

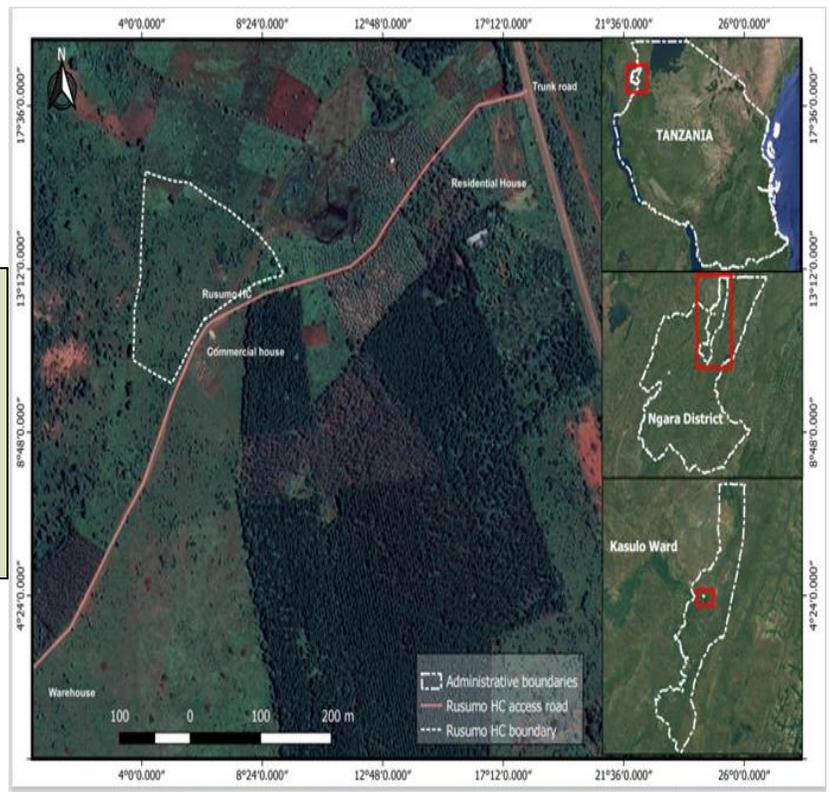
**ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA)
REPORT FOR THE PROPOSED UPGRADING OF 1KM RUSUMO
HEALTH CENTRE ACCESS ROAD TO GRAVEL STANDARD LOCATED
AT NYAKAHANGA HAMLET, RUSUMO VILLAGE, RUSUMO WARD,
NGARA DISTRICT IN KAGERA REGION.**

ESIA REPORT-Final Version



PROPONENT:

DISTRICT EXECUTIVE DIRECTOR (DED)
NGARA DISTRICT COUNCIL
P.O. BOX 30,
NGARA- KAGERA.
Telephone: +255 282226016
Fax: +255 282226152
Email: ded@ngaradc.go.tz



SUBMITTED TO:

NELSAP PROJECT MANAGER
P.O.BOX 6759,
KIGALI-RWANDA

CONSULTANT:

Gabriel Gibson (Team Leader) &
Marco S. Mchome
P.O.Box 35964,
Kinondoni-Dar es Salaam,
Location: Shekilango Road, Sinza Madukani,
Emirates Building, 2nd Floor.
Tel: +255 769 266443,
E-mail: gkabamba34@gmail.com



NELSAP-CU
NILE BASIN INITIATIVE
INITIATIVE DU BASSIN DU NIL

Submission Date: 27th /July/2022

EXECUTIVE SUMMARY

ES-1: Background

This ESIA report describes the proposed upgrading of the Rusumo Health Centre access Road from earth road to Gravel Standard to enable the constructed Health facility to be accessible throughout the year at Nyakahanga Hamlet, Rusumo Village, Rusumo Ward, Ngara District in Kagera Region. All the construction activities will be carried out in Ngara District under Local Area Development Program (LADP II) through World Bank Fund. LADP is a benefit sharing program designed to enhance regional economic and social development in the project areas in Rwanda, Burundi and Tanzania

The LADP Phase II projects include upgrading of the Rusumo Health Centre access Road from earth road to Gravel Standard as the subproject for Rusumo Health Centre project. The land use in the proposed project site has been approved by Tanzania Rural and Urban Roads Agency (TARURA) as the major regulatory body and solely owner of the existing earth road. The study reveals that, neither the individual land owner nor crops who/which will be affected during the project commencement. Construction of the proposed project and ancillary structures may require 30 personnel both skilled and unskilled while 5 technical personnel will be involved in professional works. The road upgrading process has been detailed in this report and social economic surveys of the area have been also explained. The project investment cost is USD 15,378.70

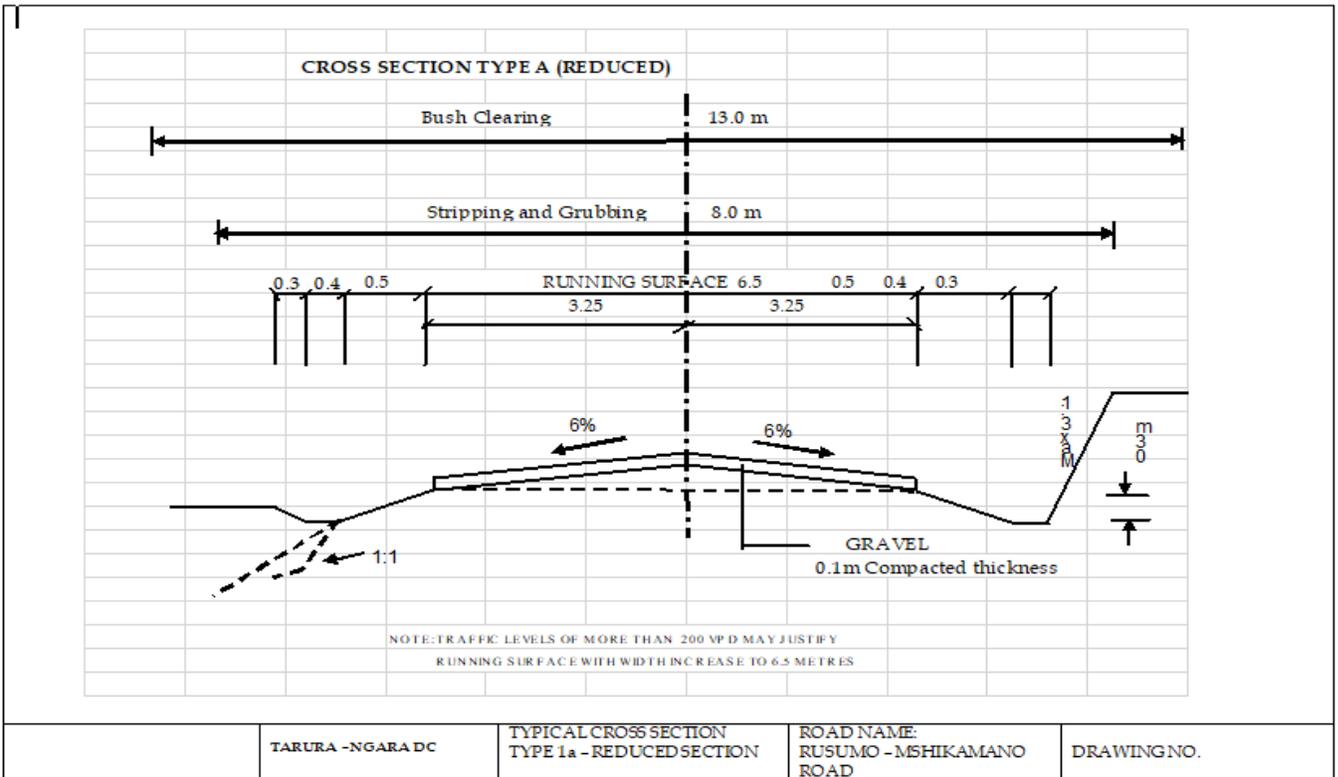
Before undertaking the construction/Upgrading works it has been found necessary to carry out Environmental and Social Impact Assessment (ESIA) of the proposed upgrading of the Rusumo Health Centre access Road from earth road to Gravel Standard. The objective of this ESIA was to exhaustively predict and forestall potential environmental and social impacts and propose mitigation measures to lessen any impacts to the environment and indigenous people in project's area of influence that may arise from rehabilitation of the road. This is to ensure that the project delivers minimum disruption to the environment. The ESIA study was commissioned to Gabriel Gibson (Team Leader and Registered Environmental Expert with registration No. EIA-0460) by Ngara District Council.

Principally, the ESIA study was conducted in accordance with the requirements of the Tanzania Environment Management Act Cap 191 (2004) and Environmental Impact Assessment and Audit Regulations No. 349 of 2005, as well as, (Environmental Impact Assessment and Audit) (Amendment) Regulations (G.N. No. 474) of 2018. Nevertheless; The World Bank Safeguard Policy applicable to this proposed project is *Environmental Assessment Policy (OP 4.01) coupled with IFC/WBG/WHO Guidelines: Occupational Health and Safety, IFC/WBG/WHO Guidelines: Air Emissions and Ambient Air Quality and IFC/WBG Guidelines: Noise Management*

The proposed upgrading of the Rusumo Health Centre access Road from earth road to Gravel Standard falls into Type B1 Mandatory projects that require full Environmental Impact Assessment hence preparation of Scoping report, Terms of References for registration with NEMC and approval process, undertaking of full ESIA and preparing the ESMP. From the World Bank perspective, the proposed project is classified as Category “C” because the proposed site is currently in use hence its potential adverse environmental impacts on human populations or environmentally important areas—including wetlands, forests, grasslands, and other natural habitats—are zero adverse.

Measures have been proposed to strengthen implementation of the ESMP presented in this report for the overall construction/Upgrading activities and operations phases. The ESMP has taken into account all the design and other changes that might occur upon construction activities that are to be implemented. Therefore, this report has taken into account the implementation of the mitigation measures proposed in which the overall social adverse impacts of the project will be very minimal while opening up significant opportunity for local communities to access health care/Medical services easily.

General Layout/Cross Section for the Proposed Upgrading of Rusumo Health Centre access road.



ES-2: ESIA Methodology

The methodologies used are in accordance with the Tanzania Environmental Assessment requirements and procedures as stipulated in the Environmental Management Act, 2004, the Environmental Management (Environmental Impact Assessment And Audit) (Amendment) Regulations, 2018, as well as other relevant Environmental Impact Assessment Guidelines. The general approached adopted are as follows:

Study Team: The study team led by ESIA expert included Sociologist, Environmental Scientist, EIA expert, Biodiversity Expert, Civil Engineer, Safety and Health expert and AutoCAD Technician.

Documents Review and Study: All data and information pertinent to this study were collected through direct observation, consultations and secondary data sources. Information and data collected and other indicators related to environmental and socio- economic trends of the project area.

Field Visit: The ESIA study team visited and did the physical assessment on the proposed site and adjacent areas and their core impact areas.

Stakeholder consultation: The stakeholder consultation which aimed among others at getting concerns and perceptions of the stakeholders regarding the projects, and also suggestions directly from the affected communities on their preferred mitigation measures; was carried through Meetings with community and official consultation.

Project Impact assessment: The checklist method was used to identify the impacts and to recommend mitigation measures while the matrix method was used to identify significant impacts. The impact assessment entailed collection of baseline data, review of Policies, Legal and Institutional Framework for Environmental and Social Management, Identifying Environmental and Social Impacts, Predicting Environmental and Social Impacts, Determining the Significance of Impacts, and Identifying Mitigation and Management Options

ES-3: Policy and Legal Guidance

Among others; the study has consulted a number of policies and laws relevant to the project for guidance in order to ensure sustainability of the project in the area. The chapter also captures the relevant MEAs, international safeguards and guidelines requirements for such kind of the project in the area. Thus, the project during its entire course of the implementation shall refer to these cited documents. Among others; National Environmental Policy (1997), National Land Policy (1997), National Economic Empowerment Policy (2004), National Gender Policy (2000), Occupational Safety and Health Policy, 2012, National Water Policy, 2002, The National Employment Policy (1997), National Land Policy (1997), National Policy on HIV/AIDS (2001), National Child Development Policy 2008, The National Transport Policy of 2003, The Mineral Policy of Tanzania (2009)

Legal framework describing the Acts and regulations which are related to the intended project are Environmental Management Act (No.20. of 2004), The Constitution of Tanzania (1977), Occupation health and safety Act (No.5,2003), HIV and AIDS (Prevention and Control) act (no.28,2008), Standards Act, 2009, Employment and Labour Relations Act (2004), The Child Act 2009, The Contractors Registration Act, 1997, Environmental Management Act (Air Quality Standards) Regulations, 2007, The Environmental Management (Soil Quality Standards) Regulations, 2007, The Environmental Management (Water Quality Standards) Regulations, 2007, Environmental Management (Hazardous Waste Management) Regulations, 2019, Environmental Management (Fees and charges) (Amended) Regulations, 2021, Environmental management (Standards for Control of Noise and Vibration) Regulations, 2015, Land Registration Act R.E 2002, The Occupational Safety and Health (First Aid and Welfare Facilities) Rules 2015, Land Acquisition Act R.E 2002, The Fire and Rescue Services Act, R: E 200, Standards Act, 2009, Penal Code 1981 including Sexual Offences Special Provisions Act 1998 (SOSPA), Mining Act, No. 14 of 2010, Mining (Safety, Occupational Health & Environment Protection) Regulations, 2010

Nevertheless; The World Bank Safeguard Policy applicable to this proposed project is Environmental Assessment Policy (OP 4.01) coupled with IFC/WBG/WHO Guidelines: Occupational Health and Safety, IFC/WBG/WHO Guidelines: Air Emissions and Ambient Air Quality and IFC/WBG Guidelines: Noise Management.

ES-4: Brief Description of the Proposed Development

Generally; the proposed project is for upgrading earth road to gravel road standard of about 1kilometer distance. Point one starts from T-Intersection (Junction) which is connected with Rusumo trunk road while the second point ends ahead of Rusumo Health Centre. The road upgrading constitutes minor widening, stripping and grubbing of the existing earth road surface hence the Contractor will pour the gravels on top of the road. The road upgrading will also involve improving safety on various sections of the road with infringed sight distance which are prone to accidents. The gravels do not allow the rainwater to form mud hence make the road passable throughout the year. These types of roads are mostly constructed in rural countryside areas and are very cheap, and less time-consuming with minimal engineering skills.

ES-5: Description of Project Environment

The existing Rusumo Health Centre access road is connected with Rusumo boarder trunk road and it is characterised with relatively flat terrain with sandy clay loam soil type. Generally; the proposed project site is located in rural-urban setting environment whereby exotic trees, cropland, grassland and very few scattered residential-Commercial buildings are dominated adjacent to the project route while the indigenous vegetation have long been cleared-off to pave way for human developments/activities. The dominant vegetation species within the road reserve are; Shrub Verbena, and Guinea Grass (*Panicum maximum*) while the dominant species adjacent to the proposed route/road are; Banana tree (*Musa Paradisiaca*), Pine (*Pinus Patula*)

and Pine (*Pinus Caribbea*). Dominant short grasses and shrubs within the road reserve will be cleared off from the site to allow construction activities to be commenced.

On top of that, the species of trees identified to the project area during the survey were also crosschecked against the IUCN list of species of special scientific and conservation interests and further revealed that there are no endemic or endangered species which need special attention during project commencement. The contractor is advised to confine all its activities only in the specified area for the existing Rusumo HC access road to avoid vegetation distortion to the adjacent land parcels. Nevertheless; the proposed project intends to improve the existing Rusumo HC earth road to gravel standard.

Based on the state of the whole site there is no pristine environment that can promote thriving and existence of the species of conservation concern as per IUCN and CITES standards. Furthermore, there are no sensitive ecological receptors in the vicinity of the project area. Also, there were no cultural or archaeological objects that were noticed or observed during the study or reported earlier during the consultation stage with local community

ES-6: Major Adjacent Developments

Rusumo Health Centre access road is connected with Rusumo Trunk Road and forms T-Intersection on North-East side, North-West the project site is demarcated by four structures (all are commercial buildings), Pine (*Pinus Patula*) farm while on the other sides; the project site is demarcated by farming plots dominated by banana.

ES-7: Brief Description of the Proposed Project Activities

The following activities will be implemented during different phases of the proposed construction of the Rusumo Health Centre access road;

- i. *Mobilization or Pre-construction Phase:* This phase entails seeking of all legal permits required by the law, mobilization of labour force, equipment. Other activities during this pre-construction phase include installation of signboards and site clearance only at the designated areas.
- ii. *Construction Phase:* The major construction activities include upgrading of the road to gravel standard. The contractor will use the existing storage room at Rusumo Health Centre established by previous contractor for storage of construction materials, specific areas whereby all material fabrication activities will be undertaken and acquisition of construction materials (such as sand, gravels, bars, cements, corrugated metals, etc). Major construction works will involve minor widening; stripping and grubbing, excavation works, pouring the gravels on top of the road, etc. Heavy duty equipment's such as motor grader, steel wheel roller, water bowser, tipping truck, 4WD Pick up, concrete mixer, poker vibrator, hand compactor, etc. Testing for quality control of the supplied materials will be given high priority.

- iii. *Demobilization Phase:* Major activities during this phase comprise decommissioning of temporary facilities and construction equipments that will be done and has to be contained in the works contract i.e. proper restoration of the site (e.g. removing of excess construction materials, restoration of disturbed areas to the required grades and removing all temporary structures). These will also involve clearance of all sorts of wastes including sewage, solid wastes (plastics, wood, metal, organic waste, etc), disposal of all wastes to the dumpsite and termination of temporary employments. Last activity is handover the completed project to the Proponent for commencement of operation phase.
- iv. *Operation phase:* Major activities during this phase including routine road repair and maintenance and health and safety awareness
- v. *Decommissioning Phase:* This is the final demise of the road due to any causative factors such as if the upgrade road need more expansion and improvement then the Closure Plan must be abided.

ES-8: Stakeholders and their Involvement in the EIA Process

The main aim of the stakeholder consultation was to inform the stakeholders about the proposed project and incorporate their views in the design of the mitigation measures and Environmental and Social Management Plan (ESMP). The specific aims of the consultation process were to; reduce problems of institutional coordination; provide precise information about the project to the communities; obtained the main concerns and perceptions of the stakeholders regarding the project; and obtain opinions and suggestions directly from the affected communities on their preferred mitigation measures. The public stakeholder consultation meetings were conducted and intended to collect information regarding sources of livelihood, living standards, and views and perceptions of the communities regarding the proposed project. Stakeholders visited include Residents, Chair Person (Hamlet), Village Chairperson, Village Executive (VE) and Ward Executive (WE). Other stakeholders included District Executive Director (DED), District Manager-Tanzania Rural and Urban Roads Agency (TARURA), District Manager - Rural Water Supply and Sanitation Agency (RUWASA), District environmental Management Officer, District Land and Natural Resources Officer (DLNSO), District Livestock Officer (DLO), Fire and Rescue Force- District Office and all other related Departments at district level.

The study applied different participatory methods, namely interviews, one-to-one discussion and focused group discussions. The consultation was first conducted with the Ngara District Council (Proponent) to get the details of the proposed activities. Stakeholders consulted were informed on the proposed project and asked to raise their concern to the consultant.

ES-8.1: Result of Public Consultation

Generally, views from various stakeholders support the development of the proposed project in Rusumo Ward in view that;

S/No	Major issue/concern	Description
1	Compliance to National laws	Prior to project commencement, the Proponent must acquire all legal permits
2	Early pregnancies	Construction activities will increase unplanned and early pregnancy cases, especially to School girls because their lusts they tend to date project workers. The contractor is advised to take precaution and strictly enforcement to his employees.
3	Economic gains and Creation of employment	The project is expected to boost Village/Ward economy in construction phase by employing local dwellers, improving small business to local vendors.
4	Proper selection of borrow pits	Material borrow areas should be selected in such a way that they do not cause cracks to houses due to vibrations Material borrow areas should be reinstated by the contractor immediately after their use by planting trees or improve to a safe state for harvesting rainwater.
5	Improved access road to health Centre	Local communities particularly Rusumo Village is very interested with this project to be commenced as soon as possible so as to rescue them from the accessibility of health care.
6	Negative Impacts such as Management of hazardous wastes, air and noise pollution; health hazards to workers and nearby community, Water pollution	The proponent/Contractor is advised to prepare comprehensive and exhaustively mitigation measures to eliminate or reduce the anticipated detrimental impacts

Status of Stakeholders' participation

Date	Venue	Stakeholders	Participants
09.11. 2021	Ngara District Council Conference Room	Ngara District Council Departmental Staffs	24
09.11. 2021	Ngara LADP Office	Ag. Environmental Officer & LADP Coordinator	4
09.11. 2021	TARURA Office,	TARURA Manager, DMO and Counter Staffs	7
07.11. 2021	Rusumo Ward/Village	Direct and indirect project beneficiaries, and Village leaders.	90
Total			125

ES-9: ESIA Study Findings

ES-9.1: Positive Impacts

Several positive and negative impacts are associated with the proposed project. Significant positive impacts include the following:

- Reliable access to Rusumo Health Center
- Reduced trafficking to patients and visitors heading to Rusumo Health Centre
- Reduced safety risk/accidents at T-intersection (Junction)
- Reliable access road for transportation of agricultural products from the nearby household farmers to Rusumo Strategic boarder market.
- Increased employment opportunity directly and indirectly to both skilled and unskilled community members
- Contribution to improving of social services in the ward
- Benefits to local producers and suppliers of construction materials
- Benefit to local vendors
- Improvement in social amenities.

ES-9.2: Negative Impacts and Mitigation Measures

The identified significant negative impacts and their proposed mitigation measures are outlined in the following tabulation:

IDENTIFIED NEGATIVE IMPACTS	MITIGATION MEASURES
A. MOBILIZATION PHASE	
<p>A1. Vegetation clearance</p> <ul style="list-style-type: none"> ▪ Site preparatory works for construction ▪ Preparatory works for construction materials stockpiling area 	<p>Currently; the existing Rusumo health centre access road is in use, hence vegetation covers are found only at the road reserve and alongside the road. However; the contractor must take the following measures to avoid any possible detrimental impacts;-</p> <ul style="list-style-type: none"> ▪ The contractor should use the existing designated areas at Rusumo Health Centre for stockpiling of construction, and preparation of all construction materials to avoid unnecessary vegetation clearing beyond the project site
B. CONSTRUCTION PHASE	
<p>B1. Vegetation clearance</p>	<p>Currently; the existing Rusumo health centre access road is in use, hence vegetation covers are found only at the road reserve and alongside the road. However; the contractor must take the following measures to avoid any possible detrimental impacts;-</p> <ul style="list-style-type: none"> ▪ The problem could be minimized by confining the construction/upgrading activities within the existing project site ▪ The Contractor shall avoid unnecessary clearing of

IDENTIFIED NEGATIVE IMPACTS	MITIGATION MEASURES
	<p>vegetation beyond the project site construction area.</p> <ul style="list-style-type: none"> ▪ The contractor should use the existing designated areas at Rusumo Health Centre for stockpiling of construction, and preparation of all construction materials to avoid unnecessary vegetation clearing beyond the project site
<p>B2. Soil Erosion and Modification of Landscape</p>	<ul style="list-style-type: none"> ▪ Control measures for runoff, such as the use of catch water drain, cut off drains, berms or drainage swales shall be put in place to redirect surface runoff away from the constructed Rusumo Health Centre access road. ▪ Confining the construction activities within the proposed project site could minimize the problem. ▪ All cleared and compacted areas should be scarified and planted with natural vegetation to stabilize the soil especially to the areas designated for preparation of construction materials ▪ The Contractor shall always ensure that the excavated areas are reinstated whenever possible
<p>B3. Air Pollutions (Fugitive Dust and Exhaust Emissions)</p>	<ul style="list-style-type: none"> ▪ The Contractor shall regularly apply water sprinkling on created dusty areas during undertaking of construction works to minimize dust emission. ▪ The Contractor shall provide dust protection masks to construction workers. ▪ The Contractor shall avoid as much as possible stockpiling of dusty construction materials or loose soils by ensuring that all materials brought to site are immediate utilized for construction works. ▪ The Contractor shall avoid use of old construction equipment/machinery which emit black smoke. All construction machinery/equipment and vehicles must be inspected during contract award to ensure that they do not emit black smoke. ▪ The Contractor shall operate and maintain vehicles and equipment in good working condition. ▪ The Contractor shall cover all trucks hauling dusty construction materials with tarpaulins during transportation. ▪ Regular monitoring of air pollutants to strengthen the control measures in case the concentration level exceeds the prescribed limits ▪ Minimum Excavator bucket height will be maintained during loading and unloading activity of crushed or quarry rocks
<p>B4. Population Influx (Labor Influx)</p>	<ul style="list-style-type: none"> ▪ Establish transparent recruitment procedures to avoid site followers in form of job-seekers ▪ Establish a recruitment policy that gives priority to local residents for less specialized services ▪ Recruitment procedures to be shared with the local authorities for further dissemination ▪ Opportunities for sub-suppliers and sub-contractors should

IDENTIFIED NEGATIVE IMPACTS	MITIGATION MEASURES
	<p>be awarded to local firms which in turn employ local labour</p> <ul style="list-style-type: none"> ▪ Conduct public health campaigns addressing issues of behavioral change, water and sanitation, malaria, HIV/AIDS, etc
<p>B5. Risks of Leakage of Hazardous Materials</p>	<p>To avoid possible side effects, the oil/fuel will be brought to the workplace/project site in small quantities that is sufficient for daily use. However; the Contractor shall abide with the following to prevent/minimize the anticipated detrimental impacts;-</p> <ul style="list-style-type: none"> ▪ Mobile fuel tanker shall be used to fill all operating machines/equipment onsite. No fuel storage shall be practiced onsite. ▪ Lubricating oils, paints, solvents, grease shall be packed in barrel and tins and will be transported by fire extinguisher equipped truck and stored in a well designated area complied with Material Safety Data Sheet (MSDS) ▪ Liquids such as fuel and lubricants materials shall be properly handled to avoid leakages to the ground/soil. ▪ Lubricating oils stored onsite shall be contained in barrels, the barrels will be stored in a secondary containment area to contain any spillage while Diesel Powered generator shall be kept on secondary containment to contain any oil/fuel leak. ▪ In the event of spill or leak of hydraulic fluid, oil and other petroleum products, they will immediately be cleaned up to prevent discharge of these fluids into the ground or storm water runoff. Absorbent materials such as polypropylene boom and pads saw dust will be kept on hand for clean-up of spilled liquids on pavement, water, and soil. In the event that there is oil spill on the soil, the soil shall be excavated and treated by incineration or applying appropriate land reclamation methods ▪ Used oil shall be kept in a primary and secondary containments prior to be collected by authorized dealer
<p>B6. Generation of solid waste</p>	<ul style="list-style-type: none"> ▪ Waste management on site shall be strictly controlled and monitored. Only approved waste disposal methods shall be allowed as prescribed in The Environmental Management Act, 2004, Part IX (a). This section gives mandate the local government authority to choose the best method of solid waste disposal for their areas of jurisdiction in consideration to climatic conditions, economic ability, interest of the community, environmental, hygienic and social benefits; and availability of tipping sites. ▪ Ensure that site personnel are instructed in the proper disposal of all waste. ▪ Ensure that all facilities are maintained in a neat and tidy condition and the site shall be kept free of litter. Measures shall be taken to reduce the potential for litter and negligent

IDENTIFIED NEGATIVE IMPACTS	MITIGATION MEASURES
	<p>behavior with regard to the disposal of all refuse.</p> <ul style="list-style-type: none"> ▪ At all places of work provide litterbins, containers and refuse collection facilities for later disposal. ▪ Solid waste may be temporarily stored on site in a designated area prior to collection and disposal. Waste storage facility shall be covered, tip-proof, weatherproof and scavenger proof. The waste storage area shall be fenced off to prevent wind-blown litter. ▪ No burning, on-site burying or dumping of waste shall occur. ▪ All solid waste shall be disposed of offsite at an approved landfill site. ▪ The Contractor shall provide metal refuse bins or equivalent plastic refuse bins, all with lids, for domestic waste. Refuse shall be collected and removed from all facilities at least twice per week. ▪ The non-reusable and non-recyclable wastes shall be collected and transported to the dumpsite for final disposal while the reusable and recyclable solid waste shall be collected by authorized dealer
<p>B7. Generation of Human Sanitary Wastes</p>	<ul style="list-style-type: none"> ▪ Contractor may use the existing toilets at Rusumo Health Centre established by the previous contractor during the entire construction period. ▪ Pit latrines and/or septic tanks/soak-away pits at the site for liquid waste collection; regular emptying ▪ Emptying will be done by the licensed contractor and will be disposed in an approved sewage system as prescribed in The Environmental Management Act, 2004, Part IX (c). This section gives mandate to local government authority to issue guidelines on how liquid waste from domestic premises should be disposed off. The local government authorities shall ensure that sewage is appropriately treated before it is finally discharged into water bodies or open land, and that it does not increase the risk of infections or ecological disturbance and environmental degradation
<p>B8. Soil and Water Quality Contamination</p>	<ul style="list-style-type: none"> ▪ In accordance with Clause 1706(a) and (b) of Standard Specifications the Contractor shall comply with all applicable Tanzanian laws, orders, regulations (Sections 34 and 39 of Water Resources Management Act and sections 6, 106, 109, and 110 of Environment Management Act), and water quality standards concerning the control and abatement of water pollution. Proper handling of generated solid and liquid waste. ▪ In accordance with Clause 1706(b) of Standard specifications, if wells or other water sources, nevertheless, are polluted, it is the responsibility of the Contractor to compensate for this and provide the consumers with clean

IDENTIFIED NEGATIVE IMPACTS	MITIGATION MEASURES
	<p>drinking water transported through pipes from an unpolluted source if required in the opinion of the Engineer.</p> <ul style="list-style-type: none"> ▪ To divert run-off using sandbags, soil or other materials, to a grassed area, pit or bare ground to soak in to mitigate the impact due to possible leakage of concrete wastewater ▪ Trucks and other construction equipment's should be serviced in a designated area with concrete surface ▪ All generated hazardous waste during construction of structures shall be temporarily stored at designated area comprised with primary and secondary containments prior to final disposal by the Authorized Contracted contractor ▪ No waste shall be disposed into waterways or streams ▪ Appropriate sites for temporary stockpiling of excavated/spoil materials and waste will be established.
B9. Generation of hazardous waste	<ul style="list-style-type: none"> ▪ Separate all hazardous wastes from domestic waste during collection and transportation ▪ All generated hazardous during construction of structures shall be temporarily stored at designated area at the site and then to be removed from site by a registered hazardous waste dealer. The process shall be complied with The Environmental Management (Hazardous Waste Control and Management) Regulations, 2021, Part V (15). This section described that the Minister may issue permits for in-country management of hazardous waste for the activities such as collection of hazardous waste, storage of hazardous waste, transportation of hazardous waste, owning or operating a plant, facility or site for recycling or recovery or re-use or treatment or disposal of hazardous waste, etc. ▪ All vehicle and equipment mechanical repair activities shall be conducted on proper designated space within the Construction site of at the nearby garage
B10. Generation of Noise and Vibrations	<ul style="list-style-type: none"> ▪ The Contractor shall avoid use of construction equipment that generates loud noise due to poorly tuned engines or damaged exhaust pipes. The construction machinery must be properly tuned and exhaust pipes fitted with mufflers. ▪ Adhere to Section 62 of Occupational Health and safety Act (2003) and Section 126 of Factories (Building Operations and Works of Engineering Construction) Rules, 1985, by ensuring that workers exposed to noise level above the limit of 75dB are equipped with ear plugs to protect them against excessive noise level ▪ The Contractor shall avoid prolonging construction works that produce high pitch noise within the residential areas during the dusk hours (18:00 – 06:00 hours)

IDENTIFIED NEGATIVE IMPACTS	MITIGATION MEASURES
<p>B11. Creation of occupational health and safety risks to workers</p>	<p>To protect skin from cement and cement mixtures, workers working in severe cement/concrete environment shall be equipped with:</p> <ul style="list-style-type: none"> ▪ Alkali-resistant gloves ▪ Coveralls with long sleeves and full-length trousers (pull sleeves down over gloves and tuck pants inside boots) ▪ Waterproof boots high enough to prevent concrete from flowing in when workers must stand in fresh concrete ▪ Suitable dust/respiratory protective gear (dust masks) when cement dust can't be avoided ▪ When kneeling on fresh concrete, use a dry board or waterproof kneepads to protect knees from water that can soak through fabric <p>Nevertheless; the further mitigations measures must be considered by the Contractor are as follow;-</p> <ul style="list-style-type: none"> ▪ The Contractor shall be caused to prepare and implement Health and Safety Management Plan (HSMP) ▪ The Contractor shall be caused to prepare and implement Emergency Preparedness and Response Plan (EPRP) ▪ The Contractor shall be caused to prepare and implement Traffic Management Plan (TMP) ▪ All the workers on site shall be provided with on-site training in site specific safety procedures and in hazards they may encounter at the site ▪ The Contractor shall be caused to conduct daily or weekly tool box meetings with specific occupational health and/or safety topic ▪ The Contractor shall be caused to conduct regular medical checks for the construction workforce ▪ The Contractor shall install safety signal devices and warning signs for the entirely project site ▪ The Contractor shall enforce mandatory use of Personal Protective Equipment (PPE) to all workforces. ▪ The Contractor shall strictly follow occupational health and safety procedures as required in Occupational Health and Safety Act No. 5 of 2003
<p>B12. Creation of safety risks to local people</p>	<ul style="list-style-type: none"> ▪ The contractor shall regularly conduct community communication and engagement meetings with villagers so as to raise safety awareness to the people ▪ The Contractor shall ensure that excavated trenches are speedily backfilled and there shall be warning tapes placed around the construction site. ▪ The Contractor shall entirely barricade with visible nets or tapes excavated trenches which found in highly populated area. ▪ Proper management of all hazardous and non-hazardous waste not to be disposed haphazardly

IDENTIFIED NEGATIVE IMPACTS	MITIGATION MEASURES
B13. Child labour, forced labour and human trafficking	<ul style="list-style-type: none"> ▪ Employment must consider labor act (18+ Years and above) ▪ Spread awareness among parents and surrounding communities ▪ Strict laws in place to prevent child, forced labors and human trafficking ▪ Formulation of proper Grievance Redress Mechanism for GBV and SEA actions occurred in working area or around the local community ▪ The Consultant Engineer with Proponent shall strictly make sure the Contractor adheres to Employment and Labour Relations Act No. 6 (2004)
B14. Disruption of traffic flow	<ul style="list-style-type: none"> ▪ Only qualified drivers with appropriate driving license shall be engaged ▪ Induction course shall be done to all drivers prior starting driving ▪ Drivers shall be sensitized on maintaining speed limits for main road and on access road ▪ Promoting safe drive with specified hours for long drive to avoid fatigue ▪ Provision of road and safety signs shall be done on site and surrounding areas that are to be followed by drivers and public in collaboration with local authority
B15. Disruption of Community Access to their Dwellings and Business Areas	<p>To abate the impact due to disruption of community access:</p> <ul style="list-style-type: none"> ▪ The contractor in collaboration with Proponent shall provide alternative/temporary road to enable pedestrians, motorcycles gain access to their business and residential premises at areas that shall be approved by the Engineer.
B16 Teenage Pregnancies	<ul style="list-style-type: none"> ▪ Strictly enforcing labors to avoid sexual with teenagers ▪ Developing a community based approach which utilizes school sex education integrated with parent, church, and community groups ▪ Increasing teenage knowledge of contraception ▪ Providing counseling and medical and psychological health and education ▪ There should be close collaboration between parents, teachers, and village governments to reduce truancy of school children. ▪ The Contractor shall not employ people under the age of 18 years. ▪ Formulation of proper Grievance Redress Mechanism for GBV and SEA actions occurred in working area or around the local community
B17. Risk of Construction Materials vandalism	<ul style="list-style-type: none"> ▪ Installation of lights in strategic areas within the project site to illuminate the whole compound and nearby areas. ▪ Regular Community awareness campaign to create sense of ownership ▪ Establishment of temporary materials' storage facilities

IDENTIFIED NEGATIVE IMPACTS	MITIGATION MEASURES
	<ul style="list-style-type: none"> ▪ Employment of sufficient number of security guards
<p>B18. Degradation / Depletion of Resources at Point of Source</p>	<ul style="list-style-type: none"> ▪ Depletion of resource cannot be avoided for developing this project. However, efficient extraction method will be used to minimize losses. All materials extraction sites shall be strictly supervised by Ngara district Council under environmental department in collaboration with other potential stakeholders
<p>B19. Possible Spread of HIV/AIDS, COVID-19 and Other Infectious Diseases</p>	<ul style="list-style-type: none"> ▪ Workers will be sensitized on the issue of HIV/AIDS and STDs and on the usage condoms etc. ▪ HIV/AIDS testing will be conducted and counseling services will be done ▪ Providing protection gears where needed such as condoms ▪ Workers and the nearby community will be sanitized on the issues of COVID-19 and protection measures ▪ The contractor shall provide employment priority to local unskilled laborers to minimize number of new comers ▪ The Contractor shall develop and implement HIV/AIDS and STIs prevention and control programme ▪ The Contractor shall put in place the COVID-19 contingency plan developed by Ngara District Council
<p>B20. Increased Risk of GBV, SEA and Harassment</p>	<ul style="list-style-type: none"> ▪ Regular training for workers on required lawful conducts in the project communities. ▪ Creation of partnership with local offices of the Ministry of Women Affairs and Youth Development, NGOs and community women groups to report workers' misconduct and complaints/reports on gender-based violence ▪ Gender based equal opportunities in all project phases ▪ Create opportunities for employment of women in both management and casual placements ▪ All gender based employment must consider labor act (18+ Years and above) ▪ Formulation of proper Grievance Redress Mechanism for GBV and SEA actions occurred in working area or around the local community
<p>B21. Fire and Explosion</p>	<ul style="list-style-type: none"> ▪ The Contractors shall maintain appropriate fire extinguishers within easy access at all working areas ▪ The Contractors shall recruits Safety Officers who will be responsible for training of all workers how to use fire extinguishers and ensuring safety measures are in place at all work sites ▪ The Contractors shall prohibit smoking in hot work areas (welding, cutting, grinding and temporal fuel/oil storage area)
C. DEMOBILIZATION PHASE	
<p>C1. Loss of Employment and</p>	<ul style="list-style-type: none"> ▪ The impact due to loss of employment at the closure of the

IDENTIFIED NEGATIVE IMPACTS	MITIGATION MEASURES
Economic Activities at the End of the Project	<p>project will be a residual impact as cannot be mitigated at the project level. To manage the impact, while recruiting workers the Contractor shall inform the expected duration of their employment.</p> <ul style="list-style-type: none"> ▪ In addition, Employment and Labour Relations Act No. 6 (2004) of United Republic of Tanzania shall be adhered to by the Contractor during termination of redundant workers
C2. Generation of Solid Wastes	<p>The impact shall be mitigated as follows:</p> <ul style="list-style-type: none"> ▪ Prior to demobilization, the Contractor shall submit to the Engineer for review and approval a closure plan for the site (including fuel storage facility, workshop, pre-cast yard if any). The plan shall outline steps that the Contractors shall adopt to reinstate the facilities, including disposal of all facilities that were used in the site which would no longer be needed and are likely to be of environmental and health hazard.
C3. Deterioration of Ambient air Quality	<p>Though deterioration of ambient air quality is less anticipated in this phase, but the contractor is advised to take precautions as follow;-</p> <ul style="list-style-type: none"> • The impact due to pollution of ambient air by dust shall be mitigated by sprinkling water on the access roads to dump sites as well as covering transporting trucks to minimize escape of wastes from the trucks. The workers at the demolition site shall be provided and ensure that they use dust masks to prevent them from inhaling polluted air.
C4. Restored clean site	<ul style="list-style-type: none"> ▪ Collection and transportation of unwanted materials to the disposal site ▪ Allow community to take valuable building materials for example timber for reuse in construction of wastes
<p>D. OPERATION AND MAINTENANCE PHASE</p> <p>POSITIVE IMPACTS</p>	
D1. Reduced Traffic Accidents	<ul style="list-style-type: none"> ▪ The impact due to improved safety shall be enhanced by ensuring that repair and maintenance of the road, including its furniture such as road safety signs are done properly and on timely
D2. Reduced Travel Time and Comfort	<ul style="list-style-type: none"> ▪ The impact due to reduction in travel and cost shall also be enhanced by ensuring that repair and maintenance of the

IDENTIFIED NEGATIVE IMPACTS	MITIGATION MEASURES
to patients, workers, visitors and pedestrians	road is done timely and properly.
D3. Improved road conditions	<ul style="list-style-type: none"> ▪ Repair and maintenance will focus on activities that ensure the long-term serviceability of the road. The activities will pertain to the road drainage structures like culvert and where necessary, re-surfacing with gravels. All repair and maintenance works will virtually have positive impacts that will enhance the intended functions of the road and lengthening its life time, especially when it is considered that the number and scope of routine maintenance of the road will be greatly reduced.
D4. Reliable Medical/clinical services throughout the year	<ul style="list-style-type: none"> ▪ The impact due to improved access road will be enhanced by ensuring that repair and maintenance of the road is done timely and properly.
D5. Improved connectivity between Mshikamano Village and Rusumo Strategic Boarder Market	<ul style="list-style-type: none"> ▪ The impact due to improved access road will be enhanced by ensuring that repair and maintenance of the road is done timely and properly.
E. OPERATION AND MAINTENANCE PHASE NEGATIVE IMPACTS	
E1. Increased Traffic Accidents	<ul style="list-style-type: none"> ▪ Warning signs followed by speed restraining humps shall be constructed on both approaches to T-Intersection(Junction) and closely to HC entrance ▪ In addition TARURA shall launch awareness campaign in the use and road safety
E2. Increased Noise and Vibrations Pollution	<ul style="list-style-type: none"> ▪ The impact due to noise and vibrations during the operation phase of the project cannot be mitigated at the project level and therefore a residual impact.
E3. Deterioration of Ambient air Quality due to Emission from Vehicle	<p>The impact due to deterioration of ambient air quality due to increase emissions from Cars/Motorcycles/trucks cannot be mitigated at the project level. This requires effort by the government to encourage and enforce measures to reduce vehicles pollution. This can be achieved:</p> <ul style="list-style-type: none"> ▪ <u>Proper maintenance of trucks/cars:</u> Proper maintenance of trucks/cars emission control systems not only limits harmful emissions, but also can improve fuel efficiency and trucks/cars performance extending the lifespan. Care in storing and handling gasoline and other solvents also reduces evaporative losses to the atmosphere. ▪ <u>Use of low emission or fuel efficient trucks/cars/motorcycles:</u> This includes the use of low carbon trucks/cars, use zero carbon cars/trucks (Battery-electric trucks, plug-in hybrid-electric trucks), and use of natural gas trucks/cars. These technologies can be used in

IDENTIFIED NEGATIVE IMPACTS	MITIGATION MEASURES
	passenger cars, trucks and transit buses. <ul style="list-style-type: none"> ▪ <u>Introduction of carbon tax</u>: The government should consider introducing carbon tax for diesel trucks/cars, since diesel trucks emit more carbon than gasoline trucks.
E4. Increased Pressure on Natural Resources due to population increase	The impact cannot be mitigated at road project level. However, although the impact cannot be easily mitigated at project level, respective local authorities can initiate environmental management measures. This may include proper land management, promotion of tree planting campaigns, proper enforcement of economic instruments charging fees or tax on forest products like charcoal, fuel wood, timber, etc.

ES-10: Environmental and Social Management Plan (ESMP)

A number of mitigation and enhancement measures have been proposed to address the identified potential negative and positive impacts. These have been used to develop an Environmental and Social Management Plan (ESMP) for construction and operation phases of the project. Programs for both internal and periodic external environmental monitoring have been proposed with an overall objective of ensuring that mitigation measures are implemented effectively. Environmental monitoring will be carried out to ensure that all construction and operation activities comply and adhere to environmental provisions and standard specifications. The activities and indicators that have been recommended for monitoring are presented in Environmental Monitoring Plan (EMP). Also, the EMP has roles for each and every partner involved in different phases of the project (NELSAP PIU, Project Proponent, Contractors, supervising engineers etc). The total amount to be allocated for an ESMP is Tshs. 11,300,000. This is an indicative budget that can change to reflect the actual activities.

ES-11: Environmental Monitoring Plan (EMP)

The systems for implementation of ESMP has been developed in chapter 9 of this report which is to be implemented as complimentary to the Environmental and Social Management Plan to monitor the impacts of the proposed project and the mitigation measures and to provide a permanent record of such monitoring. Nonetheless, an Environmental Monitoring Plan has been developed to monitor the effectiveness of the environmental protection measures and socio-economic initiatives specified in the ESMP. It supports the ESMP by maintaining a record of environmental performance and enabling adjustments to be made to mitigate environmental and socio-economic impacts during the lifetime of the project. Cost estimates for monitoring (EMP) have been included and it has been estimated to be TSH **12,600,000** as an indicative budget that can change to reflect the actual activities

Unit / Personnel	Responsibilities
National Environment Management Council (NEMC)	<ul style="list-style-type: none"> • Conduct environmental compliance monitoring and enforcement to ensure that project proponent is efficiently implement approved ESMP • Undertake screening of the project to determine level of ESIA study • Reviewing and approval of the project ESIA reports submitted by Ngara DC

<p>Ngara District Council</p>	<ul style="list-style-type: none"> • Holds final responsibility for the environmental and social performance of the project • The Client will be represented by Consultant who will be in charge of the supervision works, and overseeing the contract from initiation stage to completion of construction activities at various proposed sites; • The Client has to procure a contractor who will be responsible for the implementation of the entire project activities; • Responsible for ensuring the site development is implemented according to the requirements as stipulated in ESMP; • Ensure that sufficient resources are available to the other role players to efficiently perform their tasks as indicated in ESMP; • Overall management of all project activities; • Receive and supervise the implementation of the recommendations of the environmental report from the Consultant; • Cooperate with Consultant to periodically supervise contractors' activities • Ensure availability of key staffs for social, environmental, health and safety monitoring during project phases
<p>NELSAP PIU</p>	<ul style="list-style-type: none"> • To provide support to the District where required to facilitate the implementation of LADP activities. • Ensure timely availability and reliability of funding for agreed and approved LADP activities and related interventions. • Ensure timely processing of the direct payments to contractors and consultants on behalf of the district. • Monitoring and evaluation of the progress of LADP activities implemented by the district. • Liaise closely with Ngara DC in preparing a coordinated response on environmental and social management aspects of the project; • Carrying out safeguards due diligence; and • Preparation of weekly environmental and social performance reports for the project.
<p>World Bank</p>	<ul style="list-style-type: none"> • Financing the entire project activities • Provision of technical support and guidance to Ngara DC, NELSAP PIU, Contractor and Supervising Engineer • Recommending on additional measures to strengthening the ESMP/EMP implementation performance
<p>Consultant (Supervision Engineer)</p>	<ul style="list-style-type: none"> • Monitoring and supervision of the construction works including overseeing implementation of ESMP • Administer all construction works, progress review and monitor the works undertaken by the Contractor and implementation of ESMP to ensure compliance with contract specification and contractual requirements • Cooperate with Ngara DC to periodically supervise contractors' activities. Scheduled meetings held between the contractor, Ngara DC representative and Consultant. • Include, among its staff, an environmental officer who will oversee the implementation of the ESMP and report to Ngara DC and NELSAP PIU.
<p>Contractor</p>	<ul style="list-style-type: none"> • responsible for implementation of construction works and ensure compliance with environmental requirements; • Contractor shall prepare/update a Contractor's ESMP (C-ESMP), and ensure that the measures related to environmental and social safeguards are fully carried out as stipulated; • Preparing/Updating the project's Environmental Health and Safety Management Plan; • Conduct general training on occupational health, safety and environment to

	<p>the construction workforce</p> <ul style="list-style-type: none">• Reporting arising works that are detected by Environmental Officer to Consultant and Ngara DC representative for further actions.• Prepare and implement covid-19 contingency plan, prepare and implement emergence preparedness plan, prepare and implement traffic management plan,
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ES-12: Project Alternatives

The choice of site has been dictated by a number of factors listed below:

- a) Availability of alternative site. The access to Health center is through Mshikamano – Rusumo Road only
- b) The proposed project is for upgrading the existing Mshikamano Village road and not an establishment of a new road.
- c) Land ownership is under TARURA, neither compensation nor economic displacement will be commenced hence making the project economically viable
- d) No-Project alternative is considered as not a plausible alternative.

ES-13: Conclusion and Recommendations

ES-13.1: Conclusion

Ngara district council is growing fast as other districts in the country, for that case the council is strategically planning to meet social, health and economic needs of its population and supporting infrastructures. The local communities and the nearby areas have given the priority to establishment of a proposed project so as to have a reliable access road to the health center located at Rusumo Village. This is expected to improve easy accessibility of medical/clinical services hence to reduce mortality rates to Rusumo Village and the nearby villages. Moreover the established proposed project will stimulate economic growth and improving living standards of the surrounding communities by providing reliable road infrastructure to transport agricultural products to the market place particularly at Rusumo Strategic Boarder Market.

The identified significant negative impacts associated with the proposed project are related to the proposed construction works and operation phases and observed to be of limited scope. Nevertheless, the identified negative impacts could be minimized or prevented through implementation of recommended mitigation measures. In this regards the project proponent will ensure that the recommended mitigation measures are fully implemented during construction and operation phases. It can therefore be concluded that the proposed project does not pose severe environmental threat to the community, endangered species and natural habitats; hence it is socially acceptable, economically viable, and environmentally sustainable.

While a number of environmental impacts have been identified and assessed accordingly, none of them are considered to be too severe to make their amelioration impossible. Given the nature

and location of the development, the conclusion is that the potential impacts associated with the proposed development are of a nature and extent that can be reduced, limited and eliminated by the application of appropriate mitigation measures. Further, the consultant is of the opinion that implementation of the proposed ESMP and EMP will safeguard the integrity of the environment and welfare of the people in the project area.

ES-13.2: Recommendations:

It is evident that the proposed project is associated with both positive and negative impacts during construction and operation phases of the project. The following recommendations are made to enhance the viability of the project: The project shall be continued as planned as it is economically and socially viable, Ngara District Council and TARURA shall oversee activities of the Contractor in implementation the developed impact mitigation measures described in the ESIA report, The proposed mitigation and enhancement measures (the ESMP) should be implemented in order to minimize and/or avoid the identified adverse environmental and social impacts of the proposed project. The ESMP should be provided as part of the Contractor's contract, The EMP should also be implemented to track the effectiveness of mitigation and enhancement measures and hence further improvement of the mitigation plan

SIGNED DECLARATION OF EXPERTS

This Environmental and Social Impact Assessment (ESIA) report has been prepared by team of competent and registered Environmental Experts who are dully certified and registered by the National Environment Management Council (NEMC) of United Republic of Tanzania as an Environmental and Social Impact Assessment (ESIA) and Environmental Auditing (EA) Assessors. We are hereby certifying that the particulars given to this report are correct and true to the best of our knowledge and abide with the Environmental Management Act, 2004 Cap 191 and Environment Impact Assessment and Audit Regulations, 2005 - G.N. No. 349.

Registered Experts

S/N	Name	Responsibility	Signature
1	Gabriel Gibson	Certified Environmental Assessor (Environmental Planning and Management-Team Leader)	
2	Marco Mchome	Certified Environmental Impact Assessment Expert (MSc in Environmental Impact Assessment and Management (Ass. Team Leader)	

Non-Registered Supporting Staffs

1	Fredrick Jailos	Geography & Environmental Studies & Health and Safety Specialist
2	Josephat Shilogile	Msc in Highway Engineering
3	Kelvin Shirima	MSc Geographical Information Science
4	Eng. Hemed Mussa	Civil Engineer
5	Mr. Mugisha G. kabamba	Sociologist
6	Joseph John Mrianga	MSc. In Natural Resources Management

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ACRONYMS AND ABBREVIATIONS

AMSL	Above Mean Sea Level
CRB	Contractors Registration Board
dBA	Decibel
DED	District Executive Director
DIZ	Direct Impact Zone
EA	Environmental Audit
EMA	Environmental Management Act
EPRP	Emergency Preparedness and Response Plan
ESIA	Environmental & Social Impact Assessment
EIAAR	Environmental Impact Assessment and Audit Regulation
EIS	Environmental Impact Statement
EMP	Environmental Monitoring Plan
ERB	Engineers Registration Board
ESMP	Environmental and Social Management Plan
GBV	Gender Based Violence
GN	Government Notice
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
HSMP	Health and Safety Management Plan
IUCN	Union for Conservation of Nature
IUCN	International Union for Conservation of Nature
KPH	Kilometer per Hour
LADP	Local Area Development Program
NBS	National Bureau of Statistics
NPH	National Population and Housing Census
NEMC	National Environmental Management Council
NELSAP	Nile Equatorial Lakes Subsidiary Action Program
NGOs	Non-Government Organizations
NSGRP	The National Strategy for Growth and reduction of Poverty
OHS	Occupational Health and Safety
OSHA	Occupational Safety and Health Authority
OP	Operational Policy
PAPs	Project Affected Persons
PPE	Personnel Protective Equipment
PLHAS	People Living with HIV/AIDS
RRHP	Regional Rusumo Falls Hydroelectric Project
RUWASA	Rural Water Supply Authority
STD/STI	Sexual transmitted Diseases/Sexual Transmitted Infections
TANESCO	Tanzania Electric Supply Company
TARURA	Tanzania Rural and Urban Road Agency
TMP	Traffic Management Plan
TZS	Tanzania Bureau of Standards
ToR	Terms of Reference
URT	United Republic of Tanzania
VE	Village Executive
WBG	World Bank Group
WE	Ward Executive

ACKNOWLEDGMENT

Environmental Consultant is very grateful to the Ngara District Council, World Bank as well as NELSP/LADP for their full cooperation and inputs towards compilation of the report and development of this project. Special thanks are expressed to all stakeholders of the proposed project including among others Rusumo Village and Rusumo Ward for their vital contributions and their assistance during various project's consultations. For invaluable recognition and their willingness, their names, designations were recorded and appended to this ESIA report.

CHAPTER ONE: INTRODUCTION

1.1 Background and Nature of the Project

The proposed Local Area Development Program (LADP) is a benefit-sharing program designed to enhance regional economic and social development in the project areas in Rwanda, Burundi and Tanzania. This has been resulted from the Regional Rusumo Falls Hydroelectric Project (RRHP) as one of the priority regional projects in the Nile countries and aims at development of low-cost power generation and regional electricity trade as a means to improving productivity and to promoting economic growth in the region. The LADP project area is located in Ngara District in Tanzania, Kirehe and Ngoma Districts in Rwanda and in communes of Giteranyi (Muyinga Province) and Busoni (Kirundo Province) in Burundi.

The proposed RRHP consists of the construction of: (i) a run-of-river hydropower facility with envisaged installed capacity of 80 MW to be equally shared between the three countries. The power station and associated hydraulic infrastructure is currently under construction and is situated at the Rusumo Falls, where the Kagera River forms the boundary between Tanzania and Rwanda, and (ii) transmission facilities connecting the power plant to the national grids of Rwanda, Burundi and Tanzania. The RRHP project is financed by World Bank (WB) together with African Development Bank (AfDB) with the estimated cost of US\$340 million for the Power plant and US\$ 120 million for the Transmission lines.

In Tanzania, Ngara District is one of the seven districts of Kagera Region in the very west of mainland Tanzania. The district is bordering the Republics of Rwanda and Burundi and the distance from Ngara to Dar es Salaam is 1,600 km and 350 km to the regional headquarters (Bukoba). The district remains remote and development actors are not many. Ngara District covers an area of approximately 3,744Km²; it is divided into four divisions, 22 Wards and 75 villages. About 90% of the Ngara households depend on agriculture and livestock production for their livelihoods. The LADP is seen by the district authorities and the population as an opportunity to address key community development challenges. The district has identified several/various most critical socio-economic areas for the Local Area Development Program (LADP Phase II) support including upgrading of the Mshikamano – Rusumo Road to Gravel Standard so that the constructed Health Center can have a reliable access road throughout the year.

Therefore, this ESIA report is focused in carrying out an Environmental and Social Impact Assessment for the proposed upgrading of 1-kilometer earth road to gravel standard from Mshikamano to the constructed Health Center located at Nyakahanga Hamlet, Rusumo Village, Rusumo Ward, Ngara District in Kagera Region. The Project is part of an overall Kagera Basin Integrated Development Framework, which is part of the Nile Basin Initiative.



Figure 1: KML Map shows Rusumo HC access road –Nyakahanga Hamlet, Rusumo Village

Source: GIS Expert/2021

1.2 Project Rationale

Ngara district is growing fast as other districts in the country, for that case the council is strategically planning to meet social and economic needs of its population and supporting various infrastructures. Rusumo Health Centre was established under Local Area Development Program (LADP) Phase I meanwhile LADP Phase II intends to upgrade the access road to connect the facility with other parts of the Rusumo Village and the nearby areas. Basically; the proposed project is to upgrade earth road to gravel road standard. The proposed upgrading will;

- Improve the reliability of accessing the Health Center which is located at Nyakahanga Hamlet in Rusumo Village.
- Reduced Travel Time and Comfort to patients, workers, visitors and pedestrians
- Facilitate more efficient transportation of Agricultural Products from Mshikamano Village to Rusumo Strategic Boarder Market
- Reduce Maintenance Cost of the Road from respective Authority and
- Reduce Trucks Operating Costs along the project area

1.3 EIA Requirements

The First Schedule of the Environmental Impact Assessment (EIA) and Audit Regulations, 2005, and the amended 2018 regulation made under First Schedule Item 8 (a) '*rehabilitation of trunk roads and airports/air strips and their ancillary facilities*' are the project that falls under category B1 (Border line projects) i.e. that the project may have medium to high impacts.

Furthermore; World Bank (WB) requires Environmental and Social Impact Assessment (ESIA) to be conducted to assess whether is likely to cause significant potential harm (if any) to the surrounding environment before any actual activity is started in the proposed upgrading of the

road infrastructures. The proposed project is categorized as Category B in the Environmental and Social Screening Procedures (ESSP) used by World Bank to categorize initiative based on environmental opportunity/risk and determines depth of environmental analysis needed. The World Bank Safeguard Policy applicable to this proposed project is *Environmental Assessment Policy (OP 4.01) coupled with IFC/WBG/WHO Guidelines: Occupational Health and Safety, IFC/WBG/WHO Guidelines: Air Emissions and Ambient Air Quality and IFC/WBG Guidelines: Noise Management, IFC/WBG/WHO Effluent Discharge Guidelines*

In order to meet the requirements of WB and NELSAP/LADP, the ESIA process has also been carried out in compliance with the applicable WB Safeguard Policy on Environmental Sustainability. This report fulfills both requirements of the WB, environmental legislations of the United Republic of Tanzania and other international environmental requirements.

1.4 Objectives of ESIA

The purpose of this ESIA study was to systematically assess the potential environmental impacts of proposed project activities through a comprehensive Environmental Impact Assessment (EIA), in compliance with relevant laws and policies of the Government of Tanzania. In addition this ESIA process was carried out in order to provide a monitoring guideline for the project management to act upon during construction activities.

The main objectives of this ESIA study were to;

- i. Establish a detailed documentation prevailing baseline conditions before project construction commences;
- ii. Identify the anticipated environmental impacts of the project and the scale of the impacts;
- iii. Propose mitigation measures to be taken during and after the implementation of the project;
- iv. Document the consultation process undertaken to inform potential project stakeholders as well as the attitude of the stakeholders towards the project;
- v. Consider stakeholders' views and suggestions on project's design;
- vi. Consider different alternatives to the project to meet the intended objectives and discuss alternative methods for developing the project to ensure that the project is justified from a broader environmental and social perspective, and
- vii. Develop an Environmental and Social Management Plan (ESMP) with mechanisms for monitoring and evaluating the compliance and environmental performance that shall include the cost of mitigation measures and the time frame of implementing the measures.

1.5 Approach and Methodology

1.5.1 Approach

This ESIA Report has been prepared in line with NEMC and WB Environmental and Social Assessment Guidelines, Tanzania's Environmental Management Act (2004), EIA and Audit Regulations (2005), its subsequent regulations of 2018(G.N. No. 474 of 2018).

The approach applied by environmental experts was to divide project area into Direct Impact Zone (DIZ) and the Area of Influence (AI). The Direct Impact Zone is the area that will be immediately and directly affected by the actions undertaken during the upgrading of roads, operations phases and post-operation phase of the project. This area includes the site itself and marginal zones up to 60 meters on all sides from the project's boundaries.

The DIZ was determined on the basis of the following factors:

- The distance of travel of noise, dust, vibrations and exhaust fumes from operating machineries, trucks from the site boundary; and
- Marginal zones and developments from the site within 60m as it is within this distance that impacts are likely to be felt.

The AI is the area beyond the DIZ where most of the environmental impacts will be induced or influenced by the project activities. It is not subject to direct contact with the site, but is directly or indirectly affected by the presence of the proposed project site. Areas for borrow pits, waste dump, wastewater receptors are also considered as Areas of Influence.

1.5.2 Methodology

1.5.2.1 Study Team

The ESIA study team included an EIA expert, Sociologist, Environmental Scientist, Biodiversity Expert, High way engineer, Civil Engineer, Safety and Health expert and AutoCAD Technician. The environmentalist who is also an EIA expert led the team.

1.5.2.2 Documents Review and Study

Information and data were collected by direct observation, through consultations and secondary data sources. Information and data collected include water supply situation, sanitation situation, land use, demography, and other indicators related to environmental and socio- economic trends of the project area.

The consultant reviewed various relevant documents to be familiar with relevant issues pertaining to the study. The review of documents included: The Environmental Impact Assessment and Audit Regulations, 2005, The Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018, Ngara District Socio-Economic Profile 2018; National Bureau of Statistics, Population Distribution by age and sex, 2012; and National Bureau of Statistics, Other documents included ESIA for the proposed construction of Rusumo Village Health Center, Geographical info, and maps of project areas, Summary report for LADP activities (June 2018 to August, 2020), Environmental and Social Impact Assessment (ESIA) for the proposed Rusumo Falls Hydroelectric Project - Dam & Power Plant Component Report July, 2013, and Feasibility Report for Local Area Development Projects in Ngara District, October 2019.

1.5.2.3 Field Visit

The main objective of the field visit was to gather information relevant for the study. Field studies involved walking on the project site for assessing the existing situation of the proposed site and the nearby surroundings. The ESIA study team visited and did the physical assessment on the proposed site and their core impact areas.

The fieldwork was carried out from in 05th/November – 09th/November/ 2021. Activities carried out during field studies included:

- Interviews and consultation with stakeholders,
- Indoor village consultation meetings,
- Appraisal of environmental conditions of the project site and areas that might be impacted by the project – hydrology, flora, fauna, and

- Appraisal of land use and assessment of other relevant socio-economic parameters.

During the field visits, consultation with relevant stakeholders was also conducted. Particular attention was paid to the impact on the livelihood of the people living within or in the immediate vicinity of the proposed upgrading of the Mshikamano – Rusumo Road

1.5.2.4 Stakeholders Consultation

The main aim of the stakeholder consultation was to inform the stakeholders about the proposed project and incorporate their views in the design of the mitigation measures and Environmental and Social Management Plan (ESMP). The specific aims of the consultation process were to; reduce problems of institutional coordination; provide precise information about the project to the communities; obtained the main concerns and perceptions of the stakeholders regarding the projects; and obtain opinions and suggestions directly from the affected communities on their preferred mitigation measures.

- **Meetings with Community:** The public stakeholder village consultation meetings were conducted and intended to collect information regarding sources of livelihood, living standards, and views and perceptions of the communities regarding the proposed projects. Stakeholders visited include villagers, Village Chairperson and Village Executive (VE). The minutes for community meetings undertaken during village consultative meeting are attached in **APPENDIX I**.
- **Official Consultation:** The ESIA team met government officials who include District Commissioner, District Executive Director with the Heads of Department and NELSAP representative. Other stakeholders from various agencies who work within Ngara included District Manager – TANESCO and District Manager – TARURA. The names and signatures of the consulted stakeholders are as attached in **APPENDIX II**. The visited stakeholders had opportunities to express their views/concerns regarding the project.

1.6 Project Impact Assessment

Superimposing project elements onto the existing social and environmental conditions in the project area did impact assessment. The checklist method was used to identify the impacts and to recommend mitigation measures. Using the matrix method identified significant impacts. A key guiding assumption in this study is that the project will be designed, constructed, operated and maintained with due care for safety and environmental matters using current and practical engineering practice and/or Best Available Technology Not Entailing Excess Cost (BATNEEC). The implementation schedule of the mitigation measures is summarized in the Environmental and Social Management Plan (ESMP).

During environmental assessment the environmental impacts have been evaluated for various alternatives. The impact assessment entailed the following:

(a) Collection of Baseline Data

The collection of baseline data was conducted in parallel subsequent to defining the scope of the ESIA. These data allows the study team to determine whether more detailed information on environmental and social conditions in the project area and surroundings are needed and where such information can be obtained.

Both primary and secondary data were collected. Primary data were collected by direct measurement, observations and using semi-structured interviews with respective and targeted parties. Secondary data were obtained from various relevant sources of information such as Ngara District profile, drawings and many other official and non-official documents.

(b) Review of Policies, Legal and Institutional Framework for Environmental and Social Management

This allowed the study team to update and enhance their understanding of national policies, legislation and institutional arrangements for environmental and social management in Tanzania and relevant international procedures to ascertain the optimal management of impacts.

(c) Identifying Environmental and Social Impacts

Compiling a contender list of key impacts such as loss of flora and fauna, settlement patterns, social and cultural systems, water resources and land tenure systems undertook this.

(d) Predicting Environmental and Social Impacts

The environmental and social impacts were identified and their potential size and nature were predicted. The prediction of impacts specified the impact's causes and effects and its consequences for the environment and the social aspects.

(e) Determining the Significance of Impacts

The key activity was to evaluate the significance of impacts, engineering judgments were made about which impacts found in the study area were considered important and therefore need to be mitigated. Criteria like *likelihood*, *reversibility* and *severity* of the impact were used. Also the *scale of the impact* in terms of *spatial* and *temporal* was also taken into account.

(f) Identifying Mitigation and Management Options

The options for dealing with identified and predicted impacts were considered. This enabled the study team to analyze proposed mitigation measures. A wide range of measures has been proposed to prevent, reduce, remedy or compensate for each of the adverse impacts evaluated as being significant. Analysis of the implications of adopting different alternatives was done to assist in clear decision-making.

1.7 Report Organization

Chapter One - Introduction: Provides the introduction on the background information of the proposed project, its development objectives and scope, project rationale and the methodology used to conduct ESIA.

Chapter Two - Project Description: Describes the general project description, in which there is a description of the location and relevant components of the project and their activities.

Chapter Three – Legislative Framework and International Guidelines: Illustrates policies including World Bank safeguard policies, and legal framework, which are relevant to Tanzania environment and legislation applicable to the project.

Chapter Four – Description of Baseline Situation: Gives the baseline information relevant to the project. It also gives information on Environmental characteristics, which details the

physical and socio-economic environment and general environmental condition of the project area.

Chapter Five - Stakeholders Participation, Issues and Concerns: Express the consultation exercise at the project area detailing the list of stakeholders consulted and issues raised.

Chapter Six - Identification and Assessment of Impacts and analysis of project alternative: Describes the positive and negative environmental impacts of the project that are likely to be generated from different phases of the project (pre-construction, construction, operation and decommissioning phases), and their level of significance and describes the project alternatives in terms of sites location, technological choices.

Chapter Seven - Mitigation and Enhancement Measures: Gives the enhancement and mitigation measures for the positive and negative impacts of the project. The chapter also summarizes the grievance procedure and mechanism to be followed.

Chapter Eight – Environmental and Social Management Plan: Presents the proposed environmental and social management plan designed to evaluate the implementation and performance of the mitigation measures. The chapter also explains the environmental; health and safety practices and procedures including the management plan especially during construction phase.

Chapter Nine – Monitoring Plan: Contains the proposed institutions to carry out the monitoring activities, the monitoring indicators, time frame and the proposed budget for monitoring.

Chapter Ten – Decommissioning Plan: The chapter gives activities to be performed after completion of proposed construction works so as to restore site at least to original condition.

Chapter Eleven - Conclusion and Recommendations: Gives the conclusion and recommendations of the study, presenting the environmental and social acceptability of the project, taking into account the impacts, measures and recommendations identified during the assessment process.

References: Presents a list of the references used during the preparation of the ESIA Study.

1.7.1 Review and Approval of the Report

ESIA report will be submitted to the Proponent who also will share it with the WB/NELSAP, the donor with keen interest in environmental and social acceptability and sustainability of all the development projects it funds, for joint review and comments. The comments will be incorporated and finalized the ESIA report which will be disseminated to relevant stakeholders in Tanzania for public access

CHAPTER TWO: PROJECT LOCATION AND DESCRIPTION

2.1 Project Location

Ngara District is one of the seven districts of Kagera Region of Tanzania. The district is considered to be in the highlands of Tanzania. The total area for Ngara district is 3,744 Km². The district lies on the West of mainland Tanzania between latitudes 2°45" South and longitudes 300 64" East. It is bordered to the North by Karagwe District, to the East by Biharamulo District, to the South by the Kigoma Region, to the Northeast by Muleba District and to the West by the countries of Rwanda and Burundi

The site for the proposed project is located at Nyakahanga Hamlet, Rusumo Village, Rusumo Ward, Ngara District in Kagera Region. (As shown in Figure 2 below).

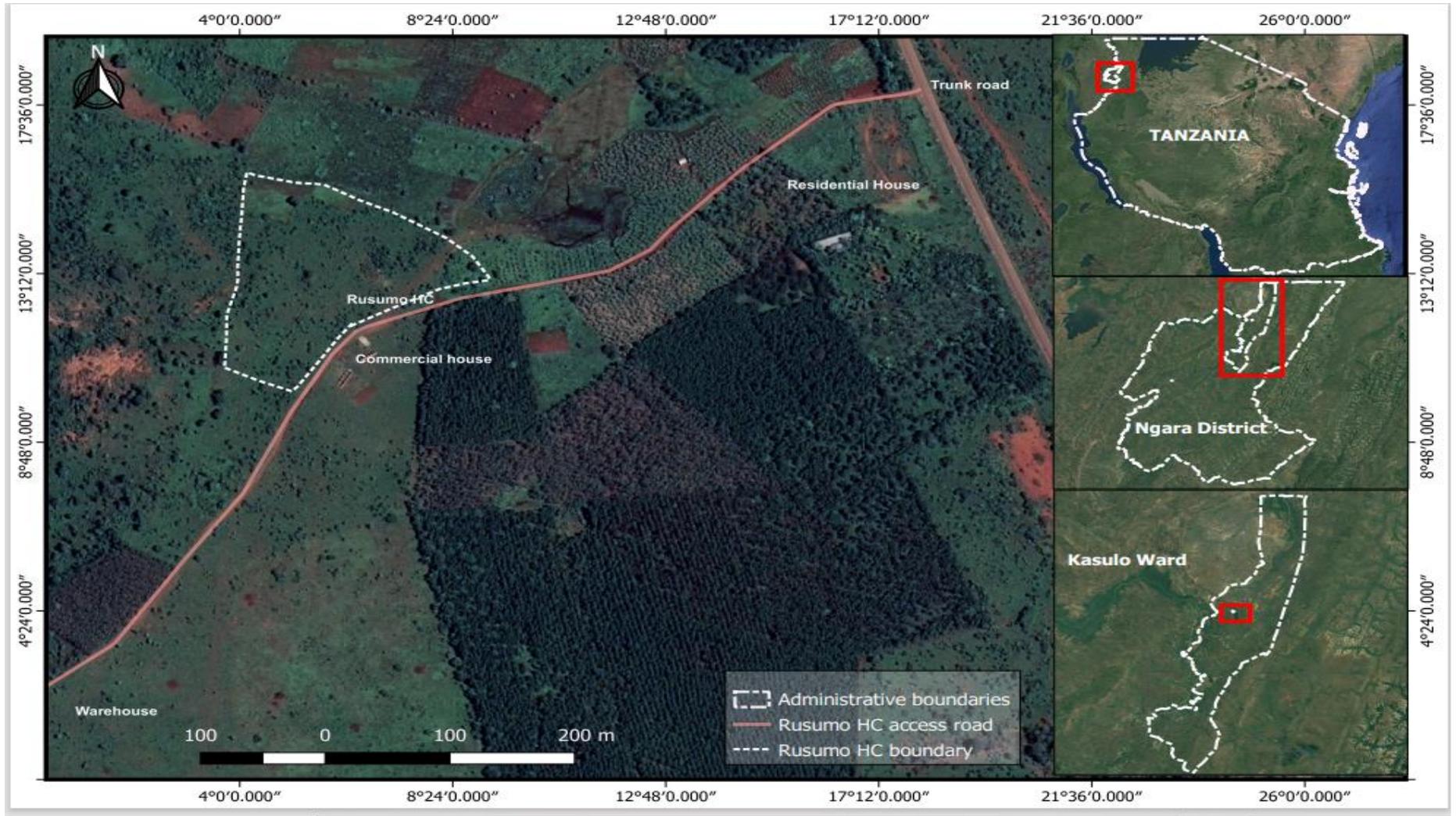


Figure 2: KML Map shows Rusumo HC access road –Nyakahanga Hamlet, Rusumo Village

Source: GIS Expert/2021

2.1.1 Accessibility of the project Site

The site is about 5kilometers South-East of Rusumo Boarder and North-West of Mshikamano Village as the nearest Vilage Centres also this is approximately 30 kilometers by road, north-east of Ngara, where the district headquarters are located. The geographical coordinates of Rusumo, Tanzania are: latitude 2°23'05"S, 30°47'01"E

2.2 Project Site Description

The existing Rusumo Health Centre access road is connected with Rusumo boarder trunk road and it is characterised with flat terrain with sandy clay loam soil type. Generally; the proposed project site is located in rural-urban setting environment whereby exotic trees, cropland, grassland and very few scattered residential-Commercial buildings are dominated adjacent to the project route while the indigenous vegetation have long been cleared-off to pave way for human developments/activities. The dominant vegetation species within the road reserve are; Shrub Verbena, and Guinea Grass (*Panicum maximum*) while the dominant species adjacent to the proposed route/road are; Banana tree (*Musa Paradisiaca*), Pine (*Pinus Patula*) and Pine (*Pinus Caribbea*),

Based on the state of the whole site there is no pristine environment that can promote thriving and existence of the species of conservation concern as per IUCN and CITES standards. Furthermore, there are no sensitive ecological receptors in the vicinity of the project area. Also, there were no cultural or archaeological objects that were noticed or observed during the study or reported earlier during the consultation stage with local community



Figure 3: General Overview of the proposed site-Rusumo HC access Road

Source: Site survey, November/ 2021

2.3 Land Ownership

Tanzania Rural and Urban Roads Agency (TARURA) is an Executive Agency of the President's Office, Regional Administration and Local Government (PO-RALG), established under Section 3 (1) of the Executive Agencies Act. (Cap 245) by Order Published in Government Gazette No. GN 211 of 12 May 2017. The TARURA establishment order gives functions and responsibilities

of TARURA which among other things will be to develop and maintain rural and urban roads network, which coincide with Part three of the Road Act on road classification, restrictions and declaration (Roads Act No. 13 of 2007 and its Regulations of 2009).

According to the road Act No. 13 of 2007 Road Management regulations 2009 No. 27 and 29 the road reserve for district roads comprising both collector and feeder roads are 40meters to 30meters respectively, meaning that 15m on each side from the road centre line specifically for feeder roads in particular. This existing road is classified as class DC-6 feeder road.

Tanzania Rural and Urban Roads Agency (TARURA) owns the existing road of which is going to be improved. The upgrading of the road shall cover a total distance of 1kilometer and a total width carriage of 8meters including 0.5meter as wide shoulders (See Appendix III). The proponent shall supervise the contractor not to affect nearby land or any private property.

2.4 Major Adjacent Developments

Rusumo Health Centre access road is connected with Rusumo Trunk Road and forms T-Intersection on North-East side, North-West the project site is demarcated by four structures (all are commercial buildings) and Pine (*Pinus Patula*) farm while on the other sides; the project site is demarcated by farming plots dominated by banana.

Table 1: Distance to the Closest Land Uses

S/N	Side	Existing Feature	Estimated Distance from Project site (M)
1.	North-East	Rusumo trunk road	T-Intersection (Junction)
2.	North-West	-Four structures (all are commercial buildings) - Pine (<i>Pinus Patula</i>) farm	-The closet is approximately 20meters from the project boundary -Immediate from the project site's boundary
3.	South and East	Farming plots mainly banana plants (<i>Musa Paradisiaca</i>)	Immediate from Project site's boundary

Source: Consultant's Field visit, November/202



Figure 4: Adjacent features alongside Rusumo HC Access Road-Nyakahanga Hamlet

Source: Consultant's Field visit, November/2021

2.5 Other Amenities

2.5.1 Power Supply

During construction the proposed project shall be relied on mobile generator since the site is not connected with Electricity from TANESCO. However; the proposed diesel powered generator has a capacity of 100kVA. The genset to be installed will be designed to comply with the EC directive for machinery safety and Noise Emissions, fully enclosed in an acoustic canopy. The Genset will have the following specifications: Prime Power for 30Hz will be 100kVA, Voltage range for 30Hz is 280-315 Volts AC; will have a length of 2.0m, width of 1.0m, height of 2.00m; weight (without fuel) will be 3270kg, fuel consumption will be 6 /hr for 100% prime power, emissions of 100% load for NO_x (Oxide of Nitrogen) will be 6.4g/kWh, PM(Particulate matter) 0.2 (g/kwh) while CO (Carbon Monoxide) will be 3.5g/kWh; Noise will be 78dBA at 1m away from Genset and 70dBA at 7M away from genset. During operation phase the Developer/respective facility will use solar power lights as streetlights on strategic areas for security purpose.

2.5.2 Manpower

Construction of the proposed project and ancillary structures may require 30 personnel both skilled and unskilled while 5 technical personnel will be involved in professional works and during operation a hired contractor shall do the routine maintenance and may use 5-10 people including skilled and non-skilled. All unskilled labors (25 people) will be sourced from the project area/Village while local leaders will be involved during the recruitment stage.

Tanzanian labour Law requires that workers should be provided written employment contract at the start of employment. Among others; an employment contract must state the information such as; name, age, permanent address and sex of the worker, job description; date of commencement; form and duration of the contract; place of work; hours of work; remuneration, the method of its calculation, and details of any benefits or payments in kind, and any other

prescribed matter. This exercise will be closely supervised by Proponent to ensure that all prescribed terms and conditions of the employment are adhered by both sides.

Security guards will be outsourced from the licensed company as described in the TZS 630: 2013, Code of practice for static guarding, mobile patrol and key holding services

2.5.3 Water Supply

Project developer shall hire local water suppliers to supply water for construction of the proposed project. It is anticipated that 5,000 Liters will be used during the entire period of construction/upgrading activities whilst 1,000Litters/day will be used for sanitation for 30 workforces. The Contractor will install the ground water storage tank with the capacity of 5,000Litters. During routine maintenance of Rusumo HC access road the contracted Contractor will be supplied water by local suppliers who are legally authorized by the respective authorities.

2.6 Project Design and Components

2.6.1 Design

The proposed project shall involve widening of the road to 8 meters including 7meters of carriage way and 0.5meter of the wide shoulders/walkways. Civil works shall involving bush clearance, stripping and grubbing, construction of one concrete culvert and finally pouring and compacting sand and gravels for strengthening the road lane. The design indicates that the sand and gravels will be poured and compacted with the thickness of 0.15m whilst the culvert has 0.9m diameter, 10meters width and 2.5meters height. The culvert has been designed such that its hydraulic capacity is capable of sustaining possible peak water flows especially during the rainy season.

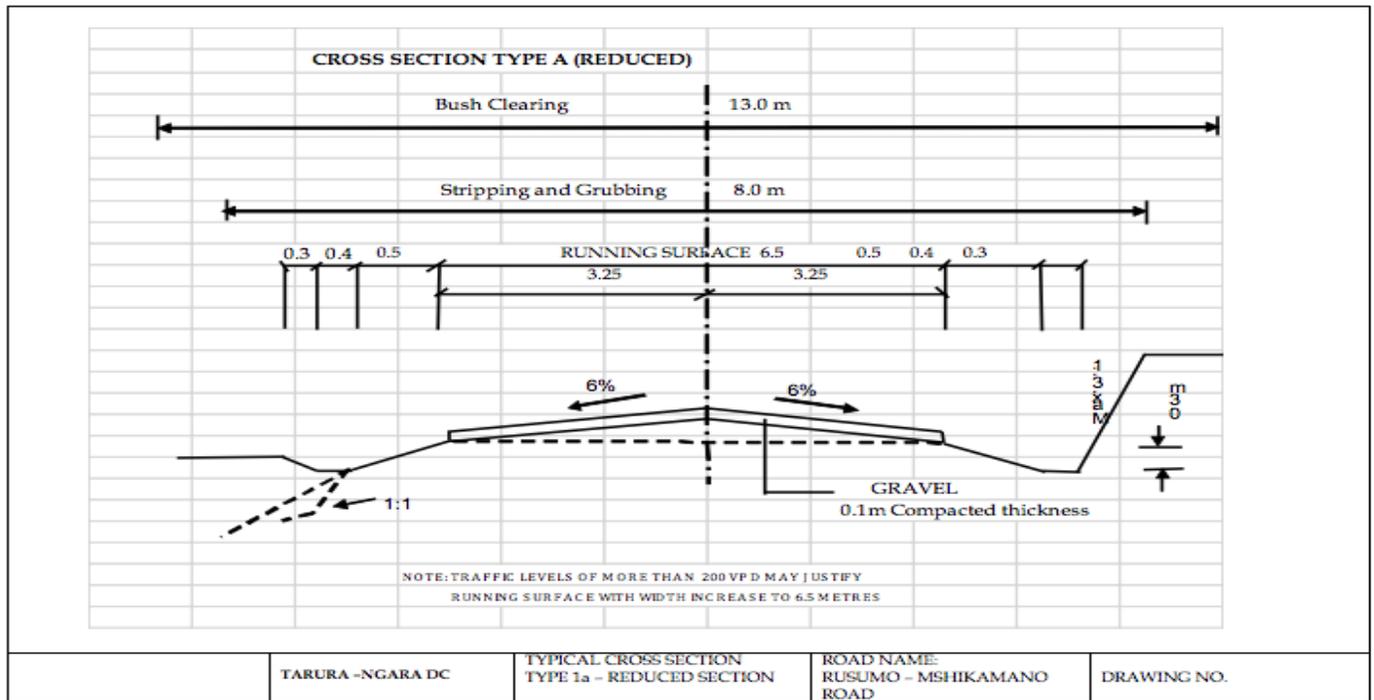


Figure 5: Typical Road Cross-Section

Source: engineering Design/2021

2.6.2 Components

The culvert with 0.9m diameter, 10meters width and 2.5meters height will be constructed to support the upgraded Rusumo HC access road. The culvert has been designed such that its hydraulic capacity is capable of sustaining possible peak water flows especially during the rainy season. Construction materials will be stored to the existing structures at Rusumo Health Centre.

2.7 Project Activities

The undertaking involves various phases from planning phase all the way to the construction, demobilization and operation phase. Decommissioning of the road is not anticipated except for the routine maintenance and improvement in the later future. The following activities are expected during mobilization, construction and operations.

2.7.1 Mobilization Phase

This phase entails Topographical Survey, Soils and Materials Investigation, design and engineering drawings, land acquisition and various legal permits as required by the law. Mobilization of labor force, equipment as well as identification of material storage and material preparation, Identification of borrows sites, and sources of other construction materials.

2.7.1.1 Materials to be used, source and quantities

The bulk materials likely to be stored on site include: sand, gravels, cement, steel tress oils and other lubricants for machinery running, water, steel reinforcement bars. Sand and gravels will be sourced from Mshikamano Village and the area has been authorized by Village Government with Ngara district Council. No construction materials and machinery/equipment are expected to be imported from outside the Ngara District. To avoid material accumulation with potential for impeding site activities, inducing safety hazards and creating a nuisance in the neighborhood, the main contractor intends to have materials delivered to the site in small quantities. Quantities and qualities of materials are well explained in the BoQ.

Consideration will be given to the working area and material storage requirements to ensure there is no conflict with the movement of the workers. Construction equipment's include: Motor grader, Water bowser, Steel wheel roller, Tipping truck, 4WD Pick up, concrete mixer, Poker vibrator, Hand compactor and trucks for carrying site materials, etc.

Duration

The duration of this phase is estimated to be One (1) Month

2.7.2 Construction Phase

Construction phase will include the following;

- Transportation of construction materials from sources to the site
- Stockpiling construction materials in accessible and safety areas
- Barricade caution tapes for safety purpose
- Machines and Trucks Parking Space
- Security office/Security booth
- Sanitary Facilities, e.g. Toilets, changing rooms, septic tanks, etc.
- Solid waste storage Cage

2.7.2.1 Activities during Construction Phase

Clearing/ grubbing of vegetation: it should be noted that there is an existing earth road that have been used for a couple of years hence site clearance will be very limited particularly to the wide shoulders/road margins. The project site is devoid of large trees hence clearance is basically for grasses and shrubs. Site clearance will be confine to the specific areas not to distort vegetation covers beyond the project site.

Stripping and Excavation works: these will mainly be undertaken during construction of Culvert and catch water drain/cut off drains. Excavation of topsoil will be carried out using excavator machine, loader and grader machineries. Most of this soil will be utilized in general landscaping of the site particularly on leveling stage of the established temporary storage facilities at Rusumo Health Centre.

Leveling and Compaction: This will be done into two phases for the purpose of determining the height of one level relative to another. The first phase is prior to pouring sand and gravels on site, the Contractor will commence during preparation of sub-base layer as per engineering

design meanwhile the second stage will commence after pouring sand and gravels. In addition, during excavation and grading top soils will be stored for reuse on slopes to form top soil.

Duration

The duration of this phase will be Forty Five (45) days

Types, Amounts and Sources of Project Requirements

Materials for construction mainly sand and gravels will be sourced from Mshikamano Village where by borrow sites are found and have been authorized by Local Government Authorities. Types and sources of project requirements during the construction/upgrading phase are shown in Table 2 whilst the quantities of materials will be indicated in the Bill of Quantities (BOQ).

Table 2: Types and sources of project requirements during the construction phase

Requirements	Type	Source
Raw Materials	Gravels	▪ Ngara (Mshikamano Village)
	Sand	• Ngara (Mshikamano Village)
	Water	▪ Ngara (Subcontract to local suppliers)
	Cement	▪ Ngara
	Reinforcement bars	▪ Ngara
Energy	Electricity	▪ Mobile Generator
	Fuel	▪ Ngara Oil fuel stations
Manpower	Skilled	▪ Contractor
	Unskilled	▪ Local People
Equipment's	Motor grader	▪ Contractor
	Steel wheel roller	▪ Contractor
	Tipping truck	▪ Contractor
	Water Bowser	▪ Contractor
	4WD Pick up	▪ Contractor
	Poker vibrator	▪ Contractor
	Concrete mixer	▪ Contractor
	Hand Compactor	▪ Contractor

Transportation

Materials such as sand and gravels will be transported by trucks from borrow sites to the construction site. Water will be supplied by water browser. Trucks will transport other materials like cement, steel tress and reinforcement bars to the construction site from authorized local vendors/suppliers.

Storage

Some of the materials from borrow sites will be used directly after delivery and as such no large piled up of materials is expected. Other materials like sand and gravels will be stored at the

specific designated area with all safety hazards pre-cautions prior to be used. Cement and reinforcement bars will be stored in special storage rooms at Rusumo Health centre

Types, Amounts and treatment/disposal of Wastes

Types, amounts and treatment/disposal of wastes during the construction phase are shown in Table 3:

Table 3: Types, amounts and treatment/disposal of wastes during the construction phase

Waste	Types	Amount	Treatment/ Disposal
Solid Waste (Degradable)	Vegetation (Grasses and bushes)	About 4m ³ of biomass (Clearance for widening of road)	Disposed in a designated area.
	Food remains	1.5kg/day (based on generation rate of 50g/day/person for 30 people)	Sorted properly and Temporarily stored in a designated collection cage/point before collected by Authorized dealer
Solid Waste (Non-Degradable)	Cut Soil	4m ³	Soil will be utilized in general landscaping of the site particularly on leveling stage
	Scrap metals, drums, used tiles	Minimum	Sold to Recyclers
	Tins, glasses and plastics	Minimum	Taken to the dumpsite at Ngara by Authorized Dealer
Liquid waste	Sewage	1.0m ³ /day (Based on 30 people, 33l/capita/day water consumption and 80% becomes wastewater)	Septic tank –Soak away system
	Oils and greases	Minimum (trucks and equipment's maintenance will be done at proper garages or designated area)	Sold to Authorized recyclers

2.7.2.2 Demobilization Phase

Prior to demobilization, the Contractor shall submit to the Engineer for review and approval a closure plan for the site (including fuel/oil storage facility, workshop, pre-cast yard). The plan shall outline steps that the Contractor shall adopt to reinstate the facilities, including disposal of old structures and all facilities that were used in the site which would no longer be needed and are likely to be of environmental and health hazard. Disposal off any remaining unwanted material and wastes will also be carried out during this demobilization phase.

After the demobilization, the contractor will hand over the works to the project Proponent for the operation and maintenance phase.

Duration

Demobilization stage will last for a period of Fifteen (15) days.

Table 4: Types and sources of project requirements during the demobilization phase

Requirements	Type	Source
Energy	Electricity	Generator
	Fuel	Ngara vending stations
Manpower	Skilled	Contractor
	Unskilled	Local People
	Wheel barrows	Contractor
	Motor grader	Contractor
	Plate compactor	Contractor
	Tippers	Contractor

Types and treatment/disposal of Wastes

The demobilization of the temporary structures will result mainly into solid wastes such as timber, iron sheets and rubbles from demolitions of temporary storage structures. Timber and iron sheets will be sold to people in the nearby communities for reuse while the rubbles will be used in reinstating nearby roads or being disposed in a dumpsite. Sand and gravels will be either given to local residents or stored for future use at Rusumo Health Centre.

2.7.2.3 Operation Phase

The actual usage of the road is expected to commence after the completion of construction/upgrading works. The project roads are under “feeder road” category D and therefore will be directly managed by TARURA. The design period is 5 years, after which re-surfacing will be needed. During this time, TARURA will carry out routine maintenance by attending to potholes, clearance of vegetation within the COL (Corridor of Impact) and monitoring.

Activities during Operation Phase

During the operations the project activities will include;

- Installation of road signs
- Control of litter accumulated on road sides
- Awareness rising on proper road usage and road management to the communities along the road
- Disposal of wastes from road maintenance activities

Duration

The duration of this phase will be Five (5) years.

Types and sources of project requirements during the operational phase are shown in Table 5:

Table 5: Types and sources of project requirements during the operational phase

Requirements	Type	Source
Material	Water	Local Suppliers
	Maintenance equipment's	Contracted contractor
Manpower	Skilled	Ngara District Council
	Unskilled	Local People
HSE Monitoring	Periodic Occupational Measurements reinstallation of road safety signs, accidents cases, etc.	Contracted expert

Transportation

Types and quantities of materials for rehabilitation/maintenance will be determined by nature of the problem at the site. Sand and gravels will consistently be sourced from the designated borrow sites and will be transported by trucks to the site. Water will be moved by water bowser or supplied by local suppliers depending on the volume required for rehabilitation or maintenances. Other materials like cement, reinforcement bars for maintenance of Culvert will be supplied by nearby local vendors.

Storage

In this operation phase, few materials will be required for rehabilitation/maintenance works. Some of the materials will be used directly after delivery while the remained will be stored to the existing storage room at Rusumo HC. Bulk materials like sand and gravels etc. will be stored at the designated area within the premise with precautions to HSE.

Types, Amounts and treatment/disposal of Wastes

Types, amounts and treatment/disposal of wastes during the construction phase are shown in Table 6

Table 6: Types, amounts and treatment/disposal of wastes during the operation phase

Waste	Types/Source	Amount	Treatment/ Disposal
Solid Waste (Degradable)	Vegetation especially Grasses cleared from wide shoulders/road margins	About 1m ³ / month	Collected and disposed by the contracted dealer
	Food leftovers	Depend with No. of	Collected and disposed by the

		labors	contracted dealer
Solid Waste (Non-Degradable)	Scrap metals, drums	Minimum	Sold to Recyclers
	Empty oil cans, filters, tires, empty water bottles	Minimum	Service of the trucks shall be done outside the site for road routine maintenance
Liquid waste	Oils and greases	Minimum	Service of the trucks shall be done outside the site for road routine maintenance
	Liquid waste from sanitary facilities and Domestic wastewater	Minimum	During routine road maintenance workers shall use temporary sanitary facility at the site
Gaseous Waste	Gaseous emission mainly hydrocarbon (HCO); carbon dioxide (CO ₂)	Number of trucks used	Air Pollutions shall be monitored continuously especially hydrocarbons

2.7.2.4 Decommissioning Phase

This is the final demise of the proposed project use value. The decommissioning entails further upgrading of the road standards of the advanced structures and other appurtenances through removing of the old road.

2.8 Project Budget and Life Span

The proponent will invest a total of 15,378.70 USD to this particular project. The expected lifespan of the project is 5 years to come as per TARURA standards

CHAPTER THREE: LEGISLATIVE FRAMEWORK AND INTERNATIONAL GUIDELINES

3.1 Introduction

Environmental Regulations in Tanzania are vested in two main Institutions namely; The National Environmental Management Council (NEMC) and Division of Environment (DoE) under the office of the vice president. The NEMC to its capacity is undertaking enforcement, compliance, and review and monitoring of Environmental Impact Assessment (EIA) and Environmental Auditing (EA). The DoE provides policy and technical backup and executes the overall mandate of the Ministry as required. Thus, in Tanzania project development and implementation normally requires consideration of Environmental concerns as outlined in the National Environmental Policy.

The Environmental compliance and guidelines are entailed in the EIA and Audit regulations of 2005, as well as (Environmental Impact Assessment and Audit) (Amendment) Regulations of 2018. The Environmental Impact Assessment Guidelines prescribe the process, procedures and practices for conducting an EIA and preparing the EIA reports.

3.2 Policy and Legal Framework

A number of policies, instruments, and laws support environment and social management and the environmental and social impact assessment processes in Tanzania. The Environmental Management Act (EMA) No. 20 of 2004, The National Environmental Policy (1997) and the National Environmental Action plan (1994) are the key instruments that cover environmental and social management in all the sectors of development.

Apart from the National Environmental Policy, there are a number of sectoral policies that consider Environmental Impact Assessment as one of the planning tools for facilitating and promoting sustainable development. These policies envisage that by integrating environmental and social considerations in the decision making process it is possible to avoid or minimize impacts associated with project implementation and that may have negative effects to the Environment. They also provide directives on the management of the project in order to ensure minimum impacts on the concerned natural resources and welfare of the society.

In addition, there are a number of legal and regulatory frameworks that the construction project must comply with. The Environmental Management Act, (No.20) 2004 is the principal legislation governing all environmental management issues in the country. Within each sector, there are sectoral legislations that deal with specific issues pertaining to the environment.

3.2.1 Policy Framework

Policy	Purposes
National Environmental Policy (1997)	<p>The National Environment Policy provides a framework for environmental protection in Tanzania. The policy requires that project development be done in a way that does not compromise the environmental integrity. It stipulates that the chosen technologies should be environmentally sound, socially acceptable and economically viable. Relevant provisions of this policy to the Stone quarry and aggregates project operations are:</p> <ul style="list-style-type: none"> ▪ Sections 28 and 29, which state that in all projects, environmentally sound technologies (i.e. those that generate no or low waste or protect environment) should be used). ▪ Section 48 I, which advocate for technologies that use water efficiently and provide wastewater treatment. ▪ Section 56 (f), which states that workers' health should be adequately protected from environmental health hazards. <p>Since the project expects to use minimum water in all phases hence small generated wastewater, therefore the project design considered the use of existing temporary septic tanks at Rusumo Health Centre during construction phase</p>
National Land Policy (1997)	<p>The National Land Policy advocates for the protection of land resources from degradation for sustainable development. Among other things, the policy requires that project development take due consideration of land capability, ensures proper management of the land to prevent erosion, contamination and other forms of degradation. Important sections of the policy relevant to the proponent are 2.4 (on use of land to promote social economic development) and section 2.8 (on protection of land resources).</p> <p>The proposed project is going to use available land resources such as sand and gravels for construction of a project which will in-turn promote socio-economic development of rural communities</p>
National Community Development Policy (1996)	<p>Policy recognizes the need to improve community livelihoods through involvement of communities towards attaining government aim of self-reliance. The policy emphasizes among other issues on poverty eradication (through households training and group production activities), provision of basic needs of the community (food, nutrition, education, health, sanitation, water, etc.)</p> <p>Implementation of the proposed project is part of government effort improving access to health facilities and eradication of poverty by ensuring income generation to the government and local villagers through having reliable road infrastructures and sustainable health.</p>
National Policy on HIV/AIDS (2001)	<p>This policy provides a framework for leadership and coordination of the National multi-sectoral response to the HIV/AIDS epidemic. One of the major objectives of the policy is to strengthen the role of all sectors, public, private, NGOs, faith groups, CBOs and other specific groups to ensure that all stakeholders are actively involved in HIV/AIDS work and to provide a framework for coordination and collaboration. The policy recognizes that HIV infection shall not be grounds for discrimination in relation to education, employment, health and any other social services. Pre-employment HIV screening shall not be required. For persons already employed, HIV/AIDS</p>

Policy	Purposes
	<p>screening will be done voluntarily and no employee shall be forced to check his/her health regarding to HIV/AIDS. HIV infection alone does not limit fitness to work or provide grounds for termination. HIV/AIDS patients shall be entitled to the social welfare benefits like other patients among the employees. HIV/AIDS information and education targeting the behaviour and attitudes of employees and employers alike shall be part of HIV/AIDS intervention in the workplace. The project proponent shall adhere to the policy by not entertaining any form of discrimination to People Living with HIV</p>
<p>National Gender Policy (2000)</p>	<p>The policy provides guidelines to ensure gender sensitive plans and programs and strategies are available in all sectors and institutions. It is emphasizing on gender equality, and establishing strategies on poverty eradication through ensuring that both women and men get access to existing resources for their development. It values the role played by women in bringing about development in the society.</p> <p>The project proponent will ensure that women and men are given equal employment opportunities during project implementation, whenever possible.</p>
<p>Occupational Safety and Health Policy, 2012</p>	<p>The main objective of the Policy is to promote the right of workers to a safe and healthy working environment, in order to contribute to the improvement of workers well-being and national productivity. The policy provides general direction for the occupational health and safety of stakeholders to adopt a management system that is effective in reducing the incidence of work related injury and disease.</p>
<p>National Water Policy, 2002</p>	<p>The main objective of this policy is to develop a comprehensive framework for sustainable development and management of the Nation's water resources and putting in place an effective legal and institutional framework for its implementation (URT, 2002). The policy aims at ensuring that beneficiaries participate fully in all stages of water resource developments. It also recognizes the fundamental but intricate linkages between water and socio-economic development, including environmental requirements. The Policy illustrates on the importance of water for domestic use, agriculture, livestock keeping, mining, energy, fisheries, environment, human health and wildlife and tourism, forestry, navigation and trans-boundary requirements.</p> <p>This project is determined to enhance water resources conservation, effective management of water system and pollution control by establishing proper management of leakages during construction of a project</p>
<p>The National Employment Policy (1997)</p>	<p>The major aim of this policy is to promote employment mainly of Tanzania Nationals. Relevant sections of this policy are (i) 10, which lays down strategies for promoting employment and section 10.1 is particularly focusing on industry and trade sectors (ii) 10.6 which deals with employment of special groups i.e. women, youth, persons with disabilities and (iii) 10.8 which deals with the tendencies of private sectors to employ expatriates even where there are equally competent nationals.</p> <p>The proponent shall promote this policy by employing many Tanzania especially the indigenous surrounding the project area with equal gender based opportunities.</p>
<p>National Transport Policy 2003</p>	<p>The National Transport Policy aims at enhancing transport safety and environmental protection, through taking steps to review and update national</p>

Policy	Purposes
	<p>legislation in transport operations and safety requirements.</p> <p>The policy has seven objectives and goals, of which one is relevant to this project. The objective, which is relevant to this project, calls for sufficient emphasis on all aspect of environment protection and management at the design, development, and operation stages of transport infrastructure, to ensure sustainability.</p> <p>The ESIA study has been carried out to fulfil the requirement of this policy</p>
National Strategy for Growth and Reduction of Poverty, 2003	<p>The National Poverty Reduction Strategy (NPRS) is a national organizing framework for putting the focus on poverty reduction on the country's development agenda. The strategy emphasis is on the growth momentum to fast track the targets of vision 2025 for high and shared growth, high quality livelihood, piece, stability and unity, good governance, high quality education, and international competitiveness.</p> <p>The project is in line with the interest of the strategy as to develop transport infrastructures</p>
Energy policy of Tanzania 1992	<p>The objective of the policy is to provide input into development process through the establishment of an efficient energy production, procurement, transportation, distribution and end use in an environmentally sound manner and with due regard to gender issues.</p> <p>The policy recognizes the critical role of energy in all sub-sectors of the economy, including the road sector. It underscores the importance of having sufficient supply and efficient use of energy in order to realize sustainable development and satisfy basic needs of the society.</p> <p>The policy recognizes the relationship between road condition and fossil fuel consumption energy by vehicles, which is one of the important sources of energy in the country. Therefore, the policy recognizes the need to rehabilitate roads to minimize fuel consumption.</p> <p>The policy is relevant to this project because fossil fuel is the major source energy supply in the transport sector. A poor road condition is associated with higher consumption of fuel. Upgrading of the road will result into not only reduced fuel consumption and transportation costs but also reduced emission.</p>
National Child Development Policy 2008	<p>The policy describes on the Right for Protection concerns the prevention of wicked and evil actions which are done to children. Such protection and security is needed in all stages of growth of children, before and after being born. So, a child needs security and protection against heavy duties and occupations, which are incongruent with the age or to be neglected; illegitimate / criminal abortions; to be oppressed; not to be taken into consideration. However; the Proponent will consider this by not engaging children under 18Years in any activities during project phases.</p>

3.3 Applicable Legal Framework

The National Laws, which are relevant for environmental management in relation to this project include:

ACT	Purposes
<p>Environmental Management Act No. 20 - Cap 191, 2004</p>	<p>The Environmental Management Act, Cap 191 seeks to provide legal and institutional framework for sustainable management of the environment in the implementation of the National Environmental Policy.</p> <p>The Environmental Management Act provides for continued existence of the National Environmental Management Council (NEMC). Under this Act, NEMC is mandated to undertake enforcement, compliance, review and monitoring of environmental impact assessment and has a role of facilitating public participation in environmental decision making, exercise general supervision and coordinating over all matters relating to the environment. The Act also requires the Council to determine whether the proposed project should be subjected to an EIA, approves consultants to undertake the EIA study, invites public comments and also has the statutory authority to review EIS and recommend to the Minister for approval and issuance of EIA certificate. This new Act imposes an obligation on Proponents to conduct an ESIA prior to the commencement of the project to determine whether the project may/or is likely to have, or will have a significant impact on the environment. Article 82 makes EIA mandatory to all projects that fall under the EIA mandatory list (Schedule 2). Proponent has complied with relevant provisions of the Act in carrying out this EIA.</p> <p>Other caps where proponent should be aware on them are: Environment Management Act Cap 72 which emphasize on land users and occupiers shall be responsible for the protection, improvement and nourishment of the land and for using it in an environmentally sustainable manner as may be prescribed by the minister.</p> <p>Section 201 among others; as a corporate body, the Act requires the Proponent to comply with other licensing bodies including National Environmental Council (NEMC) and to acquire the clearance certificate.</p> <p>Proponent has decided to hire environmental expert so as to conduct Environmental Impact Assessment Study so as to obtain Environmental Clearance</p>
<p>Land and Land Village Act (URT, 1999b) (No. 4 of 1999 amended by No. 2 of 2004)</p>	<p>The Acts relate to land-use planning processes and land-use management and guidance to land ownership in Tanzania. However, the laws declare the value attached to any piece of land and as such any land rights transfer is subject to compensation. Under the Government Standing Order on expropriation for public utility, the holder of a Right of Occupancy is guaranteed a free enjoyment of the land and is entitled to compensation if dispossessed by the Government for public use.</p> <p>The proposed project shall be carried out on the piece of land owned by TARURA</p>
<p>Land Acquisition Act 1967 (Revised Edition, 2002)</p>	<p>Under the Land Acquisition Act, 1967, the President may, subject to the provisions of this Act, acquire any land for any estate or term where such land is required for any public purpose.</p> <p>Land shall be deemed to be acquired for a public purpose where it is required,</p>

	<p>for example, for exclusive Government use, for general public use, for any Government scheme, for the development of agricultural land or for the provision of sites for industrial, agricultural or commercial development, social services, or housing or; where the President is satisfied that a corporation requires any land for the purposes of construction of any work which in his opinion would be of public utility or in the public interest or in the interest of the national economy, he may, with the approval, to be signified by resolution of the National Assembly and by order published in the Gazette, declare the purpose for which such land is required to be a public purpose and upon such order being made such purpose shall be deemed to be a public purpose; or in connection with the laying out of any new city, municipality, township or minor settlement or the extension or improvement of any existing city, municipality, township or minor settlement; etc.</p> <p>Upon such acquisition of any Land the President is compelled on behalf of the Government to pay in respect thereof, out of money provided for the purpose by Parliament, such compensation, as may be agreed upon or determined in accordance with the provisions of the Land Acquisition Act, 1967.</p> <p>The President may also revoke a right of occupancy if in his opinion it is in public interest to do so. Accordingly, the land for which a right of occupancy has been revoked reverts back to the Government for re-allocation pursuant to the existing need (s). It should also be noted here that, though the land belong to the government some changes on the land act has taken place. Land has value to the owner; therefore any land taken from the user has to be compensated. Based on this act the villagers affected by the project are claiming that they should be compensated for the lost farms and land used for residential purposes.</p> <p>Although the upgrading of the road follows the existing road alignment, there are no sections where realignment of the road shall require land acquisition. In addition, land construction material such as sand, gravel, and hard stone shall be extracted from local authorized areas particularly Mshikamano village.</p>
<p>The Constitution of Tanzania (1977)</p>	<p>The mother law recognizes the basic rights for its people as outlined in Part III section 14 and 24 (Act No. 15 of 1984). Section 14 states that every person has the right to life – that every person has the right to live and to the protection of his / her life by the society in accordance with the law</p> <p>Section 24 stipulates that every person is entitled to own property and has a right to the protection of his property held in accordance with the law. However, there are certain limitations upon enforcement and preservation of basic rights, freedom and duties as stipulated in the Act No. 15 of 1984 Section 6 and Act No. 34 of 1994.</p> <p>The national constitution must be observed by the project proponent, especially in matters concerning human rights as stipulated in the constitution and the proponent shall adhere with the national constitution of Tanzania</p>
<p>Occupation health and safety act (No.5, 2003)</p>	<p>The Act requires assurance of safety to workers during project construction, operation and demolition. Safety should be ensured against any mechanical machinery (cranes, chains, vehicles, etc.), chemicals (fumes from generators, etc.), liquid and hazardous materials (electrical installations and apparatus, toxic materials, wastewater, etc.) and fire. It is indicated that, for the assurance of workers safety, safety provisions will include fire extinguishers, first aid facilities, water supply and sanitary facilities, etc. The Contractor shall</p>

	<p>therefore address all these issues stipulated in this Act.</p> <p>The project proponent will cause her contractor to safeguard health and safety of construction workers through presence of safety drills, warning signs, provision of Person Protective Equipment (PPE), installation of well-equipped first aid kit, and conduct of regular health check-ups.</p>
HIV and AIDS (Prevention and Control) act (No. 28, 2008)	<p>The Act generally requires that adequate information on the acquisition, Transmission, prevention and post-infection of HIV/AIDS to be provided to the public including workers at workplaces. It also made provisions for appropriate treatment, care and support using available resources to people living with or at risk of HIV and AIDS.</p> <p>Section 4(1) requires every person, institution and organization living, registered or operating in Tanzania, to promote public awareness on causes, modes of transmission, consequences, prevention and control of HIV and AIDS.</p> <p>The project proponent will cause her contractor to prepare and implement program for prevention of HIV/AIDS transmission.</p>
Standards Act, 2009	<p>The Tanzania Bureau of Standards is the designated national authority for developing all kinds of national standards, including environmental standards. The TZS Act establishes the National Environment Standards Committee (NESC), which is responsible for developing environmental standards. The National Environment Management Act 2004 recognises the existence of the NESC. Part X enumerates the types of environmental standards to be established, they include water quality, discharge of effluent into water, air quality, control of noise and vibration pollution, sub-sonic vibrations, soil quality, control of noxious smells, light pollution, and electromagnetic waves and microwaves.</p> <p>Relevant national environmental standards include:</p> <ul style="list-style-type: none"> i. TZS 932:2006: ACOUSTICS - General Tolerance Limits for Noise <p>This standard specifies limits of environmental noise. It also describes the methodology and standard equipment used for measuring noise.</p> <ul style="list-style-type: none"> ii. TZS 837: 2004Air Quality standards <p>The proponent will endeavor to adhere to this standard by applying modern equipment and construction materials.</p>
Water Resources Management Act No. 11 (2009)	<p>This Act provides for institutional and legal framework for sustainable management and development of water resources; outlines principles for water resources management; for prevention and control of water pollution; and provides for participation of stakeholders and general public in implementation of the National Water Policy. Its main objective is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways that among others meets the basic human needs of present and future generations, prevents and controls pollution of water resources and protects biological diversity especially the aquatic ecosystems.</p> <p>Water shall be sourced from local water vendors, thus Proponent adheres to provisions of the Act by carrying out EIA of the proposed project</p>
Employment & Labor Relations Act (2004)	<p>The Act provides for core labor rights and establishes basic employment standards, provides framework for collective bargaining, and provides for prevention and settlement of disputes. The Act provides fundamental rights and</p>

	<p>protection e.g. prohibition of Child Labor, forced labor and discrimination in the workplace. It also sets employment standards. Act also characterizes a contract for an employee as follows; (i) A contract for an unspecified period of time; (ii) A contract for a specified period of time for professionals and managerial cadre, (iii) A contract for a specific task. The Act also states that an employer shall supply an employee, when the employee commences employment, with the following particulars in writing: (a) Name, age, permanent address and sex of the employee; (b) Place of recruitment; (c) Job description; (d) Date of commencement; (e) Form and duration of the contract; (f) Place of work; (g) hours of work; (h) Remuneration, the method of its calculation, and details of any benefits or payments in kind, and (i) Any other given matter.</p> <p>Therefore, project proponent should make sure that all the requirement of this Act are adhered and promotes equal opportunity in employment and strives to eliminate discrimination in any employment.</p>
The Public Health Act 2009	<p>The Act provide for the promotion, prevention and maintenance of the public health with a view to ensuring the provision of comprehensive, functional and sustainable public health services to the general public and to provide for other related matters.</p>
The Contractors Registration Act (1997)	<p>The Contractors Registration Act requires contractors to be registered by the Contractors Board (CRB) before engaging in practice. It requires foreign contractors to be registered by the Board before gaining contracts in Tanzania.</p> <p>Proponent shall comply with the law requirement during the recruitment of contractors for project implementation.</p>
The Road Traffic (Amendment) 1990 regulation	<p>The Road Traffic (Amendment) Act No. 4 of 1990 amended Section 28 of The Road Traffic Act of 1973, which is the principal Act. The Act deals, among others, with damage or destruction of traffic signs, electric poles or any other structures erected along the road. It requires individuals to pay sum equal to the cost of repairing any damage or destruction so caused.</p> <p>Proponent shall install road signs are properly placed and protected during project construction and operation.</p>
The Road Act No 13 2007	<p>This Act, which repeals the Highway Act Cap 167, provides for road financing, development, maintenance, management and other related matters on finance, offences, penalties and recovery. Also relevant clauses to the project are included under Parts IV, V and VII of the act covering aspects such as,</p> <ul style="list-style-type: none"> ▪ Execution of the road works ▪ Road safety ^[1]_[SEP] ▪ Restriction on the use of roads ^[1]_[SEP] ▪ Serving notice to holders of land to be affected by the road and matters related to compensation under section 36, ^[1]_[SEP] <p>The following sections are relevant to the proposed road project:</p> <ul style="list-style-type: none"> ▪ Section 30: Stipulates that road authority is responsible for the protection of environment. <p>During implementation as well as operation of the road, all possible measures shall be taken to avoid or abate devastation of the environment. In addition, the design of the road will ensure safety signs are installed and also During upgrading and operation of the road, the Employer and Contractors will observe all the requirements of this act in order to have smooth execution of its activities</p>

<p>Engineers Registration Act No 15, 1997 (Revised Edition 2007)</p>	<p>This is an act which formed the Engineers Registration Board, a statutory body with the responsibility of monitoring and regulating engineering activities and the conduct of engineers and engineering consulting firms in Tanzania through registration of engineers and engineering consulting firms. Under the law, it is illegal for an engineer or an engineering firm to practice Engineering profession if not registered with the board. The board has also been given legal powers and has the obligation to withdraw the right to practice from registered engineers if found guilty of professional misconduct or professional incompetence.</p> <p>During construction of the road, every worker either from the Contractor(s) or Engineer(s) side who will carry out the duties of an Engineer as required by the Contract shall be registered with ERB. In addition, the Engineer and his staff who will carry the duties of engineers shall be registered with ERB</p>
<p>Architects and Quantity Surveyors Act No 16, 1997 (Revised Edition 2010)</p>	<p>This act provides for establishment of the Board of Architects and Quantity Surveyors responsible for registering and regulating the conduct of the Architects, Quantity Surveyors and Architectural and Quantity Surveyors Consulting Firms.</p> <p>The Act requires that any person who carries out duties of a Quantity Surveyor be registered with the Architect and Quantity Surveyors Registration Board (AQRB).</p> <p>During construction of the road, every worker either from the Contractor(s) or Engineer(s) side who will carry out the duties of Quantity Surveyor shall be registered AQRB.</p> <p>The proponent shall comply with the requirements of this act and shall assist the board during inspections of the project works.</p>
<p>Penal Code 1981</p>	<p>The Sexual Offences Special Provisions Act 1998 (SOSPA) amended the sexual offences division of the Penal Code. The Penal Code with its laws specifying that for the crime of rape, evidence of resistance such as physical injuries to the body is not necessary to prove that sexual intercourse took place without consent. It also specified that men who abuse a position of authority or trust to commit rape will be subject to the maximum penalty. The Penal Code strictly prohibits all forms of sexual offences in Tanzania. The Proponent in collaboration with Consultant Engineer and Contractor will adhere to this Penal Code during all project phases.</p>
<p>Environmental Management Act (Air Quality Standards) Regulations, 2007</p>	<p>These regulations have been made under sections 140, 145 and 230 (2) (s) of the Environmental Management Act, 2004. They are aimed at setting minimum standard of air quality as well as prohibit emission of hazardous substances, chemicals and materials or gas. They also provide for emission limits, highest permissible quantity (emission), and special tolerance limits of emissions from special factories such as cement factories and exhaust emissions of motor vehicles and emissions from mining operations.</p> <p>During construction phase, the Contractor/proponent shall abide by these regulations including adhering to permissible weight concentration (Emission limits) from the atmosphere to a receptor as set out in the first schedule of the regulations.</p>
<p>The Environmental Management (Soil Quality Standards) Regulations, 2007</p>	<p>These regulations have been made under Section 143, 144 and 230 (2) (s) of the Environmental Management Act, 2004. They are aimed at, among other things, prescribe minimum standard of soil quality to maintain, restore and enhance the inherent productivity of soil in the long term.</p> <p>Section 21(1) stipulates that no person is allowed to discharge effluent from</p>

	<p>industrial, commercial or any other trade into soil without a consent duly granted by the National Environment Management Council or any other person designated by the council for that purpose.</p> <p>The Contractor/Proponent shall make every effort to adhere to these regulations during the construction by ensuring proper management of oil/fuel to avoid soil contamination.</p>
The Environmental Management (Water Quality Standards) Regulations, 2007	<p>These regulations have been made under Section 143, 144 and 230 (2) (s) of the Environmental Management Act, 2004. They are aimed at, among other things, setting permissible limits for municipal and industrial effluents, special permissible limits for chrome tanning industries, special tolerance limits for vegetable industry, special tolerance limits for fertilizer industry, taste, colour and smell of potable water and Chemical and physical limits for quality of Drinking Water Supplies. Of relevance to the proposed Stone quarry and aggregates project is the first schedule particularly Table A and B which stipulate permissible limits for industrial effluents.</p> <p>Since the proposed project is zero water use, hence small volume of water will be used for domestic/sanitary usage during construction phase. Wastewater generated from sanitary facilities need attention and proper management and not to be discharged haphazardly into public areas.</p>
Environmental Management (Hazardous Waste Management) Regulations, 2021	<p>These regulations have been made under section 110(4) and (5), 128, 133 (4), 135 and 130 of the Environmental Management Act, 2004. These regulations apply to all categories of hazardous waste and to generate, storage, disposal and their movement into and out of mainland Tanzania. These regulations require that any person dealing with hazardous waste in Tanzania be guided by following principles of environment and sustainable development:</p> <ul style="list-style-type: none"> ▪ The precautionary principle ▪ Polluter pays principle, and ▪ The producer extended responsibility <p>The Contractor shall adhere to this regulation by stymieing any leakage of Oil/Fuels within the project site. The maintenance/repair will be conducted within Rusumo HC at a special designated area</p>
Environmental management (Standards for Control of Noise and Vibration) Regulations, 2015	<p>The objectives of the regulations are to set standards for the Control of Noise and Vibrations Pollution from various sources. The regulation is applicable among other areas to the construction sites, plants, machinery, motor vehicles, and aircraft, including sonic booms, industrial and commercial activities. The regulation strictly forbids the making or causing of any loud and unnecessary noise that annoys, disturbs, injures or endangers the comfort, health or safety of others and that of the environment.</p> <p>Proponent observes these regulations by carrying construction activities only at day hours with light and modem equipment</p>
The Occupational Safety and Health (First Aid and Welfare Facilities) Rules 2015	<p>Section 4. - (1) states that, “The employer shall provide for each workplace such equipment, supplies, facilities, first aid attendants and services as adequate and appropriate for”:</p> <ol style="list-style-type: none"> a) Promptly rendering first aid to workers and any other persons within the workplace premises if they suffer an injury at work; and b) Transporting injured workers to medical treatment. <p>While section (2) States that “For the purpose of complying with subsection (1) the employer shall conduct an assessment of the circumstances of the workplace, including</p>

	<p>a) The number of workers who may require first aid at any time;</p> <p>b) The nature and extent of the risks and hazards in the workplace including whether or not the workplace as a whole creates a low risk of injury;</p> <p>c) The types of injuries likely to occur;</p> <p>d) Any barriers to first aid being provided to an injured person;</p> <p>e) Number of first aid boxes and trained first aiders at a proportion that ten to fifty employees shall have one first aid box and two trained first aiders;</p> <p>f) First aid box or cupboard as prescribed in the First schedule shall be distinctively marked "FIRST AID" having only appliance or stocks of first aid equipment;</p> <p>Proponent shall install first aid kit at the construction site and also the first aid attendant shall be hired/Health, Safety and Environmental Officer</p>
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3.4 Institutional Framework for the Management of Environment

3.4.1 Overall Management Responsibility

The institutional arrangement for environmental management in Tanzania is well spelt out in the EMA (2004). There are seven (7) institutions mentioned by the act, of which the Minister Responsible for the Environment is the overall in-charge for administration of all matters relating to the environment as provided for in Section 13(1) of the Act.

The legal institutions for environmental management in the country include;

- National Environmental Advisory Committee;
- Minister responsible for Environment;
- Director of Environment;
- National Environment Management Council (NEMC);
- Sector Ministries;
- Regional Secretariat;
- Local Government Authorities (City, Municipal, District, Township, Ward, Village, sub-village "Mtaa and Kitongoji")

3.4.2 National Environmental Advisory Committee

The National Advisory Environmental Committee is comprised of members with experience in various fields of environmental management in the public and private sector and in civil society. The committee advises the Minister on any matter related to environmental management. Other functions include:

- Examine any matter that may be referred to it by the Minister or any sector Ministry relating to the protection and management of the environment;
- Review and advise the Minister on any environmental plans, environmental impact assessment of major projects and activities for which an environmental impact review is necessary;

- Review the achievement by the NEMC of objectives, goals and targets set by the Council and advise the Minister accordingly;
- Review and advise the Minister on any environmental standards, guidelines and regulations;
- Receive and deliberate on the reports from Sector Ministries regarding the protection and management of the environment;
- Perform other environmental advisory services to the Minister as may be necessary.

3.4.3 Minister Responsible for Environment

The Minister is responsible for matters relating to environment, including giving policy guidelines necessary for the promotion, protection and sustainable management of the environment in Tanzania. The Minister approves an EIA and may also delegate the power of approval for an EIA to the Vice President's Office – Division of Environment (VPO-DoE), Local Government Authorities or Sector Ministries. The Minister also:

- Prescribes (in the regulations) the qualifications of persons who may conduct an EIA;
- Reviews NEMC reports on the approval of an EIA;
- Issues an EIA certificate for projects subject to an EIA;
- Suspends an EIA certificate in case of non-compliance.

3.4.4 Director of Environment

The Director of Environment heads the Office of the Director of Environment and is appointed by the President of the United Republic of Tanzania. The functions of the Director of Environment include:

- Coordination of various environmental management activities undertaken by other agencies;
- Promotion of the integration of environmental considerations into development policies, plans, programs, strategies, projects;
- Undertaking strategic environmental risk assessments with a view to ensuring the proper management and rational utilization of environmental resources on a sustainable basis for the improvement of quality of human life in Tanzania;
- Advise the Government on legislative and other measures for the management of the environment or the implementation of the relevant international environmental agreements in the field of environment;
- Monitoring and assessing activities undertaken by relevant Sector Ministries and agencies;
- Preparation and issuing of reports on the state of the environment in Tanzania through relevant agencies;
- Coordination of issues relating to articulation and implementation of environmental management aspects of other sector policies and the National Environment Policy

3.4.5 National Environmental Management Council (NEMC)

The NEMC's purpose and objective is to undertake enforcement, compliance, review and monitoring of EIA's and to facilitate public participation in environmental decision-making. As far as EIA is concerned, NEMC is the processor and for that matter the engine for the environmental assessment of development projects. The Environmental Management Act (2004) confers powers on NEMC to;

- Registers experts and firms authorized to conduct EIA;
- Registers projects subject to EIA;
- Determines the scope of the EIA;
- Set-ups cross-sectoral TAC to advise on EIA reviews;
- Requests additional information to complete the EIA review;
- Assesses and comments on EIA, in collaboration with other stakeholders,
- Convenes public hearings to obtain comments on the proposed project;
- Recommends to the Minister to approve, reject, or approve with conditions specific EIS;
- Monitors the effects of activities on the environment;
- Controls the implementation of the Environmental Management Plan (EMP);
- Makes recommendations on whether to revoke EIA Certificates in case of non-compliance;
- Promotes public environmental awareness; and
- Conducts Environmental Audits

3.4.6 Sector Ministries

The existing institutional and legal framework the Sector Ministries are required to establish Sector Environmental Sections headed by the Sector Environmental Coordinator. The Ministry of Water (MoW) has already established an Sector Environment Office, with the responsibilities among others to ensure environmental compliance by the Sector Ministry; liaise with the DoE and the NEMC on matters involving the environment and all matters with respect to which cooperation or shared responsibility is desirable or required; refer to the NEMC any matter related to the environment; and to oversee the preparation of and implementation of all EIA's required for investments in the water sector

3.4.7 Local Government Authorities

Under the Local Government Act of 1982 (Urban and District Authorities), Local Government Authorities include the City Councils, Municipal Councils, District Councils, Town Councils, Township, Kitongoji, Ward, Mtaa and Village. All administrative levels have Environmental Management Committee of each jurisdiction. The Environmental Management Act (2004), provides for City, Municipal, District and Town Councils to be headed by Environmental Inspectors who are responsible for all environmental matters in the respective jurisdiction

3.5 International Guidelines

3.5.1 World Bank Safeguard Policies

World Bank has various safeguard policies, which governs and ensures that Bank operations do no harm people and the environment. The Bank undertakes screening of each proposed project to determine the appropriate extent and type of Environmental Assessment (EA) to be undertaken and whether or not the project may trigger other safeguard policies. The policies require the borrower (country or private sector) to ensure compliance of environmental and social safeguards to projects that the Bank provides credit. The safeguard policies provide mechanisms for incorporation of environmental and social issues during project implementation. Thus, the proposed project activities may trigger following Bank policy: Environmental Assessment (OP/BP 4.01), as illustrated in the following sub section.

3.4.4.1 Environmental Assessment (OP/BP 4.01)

The World Bank Environmental Assessment Policy (OP. 4.01) requires Environmental Assessment (EA) of projects/programs proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus improve decision making. The OP 4.01 requires EA process to take into account the natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples, and cultural property) and trans-boundary and global environmental aspects.

This policy helps to ensure that the environmental and social safety and sustainability of investment projects is adhered. It also intends to ensure that Bank financed projects are environmentally sound and sustainable and decision-making is improved through appropriate analysis of actions and their likely environmental impacts. The policy also promotes environmentally sustainable development by supporting the protection, conservation, maintenance, and rehabilitation of natural habitats and their functions. The proposed construction activities involved assessment of the negative and positive impacts and recommendation made to activate measures that will minimize negative impacts or compensate for adverse impacts. Therefore, the borrower must ensure that appropriate safeguard measures to mitigate potential risks and impacts are addressed prior to commencement of works and during implementation of the construction activities as stated in the ESMP.

The proposed project is under EIA study as required by OP 4.01. The EIA study aimed at identifying environmental and social impacts and thereafter development of mitigation measures to eliminate or reduce the adverse project impacts to acceptable level.

3.6 Environmental, Health and Safety Guidelines

The EHS guidelines are applied in World Bank projects in order to ensure best practice in environmental management during implementation. The implementation of this construction / rehabilitation will require applying the EHS guidelines in all aspects of environment, occupational health and safety, community health and safety, and construction and decommissioning as referred to www.ifc.org/ehsguidelines. The EHS Guidelines are technical reference with general and industrial-specific examples of Good International Industry Practice

as defined in IFC's performance standards. The EHS Guidelines and International Finance Corporation (IFC) performance standards have been used as reference in the environmental assessment and implementation of mitigation measures. The following four (4) sections of the EHS guidelines (Source: www.ifc.org/ehsguidelines) shall be used during implementation of this project which includes:

a) Environmental - Air Emissions and Ambient Air Quality: The proposed construction activities will apply this guideline in activities that generate emissions to air at any stage of the project life-cycle. Emissions of air pollutants can occur during construction activities of a project. This guideline provides an approach and specific guidance to the management of significant sources of emissions and impacts that may arise due to these emissions.

Wastewater and Ambient Water Quality: This guideline applies to projects that have either direct or indirect discharge of process wastewater, wastewater from utility operations or storm water to the environment. Process wastewater may include contaminated wastewater from utility operations, storm water, and sanitary sewage. It provides information on common techniques for wastewater management, water conservation, and reuse. There are particular activities, which involve wastewater which shall apply these sections of guidelines to incorporate necessary actions to avoid, minimize, and control adverse impacts to human health, safety, or the environment.

Hazardous Materials Management: This guideline applies to projects that use, store or handle any quantity of hazardous materials, which represent a risk to human health, property, or the environment due to their physical or chemical characteristics. The Contractor shall therefore apply this guideline in case of any use of hazardous material during construction phase.

Noise: The contractor shall follow this guideline to control noise from construction vehicles and machineries, which bring chaos to workers and public. The noise level guidelines and noise reduction options are illustrated in the guideline.

b) Occupational Health and Safety - This section explains various elements that are applicable to the construction / rehabilitation activities which are general facility design and operation which includes fire precautions, portable water supply safe access and first aid; communication and training, physical hazards, chemical hazards, biological hazards, use of PPE and monitoring. The contractor as well as health and safety officer shall ensure the implementation of this guideline in the proposed project.

c) Community Health and Safety - The guideline contains different sections related to the proposed project which are structural safety of project infrastructure, traffic safety, disease prevention and emergency preparedness and response. The project shall apply these guidelines to protect the surrounding community from the core project area risks and impacts.

Structural safety of project infrastructure: This section describes hazards posed to the public while accessing project facilities and their management actions. The hazards include physical trauma associated with failure of building structures; burns and smoke inhalation

from fires; injuries suffered as a consequence of falls or contact with heavy equipment; respiratory distress from dust, fumes, or noxious odors; and exposure to hazardous materials.

Traffic safety: This applies mostly during operation of project equipment on private or public roads. Safety measures to protect workers and road users have been described in the section.

Disease prevention: This section describes the communicable and vector-borne diseases, which are threat to public health and health of workers, recommended interventions at project level and the control strategy.

Emergency preparedness and response: This section describes the emergency preparedness and response plan that covers basic elements such as communication systems, emergency response procedures, emergency resources, and training.

Construction and Decommissioning - The guideline provides information on prevention and control of community health and safety impacts that may occur during implementation, at the end of the project life-cycle, or due to expansion or modification of existing project facilities, in different areas of environment (Noise and vibration, soil erosion, sediment mobilization and transport, air quality, solid waste, wastewater discharges), Occupational health and safety (work in heights, slips and falls, moving machinery and other site hazards) and Community health and safety (general site hazards, disease prevention and traffic safety). These guidelines are highly recommended

3.7 IFC/WBG Guidelines

3.7.1 Effluent Discharge Guidelines

This guideline applies to projects that have either direct or indirect discharge of process wastewater, and wastewater from utility operations to the environment. Process wastewater may include contaminated wastewater from utility operations and sanitary sewage. It provides information on common techniques for wastewater management, water conservation, and reuse. This report has incorporated the necessary measures to avoid, minimize and control adverse impacts to human health, safety and environment.

3.7.2 General Liquid Effluent Quality

Discharge to Surface Water

Discharges of process wastewater, sanitary wastewater, wastewater from utility operations to surface water should not result in contaminant concentrations in excess of local ambient water quality criteria or, in the absence of local criteria, other sources of ambient water quality.

Project-specific performance levels for wastewater effluents should take into account the following considerations:

- Process wastewater treatment standards consistent with applicable Industry Sector EHS Guidelines. Projects for which there are no industry-specific guidelines should reference

the effluent quality guidelines of an industry sector with suitably analogous processes and effluents;

- Compliance with national or local standards for sanitary wastewater discharges or, in their absence, the indicative guideline values applicable to sanitary wastewater discharges is shown in Table 8

Sanitary Wastewater

Sanitary wastewater from project sites may include effluents from domestic sewage, food service, and other facilities serving site employees. Recommended sanitary wastewater management strategies include:

- Segregation of wastewater streams to ensure compatibility with selected treatment option (e.g. septic system which can only accept domestic sewage);
- Segregation and pretreatment of oil and grease containing effluents;
- If sewage is to be discharged to surface water, treatment to meet national or local standards for sanitary wastewater discharges or, in their absence, the indicative guideline values applicable to sanitary wastewater discharges is shown in 8 below;
- If sewage is to be discharged to a septic system, treatment to meet applicable national or local standards for sanitary wastewater discharges is required.
- Sludge from sanitary wastewater treatment systems should be disposed in compliance with local regulatory requirements, in the absence of which disposal has to be consistent with protection of public health and safety, and conservation and long term sustainability of water and land resources.

Table 7: Indicative Values for Treated Effluent Discharges

Pollutants	Units	Guideline Value
PH	pH	6 – 9
BOD	mg/l	30
COD	mg/l	125
Total Nitrogen	mg/l	10
Total Phosphorus	mg/l	2
Oil and grease	mg/l	10
Total suspended solids	mg/l	50
Total coliform bacteria	MPN ^b /100ml	400 ^a
Notes:		
^a Not applicable to centralized, municipal, wastewater treatment systems which are included in EHS guidelines for water and sanitation		
^b MPN – Most probable number		

Source: www.ifc.org/ehsguidelines

3.8 Noise Level Guidelines

Noise prevention and mitigation measures should be applied where predicted or measured noise impacts from a project facility or operations exceed the applicable noise level guideline at the most sensitive point of reception. The preferred method for controlling noise from stationary sources is to implement noise control measures at source. Methods for prevention and control of sources of noise emissions depend on the source and proximity of receptors. Noise reduction options that should be considered include selecting equipment with lower sound power levels; installing vibration isolation for mechanical equipment; limiting the hours of operation for specific pieces of equipment or operations, especially mobile sources operating through community areas; re-locating noise sources to less sensitive areas to take advantage of distance and shielding; and reducing project traffic routing through community areas wherever possible.

Regular monitoring is required to provide information necessary to determine impacts from noise and vibration associated with the Project. The objectives of the noise and vibration-monitoring program are to ensure that:

- The objectives of the Noise and Vibration Management Plan are being met;
- Ambient noise does not exceed applicable noise criteria at sensitive receptors;
- Vibration levels do not exceed the applicable criteria and does not cause damage to structures;
- To gather data such that any potential noise and vibration impacts are identified and appropriate mitigation measures are put in place.

Noise impacts should not exceed the levels presented in Table 8

Table 8: Noise Level Guidelines

Receptor	One Hour L_{Aeq} (dBA)	
	Daytime 07:00 – 22:00	Nighttime 22:00 – 07:00
Residential; institutional; educational	55	45
Industrial; commercial	80	60

3.9 WHO Ambient Air Guidelines

This guideline provides an approach to the management of significant sources of emissions, including specific guidance for assessment and monitoring of impacts. It is also intended to provide additional information on approaches to emissions management in projects located in areas of poor air quality, where it may be necessary to establish project-specific emissions standards.

Emissions of air pollutants can occur from a wide variety of activities during the construction, operation, and decommissioning phases of a project. These activities can be categorized based on the spatial characteristic of the source including point sources, fugitive sources, and mobile

sources and, further, by process, such as combustion, materials storage, or other industry sector-specific processes

Where possible, facilities and projects should avoid, minimize, and control adverse impacts to human health, safety, and the environment from emissions to air. Where this is not possible, the generation and release of emissions of any type should be managed through a combination of:

- Energy use efficiency
- Process modification
- Selection of fuels or other materials, the processing of which may result in less polluting emissions.

Projects with significant sources of air emissions, and potential for significant impacts to ambient air quality, should prevent or minimize impacts by ensuring that:

- Emissions do not result in pollutant concentrations that reach or exceed relevant ambient quality guidelines and standards⁹ by applying national legislated standards, or in their absence, the current WHO Air Quality Guidelines¹⁰ (see Table 9), or other internationally recognized sources;
- Emissions do not contribute a significant portion to the attainment of relevant ambient air quality guidelines or standards. As a general rule, this Guideline suggests 25 percent of the applicable air quality standards to allow additional, future sustainable development in the same air shed

Table 9: WHO Ambient Air Quality Guidelines

	Averaging Period	Guideline Value in mg/m³
Sulfur dioxide (SO₂)	24 hour	125 (Interim target-1)
	10 minute	50 (Interim target-2) 20 (guideline) 500 (guideline)
Nitrogen dioxide (NO₂)	1-year	40 (guideline)
	1-hour	200 (guideline)
Particulate Matter PM₁₀	1-year	70 (Interim target-1) 50 (Interim target-2) 50 (Interim target-3) 20 (guideline)
	24-hour	150 (Interim target-1) 100 (Interim target-2) 75 (Interim target-3) 50 (guideline)

Particulate Matter PM_{2.5}	1-year	35 (Interim target-1) 25 (Interim target-2) 15 (Interim target-3) 10 (guideline)
	24-hour	75 (Interim target-1) 50 (Interim target-2) 37.5 (Interim target-3) 25 (guideline)
Ozone	8-hour daily maximum	160 (Interim target- 1) 100 (guideline)

Source: WHO Air Quality Guidelines

3.10 Occupational Health and Safety Guidelines

Reasonable precautions must be implemented during project life cycle so as to protect the health and safety of workers. Contractors must have the capability to manage the occupational health and safety issues of the employees. Preventive and protective measures should be introduced according to the following order of priority:

- Eliminating the hazard by removing the activity from the work process. Examples include substitution with less hazardous chemicals, etc.
- Controlling the hazard at its source through use of engineering controls. Examples include local exhaust ventilation, isolation rooms, machine guarding, etc.
- Minimizing the hazard through design of safe work systems and administrative or institutional control measures. Examples include job rotation, training safe work procedures, lock-out and tag-out, workplace monitoring, limiting exposure or work duration, etc.
- Providing appropriate personal protective equipment (PPE) in conjunction with training, use, and maintenance of the PPE.

The following should be considered during design and operation:

(i) At Workplace

- Permanent and recurrent places of work should be designed and equipped to protect OHS.
- Surfaces, structures and installations should be easy to clean and maintain, and not allow for accumulation of hazardous compounds.
- Fire resistant, noise-absorbing materials should, to the extent feasible, be used for cladding on ceilings and walls.
- Heavy oscillating, rotating or alternating equipment should be located in dedicated buildings or structurally isolated sections.
- Passages to emergency exits should be unobstructed at all times. Exits should be clearly marked to be visible in total darkness. The number and capacity of emergency exits should be sufficient for safe and orderly evacuation of the

greatest number of people present at any time, and there should be a minimum two exits from any work area.

(ii) Fire Precautions

- Equipping facilities with fire detectors, alarm systems, and fire-fighting equipment. The equipment should be maintained in good working order and be readily accessible. It should be adequate for the dimensions and use of the premises, equipment installed, physical and chemical properties of substances present, and the maximum number of people present.
- Provision of manual firefighting equipment that is easily accessible and simple to use
- Fire and emergency alarm systems that are both audible and visible

(iii) Potable Water Supply

- Adequate supplies of potable drinking water should be provided with a sanitary means of collecting the water for the purposes of drinking
- Water supplied to areas of food preparation or for the purpose of personal hygiene (washing or bathing) should meet drinking water quality standards.

(iv) First Aid

- The employer should ensure that qualified first-aid could be provided at all times. Appropriately equipped first-aid stations should be easily accessible throughout the place of work
- Eye-wash stations and/or emergency showers should be provided close to all workstations where immediate flushing with water is the recommended first-aid response
- First aid stations and rooms should be equipped with gloves, gowns, and masks for protection against direct contact with blood and other body fluids
- Remote sites should have written emergency procedures in place for dealing with cases of trauma or serious illness up to the point at which patient care can be transferred to an appropriate medical facility.

(v) OHS Training

- Provisions should be made to provide OHS orientation training to all new employees to ensure they are apprised of the basic site rules of work at / on the site and of personal protection and preventing injury to fellow employees.
- Training should consist of basic hazard awareness, site specific hazards, safe work practices, and emergency procedures for fire, evacuation, and natural disaster, as appropriate. Any site-specific hazard or color coding in use should be thoroughly reviewed as part of orientation training.

(vi) Noise

No employee should be exposed to a noise level greater than 85 dB(A) for a duration of more than 8 hours per day without hearing protection. In addition, no unprotected ear should be exposed to a peak sound pressure level (instantaneous) of more than 140 dB(C).

- The use of hearing protection should be enforced actively when the equivalent sound level over 8 hours reaches 85 dB(A), the peak sound levels reach 140 dB(C), or the average maximum sound level reaches 110dB(A). Hearing protective devices provided should be capable of reducing sound levels at the ear to at least 85 dB(A).
- Although hearing protection is preferred for any period of noise exposure in excess of 85 dB(A), an equivalent level of protection can be obtained, but less easily managed, by limiting the duration of noise exposure. For every 3 dB(A) increase in sound levels, the 'allowed' exposure period or duration should be reduced by 50 percent.
- Prior to the issuance of hearing protective devices as the final control mechanism, use of acoustic insulating materials, isolation of the noise source, and other engineering controls should be investigated and implemented, where feasible
- Periodic medical hearing checks should be performed on workers exposed to high noise levels

(vii) Vibration

Exposure to hand-arm vibration from equipment such as hand and power tools, or whole-body vibrations from surfaces on which the worker stands or sits, should be controlled through choice of equipment, installation of vibration dampening pads or devices, and limiting the duration of exposure.

(viii) Personal Protective Equipment (PPE)

Personal Protective Equipment (PPE) provides additional protection to workers exposed to workplace hazards in conjunction with other facility controls and safety systems. PPE provides the worker with an extra level of personal protection. Table 10 presents general examples of occupational hazards and types of PPE available for different purposes. Recommended measures for use of PPE in the workplace include:

- Active use of PPE if alternative technologies, work plans or procedures cannot eliminate, or sufficiently reduce, a hazard or exposure

- Identification and provision of appropriate PPE that offers adequate protection to the worker, co-workers, and occasional visitors, without incurring unnecessary inconvenience to the individual
- Proper maintenance of PPE, including cleaning when dirty and replacement when damaged or worn out. Proper use of PPE should be part of the recurrent training programs for employees

Table 10: Occupational hazards and types of PPEs the Working Site

Objective	Workplace Hazards	Suggested PPE
Eye and face protection	Flying particles, molten metal, liquid chemicals, gases or vapors, light radiation.	Safety Glasses with side-shields, protective shades etc.
Head protection	Falling objects, inadequate height clearance, and overhead power cords	Plastic helmets with top and side impact protection
Hearing protection	Noise	Hearing protectors (ear plugs or ear muffs)
Foot protection	Falling or rolling objects, pointed objects. Corrosive or hot liquids	Safety shoes and boots for protection against moving and falling objects, liquids and chemicals
Hand protection	Hazardous materials, cuts or lacerations, vibrations, extreme temperatures	Gloves made of rubber or synthetic materials, leather, steel, insulating materials, etc
Respiratory protection	Dust, fogs, fumes, mists, gases, smokes, vapors	Facemasks with appropriate filters for dust removal and air purification (chemicals, mists, vapors and gases). Single or multi-gas personal monitors, if available
	Oxygen deficiency	Portable or supplied air (fixed lines) On-site rescue equipment
Body/Leg protection	Extreme temperatures, hazardous materials, biological agents, cutting and laceration	Insulating clothing, body suits, aprons, etc. of appropriate materials

(ix) Monitoring

The occupational health and safety-monitoring program should include:

- Safety inspection, testing and calibration: This should include regular inspection and testing of all safety features and hazard control measures focusing on engineering and personal protective features, work procedures, places of work, installations, equipment, and tools used. The inspection should verify that issued PPE continues to provide adequate protection and is being worn as required. All instruments installed or used for monitoring and recording of working environment parameters should be regularly tested and calibrated, and the respective records maintained
- Surveillance of the working environment: Employers should document compliance using an appropriate combination of portable and stationary sampling and monitoring instruments. Monitoring and analyses should be conducted according to internationally recognized methods and standards. Monitoring methodology, locations, frequencies, and parameters should be established individually for each project following a review of the hazards. Generally, monitoring should be performed during commissioning of facilities or equipment and at the end of the defect and liability period, and otherwise repeated according to the monitoring plan.
- Training: Training activities for employees and visitors should be adequately monitored and documented (curriculum, duration, and participants). Emergency exercises, including fire drills, should be documented adequately. Service providers and contractors should be contractually required to submit to the employer adequate training documentation before start of their assignment.

CHAPTER FOUR: ENVIRONMENTAL AND SOCIAL BASELINE INFORMATION

4.1 Introduction

The baseline data and information on biophysical and social –economic settings at the site, where the proposed project is located, provide important benchmark necessary for future project environment performance monitoring. Appraisal was made at the core project areas, including the existing premises of the project site at Rusumo Village and its immediate environs as well as broad description of the areas of influence i.e Ngara District Council and Kagera region

To get the big concept of the existing situation on the project site, this chapter provides a comprehensive description of areas that may be impacted by the project activities or vice versa. A more general description that attempt to capture the different setting is presented. There are two methodologies used to get baseline information such as existing source of information include databases, report and local community also field works which include monitoring and survey

4.1.1 Administrative Units

Administratively, Ngara district council social economic profile is divided into 4 divisions and 22 wards, 75 villages (see Table 5 which indicates project village) and 391 hamlets distributed unevenly. Among the divisions, Nyamiaga division covers largest part of land of the district approximately to 33.40 percent followed by Rulenge division with 27.56 percent of the total land and Kanazi division covers 24.81 percent. Finally, Murusagamba division follows which has smallest land covering 14.23 percent. The Nyamiaga Division where the project site is found has the total land approximately 1250.51 Square Kilometers. It has seven (7) wards, 21 Villages and 127 hamlets. Moreover; the project site is located in Rusumo Village with five (5) hamlets.

4.1.2 Administrative Set Up

The village government is run with a complete governance structure comprised of village chairperson, Village Executive (VE) and elected members of the village Council whilst there is Ward Office comprised of Ward Executive (WE) and its Ward Council members. Both Governance levels are directly responsible to the District Executive Director of Ngara District Council.

Table 11: Village with LADP Project

Division	Ward	Village	No. Of Sub Villages
Nyamiaga	Rusumo	Rusumo	5

Table 12: Land Area and Administrative Units of the proposed project Village

Division	Land Area (Sq. km)	No. of ward	No. of Villages	No. of Hamlets	Percent of Land Area
Nyamiaga	1250.51	7	21	127	33.40

Source: Site Visit, November/2021

4.2 Physical Environment

4.2.1 Climatic Condition

4.2.1.1 Rainfalls

Ngara district receives adequate annual rainfall. The rainfall pattern is bi-modal, which occurs between September/October and March/May. Rainfall averages between 800 mm in Bushubi (in Rulenge and Murusagamba Divisions) and 1,400 mm annually in Bugufi (Nyamiaga and Kanazi Divisions) areas. The annual rainfall within the project site is typically of Nyamiaga Division which ranges between 1,400mm for September and October.

Nyakahanga Hamlet which falls in Nyamiaga Division has four climatic seasons, two dry seasons from June to September and January to February with two rainy seasons from September to October and from March to May. During dry seasons there are sometimes strong winds/hazy air and temperatures vary between 18°C and 30°C depending on the time of day or night. During the rainy seasons, sudden and heavy downpours may occur daily, lasting from a few minutes to several hours. The rain is sometimes associated with strong winds, floods, mud, fog and temperatures may range between 12°C and 28°C (*Ngara District Profile, 2018*).

4.2.1.2 Temperature

Temperatures range between 14°C - 28°C. The region consists of series of hilly running North-South and parallel to the lakeshore. September and October are the hottest months with temperature going as high as 28°C while July is the coldest month with minimum temperature of 14°C (*Ngara District Profile, 2018*).

4.2.1.3 Wind Patterns

Relative humidity around the proposed project area is on average of 79% with little variation during the year. In the wet season values are between 80% and 85% and are slightly lower during the dry season. On a monthly basis wind speed seems to be little variation – averaging to 0.9 m/sec, during the rainy season wind speeds are slightly lower than during the dry season. Strong winds frequently occur associated with rainstorms, particularly at the onset of the rains (*Ngara District Profile, 2018*).

4.3 Topography

Rusumo village is characterized by a series of dissected plateau at different altitude levels forming harsh undulating topography. Subsequent erosion and dissection has resulted into hills and valleys. The altitude ranges between 1,320m (the level of River Kagera) to about 1,550m above the mean sea level. Major landscapes of the proposed project area are comprised of hills, ridges and scarps, dissected plains, plateau, swamps, flood plains, river terraces and valleys. The average elevation of Rusumo village is approximately 1,500m above mean sea level and has been considered to be one of Tanzania highlands. Source: Ngara District Social Economic Profile; 2018

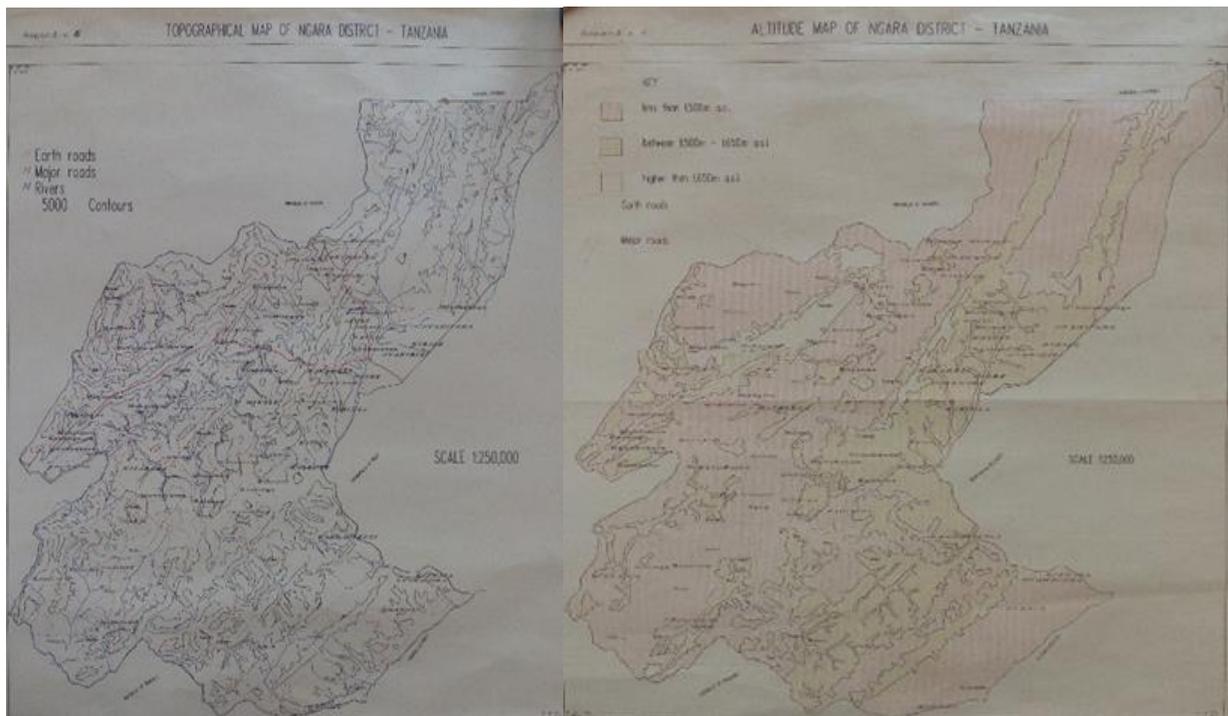


Figure 6: Map of Terrain and Topography for Ngara District

(Source: Ngara District Social Economic Profile; 2018)

4.4 Soils and Geology

Pre-Cambrian rocks of the Karagwe – Ankolean system, dominate the project area. The existing main rock types are phillies, philliticshale's and mixed quartzites. Many parts have remnants of old landscapes, which are characterized by laterites caps. Some parts have few granitic rocks. The soil within Rusumo village is mainly dominated by strongly weathered, reddish, loamy soils on foot- slopes and plateau plains. In highly dissected parts of the rocky areas, shallow soils dominate the hill slopes that have poor water retention capacity. The major landscapes Of Rusumo village comprises hills, ridges, scarps, dissected pen plain, plateaus, swamps, flood

confluence at Rusumo valley which resulting into Kagera River. Thus, Ruvubu and Akagera Rivers provide waters of Kagera River. Kagera River flows the northeastwards of the Rusumo village to Lake Victoria through Karagwe, Kyerwa, Misenyi and Bukoba Districts. Rusumo falls are found approximately 100m from Ruvubu and Akagera Rivers confluence. The closest distance from Mshikamano – Rusumo road project is about 2 kilometers



Figure 8: Ruvubu River located 2 km away from the proposed project site.

Source: Site visit, November/ 2021

Ground water characteristics: The water table in the project area is high and water is found at a depth ranging from 15.00m to 20.00m below the ground surface within the drilled depth. (Source: Ngara District Social Economic profile; 2018)

4.6 Land Uses

The land of Ngara district is loamy, clay, stretched with some hills, divided into arable land that is suitable for crop production while normal forests are used for grazing. Some areas are of high lands with rocks, stones and gravels which is not fertile for crops production. The largest land area of the Ngara district is used for grazing followed by settlement, arable land and agriculture

Agriculture activities and residential houses largely occupy the proposed project site. Based on the survey conducted by the Consultant in July 2021, most of the houses found within Rusumo Village consist of a cluster of low-rise buildings made of improved building materials such as burnt bricks, pitched roof with corrugated iron sheets, timber, wooden doors and cement floors. Institutions found at Rusumo Village include Police, schools, religious dominations, and several NGOs. Generally; the project site is located within the rural setting environment dominated by agriculture activities. Source; Ngara District Social Economic Profile, 2018

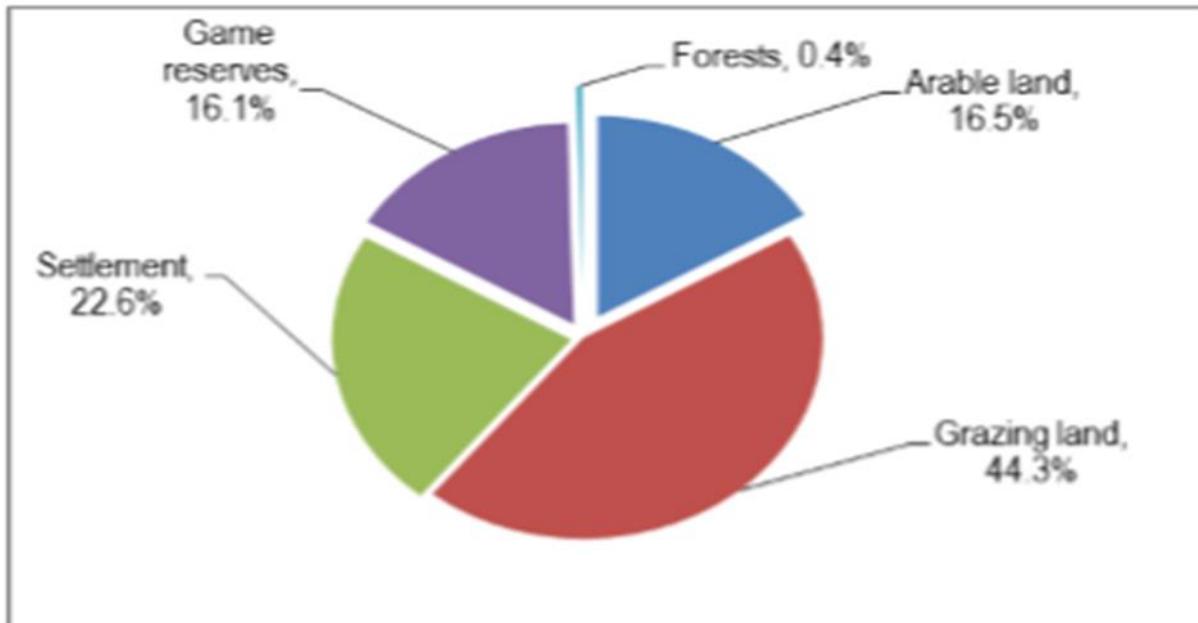


Figure 9: Land use pattern for Ngara District

Source: Ngara District Council Socio-Economic Profile, 2018

4.7 Biological Environment

4.7.1 Flora

The vegetation survey was conducted by involving local community in naming the tree species by their vernacular names. The identified tree species were then recorded and the list of tree species was compiled. Further investigation was conducted whereby the recorded list was used to identify the scientific names of the trees by comparing it against the National Forestry Resources Monitoring and Assessment of Tanzania (NAFORMA 2010). The recording of species involved the DAFOR system whereby D=dominant, A=abundant, F=frequent, O=occasional and R=rare.

Mainly exotic and little natural vegetation types adaptive to low land and sub montane habitat dominated the project area. The road has been in use for a couple of years hence no any vegetation within the present carriage way while Vegetation covers is found only within the road reserve. The dominated vegetation species within the road reserve are; Shrub Verbena, and Guinea Grass (*Panicum maximum*) while adjacent the road reserve (proposed route) there are Banana tree (*Musa Paradisiaca*) and Pine (*Pinus Patula*). Part of the existing vegetation at the road reserve will be cleared off to allow construction activities to be commenced. No any form of encroachment noticed within the road area during the study.

The consultation with the local community and the inventory of the vegetation type available onsite mainly at road reserve both revealed that, there are no vegetation species that are of conservation interests to stop implementation of the project, thus, withdrawing the project because of conservation purposes is less viable.

On top of that, the species of trees identified adjacently to the project site during the survey were also crosschecked against the IUCN list of species of special scientific and conservation interests and further revealed that there are no endemic or endangered species which need special attention during project commencement. The contractor is advised to confine all its activities only in the specified area for the existing Rusumo HC access road to avoid vegetation distortion to the adjacent land parcels.



Figure 10: Grasses and Shrubs found within the proposed project site-Road Reserve

Source: Site Visit, November/2021

4.7.2 Fauna

The proposed project site was surveyed using methodologies identified in Duthie 2000 coupled with the consultation of the local community. The consultation with the local community revealed availability of rabbits. The clearance will to some extent affect habitat and pattern of the food web for this organism. The site is also proximity to the built-up areas where the impact of noise is inevitable. This may affect breeding densities for some species however, new species mostly pests and undesirable species like lizards, scavenging birds, rats and snakes hiding may develop and be available in the structures.

The presence of the proposed project and the associated socio-economic activities within and nearby proposed project site may have probably contributed to the limited number of particular species of organism's multiplication and distribution due to noise generated in this areas and fear of human. Therefore, through observation and interviews it was confirmed that no specific animals sign which suggest the availability of big animals in the area. It is also envisaged that

no any fauna will be disturbing the construction activities, as the site is not nearby the wildlife areas.

4.8 Socio-Economic Environment

4.8.1 Population and Housing

The population of Ngara District has experienced significant growth in the last decade. Population has decreased by 4.29 percent in 2012 from 334,409 people in 2002 to 320,056 people reported in the 2012 Population Census, resulting in a significant decrease of 14,353 people during the inter-censal period. The 2012 population census put the council's population at 320,056 out of which, females account for 52.36 percent (167,613) of the population whilst the population for Rusumo Ward is about 27,425. The population composition of the Village in the proposed LADP project (Rusumo Village) is presented in Table 17. However; in this proposed Village, the sex ratio is less than 90.

Table 13: Population Distribution in the Rusumo Village.

			Population				Sex Ration
				Total Number			
Division	Ward	Name of Village	Households	Males	Females	Total	
Nyamiaga	Rusumo	Rusumo	780	1,520	1,786	3,306	99

Source: Village Council Records November/2021

Generally, Ngara District is one of the areas that might require great attention because had been receiving refugees from Burundi since 1993 and Rwanda in 1994 during the Great Lakes Refugee Crisis. A number of refugee camps were established to accommodate refugees and to date some of the camps have been closed. Despite of the recorded population data from existing district profile, consultant updated population data from respective Village.

4.8.2 HIV/AIDS Infections Status

The impact of HIV/AIDS pandemic have also replicated to the high rates of orphans experienced in the 2012-population census. Ngara District Council is among the councils in Kagera region with average rates of orphans of 8.1 percent. Orphan males were more than orphan females. There is a need for the council management to conduct a survey in order to know the current status of orphan hood and factors contributing to have higher rates of orphans and come up with solutions.

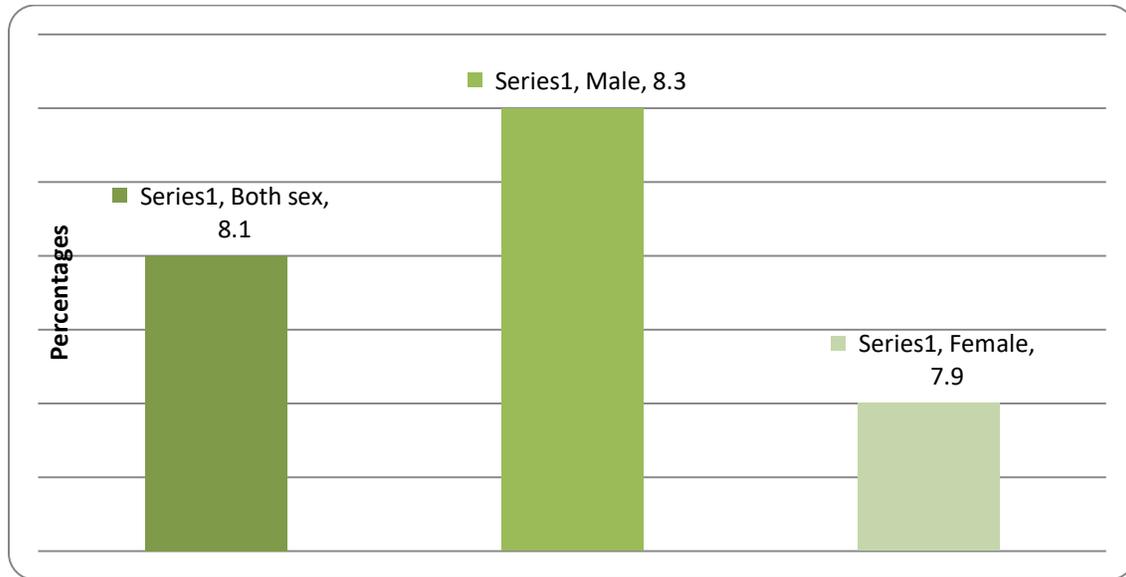


Figure 11: Percentage Distribution of Orphans by Sex,

(Source: Ngara District Council, 2012 Census)

4.9 Economic Activities

This section provides baseline information on economic activities in the project area as per requirements of EIA and EA regulations. These activities may not have direct impact to the proposed project, but may in one way or another influence activities, employments and income to the communities around the project area, district and regional and large.

4.9.1 Agriculture

The main economic activities in the proposed project village are agriculture, employment, livestock keeping, and small-scale enterprises. Agricultural crops include both food and cash crops. The main food crops are beans, bananas and maize. Other food crops include cassava, sweet potatoes, yams and vegetables. However, surplus production of food crops is sold to earn cash income to the households. Presence border and its associated activities is the essence of constructing the proposed project will create employment opportunities to the villagers. In addition, proposed project's operations will enhance running of small scale businesses such as food vending and petty trading, retail shops, kiosks and food stalls that are regarded as alternative sources of income to the households.

At Nyakahanga Hamlet where the proposed project is located the major agriculture crops includes Banana, Sweet potatoes, and Cassava. The table below presents agricultural land productivity in Ngara District.

Table 14: Agricultural Land Uses in Ngara District

Agricultural land uses	Size (Ha)	Proportion
Total District's land Size	374,400	
District's arable land	303,483	81%
Arable land which is currently in use	64,940	21%
Land size suitable for Irrigation	5,000	2%
Non - arable land	70,917	19%

Source; Ngara DC Website: www.ngaradc.go.tz



Figure 12: Banana Plantation along the Rusumo HC Access road-Nyakahanga Hamlet

Source; Site survey, November/ 2021

4.9.2 Livestock Keeping

Livestock keeping is the second most important economic activity after agriculture in Ngara DC. Most of the livestock keeping are cattle, sheep, goats and chicken. The Hangaza and Tutsi tribes are dominating in livestock keeping. Most of them develop scattered settlements in the district searching for green pastures. Also they practice shifting grazing around the district and nearby areas. Within the project village, livestock keeping is practiced at low level since it is an urbanized area hence experiencing challenges in grazing. Source; Ngara District Social Economic Profile; 2018

4.9.3 Other Economic Activities

Kagera Region Investment Guide (2019) mentions other economic activities in Ngara district to include local trade and businesses, tourism, mining (Kabanga Nickel Project) and cross border trade.

4.10 Economic Infrastructure

4.10.1 Transport Services

Roads

The truck road (T03) Isaka - Lusahunga - Rusumo passes across the village on its way to Rwanda. This road is in double surface treatment bituminous standard and was constructed late 1980's. Due to recurrent traffic loads, heavy down pour and ageing some of T03 road sections have been deteriorated such that there is significant number of pot holes that causing difficult passage of trucks. On the other hand the village has a total of 28km gravel local roads, which are well maintained and passable throughout the year.

Railway

Rusumo Ward including Ngara District is not serviced with railway transport. According to the Feasibility Study Report prepared by East African Community in 2010 there is plan for construction a railway line from Isaka to Kigali (in Rwanda) via Rusumo village. It is envisage that constructions of Isaka - Rusumo - Kigali railway line will easy transportation of passengers and goods at Rusumo village and in Ngara District at large

4.10.2 Electricity

TANESCO is the sole supplier of electrical power at Rusumo Village. Electricity supply in the village is not yet stable and faces a number of problems such as intermittent power supply, low voltage and rationing. In one way or another, these problems affect production of goods and services in the village. In order to eliminate problems related to power supply there is on-going Rusumo Hydro Power Generation Project under NELSAP that will produce about 80 MW to be equally shared between Tanzania, Rwanda and Burundi.

4.10.3 Telecommunication

There has been a recent improvement in telecommunications within Rusumo Village. Six mobile phone service providers namely Airtel, Tigo, Zantel Vodacom, Halotel and TTCL are in operational at Rusumo Village. With the exception of a few areas, the mobile telecommunication networks can reach almost all parts of the village. Radio and Television (TV) broadcasts already reached Rusumo Village. TBC Taifa and Radio Kwizera are examples of radio broadcasts that can be received at Rusumo Village

Nevertheless, like other parts in Tanzania the access of some television network at Rusumo Village is subject to payment of monthly pre-paid service charges imposed at different rates depending on televised company and user requirement.

4.11 Social Services Infrastructure

4.11.1 Health Facilities

Ngara district, like other rural councils in the region, experiences shortages of health facilities, practitioners such as Medical officer, assistant medical officers (AMOs), nursing officers, pharmaceutical technologist, laboratory technologist, nutritionist, assistant laboratory technologist, pharmaceutical technologist assistant, clinical officers (COs), dental surgeon, dentist, nurses, physiotherapist, environmental health officers, assistant environmental health officers, health assistant, medical attendant, radiologist and radiographic assistants. These shortages cause unnecessary loss of people's lives due to incomplete treatment of preventable diseases. Top ten diseases in Ngara district are ARI, Malaria, Diarrhea, Pneumonia, intestinal worms, other diagnosis, skin disease, eye condition, emergency surgical condition and ear condition.

Ngara district is still improving the health sector by constructing and renovating health facilities, especially dispensaries and health centers. Ngara district had remained with only 60 health facilities in the last five years covering with 6 health centers and 54 dispensaries. It is obvious that, the available facilities cannot serve the ever increasing population of the district. The council authority should continue motivating the community to participate in current initiative of construction more health facilities in order to meet health strategies as stipulated in the Policy. Implementation of the LADP projects in the health sector, which include dispensary and health centers is expected to improve the situation in the district. There are three health centers at the

Implementation of the LADP projects in the health sector which include health Centers and Dispensaries is expected to improve the situation in the district. In Rusumo Village there is no any health facility hence LADP Phase I is establishing a Health Centre which is expected to serve more than 20,000people around the Rusumo Ward and the nearby Villages. Currently; inhabitants in Rusumo Village are obtain medical service at neighboring Villages of Kyenda, Nyamiaga and Mshikamano which is about 10-28Km.

4.11.2 Educational Services

Enrolment of primary school pupils dropped from 66,704 in 2013 to 61,164 in 2015 which was eight (8) percent decrease. The main reason attributed to the decrease of enrolment was the parents' lack of funds to finance school expenses including fees. In 2018 the enrolment increased by 38% compared to that of 2015. The increase was said to be due to the introduction of the new Government policy of free education for primary and secondary education. Rusumo ward having both primary school and secondary school owned by government. The proposed LADP projects phase two on construction of building facilities for two primary schools and five secondary schools are likely to improve the delivery of education services in the Ward and the

district at large. Currently; Rusumo Village has only one Primary school whilst depending on Rusumo B secondary school which is about 12km from the Village.

4.11.3 Ethnic Groups

Ngara District council is among the eight district councils in Kagera region; experiencing slow population growth by natural birth and moderate population growth by migration. As a result, more ethnic groups are found in the council. However, among all people, the council has three main ethnic groups namely Hangaza, Shubi and Haya. Hangaza being the main ethnic group occupy most wards of the council, while Shubi occupy most of the Rulenge division and Haya are found mostly in Bugufi i.e. Kanazi and Nyamiaga Divisions especially in the high altitudes

4.11.4 Sanitation Services

With the exception of town centers such as Ngara Town, more than 90% of the households in the rural areas of the district use traditional pit latrines. There is an ongoing campaign in the district to ensure that each household owns and uses a latrine. The fact that only about 0.02% of the households is without toilets indicates success of the campaign.

4.11.5 Water Supply

The National Water Policy requires every person to get water within short distance from an improved source of water, such as piped water, protected boreholes, dug wells and springs. The region, therefore mainly uses different types of water sources including Rusumo water supply, shallow wells, bore holes, charcoal dams and surface water such as springs, lake, river and rain water harvesting. Rusumo Village where the project site is found obtains water from Mshikamano Village through a Pipeline. However; NELSAP Phase I project is constructing a pipeline for water supply within the Ward and the nearby areas. Other sources within the Village are Ruvuvu River, Kagera River, shallow wells and rain water harvest.

Table 15: Number and Type of Rural Water Sources by Ward, Ngara DC; 2018

Water Source	Working	Percent Working	Not Working	Percent Not Working	Total	Percent Source
Charcoal	0	0	0	0	0	0
Spring	176	84.2	33	15.8	209	29.2
Shallow wells	236	112.9	50	17.5	286	39.9
Rain Water Harvesting	78	37.3	6	7.1	84	11.7
Bore Holes	24	11.5	4	14.3	28	3.9
Piped Scheme	38	18.2	7	15.6	45	6.3
	Permanent	Percent	Season	Percent		
River water	64	100	0	0	64	8.9
Lake	0	0	0	0	0	0
Dam	0	0	0	0	0	0

Total	616	86.0	100	14.0	716	100
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Source: Compiled data from district executive director's office, Water Supply and Sanitation Department, 2017

4.11.6 Financial Services

Only two financial institutions are operating in Ngara DC which is NMB and CRDB Bank. There is local financial institute which is also operating in the district. This is an indication the council is in need of more financial institutions as there is an increase of number of formal and informal small scale businesses. Also the District council has some credit facilities targeted to women and youth. These credit facilities are provided to individuals as well as group for economic activities. Moreover; nowadays the raise of money transaction done through different mobile networks such as tigo pesa, Hallo Pesa, Mpesa and Airtel money has accelerated the growth of the financial services in the Ngara Town and Ngara District.

4.12 Income Poverty Rate, Poverty Gap and GINI Coefficient

The Poverty Gap is an estimate of how far the poor are below the poverty line, expressed as a percentage of the poverty line. The GINI coefficient is a measure of equality of the income distribution. A measure of 100 corresponds with complete inequality; a measure of 1 corresponds with complete equality. District poverty and GINI estimates show a negative correlation, indicating that low poverty rates are associated with a high inequality in income distribution.

According to the 2015 REPOA report (Where are the poor poverty map), Ngara District Council was among the low income councils on Tanzania Mainland in regard to the least number of people living below the basic needs poverty line. The Report indicates 41.7 percent of Ngara DC residents live below the basic needs poverty line.

The situation is different as regards to the GINI Coefficient Rate. All councils had better inequality and variation in the distribution of wealth in Kagera region

4.13 Database for Monitoring

To facilitate easy follow up and monitoring of socio-economic activities and development processes in general at the village level functional departments of Ngara District Council should be encouraged to track and keep in their databases data of their particular performance indicators at village level.

Each functional department should be required to update data using the variables contained in the Socio-Economic Profile of the District so as to enable one to make updated interpretation of the variables contained therein.

CHAPTER FIVE: STAKEHOLDERS CONSULTATION AND ANALYSIS

5.1 Introduction

The Environmental Management Act 2004 provides directives and guidelines on public participation during the EIA process. Regulation 17 under Part IV of the EIAAR 2005 stresses that “the Proponent or Developer shall in consultation with the Council, seek the views of any person who is or is likely to be affected by the project”. Section 89 of the EMA No. 20 of 2004 provides directives on public participation issues and its importance in ESIA. The EIA and Audit Regulations of 2005, provides further details and procedures for public participation in environmental assessments. Nevertheless; World Bank Environmental and Social Standards (ESS10: Stakeholder Engagement and Information Disclosure) recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation. Generally; Stakeholders involvement ensures all interested and affected parties are involved in the project.

Consultant carried out consultations with stakeholders with the assistance from counterpart staffs from Ngara District Council. Consultation took place in the project community. Interviews were conducted with village government officials, local people representatives, Ngara District officials and Regional level officials.

5.2 Stakeholders Identification and Consultations

Section 89 of the EMA No. 20 of 2004 provides directives on public participation issues and its importance in ESIA. The EIA and Audit Regulations of 2005, provides further details and procedures for public participation in environmental assessments. In this ESIA the concept stakeholder was given a broad definition to encompass all key stakeholders required to be involved in the proposed project. The names and contacts of the people consulted are appended in this report (prior permission was granted to allow their details to be used in this report). To accomplish the need of getting the public’s opinion on the proposed project, discussions with communities residing or running businesses around the proposed facilities were conducted. Efforts were made to involve more women as they much highly affected by the particular project. All the respondents were in support for the project to be implemented and that Improvement of the Rusumo HC access road is for their benefits. Their views and concerns have been included in the recommendations and suggestions part of this report.

Consultant carried out consultations with stakeholders with the assistance from counterpart staffs from Ngara District Council. Consultation took place in the project community. Interviews were conducted with village government officials, local people representatives, Ngara District officials and Regional level officials

5.3 Methods Used In Stakeholders Consultation

Various methods were used during consultative meetings subject to the nature of the information that was required. However, the following methods were pertinently used.

5.3.1 Semi-Structured Interviews with Key Informants

Semi-structured interviews were conducted with key informants at the, village, district and regional levels. At the district level semi-structured interviews were conducted with District Executive Officer and functional departmental staffs namely District Executive Director (DED), District Manager-TANESCO, District Manager-Tanzania Rural and Urban Roads Agency (TARURA), District Manager - Rural Water Supply and Sanitation Agency (RUWASA), District environmental Management Officer, District Land and Natural Resources Officer (DLNSO), District Livestock Officer (DLO), District Medical Office (DMO), Fire and Rescue Force-District Office and all other related Departments at district level

At the village level semi-structured interviews were conducted with Village Chairperson, Village Executive (VE) Ward Executive (WE) and other nearby communities. These interviews enabled the consultant to have in-depth information on the socio-economic, political and cultural conditions of the people in the proposed project areas. The knowledge gained from the interviews helped the consultant to make evaluation of the socio-economic and cultural impacts.

5.3.2 Indoor Village Consultation Meetings

In the village, with the proposed project, the consultant made an indoor consultation meeting with the village council members and village influential persons. Subjects of discussion included the village social, economic, political, and cultural aspects including life styles of the community people and main ethnic groups of the village





Figure 13: Consultation meetings with Rusumo Villagers and Ngara DC CTM

Source: Site Visit November/2021

5.3.3 Public Village Consultation Meetings

Before conducting meeting, letters were sent to the selected villages in Ngara district with the proposed project. These letters were sent prior to the commencement of the study. The main aim of the stakeholder village consultation meetings was to inform the stakeholders about the proposed project and incorporate their views in the design of the mitigation measures. The specific aims of the consultation process were to; reduce problems of institutional coordination; provide precise information about the project to the communities; obtained the main concerns and perceptions of the stakeholders regarding the projects; and obtain opinions and suggestions directly from the affected communities on their preferred mitigation measures. The public stakeholder village consultation meetings were also intended to collect information regarding sources of livelihood, living standards, and views and perceptions of the communities regarding the proposed projects.

5.3.4 Direct Observation

During site visit to the proposed project site, indoor village consultation meetings and stakeholder public village consultation meetings the consultant made direct observation to phenomena and surroundings of the communities. In the process triangulation to counter-check information obtained through other described methods was possible.

5.4 Consultation Process and Stakeholders Consulted

The overall goal of the consultation process was to disseminate Project information and to incorporate the views of stakeholders in the design of the Environmental mitigation measures,

management plan and Monitoring Plan. The specific aims of the consultation process are to improve project design and hence minimize conflicts and delays in implementation; Increase long term Project sustainability and ownership; and to gather the information needed to complete the assessment. Stakeholders consulted include those at village and district level. List of Stakeholders consulted and minutes during village meetings is as shown in Appendix I

Table 16: Status on the Consulted Stakeholders

Date	Venue	Stakeholders	Participants
09.11. 2021	Ngara District Council Conference Room	Ngara District Council Departmental Staffs	24
09.11. 2021	Ngara LADP Office	Ag. Environmental Officer & LADP Coordinator	4
09.11. 2021	TARURA Office	TARURA Manager, DMO and Counter Staffs	7
07.11. 2021	Rusumo Ward/Village	Direct and indirect project beneficiaries, and Village leaders.	90
Total			125

5.5 Stakeholders Concerns

In respect of the intended project activities, the stakeholders that were consulted raised concerns on a number of issues that need attention. The summaries of issues/concerns raised by stakeholders are as presented in Table 17.

Table 17: Concerns and Issues from Stakeholders' Consultations

S/N	Stakeholder	Issue/concern
1	District Executive Director (DED)	<ul style="list-style-type: none"> - Wider stakeholder consultations and community involvement with regard to land issues should be done before construction. - In order to avoid delays of the implementation of the proposed project, there should a memorandum of understanding between World Bank, NELSAP and Ngara DC
2	District Environmental Management Officer (DEMO)	<ul style="list-style-type: none"> - The issue was how environment can be protected to avoid environmental degradation. The district has managed to have bylaws that govern. The bylaws have been adopted from Environmental and Management act No.20 of 2004. - As a department for environment has managed to prepare monitoring strategies which will govern contractor from extracting construction materials. All materials must be

		<p>sources from the designated areas.</p> <ul style="list-style-type: none"> - Ward Executive Officers have been given by-laws that govern them on how communities are required to take care of their environment as per set guidelines. The issue still in question due to irresponsible leaders. - Management of solid waste is still a problem though the project design considered it. - Environmental Education should be properly provided to local residents and staffs for management and sustainability.
3	District Community and Development Officer (DCDO)	<ul style="list-style-type: none"> - Community development had to be involved from the initial stage of the project development. - Each department should know that community development is a crosscutting issue that should be shared to the department too; DCDO has to be involved at early stages of the project to have better community participation.
4	District Land and Natural Resource Officer (DLNRO)	<ul style="list-style-type: none"> - The department is well informed about this proposed project. - Good enough, land is 100% owned by TARURA hence no any social conflict is expected from local community. - The proposed area has no any conflict, this has approved during Village General Assembly. - TARURA and Ngara DC shall be responsible to supervise all construction activities to make sure no any activity is conducted offsite.
5	District Planning Officer (DPLO)	<ul style="list-style-type: none"> - Education on proper land use plan should be given to all communities and to instruct them not to offer lands illegally to investors without prior permission.
6	TARURA-Ngara DC	<ul style="list-style-type: none"> - The land covered by the Rusumo Health Centre access road belongs to TARURA hence there will be no any land conflict. - The Contractor must be aware and well supervised during project commencement not to destruct individuals' properties beyond the project site.
7	Rusumo Ward & Rusumo Village Officials and Villagers	<ul style="list-style-type: none"> - Employment should be given to the local people surrounding the project site - Local suppliers to be given priority during construction stage - The contractor should extract construction materials in an environmentally friendly ways. - They should participate in programs of developments of the Village - They should consider the safety of their workers - Construction activities will increase unplanned and early pregnancy cases, especially to School girls because their lusts they tend to date project workers. The contractor is advised to take precaution and strictly enforcement to his employees.

Source: Consultant's Analysis from Stakeholders Consultation: November/2021

CHAPTER SIX: ASSESSMENT OF IMPACTS AND IDENTIFICATION OF ALTERNATIVES

6.1 Introduction

This chapter describes an assessment and analysis of the physical, biological and human environment impacts identified during ESIA. Since the proposed construction activities are in groupings that fall under similar geographical area, impacts were assessed in terms of their magnitude (size) and significance (importance) and actions necessary to mitigate them. Impacts' monitoring requirements are summarized in a section of this report. The proposed project is expected to have some impacts on certain aspects of the physical, biological and human environment of the proposed project area. These impacts may occur during construction or operation or during decommissioning phases. These impacts may be beneficial (positive) or negative.

6.2 Impacts Identification and Analysis

Impact identification is a process designed to ensure that all potential significant impacts are identified and taken into account in project design and implementation. A number of 'tools' are available to assist in impact identification. The simplest, and most frequently used, are checklists of impacts, although matrices, network diagrams and map overlays are also commonly used. In this study, a checklist and matrix methods were used. The checklists, developed from previous experiences, provide lists of potential impacts associated with specific activities. They provide a quick method of identifying the impacts and in such help also practitioners to avoid overlooking some of potential of the impacts associated with a particular activity. The matrix provides a rather systematic way of evaluating the identified impacts.

The Impact Identification Checklist was used for identification of impacts associated with the proposed project at different phases. The identification of impacts was based on the interaction between project activities during pre-construction or mobilization, construction, decommissioning or demobilization of the project and the characteristics of the project environment that could be affected. The main receptors of impacts associated with the anticipated project include human livelihood, public health and safety, physical environment (hydrology, surface water quality, soils, geology, vibration, air quality and noise) and biophysical environment (vegetation characteristic and fauna). In general, proposed project construction is for public interest, it has significant positive socio-economic impacts to the national, regional and local levels. Therefore; the project is accelerated to have potential impacts whilst on the other hand the proposed project contributes negative impacts to the general environments.

6.3 Potential Impacts during Mobilization and Construction Phase

Construction phase shall begin with the site preparations for construction works to take place. Construction Impacts have the potential to create nuisance for residents in the neighborhood, however these shall be managed within acceptable limits. In addition the construction impacts are also temporary in nature.

6.3.1 Potential Positive Impacts

6.3.1.1 Creation of Temporary Job Opportunities

Both direct and indirect forms of employment shall arise from the project initiation. Direct employment will be mainly through skilled and unskilled laborers whose workforce shall be needed to construct the proposed project and the ancillary infrastructures. Employment opportunities will be a benefit both in economic and social sense. In the economic sense it means abundant unskilled labor will be used in economic production. Several workers including casual laborers are expected to work on the site for a period that the project will start to the end. Apart from casual labor, semi-skilled and unskilled labor and formal employees are also expected to obtain gainful employment during the period of construction. *This impact is considered to be direct, positive, short-term and of moderate significance.*

6.3.1.2 Increased Income to Rusumo Villagers

There is an expectation that majority of unskilled labours will be employed from residents of Rusumo Village. This will increase the income to local people who might have the opportunities to be employed by the contractor. However, some of the villagers, especially women will also get opportunity to sell food items to the construction workforce, thus increase income at the household level. *This impact is considered to be direct, positive, short term and of high significance*

6.3.1.3 Benefit to Local Producers and Suppliers of Construction Materials

Construction of the proposed project and ancillary infrastructures has considered the use of local laborers and local available materials at Ngara District. This is economically and socially viable hence streamed as the efforts to improve the standards of living for local suppliers. *This impact is considered to be direct, positive, short term and of low significance.*

6.3.1.4 Increased Human Capital

Villagers may gain new skills and knowledge from the people outside the village coming to seek employment in the project. *This impact is considered to be direct, positive, short-term and of moderate significance.*

6.3.2 Potential Negative Impacts

6.3.2.1 Air Pollutions (Fugitive Dust and Exhaust Emissions)

The proposed construction activities will involve trench and foundation excavations, transportation construction materials, as well as, handling of cement bags. This is likely to generate dust in and around construction site. Exhaust emissions from the trucks, machinery and construction equipment are likely to generate mixture of toxic gases such as carbon monoxide (CO), nitrogen oxides (NOX), Oxides of sulphur (SOX), Hydrocarbons (HC) and Suspended Particulate Matter and possibly Lead (Pb). Dust and exhaust emission may create nuisance and in extreme cases may lead into adverse health impacts. *This impact is considered to be direct, negative, long term and of high significance.*

6.3.2.2 Soil Erosion and Modification of Landscape

Clearance of vegetation due to construction activities will leave considerable soil surface to be exposed and can be easily eroded by runoff. Movement of heavy equipment to the site may lead into soil compaction and soil erosion. *This impact is considered to be direct, negative, long term and of high significance*

6.3.2.3 Population Influx (Labor Influx)

In many cases, labor influx is compounded by an influx of other people (followers) who follow the incoming workforce with the aim of selling them goods and services, or in pursuit of job or business opportunities. The influx of workers and followers can lead to adverse social and environmental impacts on local communities, especially if the communities are rural, remote or small. Such adverse impacts may include increased demand and competition for local social and health services, as well as for goods and services, which can lead to price hikes and crowding out of local consumers, increased volume of traffic and higher risk of accidents, increased demands on the ecosystem and natural resources, social conflicts within and between communities, increased risk of spread of communicable diseases, and increased rates of illicit behavior and crime. These impacts need to be well mitigated. *The impact is considered to be negative of short-term duration with high significance.*

6.3.2.4 Increased Risk of GBV, SEA and Harassment

Males seeking employment in the project are likely to come there without their spouses. Women and girls are at risk of gender-based violence from such males seeking forced social relationships. Victims of violence can suffer sexual and reproductive health consequences, including forced and unwanted pregnancies, unsafe abortions, traumatic fistula, sexually transmitted infections including HIV, and even death. *This impact is considered to be direct, negative, short term and of high significance*

6.3.2.5 Generation of Human Sanitary Wastes

Contractor's workforce to be involved for proposed project shall generate liquid waste consists of grey water, urine and fecal matters at site. If not properly managed, the anticipated liquid waste from construction workers can significantly impair aesthetic value of the proposed site and cause threat to public health. *This impact is considered to be direct, negative, short term and of high significance.*

6.3.2.6 Generation of Solid Wastes

It is obvious that the proposed project construction activities will be associated with production of solid wastes. These waste streams are likely to be generated from fabrication and domestic activities of the workers at the construction site. The type of solid wastes likely to be generated during construction activities include vegetation residues, garbage, excess soil materials and gravels, cement paper bags, plastic waste (bottles and bag) and pieces of metals. All these if not well handled may cause environmental pollution and health risk to workers and nearby community. *This impact is considered to be direct, negative, short term and of high significance*

6.3.2.7 Generation of hazardous waste

Repair and maintenance activities of construction machinery and equipment will produce significant quantity of hazardous wastes including used oil filters, scrap metals, waste oils, greases and used batteries. Improper handling of the generated hazardous wastes can lead into soil contamination, underground water pollution and public health threat. *This impact is considered to be direct, negative, short term and of medium significance.*

6.3.2.8 Vegetation clearing

Generally; the existing Rusumo Health Centre access road is in use and connects Mshikamano Village with other parts of the District. The upgrading will commence with widening of the road hence cause vegetation clearance at the wide shoulders/road reserve. The road reserve is typically dominated by short grasses and shrubs hence detrimental impacts resulted from vegetation clearance will be very limited. *This impact is considered to be direct, negative, short-term and of low significance*

6.3.2.9 Risk of Construction Materials vandalism

Generally; construction projects experience vandalism and theft of construction materials mainly by locals in conjunction with construction technicians. For the proposed project these acts of vandalism may take a number of forms including cements, iron sheets, blocks, fuels theft from trucks storage tanks, theft of valuable spare parts and other accessories leading to an increase in the construction costs and state of trepidation to Contractor. Vandalism and theft acts will totally jeopardize the proposed project and subsequently cause directly great loss to the Proponent and Contractor.

6.3.2.10 Teenage Pregnancies

Teenage pregnancies are a global problem as well as Tanzania in particular but occur most often in poorer and marginalized communities. Early pregnancies remain the major contributors to maternal and child mortality whilst complications relating to pregnancy and childbirth are the leading cause of death for girls aged 15-18. Adolescent pregnancy can also have negative social and economic effects on girls, their families and communities such as drop out of schools, limiting opportunities for future employment, perpetuating poverty cycle, etc. Nevertheless; the proposed project will cause high socio interactions during construction state that may cause sexual interaction and sexual infidelity at Nyakahanga Hamlet/ Rusumo Village and nearby areas.

6.3.2.11 Risks of Leakage of Hazardous Materials

The project will utilize a number of hazardous materials during construction and maintenance of construction equipments. Some of the materials will have to be transported from outside the project area, and will therefore require special attention in their transport, handling, and storage. Such materials will include different grades of lubricants (foils, grease etc.) and fuels, (all hydrocarbons compounds), solvents, brake fluids, battery acid.

Leakage of such hazardous materials poses a risk of soil contamination as well as surface and groundwater pollution. *The impact is will be direct, moderate, irreversible, and long term since when it occurs, clean-up of chemicals, apart from being very expensive, will take long time.*

6.3.2.12 Disruption of Community Access to their Dwellings and Business Areas

During construction, disruption of community access to their business activities and residential places at all settlements along the road will occur due to creation of barriers. One of the potential barriers is the construction of their access road. The impact of these barriers would be an increase in travel time for local residents to their business and residential areas. *This will be indirect, moderate, reversible, and short term negative impact*

6.3.2.13 Child labour, forced labour and human trafficking

Child labour, forced labor and human trafficking are the results of many factors, including poverty, social norms condoning them, lack of decent work opportunities for adults and adolescents, migration and emergencies. These factors are not only the cause but also a consequence of social inequities reinforced by discrimination. The project Proponent, Contractor, Consultant engineer and other stakeholders need critical attention to abide with employment Act

6.3.2.14 Creation of safety risks to local people

Workers working on site during development phase definitely will generate some wastes in solid and liquid form including human wastes. This might result into sanitary related diseases such as cholera, dysentery and alike. Depending on the number of construction workers and the season when work will be done the impact might become significance. Likewise, mismanaged solid wastes such as plastic bottles, food remains, used packaging material (e.g. cement bags) and alike might end up into drainage system and interfere the usual flow of storm water. This might also create untidy condition in the area while also creating favourable condition for germs. *The impact is considered negative, short term and of moderate significance*

6.3.2.15 Generation of Noise Nuisance and Vibration

Construction activities are expected to produce point source noise, which is defined as noise that remains in one place for extended period of time. For example, noise, which will be generated from, trucks, jackhammers, or excavators working in one location. Noise from a point

source spreads spherically over distance, and travels in all directions equally from the source. Noise nuisance may also occur due to operation of construction machinery / equipment and movement of trucks transporting construction materials to the site. The significant noise is expected from operation of noise creating equipment like grader machinery, excavators and concrete mixture. Earth moving, compaction, and other construction activities will generate vibrations due to reactions between earth and the equipment. *This impact is considered to be direct, negative, short term and of low significance*

6.3.2.16 Soil and Water Quality Contamination

Project related with removing of earth materials could lead to soil and ground water quality degradation. Contaminated soil or ground water in the path of the project could be disturbed by excavation resulting in a potential transfer of the contaminants to surface waters. The excavated area, if linear could act as a conduit to extend groundwater contamination to new areas. Spills of hazardous materials in excavated areas during construction could introduce contaminants to ground water. The machines on site may be containing moving parts, which will require continuous oiling to minimize the usual corrosion or wear and tear. Possibilities of such oils spilling and contaminating the soil and water on site are real. Likewise, moving vehicles on site may require oil change. *It is expected that the impacts will be mild, local, and they will occur mostly during the construction stage (short term)*

6.3.2.17 Disruption of Traffic Flow

The proposed project involves upgrade of the same road, which is currently used by community and there will be frequent turning of trucks from and to the construction site. This could result into disruption of movement of traffic along the road and if no measures are taken it could result into accidents and accumulation of trucks resulting into traffic jam. *This impact is considered to be direct, negative, short term and of medium-term significance*

6.3.2.18 Occupational Health and Safety Hazards to Workers

Project workers working near mobile equipment such as excavator, concrete mixer, Motor grader, poker vibrator, Hand compactor, Steel wheel roller, etc. or members of the community near such equipment will be exposed to physical hazards due to the possibility of being hit, entangled, or crushed by the equipment during their operations.

Construction activities, involving the use of different construction materials will expose workers and the public to health hazards. Health hazards can be categorized into chemical health hazard (due to liquids, dusts, gases, and fumes), physical health hazards to (due to heat, noise and vibrations, compressed air, and manual handling), and biological health hazards

Furthermore, during construction phase, workers are also likely to be exposed to diseases from building materials. It is therefore recommended that before the construction commences, there is need for the materials to be well inspected according to the occupational health and safety standards.

With clear instructions, safety measures, awareness training and protective equipment in place there are no features of the Project that would result in a higher potential for accidents, malfunctions, and unplanned events resulting in harm to workers, the public, or the environment to occur.

With the anticipated considerable number of workers and local community, the social interaction among them may not be avoided and will be of high significance. Considering the nature with which HIV/AIDS is contracted and spread, this makes a significant contribution to the pandemic. The beneficiaries of some of the activities within the facilities especially youth and women are the most venerable group to that social interaction due to their social economic background. With the mitigation measures in place, the residual impact is none to insignificant.

Other public health hazards could occur due to high congestion of people into a small area where disease like TB, eye disease, upper respiratory tract infections and spread of COVID 19 etc. may occur.

Also at the work place environment there are several issues on occupational health and safety has to be comply with which include the following;

- **Ergonomics hazards** (long standing hours, long working hours, working in confined space and lightning hazards.)
- **Biological hazards:** Physical risk factors to which workers are exposed on construction site include noise from vehicles, extreme air temperatures (hot and cold) during the seasons with extreme temperatures characteristic of a project area risk factor include contact with the bacteria, viruses, fungi which the construction workers come into contact due to diversity of people.

The impact is considered to be negative of short-term duration with high significance.

6.3.2.19 Possible Spread of HIV/AIDS, COVID-19 and Other Infectious Diseases

The main health risk associated with the project relates to the HIV/AIDS epidemic. Considering the socio-economic as well as geographical characteristics of the project area, there exist a number factors (including poverty) that either may influence high infection rate, or deter efforts to combat the epidemic. For example, the problem of low or irregular incomes among young women aged 15 – 45 years is the HIV/AIDS risk factor, which can influence high infection rate in the project area. It is expected that the project will increase interaction between people in the cause of livelihood sustenance or social relaxation. Nevertheless; the social interactions may influence COVID-19 transmission among workers and the local community.

6.3.2.20 Degradation / Depletion of Resources at Point of Source

Most of the building materials such as sand and gravels required for construction of the proposed project will be obtained from natural resource banks such as rivers and land. Since substantial quantities of these materials will be required for construction of the development, the availability and sustainability of such resources at the extraction sites will be negatively affected as they are not renewable in the short term. In addition, the sites from which the materials will

be extracted may be significantly affected in several ways including landscape changes, displacement of animals and vegetation, poor visual quality and opening of depressions on the surface leading to several human and animal health impacts. *This impact is considered to be direct, negative, long term and of high significance*

6.4 Demobilization Phase

6.4.1 Positive Impacts

6.4.1.1 Restored Clean Site

It is anticipated that soon after completion of construction works for the proposed project, the Contractor will be caused to remove all unwanted and left over materials from the site. Similarly, all loose soil found within excavated areas either within or along the project site will be backfilled and properly compacted to allow uninterrupted use of land by the general public. *This impact is direct, positive, long term and of medium significance.*

6.4.2 Negative Impacts

6.4.2.1 Loss of Employment and Economic Activities at the End of the Project

The local people who will be benefiting from the project during construction phase through selling of their commodities and services to the construction workers will lose the created potential market during previous phase. This situation will result into loss of household income to Rusumo Villagers.

Laborers who will be employed during the construction phase will lose job after decommissioning of the project phase. Some labours may change job and be employed to work on industries that will emerge and some may leave the place for other jobs in other areas. In most cases most laborers employed during construction phase are semi-skilled laborers that move to seek for similar jobs in other areas. *This impact is rated as moderately significant with wide spread impact occurring over short period of time.*

6.4.2.2 Deterioration of Ambient air Quality

Demobilization; mainly collection, and transport of wastes will generate dust. The dust generated will affect workers at the site as well as residents as the trucks move across settlements. *The impact is gauged to be direct, moderate, reversible, and short term.*

6.5 Potential Impacts during Operational Phase

The operation of the proposed project will potentially be related to changes in the biophysical and socio-economic environment within and around the project area.

6.5.1 Positive Impacts during Operation Phase

6.5.1.1 Reduced Traffic Accidents

Improvement of the road will involve widening of the existing road as well as change in the road geometry. Increased road width and change of geometry, including installation of speed restraining humps especially at accident black spots will significantly improve the safety of the road, the result of which will be reduction in accident rates.

In addition, reduced generation of dust will improved visibility and so reduce driving hazards. The result of which will be reduced traffic accidents involving motorists as well as pedestrians. *The impact will be direct, major, and long term, and irreversible.*

6.5.1.2 Reduced Travel Time and Comfort to patients, workers, visitors and pedestrians

Upgrading of the road to gravel standard will significantly reduce travel time, since trucks/cars will be able to travel at higher speeds throughout the year. During the rainy season the existing road forms mud with slippery surface which may pose detrimental impacts such as accidents and traffic jam. However; the improved Rusumo Health Centre access road have significant impact in reducing the travel time , accidents and other unnecessary inconveniences to patients, staffs and visitors whilst the served travel time could be used to other productive ventures. *The impact will be direct, major, positive, and long term since it will be felt throughout the operation phase of the project.*

6.5.1.3 Improved road conditions

Increased household income is expected due to improved road conditions and improved traffic. It is thus expected that there will be a positive impact on businesses and trading activities adjacent to the road, thereby increasing the income of households along the road. The impact will be indirect, moderate and long-term.

Repair and maintenance will focus on activities that ensure the long-term serviceability of the road. Repair and maintenance activities will pertain to the road pavement and its embankments, hydraulic and drainage structures and road furniture and where necessary, re-surfacing. All repair and maintenance works will virtually have positive impacts that will enhance the intended functions of the road and lengthening its life time, especially when it is considered that the number and scope of routine maintenance of the road will be greatly reduced

6.5.1.4 Reliable Medical/clinical services throughout the year

Rusumo Village residents and the nearby villages will be relieved to the access of medical service at Rusumo Health Centre. The impact due to improved access road will be enhanced by ensuring that repair and maintenance of the road is done timely and properly.

6.5.1.5 Improved connectivity between Mshikamano Village and Rusumo Strategic Boarder Market

LADP Phase II intends to establish Rusumo Strategic Boarder Market which will create economic opportunities to local dwellers. Small holder farmers will be able to transport their agricultural products to the market with less cost due to presence of improved road. The impact due to improved access road will be enhanced by ensuring that repair and maintenance of the road is done timely and properly.

6.5.1.6 Enhanced Income, Employment Opportunities and Local Business

The existence of a proposed project with its facilities is likely to attract other service providers in the area, provide considerable employment opportunities and spur local business. This will in turn boost income of the local people consequently improving the welfare of the local community. *This impact is a direct, positive, long term and of high significance.*

6.5.2 Potential Negative Impacts

The proposed development will cause significant disturbances within the area, which shall be kept at controllable levels.

6.5.2.1 Deterioration of Ambient air Quality due to Emission from Vehicle

Motor vehicles are significant sources of pollution that can damage the environment and pose public health issues. Carbon monoxide, nitrogen oxides, and hydrocarbons are released when fuel is burned in an internal combustion engine and when air/fuel residuals are emitted through the vehicle exhaust pipe. Gasoline vapours also escape into the atmosphere during refueling and when fuel vaporizes from engines and fuel systems caused by vehicle operation or hot weather.

The pollutants in vehicle emissions are known to damage lung tissue, and can lead to and aggravate respiratory diseases, such as asthma. Motor vehicle pollution also contributes to the formation of acid rain and adds to the greenhouse gases that cause climate change.

Pollutants emitted directly from vehicles are not the only cause for concern. On warm, sunny days, hydrocarbons react with oxides of nitrogen to create a secondary pollutant, ozone. In many urban areas, motor vehicles are the single largest contributor to ground-level ozone which is a common component of smog. Ozone causes coughing; wheezing and shortness of breath,

and can bring on permanent lung damage, making it a cause of crucial public health problems. The impact will be direct, moderate, long term, and reversible.

6.5.2.2 Increased Traffic Accidents

At present road traffic accidents are minimal because of the poor road conditions even reckless drivers are forced to drive slowly. However; when Rusumo Health Centre will commence its operations is likely to increase traffic volume and travel speeds. This could in turn lead to an increase in the number of accidents especially at the T-Intersection (Junction) and at the entrance point to Rusumo HC. *The impacts will be direct, moderate, short term, and irreversible. The impact will be residual because accident cannot be prevented fully.*

6.5.2.3 Noise pollution and vibration

During Operation, sound emissions are not expected to differ greatly from that associated with the proposed project. Properties that are situated close to the road may be affected. Therefore, the potential for sound emissions from the Project to adversely affect nearby residences or the general public is expected to be very low, and likely largely confined to the Project site.

The principal sources of noise at the proposed project will be traffic movement. It is, therefore, concluded that the existing noise level, beyond the premises, will remain practically unaffected and would be within commercial-residential area noise level standards. Mitigation measures will be required to reduce the impact for those who are potential for a prolonged exposure above allowable limits and for protection of other people working around the project area. *The impact is then considered to be negative of short-term duration and low significance.*

6.5.2.4 Increased Pressure on Natural Resources due to population increase

The improved access road together with medical services at Rusumo Health Centre is likely to cause population increase “Pull Factor” at Nyakahanga Hamlet and Rusumo Village in general. The increased population in turn will lead into pressure on natural resources as well as to social amenities. *The impact is then considered to be negative of long-term duration and medium significance.*

6.6 Potential Impacts during Decommissioning Phase

Decommissioning forms the end part of the project life cycle. The proposed project is not expected to end at near future due to its nature and inelasticity. However; if decommissioning becomes inevitable due to any causative factors such as if the upgrade road need more expansion and improvement then the Closure Plan must be abided.

Decommissioning may involve excavation and other activities that will lead to temporary increase in noise and vibration as well as air pollution due to dust emissions. The deconstruction of public utilities alongside the road will also result in the creation of both solid wastes that needs to be handled according to waste management regulations.

The earth moving works during topsoil replacement will lead to significant deterioration of the acoustic environment within the area and the surrounding areas. This will be as a result of the noise and vibration that will be experienced from machines and workforce being utilized. Dust will also be emitted affecting the surrounding environment. The decommissioning works will involve occupational health and safety risks similar to those of the construction phase.

6.7 Consideration of Project Alternatives

The ESIA study requires identification and analysis of project alternative, which includes consideration of different options in implementing the project. Identifying project alternatives provides the chance to compare different options, the advantages and disadvantages of implementing a specific option. Conducting environmental assessment for each project alternative helps to weigh out the best alternative that meets the project objective. In the analysis of these options, it is also important to consider the no project alternative, which will help to assess what will happen in the absence of the proposed project. The analysis of project alternatives in this study has considered several options as discussed in the following sections.

6.7.1 No Project Alternative (Zero option)

The No Project option in respect to the proposed project implies discontinuation of the project proposal hence the status quo is maintained. The result is the site being retained in its existing form. This option is the most suitable alternative from an extreme environmental perspective as it ensures non-interference with the existing conditions. This option will however have the greatest implications on the socio-economic environment of the area and surrounding communities. This will mean the existing earth road will not be upgraded and Rusumo Health Centre will remain underutilized for the specific purpose it is supposed to serve. The No Project Option is the least preferred from the socio-economic and partly environmental perspective due to the following factors:

- Poor access to Rusumo Health Centre will remain unchanged
- Accidents and traffic jam will be a serious threat to road users
- Rusumo Health Centre will be underutilized especially during rainy season whereby the existing earth road forms mud with slippery surface.
- Mortality rate will not be minimized due to unreliable medical/clinical services nearby
- Mshikamano Villagers will not benefit from transporting their crops to the market.
- No employment opportunities will be created for local citizens who will work in the project construction phase

From the analysis above, it becomes apparent that the No Project alternative is not attractive to the local communities in Nyakashanga hamlet, Rusumo village, Ngara District and Kagera region at large.

6.6.1 Alternative on technology and design

The proposed project shall deploy the sophisticated technologies during the upgrading of the road to gravel standard so as to minimize Oil spills, noise and air pollution in the project surroundings. Machines to be used during project phases shall be up to date and shall run through use of modern technology.

6.6.2 Analysis of Alternative Construction Materials and Technology

The proposed project will be constructed using modern, locally and internationally accepted materials to achieve public health, safety, security and environmental aesthetic requirements. The Rusumo Health Centre Upgrading works will be made using locally sourced materials that meet the Tanzania Bureau of Standards requirements as well as Engineering perspective. Equipment that saves energy and water will be given first priority without compromising on cost or availability factors.

Upgrading/construction works will utilize materials that will be locally supplied especially from the approved local suppliers/borrow sites so as to promote market of the local vendors or suppliers. This shall also reduce environmental pollution that would have been triggered by vehicles transporting materials from outside the region. Furthermore, resource efficiency concept shall be emphasized so as to use all construction materials in a useful manner

CHAPTER SEVEN: IMPACTS MITIGATION AND ENHANCEMENT MEASURES

7.1 Introduction

This chapter presents mitigation measures and/or compensatory actions and enhancement measures for the identified impacts. Many of the potential impacts identified in the preceding chapter can be eliminated or reduced/enhanced through the implementation of appropriate mitigation/enhancement measures either at the planning stage or when applied to specific project tasks and activities.

The proponent will ensure that any significant impacts identified is managed (mitigated/enhanced) within its capability in collaboration with other relevant stakeholders. A contractor on behalf of the proponent will:

- Plan and design the project with environmental consideration to reduce the impacts to the natural and social environment;
- Raise awareness of employees and communities surrounding the project site regarding environmental protection, social interaction with communities, security, safety and health issues (e.g. infectious diseases such as HIV/AIDS, COVID-19, STIs, accidents and theft);
- Ensure daily environmental and safety management best practices to minimize and prevent accidents, spill of hazardous material, soil erosion and improve waste management;
- Put in place a mechanism for waste collection and safe disposal of all kinds of wastes generated from the working site;
- Make a provision of monitoring the implementation of mitigation measures during construction and operation phases; and
- Continually improve the mitigation measures following monitoring and evaluation exercise.

7.2 Mitigation Measures during Mobilization & Construction Phase

7.2.1 Enhancement Measures for Positive Impacts

7.2.2 Employment Opportunities

- The Proponent shall be encouraged to employ local, unemployed yet willing to work hard, manpower to the extent viable subject to a maximum of 50% unskilled labor. This will ensure that local people are more benefited out of the project.
- In search for skilled labors, the Contractor must first look in the village/District before going on to other villages/Districts.
- Employment should be on equal opportunities for both gender
- Proponent shall not cause children under the age eighteen (18) to be employed or be engaged in any project activities.

7.2.1.3 Increased Income to Rusumo Villagers

- The Contractor must ensure that the laborers are paid as per Tanzania's Minimum wages
- Ensure all payments are timely completed
- The contractor should purchase the required and available materials from local vendors

7.2.1.4 Increased Income Generation Activities to Local People

- Food vendors shall have the market opportunity for the workers upgrading the road
- Encourage women to participate in the food vending business

7.2.1.5 Increased Human Capital

- On the job-training to villagers when working with skilled projects' personnel

7.3 Mitigation Measures for Negative Impacts

7.3.1 Vegetation clearing

- The problem could be minimized by confining the construction/upgrading activities within the existing project site
- The Contractor shall avoid unnecessary clearing of vegetation beyond the proposed project construction area
- The contractor should use the existing designated areas at Rusumo Health Centre for stockpiling of construction, and preparation of all construction materials to avoid unnecessary vegetation clearing beyond the project site
- All cleared and compacted areas should be scarified and planted with natural vegetation to stabilize the soil
- The Contractor shall always ensure that the excavated areas are reinstated whenever possible

7.3.2 Generation of Noise and Vibrations

- The Contractor shall avoid use of construction equipment that generates loud noise due to poorly tuned engines or damaged exhaust pipes. The construction machinery must be properly tuned and exhaust pipes fitted with mufflers.
- Adhere to Section 62 of Occupational Health and safety Act (2003) and Section 126 of Factories (Building Operations and Works of Engineering Construction) Rules, 1985, by ensuring that workers exposed to noise level above the limit of 75dB are equipped with ear plugs to protect them against excessive noise level
- The Contractor shall avoid prolonging construction works that produce high pitch noise within the residential areas during the dusk hours (18:00 – 06:00 hours)

7.3.3 Air Pollutions (Fugitive Dust and Exhaust Emissions)

- The Contractor shall regularly apply water sprinkling on created dusty areas during undertaking of construction works to minimize dust emission.

- The Contractor shall provide dust protection masks to construction workers.
- The Contractor shall ensure that appropriate construction machines that do not emit fumes and smokes are used for construction works
- The Contractor shall avoid as much as possible stockpiling of dusty construction materials or loose soils by ensuring that all materials brought to site are immediately utilized for construction works.
- The Contractor shall avoid use of old construction equipment/machinery which emit black smoke. All construction machinery/equipment and vehicles must be inspected during contract award to ensure that they do not emit black smoke.
- The Contractor shall operate and maintain vehicles and equipment in good working condition.
- The Contractor shall cover all trucks hauling dusty construction materials with tarpaulins during transportation.
- Regular monitoring of air pollutants to strengthen the control measures in case the concentration level exceeds the prescribed limits
- Minimum Excavator bucket height will be maintained during loading and unloading activity of crushed or quarry rocks

7.3.4 Generation of hazardous waste

- Separate all hazardous wastes from domestic waste during collection and transportation
- All vehicle and equipment mechanical repair activities shall be conducted on proper designated space within the Construction site
- All generated hazardous during construction of structures shall be temporarily stored at designated area at the site and then to be removed from site by a registered hazardous waste dealer. The process shall be complied with The Environmental Management (Hazardous Waste Control and Management) Regulations, 2021, Part V (15). This section described that the Minister may issue permits for in-country management of hazardous waste for the activities such as collection of hazardous waste, storage of hazardous waste, transportation of hazardous waste, owning or operating a plant, facility or site for recycling or recovery or re-use or treatment or disposal of hazardous waste, etc.

7.3.5 Generation of Solid Wastes

- Waste management on site shall be strictly controlled and monitored. Only approved waste disposal methods shall be allowed as prescribed in The Environmental Management Act, 2004, Part IX (a). This section gives mandate the local government authority to choose the best method of solid waste disposal for their areas of jurisdiction in consideration to climatic conditions, economic ability, interest of the community, environmental, hygienic and social benefits; and availability of tipping sites
- Ensure that site personnel are instructed in the proper disposal of all waste.
- Ensure that all facilities are maintained in a neat and tidy condition and the site shall be kept free of litter. Measures shall be taken to reduce the potential for litter and negligent behavior with regard to the disposal of all refuse.
- At all places of work provide litterbins, containers and refuse collection facilities for later disposal.

- Solid waste may be temporarily stored on site in a designated area prior to collection and disposal. Waste storage facility shall be covered, tip-proof, weatherproof and scavenger proof. The waste storage area shall be fenced off to prevent wind-blown litter.
- No burning, on-site burying or dumping of waste shall occur.
- All solid waste shall be disposed of offsite at an approved landfill site.
- The Contractor shall provide metal refuse bins or equivalent plastic refuse bins, all with lids, for domestic waste. Refuse shall be collected and removed from all facilities at least twice per week.
- The non-reusable and non-recyclable wastes shall be collected and transported to the dumpsite for final disposal while the reusable and recyclable solid waste shall be collected by authorized dealer

7.3.6 Degradation / Depletion of Resources at Point of Source

- Depletion of resource cannot be avoided for developing this project. However, efficient extraction method will be used to minimize losses. All materials extraction sites shall be strictly supervised by Ngara district Council under environmental department in collaboration with other potential stakeholders

7.3.7 Population Influx (Labor Influx)

- Establish transparent recruitment procedures to avoid site followers in form of job-seekers
- Establish a recruitment policy that gives priority to local residents for less specialized services
- Recruitment procedures to be shared with the local authorities for further dissemination
- Opportunities for sub-suppliers and sub-contractors should be awarded to local firms which in turn employ local labour
- Conduct public health campaigns addressing issues of behavioral change, water and sanitation, malaria, HIV/AIDS, etc.

7.3.8 Increased Risk of GBV, SEA and Harassment

- Regular training for workers on required lawful conducts in the project communities.
- Creation of partnership with local offices of the Ministry of Women Affairs and Youth Development, NGOs and community women groups to report workers' misconduct and complaints/reports on gender-based violence
- Gender based equal opportunities in all project phases
- Create opportunities for employment of women in both management and casual placements
- Put in place the prepared Grievance Redress Mechanism for GBV and SEA actions occurred in working area or around the local community
- All gender based employment must consider labor act (18+ Years and above)

7.3.9 Soil and Water Quality Contamination

- In accordance with Clause 1706(a) and (b) of Standard Specifications the Contractor shall comply with all applicable Tanzanian laws, orders, regulations (Sections 34 and 39

of Water Resources Management Act and sections 6, 106, 109, and 110 of Environment Management Act), and water quality standards concerning the control and abatement of water pollution. Proper handling of generated solid and liquid waste.

- In accordance with Clause 1706(b) of Standard specifications, if wells or other water sources, nevertheless, are polluted, it is the responsibility of the Contractor to compensate for this and provide the consumers with clean drinking water transported through pipes from an unpolluted source if required in the opinion of the Engineer.
- To divert run-off using sandbags, soil or other materials, to a grassed area, pit or bare ground to soak in to mitigate the impact due to possible leakage of concrete wastewater
- Trucks and other construction equipment's should be serviced in a designated area with concrete surface
- All generated hazardous waste during construction of structures shall be temporarily stored at designated area comprised with primary and secondary containments prior to final disposal by the Authorized Contracted contractor
- No waste shall be disposed into waterways or streams
- Appropriate sites for temporary stockpiling of excavated/spoil materials and waste will be established.

7.3.10 Risk of Construction Materials vandalism

- Installation of lights in strategic areas within the project site to illuminate the whole compound and nearby areas.
- Regular Community awareness campaign to create sense of ownership
- Establishment of temporary materials' storage facilities
- Employment of sufficient number of security guards

7.3.11 Disruption of traffic flow

- Only qualified drivers with appropriate driving license shall be engaged
- Induction course shall be done to all drivers prior starting driving
- Drivers shall be sensitized on maintaining speed limits for main road and on access roads/internal driveways.
- Promoting safe drive with specified hours for long drive to avoid fatigue
- Provision of road and safety signs shall be done on site and surrounding areas that are to be followed by drivers and public in collaboration with local authority

7.3.12 Generation of Human Sanitary Wastes

- Contractor may use the existing toilets at Rusumo Health Centre established by the previous contractor during the entire construction period.
- Pit latrines and/or septic tanks/soak-away pits at the site for liquid waste collection; regular emptying.
- Emptying will be done by the licensed contractor and will be disposed in an approved sewage system as prescribed in The Environmental Management Act, 2004, Part IX (c). This section gives mandate to local government authority to issue guidelines on how liquid waste from domestic premises should be disposed off. The local government authorities shall ensure that sewage is appropriately treated before it is finally

discharged into water bodies or open land, and that it does not increase the risk of infections or ecological disturbance and environmental degradation

7.5.1.1 Possible Spread of HIV/AIDS, COVID-19 and Other Infectious Diseases

- Workers will be sensitized on the issue of HIV/AIDS and STDs and on the usage condoms etc. .
- HIV/AIDS testing will be conducted and counseling services will be done
- Providing protection gears where needed such as condoms
- Workers and the nearby community will be sanitized on the issues of COVID-19 and protection measures
- The contractor shall provide employment priority to local unskilled laborers to minimize number of new comers
- The Contractor shall put in place the COVID-19 contingency plan developed by Ngara District Council

7.3.13 Creation of occupational health and safety risks to workers

To protect skin from cement and cement mixtures, workers working in severe cement/concrete environment shall be equipped with:

- Alkali-resistant gloves
- Coveralls with long sleeves and full-length trousers (pull sleeves down over gloves and tuck pants inside boots)
- Waterproof boots high enough to prevent concrete from flowing in when workers must stand in fresh concrete
- Suitable dust/respiratory protective gear (dust masks) when cement dust can't be avoided
- When kneeling on fresh concrete, use a dry board or waterproof kneepads to protect knees from water that can soak through fabric

Nevertheless; the further mitigations measures must be considered by the Contractor are as follow;-

- The Contractor shall be caused to prepare and implement Health and Safety Management Plan (HSMP)
- The Contractor shall be caused to prepare and implement Emergency Preparedness and Response Plan (EPRP)
- The Contractor shall be caused to prepare and implement Traffic Management Plan (TMP)
- All the workers on site shall be provided with on-site with training in site specific safety procedures and in hazards they may encounter at the site
- The Contractor shall be caused to conduct daily or weekly tool box meetings with specific occupational health and/or safety topic
- The Contractor shall be caused to conduct regular medical checks for the construction workforce

- The Contractor shall install safety signal devices and warning signs for the entirely project site
- The Contractor shall enforce mandatory use of Personal Protective Equipment (PPE) to all workforces.
- The Contractor shall strictly follow occupational health and safety procedures as required in Occupational Health and Safety Act No. 5 of 2003

7.3.14 Creation of safety risks to local people

- The contractor shall regularly conduct community communication and engagement meetings with villagers so as to raise safety awareness to the people
- The Contractor shall ensure that excavated trenches are speedily backfilled and there shall be warning tapes placed around the construction site
- The Contractor shall entirely barricade with visible nets or tapes excavated trenches which found in highly populated area
- Proper management of all hazardous and non-hazardous waste not to be disposed haphazardly

7.3.15 Child labour, forced labour and human trafficking

- Employment must consider labor act (18+ Years and above)
- Spread awareness among parents and surrounding communities
- Strict laws in place to prevent child, forced labors and human trafficking
- Formulation of proper Grievance Redress Mechanism for GBV and SEA actions occurred in working area or around the local community
- The Consultant Engineer with Proponent shall strictly make sure the Contractor adheres to Employment and Labour Relations Act No. 6 (2004)

7.3.16 Disruption of Community Access to their Dwellings and Business Areas

To abate the impact due to disruption of community access:

- The contractor in collaboration with Proponent shall provide alternative/temporary road to enable pedestrians, motorcycles gain access to their business and residential premises at areas that shall be approved by the Engineer

7.3.17 Teenage Pregnancies

- Strictly enforcing labors to avoid sexual with teenagers
- Developing a community based approach which utilizes school sex education integrated with parent, church, and community groups
- Increasing teenage knowledge of contraception
- Providing counseling and medical and psychological health and education
- There should be close collaboration between parents, teachers, and village governments to reduce truancy of school children.

- Formulation of proper Grievance Redress Mechanism for GBV and SEA actions occurred in working area or around the local community
- The Contractor shall not employ people under the age of 18 years.

7.3.18 Risks of Leakage of Hazardous Materials

To avoid possible side effects, the oil/fuel will be brought to the workplace/project site in small quantities that is sufficient for daily use. However; the Contractor shall abide with the following to prevent/minimize the anticipated detrimental impacts;-

- Mobile fuel tanker shall be used to fill all operating machines/equipment onsite. No fuel storage shall be practiced onsite.
- Lubricating oils, paints, solvents, grease shall be packed in barrel and tins and will be transported by fire extinguisher equipped truck and stored in a well designated area complied with Material Safety Data Sheet (MSDS)
- Liquids such as fuel and lubricants materials shall be properly handled to avoid leakages to the ground/soil.
- Lubricating oils stored onsite shall be contained in barrels, the barrels will be stored in a secondary containment area to contain any spillage while Diesel Powered generator shall be kept on secondary containment to contain any oil/fuel leak.
- In the event of spill or leak of hydraulic fluid, oil and other petroleum products, they will immediately be cleaned up to prevent discharge of these fluids into the ground or storm water runoff. Absorbent materials such as polypropylene boom and pads saw dust will be kept on hand for clean-up of spilled liquids on pavement, water, and soil. In the event that there is oil spill on the soil, the soil shall be excavated and treated by incineration or applying appropriate land reclamation methods
- Used oil shall be kept in a primary and secondary containments prior to be collected by authorized dealer

7.3.19 Fire and Explosion

- The Contractors shall maintain appropriate fire extinguishers within easy access at all work areas
- The Contractors shall recruits Safety Officers who will be responsible for training of all workers how to use fire extinguishers and ensuring safety measures are in place at all work sites
- The Contractors shall prohibit smoking in hot work areas (welding, cutting, grinding and fuel storage area)

7.3.20 Soil Erosion and Modification of Landscape

- Control measures for runoff, such as the use of catch water drain, cut off drains, berms or drainage swales shall be put in place to redirect surface runoff away from the constructed Rusumo Health Centre access road.
- Confining the construction activities within the proposed project site could minimize the problem.

- All cleared and compacted areas should be scarified and planted with natural vegetation to stabilize the soil especially to the areas designated for preparation of construction materials
- The Contractor shall always ensure that the excavated areas are reinstated whenever possible

7.4 Demobilization phase

7.4.1 Loss of Employment and Economic Activities at the End of the Project

- The impact due to loss of employment at the closure of the project will be a residual impact as cannot be mitigated at the project level. To manage the impact, while recruiting workers the Contractors shall inform the expected duration of their employment.
- Adapt a project – completion policy: identifying key issues to be considered.
- Assist with re-employment and job seeking of the involved workforce.
- Compensate and suitably recommend the workers to help in seeking opportunities elsewhere.
- Offer advice and counseling on issues such as financial matters.
- In addition, Employment and Labour Relations Act No. 6 (2004) of United Republic of Tanzania shall be adhered to by the Contractor during termination of redundant workers

7.4.2 Generation of Solid Wastes

The impact shall be mitigated as follows:

- Prior to demobilization, the Contractor shall submit to the Engineer for review and approval a closure plan for the site (including fuel storage facility, workshop, pre-cast yard if any). The plan shall outline steps that the Contractors shall adopt to reinstate the facilities, including disposal of old structures and all facilities that were used in the site which would no longer be needed and are likely to be of environmental and health hazard.

7.4.3 Restored clean site

- Collection and transportation of unwanted materials to the disposal site
- Allow community to take valuable building materials for example timber for reuse in construction of wastes

7.4.4 Deterioration of Ambient air Quality

Though deterioration of ambient air quality is less anticipated in this phase, but the contractor is advised to take precautions as follow;-

- The impact due to pollution of ambient air by dust shall be mitigated by sprinkling water on the access roads to dump sites as well as covering transporting trucks to minimize escape of wastes from the trucks wastes. The workers at the demolition site shall be provided and ensure that they use dust masks to prevent them from inhaling polluted air.

7.5 Mitigation Measures during Operation and Maintenance Phase

7.5.1 Positive Impacts

7.5.1.2 Reduced Traffic Accidents

- The impact due to improved safety shall be enhanced by ensuring that repair and maintenance of the road, including its furniture such as road safety signs are done properly and on timely

7.5.1.3 Reliable Medical/clinical services throughout the year

- The impact due to improved access road will be enhanced by ensuring that repair and maintenance of the road is done timely and properly.

7.5.1.4 Improved connectivity between Mshikamano Village and Rusumo Strategic Boarder Market

- The impact due to improved access road will be enhanced by ensuring that repair and maintenance of the road is done timely and properly.

7.5.1.5 Improved road conditions

- Repair and maintenance will focus on activities that ensure the long-term serviceability of the road. The activities will pertain to the road drainage structures like culvert and where necessary, re-surfacing with gravels. All repair and maintenance works will virtually have positive impacts that will enhance the intended functions of the road and lengthening its life time, especially when it is considered that the number and scope of routine maintenance of the road will be greatly reduced

7.5.1.6 Reduced Travel Time and Comfort to patients, workers, visitors and pedestrians

- The impact due to reduction in travel and cost shall also be enhanced by ensuring that repair and maintenance of the road is done timely and properly.

7.5.2 Negative Impacts

7.5.2.1 Increased Traffic Accidents

- Warning signs followed by speed restraining humps shall be constructed on both approaches to T-Intersection(Junction) and closely to HC entrance
- In addition TARURA shall launch awareness campaign in the use and road safety
- Speed limits signs shall be installed along the road

7.5.2.2 Increased Noise and Vibrations Pollution

- The impact due to noise and vibrations during the operation phase of the project cannot be mitigated at the project level and therefore a residual impact.

7.5.2.3 Deterioration of Ambient air Quality due to Emission from Vehicle

The impact due to deterioration of ambient air quality due to increase emissions from Cars/Motorcycles/trucks cannot be mitigated at the project level. This requires effort by the

government to encourage and enforce measures to reduce vehicles pollution. This can be achieved:

- Proper maintenance of trucks/cars: Proper maintenance of trucks/cars emission control systems not only limits harmful emissions, but also can improve fuel efficiency and trucks/cars performance extending the lifespan. Care in storing and handling gasoline and other solvents also reduces evaporative losses to the atmosphere.
- Use of low emission or fuel efficient trucks/cars/motorcycles: This includes the use of low carbon trucks/cars, use zero carbon cars/trucks (Battery-electric trucks, plug-in hybrid-electric trucks), and use of natural gas trucks/cars. These technologies can be used in passenger cars, trucks and transit buses.
- Introduction of carbon tax: The government should consider introducing carbon tax for diesel trucks/cars, since diesel trucks emit more carbon than gasoline trucks

7.5.2.4 Increased Pressure on Natural Resources due to population increase

- The impact cannot be mitigated at road project level. However, although the impact cannot be easily mitigated at project level, respective local authorities can initiate environmental management measures. This may include proper land management, promotion of tree planting campaigns, proper enforcement of economic instruments charging fees or tax on forest products like charcoal, fuel wood, timber, etc.

7.5.2.5 Environmental pollution from Oil Leaks and Spills

- Trucks shall not be allowed to be serviced along the road
- If accidental leakages occur authorized hazardous waste dealer shall be notified as soon as possible

7.6 Mitigation Measures during Decommissioning Phase

At decommissioning, the Developer (Ngara District council) will either improve the project or close or convert it to another use or disassemble all infrastructures in an environmentally sound manner to restore the environment into its original appearance. The adverse impacts for decommissioning activities are the same as indicated in the above sections; 7.3.2, 7.3.3, 7.3.5, 7.3.11, 7.3.13 and 7.3.14 (Construction Phase)

7.7 Impacts Assessment and Evaluation

The identified impacts above have been subjected to assessment by using matrix method, whereby two types of matrices were used. These include the Impact Categorization Matrix (ICM) and Impact Evaluation Matrix (IEM). The ICM has been used to categorize impacts according to environmental components (biophysical and socio-economic) that are likely to be affected, and IEM was used for determination of the significance of impacts. The significance of impacts was based on the following factors:

- Type of impact – whether positive or negative
- Its effects – whether direct, indirect or cumulative

- Intensity – whether low, medium or high
- Magnitude – whether site specific, local or regional
- Duration – whether short-term, long-term or permanent
- Reversibility- reversible or irreversible
- Significance- whether negligible, low, moderate or high

As demonstrated in **Table 18** the proposed project construction project is expected to have both negative and positive impacts of minor, moderate and major significance during mobilization, construction and operation phases. The results of the assessment indicate that most of the impacts are negative; indirect; have moderate intensity; site specific; short term; reversible and with low to medium significance.

Table 18; Summary of Impact Assessment

Impacts	Category	Mobilization Phase	Construction Phase	Demobilization Phase	Operation Phase	Decommissioning phase
Creation of job opportunities	S	+2	+2	0	0	0
Increased Income to Rusumo Villagers	S	+2	+3	0	+2	0
Benefit to Local Producers and Suppliers of Construction Materials	S	0	+3	0	0	0
Improved connectivity between Mshikamano Village and Rusumo Strategic Boarder Market	S	0	0	0	+2	0
Increased Human Capital	S	0	+2	0	0	0
Reduced Traffic Accidents	S	0	0	0	+2	0
Population Influx (Labor Influx)	S	0	-2	0	0	0
Vegetation clearance	B	0	-1	0	0	0
Air Pollutions (Fugitive Dust and Exhaust Emissions)	B	0	-3	0	0	-3
Increased Risk of GBV, SEA and Harassment	S	0	-2	0	0	0
Solid waste generation	B	0	-2	-1	0	-2
Generation of hazardous waste	B	0	-2	0	0	-2
Risks of Leakage of Hazardous Materials	B	0	-2	0		-2
Reduced Travel Time and Comfort to patients, workers, visitors and pedestrians	S	0	0	0	+2	0
Improved road conditions	S	0	0	0	+2	0

Impacts	Category	Mobilization Phase	Construction Phase	Demobilization Phase	Operation Phase	Decommissioning phase
Reliable Medical/clinical services throughout the year	S	0	0	0	+3	0
Generation of Human Sanitary Wastes	B	0	-2	0	0	0
Noise Nuisance and vibration	B	0	-2	0	0	-2
Soil Erosion and Modification of Landscape	B	0	-1	0	0	0
Soil and Water Quality Contamination	B	0	-2	0	0	0
Degradation / Depletion of Resources at Point of Source	B	0	-2	0	0	0
Environmental pollution from Leaks and Spills	B	0	-2	0	0	0
Risks of Fire and Explosions	B	0	-1	0	0	0
Creation of occupational health and safety risks to workers	S	0	-2	0	0	-2
Creation of Safety Risk to local people	S	0	-2	0	0	-2
Disruption of traffic flow	S	0	-3	0	0	0
Possible Spread of HIV/AIDS, COVID-19 and Other Infectious Diseases	S	0	-3	0	0	0
Child labour, forced labour and human trafficking	S	0	-2	0	0	0
Disruption of Community Access to their Dwellings and Business Areas	S	0	-2	0	0	0
Teenage Pregnancies	S	0	-1	0	0	0
Restored Clean Site	B	0	0	+2	0	+2
Loss of Employment and Economic Activities at the End of the Project	S	0	0	-2	0	0
Risk of infrastructure vandalism	S	0	-2	0	0	0

KEY:

S	Socio-economic impact	B	Bio-geophysical Impact
0	Negligible	+2	Moderate positive impacts
-1	Minor negative impacts	+3	Major positive impacts

-2	Moderate negative impacts	-3	Major negative impacts
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Source: Consultant's Analysis (November/ 2021)

CHAPTER EIGHT: ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

8.1 INTRODUCTION

The EIA guidelines define an Environmental and Social Management Plan (ESMP) as a report or document prepared by the proponent after the conduction of ESIA study to present the case for the assessment of their proposal as part of the environmental and social impact assessment process. The ESMP as presented in this chapter contains recommendations and cost estimates for mitigation measures designed to address the negative impacts of the proposed project. The ESMP provides a general outlay of the environmental and social aspects, potential impacts and mitigation measures, performance indicators, monitoring means and frequency, responsibility for monitoring and associated cost estimates.

The responsibility for the incorporation of mitigation measures for the project implementation lies with the Supervising Engineer, who must ensure that the contractor implements all specified mitigation measures. In order for the contractor to carry out environmental management activities during construction, the contractor should draw up an environmental management plan of his/her own to show how s/he will address the mitigation measures during the construction period. The Supervising Engineer is responsible for assessing the contractor's environmental management plan.

The ESMP has been developed with project knowledge and information available to date. As project commencement and scheduling plans are developed and changed, components of the ESMP might require amendments. This is therefore a working document, which can be updated whenever new information is received or site conditions change.

The objectives of the ESMP are to:

- (i) To bring the project into compliance with applicable national environmental and social legal requirements social policies and procedures; and
- (ii) To outline the mitigation/enhancing, monitoring, consultative and institutional measures required to prevent, minimize, mitigate or compensate for adverse environmental and social impacts, or to enhance the project beneficial impacts.

The objectives, activities, mitigation measures and allocation of costs and responsibilities pertaining to prevention, minimization and monitoring of significant negative impacts and maximization of positive impacts associated with the project equipment installation and operational phases are outlined in the proposed ESMP in the following section. It outlines corresponding management strategies proposed in chapter 8 that will be employed to mitigate potential negative environmental impacts and assign responsibility for the implementation of mitigation measures.

8.2 Implementation of the Management Plan

The environmental and social mitigation measures of the proposed project shall be handed over to the contractor during construction period. The Contractor shall take stock of the contents of

the Environmental and Social Management Plan of the Project. The contractor shall implement the ESMP during the construction period under close supervision of Proponent. During the Operation Phase, Proponent shall implement the ESMP

8.2.1 Environmental and Social Cost

The total cost for implementation of ESMP is estimated at Tshs. 11,300,000.00 in which those of construction phase are included in the works contract of this project. The environmental and social cost estimates was developed based on the measured items in the contractual bill of quantities and experience of the Consultant on projects of similar nature

Table 19: ESMP's Institutional Responsibilities

Unit / Personnel	Responsibilities
National Environment Management Council (NEMC)	<ul style="list-style-type: none"> • Conduct environmental compliance monitoring and enforcement to ensure that project proponent is efficiently implement approved ESMP • Undertake screening of the project to determine level of ESIA study • Reviewing and approval of the project ESIA reports submitted by Ngara DC • Reviewing of the annual environmental and social audit reports submitted by Ngara DC;
Ngara District Council/Proponent	<ul style="list-style-type: none"> • Holds final responsibility for the environmental and social performance of the project • The Client will be represented by Consultant who will be in charge of the supervision works, and overseeing the contract from initiation stage to completion of construction activities at various proposed sites; • The Client has to procure a contractor who will be responsible for the implementation of the entire project activities; • Responsible for ensuring the site development is implemented according to the requirements as stipulated in ESMP; • Ensure that sufficient resources are available to the other role players to efficiently perform their tasks as indicated in ESMP; • Overall management of all project activities; • Receive and supervise the implementation of the recommendations of the environmental report from the Consultant; • Cooperate with Consultant to periodically supervise contractors' activities; and • Carry out annual environmental and social audits of the project and submit the subsequent reports to NEMC for review and approval. • Ensure availability of key staffs for social, environmental, health and safety monitoring during project phases
NELSAP PIU	<ul style="list-style-type: none"> • To provide support to the District where required to facilitate the implementation of LADP activities. • Ensure timely availability and reliability of funding for agreed and approved LADP activities and related interventions. • Ensure timely processing of the direct payments to contractors and consultants on behalf of the district. • Monitoring and evaluation of the progress of LADP activities implemented by the district. • Liaise closely with Ngara DC in preparing a coordinated response on environmental and social management aspects of the project; • Carrying out safeguards due diligence; and

Unit / Personnel	Responsibilities
	<ul style="list-style-type: none"> Preparation of quarterly environmental and social performance reports for the project.
World Bank	<ul style="list-style-type: none"> Financing the entire project activities Provision of technical support and guidance to Ngara DC, NELSAP PIU, Contractor and Supervising Engineer Recommending on additional measures to strengthening the ESMP/EMP implementation performance
Consultant (Supervision Engineer)	<ul style="list-style-type: none"> monitoring and supervision of the construction works including overseeing implementation of ESMP administer all construction works, progress review and monitor the works undertaken by the Contractor and implementation of ESMP to ensure compliance with contract specification and contractual requirements Cooperate with Ngara DC to periodically supervise contractors' activities. Scheduled meetings held between the contractor, Ngara DC representative and Consultant. Include, among its staff, an environmental officer who will oversee the implementation of the ESMP and report to Ngara DC and NELSAP PIU.
Contractor	<ul style="list-style-type: none"> responsible for implementation of construction works and ensure compliance with environmental requirements; Contractor shall prepare/update a Contractor's ESMP (C-ESMP), and ensure that the measures related to environmental and social safeguards are fully carried out as stipulated; Preparing/Updating the project's Environmental Health and Safety Management Plan; Conduct general training on occupational health, safety and environment to the construction workforce Reporting arising works that are detected by Environmental Officer to Consultant and Ngara DC representative for further actions. Prepare and implement covid-19 contingency plan, prepare and implement emergence preparedness plan, prepare and implement traffic management plan,

Table 20: Environmental and Social Management Plan (ESMP)

Identified Impact	Mitigation & Enhancement Measure	Responsible Institution	Timeframe	Relative Budget (TZS)	Target Level
Mobilization and Construction Phase					
Employment Opportunities	<ul style="list-style-type: none"> The Proponent shall be encouraged to employ local, unemployed yet willing to work hard, manpower to the extent viable subject to a maximum of 50% unskilled labour. This will ensure that local people are more benefited out of the project. In search for skilled labours, the Contractor must first look in the village/District before going on to other villages/Districts. Employment should be on equal opportunities for both gender Proponent shall not cause children under the age eighteen (18) to be employed or be engaged in any project activities. 	Contractor and Proponent	5 days during mobilization stage	4,000,000	100% of unskilled labours to be recruited from project village
Increased Income to Rusumo Villagers	<ul style="list-style-type: none"> The Contractor must ensure that the laborers are paid as per Tanzania's Minimum wages Ensure all payments are timely completed The contractor should purchase the required and available materials from local vendors 	Contractor and Proponent	During Construction Phase	N/A	Maximum numbers of opportunities
Increased Human Capital	<ul style="list-style-type: none"> On the job-training to villagers when working with skilled projects' personnel 	Contractor and Proponent	During Construction Phase	N/L	100% are imparted skills
Vegetation clearing	Currently; the existing Rusumo health centre access road is in use, hence vegetation covers are found only at the road reserve and alongside the road. However; the contractor must take the following measures to avoid any	Contractor and Proponent	During pre-construction and stages.	1,000,000	No widespread destruction of vegetation around the

	<p>possible detrimental impacts:-</p> <ul style="list-style-type: none"> • The problem could be minimized by confining the construction/upgrading activities within the existing project site • The Contractor shall avoid unnecessary clearing of vegetation beyond the project site construction area. • The contractor should use the existing designated areas at Rusumo Health Centre for stockpiling of construction, and preparation of all construction materials to avoid unnecessary vegetation clearing beyond the project site 				project areas
Generation of Noise and Vibrations	<ul style="list-style-type: none"> • The Contractor shall avoid use of construction equipment that generates loud noise due to poorly tuned engines or damaged exhaust pipes. The construction machinery must be properly tuned and exhaust pipes fitted with mufflers. • Adhere to Section 62 of Occupational Health and safety Act (2003) and Section 126 of Factories (Building Operations and Works of Engineering Construction) Rules, 1985, by ensuring that workers exposed to noise level above the limit of 75dB are equipped with ear plugs to protect them against excessive noise level • The Contractor shall avoid prolonging construction works that produce high pitch noise within the residential areas during the dusk hours (18:00 – 06:00 hours) 	Contractor and Proponent	During Construction Phase	0	<ul style="list-style-type: none"> -Not exceeding TZS Limit 75dB -Construction workers wearing noise protection gears: (ISO 45001)
Air Pollutions (Fugitive Dust and Exhaust Emissions)	<ul style="list-style-type: none"> • The Contractor shall regularly apply water sprinkling on created dusty areas during undertaking of construction works to minimize dust emission. • The Contractor shall provide dust 	Contractor and Proponent	During Construction Phase	500,000	<ul style="list-style-type: none"> • 0.021mg/m³ for PM₁₀ as per TZS • 0.015mg/m³

	<p>protection masks to construction workers.</p> <ul style="list-style-type: none"> • The Contractor shall ensure that appropriate construction machines that do not emit fumes and smokes are used for construction works • The Contractor shall avoid as much as possible stockpiling of dusty construction materials or loose soils by ensuring that all materials brought to site are immediate utilized for construction works. • The Contractor shall avoid use of old construction equipment/machinery which emit black smoke. All construction machinery/equipment and vehicles must be inspected during contract award to ensure that they do not emit black smoke. • The Contractor shall operate and maintain vehicles and equipment in good working condition. • The Contractor shall cover all trucks hauling dusty construction materials with tarpaulins during transportation. • Regular monitoring of air pollutants to strengthen the control measures in case the concentration level exceeds the prescribed limits • Minimum Excavator bucket height will be maintained during loading and unloading activity of crushed or quarry rocks 				<p>for PM_{2.5} as per TZS</p> <ul style="list-style-type: none"> • 0.12ppm for NO₂ as per TZS • 0.5ppm for SO₂ as per TZS • 10ppm for CO as per TZS • Construction workers wearing dust protection gears (ISO 45001)
Generation of hazardous waste	<ul style="list-style-type: none"> • Separate all hazardous wastes from domestic waste during collection and transportation • All vehicle and equipment mechanical repair activities shall be conducted on proper designated space within the Construction site • All generated hazardous during construction of structures shall be 	Contractor and Proponent	During Construction Phase	1,000,000	Zero Adverse Impact hence adequate volume waste is re-used or recycled/ TZS 1117;2009

	<p>temporarily stored at designated area at the site and then to be removed from site by a registered hazardous waste dealer. The process shall be complied with The Environmental Management (Hazardous Waste Control and Management) Regulations, 2021, Part V (15). This section described that the Minister may issue permits for in-country management of hazardous waste for the activities such as collection of hazardous waste, storage of hazardous waste, transportation of hazardous waste, owning or operating a plant, facility or site for recycling or recovery or re-use or treatment or disposal of hazardous waste, etc.</p>				
Generation of Solid Wastes	<ul style="list-style-type: none"> Waste management on site shall be strictly controlled and monitored. Only approved waste disposal methods shall be allowed as prescribed in The Environmental Management Act, 2004, Part IX (a). This section gives mandate the local government authority to choose the best method of solid waste disposal for their areas of jurisdiction in consideration to climatic conditions, economic ability, interest of the community, environmental, hygienic and social benefits; and availability of tipping sites. Ensure that site personnel are instructed in the proper disposal of all waste. Ensure that all facilities are maintained in a neat and tidy condition and the site shall be kept free of litter. Measures shall be taken to reduce the potential for litter and negligent behavior with regard to the disposal of all refuse. 	Contractor and Proponent	During Construction Phase	400,000	Adequate volume of solid waste is re-used or recycled/ TZS 1117;2009

	<ul style="list-style-type: none"> • At all places of work provide litterbins, containers and refuse collection facilities for later disposal. • Solid waste may be temporarily stored on site in a designated area prior to collection and disposal. Waste storage facility shall be covered, tip-proof, weatherproof and scavenger proof. The waste storage area shall be fenced off to prevent wind-blown litter. • No burning, on-site burying or dumping of waste shall occur. • All solid waste shall be disposed of offsite at an approved landfill site. • The Contractor shall provide metal refuse bins or equivalent plastic refuse bins, all with lids, for domestic waste. Refuse shall be collected and removed from all facilities at least twice per week. • The non-reusable and non-recyclable wastes shall be collected and transported to the dumpsite for final disposal while the reusable and recyclable solid waste shall be collected by authorized dealer 				
Degradation / Depletion of Resources at Point of Source	<ul style="list-style-type: none"> • Depletion of resource cannot be avoided for developing this project. However, efficient extraction method will be used to minimize losses. All materials extraction sites shall be strictly supervised by Ngara district Council under environmental department in collaboration with other potential stakeholders 	Contractor and Proponent	During Construction Phase	Not Measurable	Almost restored to its origin
Population Influx (Labor Influx)	<ul style="list-style-type: none"> • Establish transparent recruitment procedures to avoid site followers in form of job-seekers • Establish a recruitment policy that gives priority to local residents for less 	Contractor and Proponent	During Construction Phase	200,000	ZERO adverse Impact

	<p>specialized services</p> <ul style="list-style-type: none"> • Recruitment procedures to be shared with the local authorities for further dissemination • Opportunities for sub-suppliers and sub-contractors should be awarded to local firms which in turn employ local labour • Conduct public health campaigns addressing issues of behavioral change, water and sanitation, malaria, HIV/AIDS, etc 				
Increased Risk of GBV, SEA and Harassment	<ul style="list-style-type: none"> • Regular training for workers on required lawful conducts in the project communities. • Creation of partnership with local offices of the Ministry of Women Affairs and Youth Development, NGOs and community women groups to report workers' misconduct and complaints/reports on gender-based violence • Provision of opportunities for workers to regularly return to their families or take advantage of entertainment opportunities away from rural host communities. • Gender based equal opportunities in all project phases • Create opportunities for employment of women in both management and casual placements • Formulation of proper Grievance Redress Mechanism for GBV and SEA actions occurred in working area or around the local community • All gender based employment must consider labor act (18+ Years and above 	Contractor and PropONENT	During Construction Phase	200,000	Zero Adverse Impact

<p>Disruption of Traffic Flow and creating traffic jams</p>	<ul style="list-style-type: none"> • Placement Only qualified drivers with appropriate driving license shall be engaged • Induction course shall be done to all drivers prior starting driving • Drivers shall be sensitized on maintaining speed limits for main road and on access roads/internal driveways. • Promoting safe drive with specified hours for long drive to avoid fatigue • Provision of road and safety signs shall be done on site and surrounding areas that are to be followed by drivers and public in collaboration with local authority 	<p>Contractor and Proponent</p>	<p>During Construction Phase</p>	<p>400,000</p>	<p>Smooth continue flow of normal traffic</p>
<p>Soil and Water Quality Contamination</p>	<ul style="list-style-type: none"> • In accordance with Clause 1706(a) and (b) of Standard Specifications the Contractor shall comply with all applicable Tanzanian laws, orders, regulations (Sections 34 and 39 of Water Resources Management Act and sections 6, 106, 109, and 110 of Environment Management Act), and water quality standards concerning the control and abatement of water pollution. Proper handling of generated solid and liquid waste. • In accordance with Clause 1706(b) of Standard specifications, if wells or other water sources, nevertheless, are polluted, it is the responsibility of the Contractor to compensate for this and provide the consumers with clean drinking water transported through pipes from an unpolluted source if required in the opinion of the Engineer. • To divert run-off using sandbags, soil or other materials, to a grassed area, pit or bare ground to soak in to mitigate the 	<p>Contractor and Proponent</p>	<p>During Construction Phase</p>	<p>0</p>	<p>Mg/l/pH WHO and TBS standards, No contamination</p>

	<p>impact due to possible leakage of concrete wastewater</p> <ul style="list-style-type: none"> • Trucks and other construction equipment's should be serviced in a designated area with concrete surface • All generated hazardous waste during construction of structures shall be temporarily stored at designated area comprised with primary and secondary containments prior to final disposal by the Authorized Contracted contractor • No waste shall be disposed into waterways or streams • Appropriate sites for temporary stockpiling of excavated/spoil materials and waste will be established 				
<p>Creation of occupational health and safety risks to workers</p>	<p>To protect skin from cement and cement mixtures, workers working in severe cement/concrete environment shall be equipped with:</p> <ul style="list-style-type: none"> • Alkali-resistant gloves • Coveralls with long sleeves and full-length trousers (pull sleeves down over gloves and tuck pants inside boots) • Waterproof boots high enough to prevent concrete from flowing in when workers must stand in fresh concrete • Suitable dust/respiratory protective gear (dust masks) when cement dust can't be avoided • When kneeling on fresh concrete, use a dry board or waterproof kneepads to protect knees from water that can soak through fabric <p>Nevertheless; the further mitigations measures must be considered by the Contractor are as follow;-</p>	<p>Contractor and Proponent</p>	<p>During Construction Phase</p>	<p>1,000,000</p>	<p>No significant cases related to health and safety risks ISO 45001</p>

	<ul style="list-style-type: none"> • The Contractor shall be caused to prepare and implement Health and Safety Management Plan (HSMP) • The Contractor shall be caused to prepare and implement Emergency Preparedness and Response Plan (EPRP) • The Contractor shall be caused to prepare and implement Traffic Management Plan (TMP) • All the workers on site shall be provided with on-site with training in site specific safety procedures and in hazards they may encounter at the site • The Contractor shall be caused to conduct daily or weekly tool box meetings with specific occupational health and/or safety topic • The Contractor shall be caused to conduct regular medical checks for the construction workforce • The Contractor shall install safety signal devices and warning signs for the entirely project site • The Contractor shall enforce mandatory use of Personal Protective Equipment (PPE) to all workforces. • The Contractor shall strictly follow occupational health and safety procedures as required in Occupational Health and Safety Act No. 5 of 2003 				
Generation of Human Sanitary Wastes	<ul style="list-style-type: none"> • Contractor may use the existing toilets at Rusumo Health Centre established by the previous contractor during the entire construction period. • Pit latrines and/or septic tanks/soak-away 	Contractor and Proponent	During Construction Phase	300,000	Number of operating mobile toilet facilities/ TZS 1117;2009

	<p>pits at the site for liquid waste collection; regular emptying</p> <ul style="list-style-type: none"> Emptying will be done by the licensed contractor and will be disposed in an approved sewage system as prescribed in The Environmental Management Act, 2004, Part IX (c). This section gives mandate to local government authority to issue guidelines on how liquid waste from domestic premises should be disposed off. The local government authorities shall ensure that sewage is appropriately treated before it is finally discharged into water bodies or open land, and that it does not increase the risk of infections or ecological disturbance and environmental degradation 				
Possible Spread of HIV/AIDS, COVID-19 and Other Infectious Diseases	<ul style="list-style-type: none"> Workers will be sensitized on the issue of HIV/AIDS and STDs and on the usage condoms etc. Establishment and implementation of HIV/AIDS awareness and prevention programs. HIV/AIDS testing will be conducted and counseling services will be done Providing protection gears where needed such as condoms Workers and the nearby community will be sanitized on the issues of COVID-19 and protection measures The contractor shall provide employment priority to local unskilled laborers to minimize number of new comers The Contractor shall develop and implement HIV/AIDS and STIs prevention and control programme 	Contractor and Proponent	During Construction Phase	300,000	No new cases of HIV / AIDS and STI's infections

	<ul style="list-style-type: none"> The Contractor shall put in place the COVID-19 contingency plan developed by Ngara District Council 				
Creation of safety risks to local people	<ul style="list-style-type: none"> The contractor shall regularly conduct community communication and engagement meetings with villagers so as to raise safety awareness to the people The Contractor shall ensure that excavated trenches are speedily backfilled and there shall be warning tapes placed around the construction site. The Contractor shall entirely barricade with visible nets or tapes excavated trenches which found in highly populated area. Proper management of all hazardous and non-hazardous waste not to be disposed haphazardly 	Contractor and Proponent	During Construction Phase	300,000	No significant cases related to personal injury ISO 45001
Soil Erosion and Modification of Landscape	<ul style="list-style-type: none"> Control measures for runoff, such as the use of catch water drain, cut off drains, berms or drainage swales shall be put in place to redirect surface runoff away from the constructed Rusumo Health Centre access road. Confining the construction activities within the proposed project site could minimize the problem. All cleared and compacted areas should be scarified and planted with natural vegetation to stabilize the soil especially to the areas designated for preparation of construction materials The Contractor shall always ensure that the excavated areas are reinstated whenever possible 	Contractor and Proponent	During Construction Phase	100,000	Attaining an even/level surface
Child labour, forced labour and human	<ul style="list-style-type: none"> Employment must consider labor act (18+ Years and above) 	-NELSAP -Consultant	During Construction	0	No Child Employments

trafficking	<ul style="list-style-type: none"> • Spread awareness among parents and surrounding communities • Strict laws in place to prevent child, forced labors and human trafficking • Formulation of proper Grievance Redress Mechanism for GBV and SEA actions occurred in working area or around the local community • The Consultant Engineer with Proponent shall strictly make sure the Contractor adheres to Employment and Labour Relations Act No. 6 (2004) 	<p>Supervisor engineer -Site Contractor -Proponent</p>	Phase		
Disruption of Community Access to their Dwellings and Business Areas	<p>To abate the impact due to disruption of community access:</p> <ul style="list-style-type: none"> • The contractor in collaboration with Proponent shall provide alternative/temporary road to enable pedestrians, motorcycles gain access to their business and residential premises at areas that shall be approved by the Engineer. 	<p>-NELSAP -Consultant Supervisor engineer -Site Contractor -Proponent</p>	During the entire period of construction phase	0	Smooth continue flow of normal traffic
Teenage Pregnancies	<ul style="list-style-type: none"> • Strictly enforcing labors to avoid sexual with teenagers • Developing a community based approach which utilizes school sex education integrated with parent, church, and community groups • Increasing teenage knowledge of contraception • Providing counselling and medical and psychological health and education • There should be close collaboration between parents, teachers, and village governments to reduce truancy of school children. • Formulation of proper Grievance Redress Mechanism for GBV and SEA actions occurred in working area or around the 	<p>-NELSAP -Consultant Supervisor engineer -Site Contractor -Proponent</p>	During the entire period of construction phase	0	Zero case recorded

	<p>local community</p> <ul style="list-style-type: none"> The Contractor shall not employ people under the age of 18 years. 				
Risk of Construction Materials vandalism	<ul style="list-style-type: none"> Installation of lights in strategic areas within the project site to illuminate the whole compound and nearby areas. Regular Community awareness campaign to create sense of ownership Establishment of temporary materials' storage facilities Employment of sufficient number of security guards 	<p>-NELSAP -Consultant Supervisor engineer -Site Contractor -Proponent</p>	During the entire period of construction phase	200,000	Zero case recorded
Risks of Leakage of Hazardous Materials	<p>To avoid possible side effects, the oil/fuel will be brought to the workplace/project site in small quantities that is sufficient for daily use. However; the Contractor shall abide with the following to prevent/minimize the anticipated detrimental impacts;-</p> <ul style="list-style-type: none"> Machines/equipment onsite. No fuel storage shall be practiced onsite. Lubricating oils, paints, solvents, grease shall be packed in barrel and tins and will be transported by fire extinguisher equipped truck and stored in a well designated area complied with Material Safety Data Sheet (MSDS) Liquids such as fuel and lubricants materials shall be properly handled to avoid leakages to the ground/soil. Lubricating oils stored onsite shall be contained in barrels, the barrels will be stored in a secondary containment area to contain any spillage while Diesel Powered generator shall be kept on secondary containment to contain any oil/fuel leak. In the event of spill or leak of hydraulic 	<p>-NELSAP -Consultant Supervisor engineer -Site Contractor -Proponent</p>	During the entire period of construction phase	800,000	Zero adverse impacts

	<p>fluid, oil and other petroleum products, they will immediately be cleaned up to prevent discharge of these fluids into the ground or storm water runoff. Absorbent materials such as polypropylene boom and pads saw dust will be kept on hand for clean-up of spilled liquids on pavement, water, and soil. In the event that there is oil spill on the soil, the soil shall be excavated and treated by incineration or applying appropriate land reclamation methods</p> <ul style="list-style-type: none"> • Used oil shall be kept in a primary and secondary containments prior to be collected by authorized dealer 				
Fire and Explosion	<ul style="list-style-type: none"> • The Contractors shall maintain appropriate fire extinguishers within easy access at all work areas • The Contractors shall recruits Safety Officers who will be responsible for training of all workers how to use fire extinguishers and ensuring safety measures are in place at all work sites • The Contractors shall prohibit smoking in hot work areas (welding, cutting, grinding AND fuel storage area) 	<p>-NELSAP -Consultant Supervisor engineer -Site Contractor -Proponent</p>	During the entire period of construction phase	0	Zero impacts
DEMobilization PHASE					
Restored clean site	<ul style="list-style-type: none"> • Collection and transportation of unwanted materials to the disposal site • Allow community to take valuable building materials for example timber for reuse in construction of wastes 	Contractor and Proponent	5 Days	300,000	Almost to its origin state

Loss of Employment and Economic Activities at the End of the Project	<ul style="list-style-type: none"> The impact due to loss of employment at the closure of the project will be a residual impact as cannot be mitigated at the project level. To manage the impact, while recruiting workers the Contractors shall inform the expected duration of their employment. In addition, Employment and Labour Relations Act No. 6 (2004) of United Republic of Tanzania shall be adhered to by the Contractor during termination of redundant workers 	Contractor Proponent and	10 days	Non Measurable	Zero Complain
Generation of Solid Wastes	<p>The impact shall be mitigated as follows:</p> <ul style="list-style-type: none"> Prior to demobilization, the Contractor shall submit to the Engineer for review and approval a closure plan for the site (including fuel storage facility, workshop, pre-cast yard if any). The plan shall outline steps that the Contractors shall adopt to reinstate the facilities, including disposal of old structures and all facilities that were used in the site which would no longer be needed and are likely to be of environmental and health hazard 	Contractor Proponent and	5 days	300,000	Retrenchment to go as smoothly as possible
Deterioration of Ambient air Quality	<p>Though deterioration of ambient air quality is less anticipated in this phase, but the contractor is advised to take precautions as follow;-</p> <ul style="list-style-type: none"> The impact due to pollution of ambient air by dust shall be mitigated by sprinkling water on the access roads to dump sites as well as covering transporting trucks to minimize escape of wastes from the trucks. The workers at the demolition site shall be provided and ensure that they use dust masks to prevent them from inhaling polluted air. 	Contractor Proponent and	During the entire period of demobilization phase	Non Measurable	No significant cases related to health and safety risks ISO 45001

Operation Phase

Positive Impacts

Reduced Traffic Accidents	<ul style="list-style-type: none"> The impact due to improved safety shall be enhanced by ensuring that repair and maintenance of the road, including its furniture such as road safety signs are done properly and on timely 	Proponent	Operation Phase	0	Zero accident
Reduced Travel Time and Comfort to patients, workers, visitors and pedestrians	<ul style="list-style-type: none"> The impact due to reduction in travel and cost shall also be enhanced by ensuring that repair and maintenance of the road is done timely and properly. 	Proponent	Operation Phase	0	Smooth traffic flow and conformability
Improved road conditions	<ul style="list-style-type: none"> Repair and maintenance will focus on activities that ensure the long-term serviceability of the road. The activities will pertain to the road drainage structures like culvert and where necessary, re-surfacing with gravels. All repair and maintenance works will virtually have positive impacts that will enhance the intended functions of the road and lengthening its life time, especially when it is considered that the number and scope of routine maintenance of the road will be greatly reduced. 	Proponent	Operation Phase	Not Measurable	Maximum utilization of 5years of its lifespan
Reliable Medical/clinical services throughout the year	<ul style="list-style-type: none"> The impact due to improved access road will be enhanced by ensuring that repair and maintenance of the road is done timely and properly. 	Proponent	Operation Phase	Not Measurable	Maximum accessibility of medical services
Improved connectivity between Mshikamano Village and Rusumo Strategic Boarder Market	<ul style="list-style-type: none"> The impact due to improved access road will be enhanced by ensuring that repair and maintenance of the road is done timely and properly 	Proponent	Operation Phase	Not Measurable	The Village to be connected by 100%

Operation Phase						
Negative Impacts						
Increased Accidents	Traffic	<ul style="list-style-type: none"> Warning signs followed by speed restraining humps shall be constructed on both approaches to T-Intersection(Junction) and closely to HC entrance In addition TARURA shall launch awareness campaign in the use and road safety 	Proponent	Operation Phase	Not Measurable	Zero accident
Increased Noise and Vibrations	Pollution	<ul style="list-style-type: none"> The impact due to noise and vibrations during the operation phase of the project cannot be mitigated at the project level and therefore a residual impact. 	Proponent	Operation Phase	Not Measurable	-Not exceeding TZS Limit 75dB -Construction workers wearing noise protection gears: (ISO 45001)
Deterioration of Ambient air Quality due to Emission from Vehicle		The impact due to deterioration of ambient air quality due to increase emissions from Cars/Motorcycles/trucks cannot be mitigated at the project level. This requires effort by the government to encourage and enforce measures to reduce vehicles pollution. This can be achieved: <ul style="list-style-type: none"> <u>Proper maintenance of trucks/cars:</u> Proper maintenance of trucks/cars emission control systems not only limits harmful emissions, but also can improve fuel efficiency and trucks/cars performance extending the lifespan. Care in storing and handling gasoline and other 	Proponent	Operation Phase	Not Measurable	Within the standard limits: TZS 845:2012 & ISO 10007:2003

	<p>solvents also reduces evaporative losses to the atmosphere.</p> <ul style="list-style-type: none"> ▪ <u>Use of low emission or fuel efficient trucks/cars/motorcycles:</u> This includes the use of low carbon trucks/cars, use zero carbon cars/trucks (Battery-electric trucks, plug-in hybrid-electric trucks), and use of natural gas trucks/cars. These technologies can be used in passenger cars, trucks and transit buses. ▪ <u>Introduction of carbon tax:</u> The government should consider introducing carbon tax for diesel trucks/cars, since diesel trucks emit more carbon than gasoline trucks 				
Increased Pressure on Natural Resources due to population increase	<ul style="list-style-type: none"> • The impact cannot be mitigated at road project level. However, although the impact cannot be easily mitigated at project level, respective local authorities can initiate environmental management measures. This may include proper land management, promotion of tree planting campaigns, proper enforcement of economic instruments charging fees or tax on forest products like charcoal, fuel wood, timber, etc. 	Proponent	Operation Phase	Not Measurable	Zero adverse impacts
TOTAL				11,300,000	

CHAPTER NINE: ENVIRONMENTAL MONITORING PLAN

9.1 Environmental Monitoring Plan

This section discusses the need for programs covering both internal and periodic external monitoring. The overall objective of environmental and social monitoring is to ensure that mitigation and enhancement measures are implemented and that they are effective. The activities and indicators that have been recommended for monitoring are presented in the EMP in the next section. Environmental monitoring will be carried out to ensure that all construction and operation activities comply and adhere to environmental provisions and standard specifications, so that all mitigation measures are implemented. Such monitoring can act as an early warning system to management, providing a feedback mechanism to enable damaging practices to be altered.

Simple monitoring systems should be set up during construction by the Supervising Engineer (SE) and Contractor and by the Proponent during operation, so that potentially environmentally problematic areas can be detected well in advance and the appropriate remedial action taken. This could simply be a checklist of items that need to be inspected as a matter of routine, or periodically, depending on the nature of the aspect.

There are four types of monitoring that are also relevant to this EIA.

- **Baseline monitoring:** the measurement of environmental parameters during a pre-project period and operation period to determine the nature and ranges of natural variations and where possible establish the process of change.
- **Impact/effect monitoring:** involves the measurement of parameters (performance indicators) during establishment, operation and decommissioning phase in order to detect and quantify environmental and social change, which may have occurred as a result of the project. This monitoring provides experience for future projects and lessons that can be used to improve methods and techniques.
- **Compliance monitoring:** takes the form of periodic sampling and continuous measurement of levels of compliance with standards and thresholds – e.g. for waste discharge, air pollution.
- **Mitigation monitoring:** aims to determine the suitability and effectiveness of mitigation programs designed to diminish or compensate for adverse effects of the project.

Table 21: EMP Institutional Responsibilities

Unit / Personnel	Responsibilities
National Environment Management Council (NEMC)	<ul style="list-style-type: none"> • Conduct environmental compliance monitoring and enforcement to ensure that project proponent is efficiently implement approved ESMP • Undertake screening of the project to determine level of ESIA study • Reviewing and approval of the project ESIA reports submitted by Ngara DC • Reviewing of the annual environmental and social audit reports submitted by Ngara DC;
Ngara District Council/Proponent	<ul style="list-style-type: none"> • Holds final responsibility for the environmental and social performance of the project • The Client will be represented by Consultant who will be in charge of the supervision works, and overseeing the contract from initiation stage to completion of construction activities at various proposed sites; • The Client has to procure a contractor who will be responsible for the implementation of the entire project activities; • Responsible for ensuring the site development is implemented according to the requirements as stipulated in ESMP; • Ensure that sufficient resources are available to the other role players to efficiently perform their tasks as indicated in ESMP; • Overall management of all project activities; • Receive and supervise the implementation of the recommendations of the environmental report from the Consultant; • Cooperate with Consultant to periodically supervise contractors' activities; and • Carry out annual environmental and social audits of the project and submit the subsequent reports to NEMC for review and approval. • Ensure availability of key staffs for social, environmental, health and safety monitoring during project phases
NELSAP PIU	<ul style="list-style-type: none"> • To provide support to the District where required to facilitate the implementation of LADP activities. • Ensure timely availability and reliability of funding for agreed and approved LADP activities and related interventions. • Ensure timely processing of the direct payments to contractors and consultants on behalf of the district. • Monitoring and evaluation of the progress of LADP activities implemented by the district. • Liaise closely with Ngara DC in preparing a coordinated response on environmental and social management aspects of the project; • Carrying out safeguards due diligence; and • Preparation of quarterly environmental and social performance reports for the project.
World Bank	<ul style="list-style-type: none"> • Financing the entire project activities • Provision of technical support and guidance to Ngara DC, NELSAP PIU, Contractor and Supervising Engineer • Recommending on additional measures to strengthening the ESMP/EMP implementation performance
Consultant (Supervision Engineer)	<ul style="list-style-type: none"> • monitoring and supervision of the construction works including overseeing implementation of ESMP • administer all construction works, progress review and monitor the works undertaken by the Contractor and implementation of ESMP to ensure compliance with contract specification and contractual requirements • Cooperate with Ngara DC to periodically supervise contractors' activities.

Unit / Personnel	Responsibilities
	<p>Scheduled meetings held between the contractor, Ngara DC representative and Consultant.</p> <ul style="list-style-type: none"> • Include, among its staff, an environmental officer who will oversee the implementation of the ESMP and report to Ngara DC and NELSAP PIU.
Contractor	<ul style="list-style-type: none"> • responsible for implementation of construction works and ensure compliance with environmental requirements; • Contractor shall prepare/update a Contractor's ESMP (C-ESMP), and ensure that the measures related to environmental and social safeguards are fully carried out as stipulated; • Preparing/Updating the project's Environmental Health and Safety Management Plan; • Conduct general training on occupational health, safety and environment to the construction workforce • Reporting arising works that are detected by Environmental Officer to Consultant and Ngara DC representative for further actions. • Prepare and implement covid-19 contingency plan, prepare and implement emergence preparedness plan, prepare and implement traffic management plan,

Table 22: Environmental Monitoring Plan (EMP)

Environmental Aspect	Parameters	Monitoring Frequency	Sampling Area	Measurement Units	Measurement Method	Target level/Standard	Responsible Institution	Annual Estimates Cost (TZS)
Pre-construction and Construction Phase								
Soil and Water Quality Contamination due to accidental spill of oil, fuel, lubricants on site	-Hydrocarbons/ Oil & Grease / area affected (Physical, chemical and biological)	-Before to start construction -After construction (Before Operation)	Project Site/discharged water -Nearby Water Source	Mg/l/pH	Laboratory/Visual	<10 / Zero oil spilled to the area - WHO and TZS standards, No contamination	Proponent and Contractor	500,000
Air Pollutions (Fugitive Dust and Exhaust Emissions)	SO ₂	Daily	Project Site	mg/Nm ³ /yr	Portable Gas Analyzer & Dust Track Aerosol Particulate Monitor	SO ₂ < 0.5	Contractor/ Proponent	1,000,000
	CO ₂			mg/Nm ³ /yr		CO ₂ < 500,		
	NO _x			mg/Nm ³ /yr		NO _x < 0.2,		
	CH ₄			mg/Nm ³ /yr		CH ₄ <20		
	Particulate matter (TSP, PM10, PM2.5)			mg/m ³		TSP < 0.23, PM10 < 0.05 & PM2.5 < 0.025		
Teenage Pregnancies	Number of incidences recorded and	Daily	Project site and project Village/Ward	No. of cases	Reports/ Documents Review/Observations	Zero cases	-NELSAP -Consultant Supervisor engineer -Site Contractor -Proponent	1,000,000
Child labour, forced labour and human trafficking	-Number of incidences recorded	Daily	Project site and project Village/Ward	No. of cases	Reports/ Documents Review/Observations	Zero cases	-NELSAP -Consultant Supervisor engineer -Site Contractor -Proponent	1,000,000

Traffic Accidents	Number of Accidents reported Number of trainings conducted Number of qualified drivers	Daily	Project Site	Number of accidents reported	Inspection/ Observation/ Document Review	Zero accident	-NELSAP -Consultant Supervisor engineer -Site Contractor -Proponent	1,000,000
Increased Risk of GBV, SEA and Harassment	--No of cases reported -No. of workers trained on GBV and SEA	Daily	Project site	No. of cases	Recording	Zero cases	Proponent and Contractor	1,000,000
Population Influx	Number of new job seekers	Weekly	Project site and project village	No. of cases	Recording	Zero cases	Proponent and Contractor	500,000
Soil Erosion and Modification of Landscape	Eroded area	Once during and after construction phase	Project site	m ³	Physical observation	No undulating surface	Proponent and Contractor	500,000
Vegetation Clearance	Presence of grasses and shrubs vegetation.	Weekly	Project site	Area covered by vegetation	Physical Inspection	No widespread destruction of natural vegetation around the project areas	Proponent and Contractor	500,000
Noise Levels	Noise Levels	During construction	Project Site	dBA	Noise Detectors/Sound Meters	75 dBA daytime	Proponent and Contractor	1,000,000
HIV/AIDS Infections and COVID 19	Number of infected persons Illness of construction workers	Two weeks	Project site	Number of cases	Affected People	Non New cases	Proponent and Contractor	500,000

Employment Opportunities and Management	-Number of local employments	Weekly	Project Site	Number of local employments	Employed people	100% of unskilled labourers from project village	Proponent and Contractor	300,000
Increased Health and Safety Risks to workers and Local people	Number and type of safety equipments such as PPEs, Warning Signs, Trainings, Medical examinations, Safety Procedures	Daily	Project site and project Hamlet	-Number of PPEs provided	Records, injuries and inspection	No significant cases related to health and safety risks ISO 45001	Proponent and Contractor	500,000
	Number of incidences			-Number of incidents reported				
Waste Management	Solid Waste	Daily		Kg of waste	Weight	Zero adverse impact and adequate volume of solid waste is reused or recycled/ TZS 1117;2009	Proponent and Contractor	1,000,000
	Liquid Waste	Daily		Litres of waste	Volume			
Operation Stage								
Deterioration of Ambient air Quality due to Emission from Vehicle	SO ₂	During maintenance	Project site	mg/Nm ³ /yr	Portable Gas Analyzer	SO ₂ < 0.5	Contractor/ Proponent	1,000,000
	CO ₂			mg/Nm ³ /yr		CO ₂ < 500,		
	NO _x			mg/Nm ³ /yr		NO _x < 0.2,		
	CH ₄			mg/Nm ³ /yr		CH ₄ <20		
Increased Noise and Vibrations Pollution	Noise levels	During maintenance	Project Site	dBA	Sound Level Meters	Daytime <75dBA Night time <65dBA	Contractor/ Proponent	300,000
Environmental pollution from Leaks and Spills	- Oil leakages from moving trucks (pH, colour, EC, TDS, COD, BOD, DO, Pb, Zn, Cu, TSS)	Monthly	Along the road	Mg/l/pH	Contents	<10 / Zero oil spilled to the area	Contractor/ Proponent	1,000,000

						- WHO and TBS standards, No contamination		
Increased Traffic Accidents	Accidents/Incidents recorded	Monthly	Along the road	Number of cases recorded	Accidents/Incidents Recorded	No accident recorded	Proponent	Not Measurable
TOTAL								12,600,000

CHAPTER TEN: PRELIMINARY DECOMMISSIONING PLAN

10.1 Introduction

Decommissioning forms the end part of the project life cycle. The proposed project is not expected to end at near future due to its nature and inelasticity. However; if decommissioning becomes inevitable due to any causative factors such as if the upgrade road need more expansion and improvement then the Closure Plan must be abided. During decommissioning of the project, various disturbances that will have been caused in the area need to be addressed quickly and efficiently in order to minimize the possible impacts that could continue to happen even after closure of the project. It is also important, that all remediation plans suggested be conducted by taking into consideration the needs for sustainable development of the project area. In order to achieve this, consultations with various stakeholders during preparation of the Closure Plan (CP) will be undertaken.

It is the requirement of the Environmental Impact Assessment and Audit regulations of 2005 and its subsequent amendment 2018 regulation that the Proponent have to prepare a closure plan in order to indicate how impacts will be dealt with, including cost of mitigation measures.

10.2 Preliminary Decommissioning and Closure Plan

The council director in collaboration will chair the closure committee with local leaders including WEO and VEO. Members of the committee will be selected through consultations with the local authorities and relevant government institutions i.e. NEMC, TANESCO and TARURA offices. This is the set –up and implementation procedure of the closure plan that will be followed as part of the ESMP. Objectives are set as follows:

- The closure plan must limit the potential adverse effects of the closed proposed project site on the receiving environment and that the quality of life of the surrounding communities is not compromised after operation of proposed project site.
- The rehabilitation of the area in its natural appearance and closure plan complies with current regulatory requirements and must facilitate the attainment of site relinquishment after demonstration of successful implementation of the closure measures stipulated in the plan.
- That decommissioning and rehabilitation are carried out in a planned sequential manner consistent with best practice.
- That as far as is practicable the post project site operation landform is safe stable non-erodible and is integrated into the surrounding environment.
- Prevent or minimize adverse long term social and environmental impacts of the post-project site
- Create a self-sustaining ecosystem or ultimate land use based on an agreed set of objectives
- Enable all stakeholders to have their interests considered during project closure.
- Ensure the process of closure occurs in an orderly cost effective and timely manner.
- Ensure that the cost of closure is adequately represented in proponent's budgets.
- Ensure clear accountability and sufficient resources for the implementation of the closure plan

- Establish appropriate indicators for evaluating success of the closure process. The achievements from this process will justify relinquishment of the project license.

The Proprietor will participate in rehabilitation for disturbed and impacted areas depending on their location, the type of impact, and the proposed end land use. The closure plan identifies those actions that will be undertaken upon completion of project activities and subsequent decommissioning of the site. This includes the removal of structures, the disturbed landscape and vegetation will be restored to make it compatible with future use.

The Proprietor understands the importance for planning for decommissioning and closure early to ensure that the final landforms are properly designed and able to function as ecological systems in the long term and reach a point where the project proponent has met agreed completion criteria to the satisfaction of the Government and surrounding community.

Table 23: Preliminary Decommissioning and Closure Plan

Activity	Closure Plan	Responsibility	Budget (TZS)
Removing of the public utilities buried on the edge of the road	<ul style="list-style-type: none"> • Removing water supply networks, telephone and cable networks • Demolition of all concrete and metal structures including culvert • Warning signs will be posted and fence installed around project site • Qualified engineers will supervise all disassembling and demolition activities. • Closure Committee will be monitoring all closure activities to ensure they are done appropriately • All relevant stakeholders will be consulted for technical assistance during the closure phase 	Proponent and Contractor	5,000,000
Old gravel road removal	<ul style="list-style-type: none"> • Culverts will be removed and disposed into the appropriate waste disposal facility; • Excavation of the old gravel road to pave way for the construction and expansion of the new upgraded road 	Proponent and Contractor	3,000,000
Personal Protective Equipment (PPE)	<ul style="list-style-type: none"> • All workers during the closure phase shall use appropriate PPE including helmet, safety boot, dust mask, safety gloves, goggles, protective garment and safety vest. 	Proponent and Contractor	1,000,000
Waste Management	<ul style="list-style-type: none"> • All waste generated during the closure phase will be sorted for easy management • A review process will be introduced so that the closure plan for waste dumps is adjusted and updated for the inevitable changes to quarrying and plant site plans schedules, community standards and recognized best practices • Debris may be used on the road to fill on earth roads instead of dumping over land. • Metal materials will be collected and transported to steel factories where could be recycled for metal 	Proponent and Contractor	2,000,000

Activity	Closure Plan	Responsibility	Budget (TZS)
	production. • All hazardous wastes found at the site during decommissioning will be cleaned up and disposed of in accordance with the regulations. • The closure committee will make sure that no wastes will be disposed in the water bodies.		
TOTAL			11,000,000

10.3 Post –Closure Monitoring

10.3.1 Site Monitoring

Monitoring of the project site will be continued for six month after closure phase to monitor if there are any impacts that have been caused by closure activity during the removal of structures. Post closure monitoring will then be finalized after six months when an appropriately qualified independent third party establishes that steady state conditions have been achieved and there is no risk at the site.

If contamination related to the hazardous materials spill, oil spills or waste management facilities is detected at any point consultations with regulatory authorities shall be made to agree on mitigation measures, timeframe followed by carrying out of implementations.

10.3.2 Vegetation

Semi-annual inspection of re-vegetation areas will be carried out until an appropriately qualified independent third–party establishes that they are self-sustaining and that habitat restoration objectives have been achieved.

10.3.3 Physical Stability

Semi-annual assessment of the stability of the following rehabilitated areas and as appropriate and necessary corrective action shall be taken with particular attention on

- The stability of the soil used to fill pits of the site;
- Stability of compacted areas in resistance to soil erosion; and
- Stability of the planted vegetation to avoid soil erosion.

CHAPTER ELEVEN: CONCLUSION AND RECOMMENDATIONS

The Environmental Impact Assessment study has identified a number of issues pertaining to the proposed project. The issues/impacts have been described and assessed in detail to gain adequate understanding of possible environmental effects of the proposed project at all stages. The Environmental Management plan provides a way forward for implementation of the proposed mitigation measures. The Environmental Monitoring Plan shows what has to be monitored during proposed project cycle. The estimated costs for implementing the mitigation measures as well as monitoring are just indicative based on consultant's informed judgment.

11.1 Conclusions

Ngara district is growing fast as other districts in the country, for that case the council is strategically planning to meet social and economic needs of its population and supporting various infrastructures. Rusumo Health Centre was established under Local Area Development Program (LADP) Phase I meanwhile LADP Phase II intends to upgrade the access road to connect the facility with other parts of the Rusumo Village and the nearby areas. Basically; the proposed project is to upgrade earth road to gravel road standard. The proposed upgrading will;

- Improve the reliability of accessing the Health Center which is located at Nyakahanga Hamlet in Rusumo Village.
- Reduced Travel Time and Comfort to patients, workers, visitors and pedestrians
- Facilitate more efficient transportation of Agricultural Products from Mshikamano Village to Rusumo Strategic Boarder Market
- Reduce Maintenance Cost of the Road from respective Authority and
- Reduce Trucks Operating Costs along the project area

The identified significant negative impacts associated with the proposed project are related to the proposed construction works, operation and decommissioning phases and observed to be of limited scope. Nevertheless, the identified negative impacts could be minimized or prevented through implementation of recommended mitigation measures. In this regards the project proponent will ensure that the recommended mitigation measures are fully implemented during construction and operation phases. It can therefore be concluded that the proposed project does not pose severe environmental threat to the community, endangered species and natural habitats; hence it is socially acceptable, economically viable, and environmentally sustainable.

While a number of environmental impacts have been identified and assessed accordingly, none of them are considered to be too severe to make their amelioration impossible. Given the nature and location of the development, the conclusion is that the potential impacts associated with the proposed development are of a nature and extent that can be reduced, limited and eliminated by the application of appropriate mitigation measures. Further, the consultant is of the opinion that implementation of the proposed ESMP and EMP will safeguard the integrity of the environment and welfare of the people in the project area.

11.2 Recommendations

It is evident that the proposed project is associated with both positive and negative impacts during construction and operation phases of the project. The following recommendations are made to enhance the viability of the project: The project shall be continued as planned as it is economically and socially viable, Ngara District Council and TARURA shall oversee activities of the Contractor in implementation the developed impact mitigation measures described in the ESIA report, The proposed mitigation and enhancement measures (the ESMP) should be implemented in order to minimize and/or avoid the identified adverse environmental and social impacts of the proposed project. The ESMP should be provided as part of the Contractor's contract, The EMP should also be implemented to track the effectiveness of mitigation and enhancement measures and hence further improvement of the mitigation plan. Monitoring will be used as a means of ensuring compliance with national or international standards and this should go hand in hand with obtaining statutory approvals as listed in table 28

Table 24: Statutory Permits, Certificates and Licences for the Project

	Permit, Certificate and License	Relevant Act/Regulation	Responsible authority	Owner/who to apply for	Status
1	EIA Certificate	EMA No. 20, of 2004	VPO-DoE through NEMC	Ngara DC	This document is part of the application
3	Workers Compensation Fund (WCF) registration	The Workers Compensation Act No. 20 of 2008.	Workers Compensation Fund	Ngara DC	To be applied for
5	Construction permit	The Contractors Registration Act No. 17 of 1997	Contractors Registration Board (CRB)	Ngara DC	To be applied for
6	Land Use Permit	The Roads Act No. 13 of 2007 and its Regulation of 2009	TARURA	Ngara DC	Obtained-See Appendix III

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APPENDICES

Appendix I: Consulted Stakeholders & Minutes of Village Meeting

MUHTASARI WA KUTHIBITISHA UWEZO WA ARDHI KWA
AJILI YA MIRADI YA KIROO CHA AFYA CHA RUSUMO NJIA
YA UMEME KWENDA KIROO CHA AFYA NA CHANZO CHA
MAJI, MRADI WA SOKO LA KAHAZA, MRADI WA BARABARA
IENDAYO KIROO CHA AFYA. 7-11-2021

AGENDA ZA MKUTANO

1. KUFUNGUWA KIKAO
2. UTAMBULISHO
3. UPATIKANAJI WA ARDHI KWA AJILI YA MIRADI
4. TATHMINI YA ATHAL ZA MAZINGIRA NA KIJAMII
5. KUFUNGUWA KIKAO.

MUHT NA 1/2021/2022: KUFUNGUWA MKUTANO.
Mwenzekiti alifungua mkutano mnamo saa 9:12 jioni
kwa kuwakanbisha wananchi kwenye mkutano na
kujadili mada zinazotolwa mbele ya mkutano.

MUHT NA 2. 2021/2022 UTAMBULISHO.
Utambulisho ulifanyika kwa usunguzi wa Serikali
ya Kijiji wataalam kutoka kwa mkurugenzi wa
Halmashauri ya ulaya ya Ngara na wananchi kwa
kupata utongoji.

MUHT NA 3: UPATIKANAJI WA ARDHI YA KUTEKELEZA
MIRADI YA KIJIKI CHA RUSUMO:

Katika mkutano huo mtaalam kutoka kwa mkurugenzi
nzi wa ulaya alisimama na kuwasilisha agenda hiyo
kwa kutaka kujua kama kuna ardhi iliyotengwa
kwa ajili ya utekelezaji wa miradi hiyo.

Baadae wananchi walieleza kuwa eneo litolewe kwa ajili ya miradi; na hapatakuwa po na migogoro au manumbano ya ardhi; na ardhi huyo itumike kwa ajili ya miradi tajwa kwa ajili ya maendeleo ya wananchi wote. Na wameshukuru na wanandi kushukuru kwa Benta ya Dunia kuwepadhili miradi maana maisha yao yanaboreka.

AMUHI NA 4: TATHUMINI YA ADHARI ZA MAUNGIRA

Mtaalamu alisimama na pandero kuwa yupo madhara yanatokana na uwepo wa ardhi wakati wa baada hivyo amesoma wananchi wazidhi madhara hayo na faida za miradi hiyo. Baada ya maalizo wananchi wamesoma kuwa Ajira utapatikana mapapatikana na maungira yatahambika kutokana na Uchimbaji wa barabara wa mashimo ya nguzo zilizomwamba, lakini hasara zita kabilikwa na faida au nyingi uluhungani. Hilo hasara za miradi hiyo.

Baadae wananchi walieloro kuwa eneo litolewe kwa ajili ya miradi; na hapatakuwa po na migogoro au marumbano ya ardhi; na ardhi huyo itumike kwa ajili ya miradi tajwa kwa ajili ya maendeleo ya Wananchi wote. Na wameshukuru na wanandi kushukuru kwa Bantu ya Dunia kuwepadhili miradi maana maisha yao yanaboreka.

MAUHTI NA 4: TATHUMINI YA ADHARI ZA MAUNGIRA

Mtaalamu alisimama na maeloro kuwa yupo madhara yanatokana na uwepo wa ardhi wakati wa baada huyo amesoma wananchi wazidhi madhara hayo na faida za miradi hiyo, Baada ya maeloro wananchi wamesoma kuwa Ajira utapatikani map yapatikana na maungira yataharibiwa kutokana na Uchimbaaji wa barabara wa mstamu ya ufurw v'kumeme, lakini hasara zita kabilikwa na faida ni nyingi. Uhalingani sho hasara za miradi hiyo.

wakati amesimama wananchi walimwomba atgaji ni miradi gani inayotarajiwa kutekelewa, alielea kuwa miradi kwe rusumo ni miradi wa kutua cho afya kipeleke umeme wa tansico kwenuye kutua cho afya na kwenye chanzo cho maji na Bababara iendaye kwenuye kutua cho afya, uwekaji wa bens kutua cho afya na ujerri wa soko la kahara alielea kuwa katika kutekeleza miradi huyo maeneo ya kuwekera miradi huyo inatakiwa ardhi, na alielea kuwa faida unozopati kana kutokana na miradi hup ni fanyaji

na ① Wananchi kupata huduma za afya wakati wote wa ufu utapungua kwa kuwa umeme unakuwepo wa huduma unazoelewa na kuwepo wa umeme.

② Maji yatapatikana kutokana na umeme wa Bababara Hararusisho kusafisho wagonjwa na wananchi kwa ujumla.

Baada ya maelezo hayo wananchi waliiki 29 kama: Je wakati wa kutekeleza miradi Wananchi wanaoanguka rusumo watapatia ujira au shughuli huyo itafanywa na kampuni Wananchi walielera kuwa ajira 20 muda itarungatiwa kwa wazawa ili kinachotakiwa wawe waaminifu maana inayoteleza wananchi kupewa kazi na kuanza kudokoa na kuanza inayoteleza maeneo mengine

10

MUHT NA S: KUHNGA MUKTANO

Mkutano wa kazi wa kazi unafunzwa
ho mweyekul mnamo saa 11-27 kwa
kuwashukuru kwa michango yao na
kuwataka safari njema wamipona matua
Naomba kuwasilisha.

PASCHAL P. LINDA
MWE NYEKITA
MKAJI YA KIJiji
RUSUMO

ELIJAH P. NYELI
MTENDAJI KIJiji
CHA RUSUMO
NGARA

MAHUSHURIO YA MUKUTANO MWA WA ASHARA KUTISI CHA RUSUMO		
JINA KAMELI	WASHIRI	SAFFARI
1 DEUS DAMIANI	Mikiri Rusumo Borde	Saffari
2 XUBUSISI MUBARAK	Balozzi	Saffari
3 JUMA SERAFINA	Mjumbwe	Saffari
4 FABIAN RUDOVICK	- II - I - II -	Juma
5 JAMILA SALUMU	Mjumbwe S/Kyayi	Juma
6 VESTINA DEUSI	- I - I -	
7 MAFUNGWA PAUL	- II - I -	
8 PROLA PAPIUS	- I - I -	
9 GERVAISE BUIDIO	Balozzi / Mjumbwe	
10 SAFFORD MISAHO	- x - x -	
11 XIHANAS BERNARDO	- x - x -	
12 FURAH ANTHONY	- I - I -	
13 KORONERY GISHEGEME	- I - I -	
14 NURU MGHITTA	MIENDAJI KUTISI CHA RUSUMO NGARA	Goro M I
15 MEDY SAMBANI	- I - I -	
16 RAZARO PIUS	- x - I -	
17 XBURAKHARY ISMAIL	- x - x -	Lazar O
18 KAKURU KIBARONGO	Balozzi - Mjumbwe	Kakuru
19 ISSAIA KEREMENI	- I - x -	Issa
20 DIDAS DAMIANI	- I - x -	Didas
21 JOEL JOVINI	Balozzi - Mjumbwe	
22 GEORGE ALEXANDER	- I - x -	
23 DORIS XUBUSISI	- I - x -	
24 HADDO ADIRIANI	- I - I -	
25 RENA MEDADI	- I - I -	
26 NATANA JOHNI	- x - I -	
27 JESKA MADARAKA	- x - I -	
28 MADARAKA ZINGIRIINI	- I - I -	
29 MATHA KETA	- I - I -	
30 ESTER FRENCK	- I - I -	
31 YUSUPH BASTIAN	- I - I -	

RUSUMO		MUKUJANO MUKUU KUYIJI CITA		
JINA	KAMILI	KLABIIPA		SAMHI
31	SEREMAN ABUL	x	x	SEREMAN
32	STONY JUVINRY	x	x	STONE
33	FRED BIRAMA	Mjumbwe		Fred
34	Hassimu PEIER	x	x	Fred
35	XUDAR Lotichumu	Mjumbwe/Baloz		Sati
36	SETH Siasi	M/Kiri/Vijana		Sati
37	MEUSER MUCANA			Sati
38	JOHNI VAMUNTO			Sati
39	HABILI JOHNI			Sati
40	PRORENSI RUGINA			Sati
41	JAMEI BUKURU			Sati
42	XDIRIAN SHUMBUSHO			Sati
43	RUCHUS TURDO			Turdo
44	MASHAKA MASOROCO			MASHAKA
45	NOVATI SHUMBUSHO			NOVAT
46	EMANUEL KAMUGISHA			KAMUGISHA
47	MAPAMBANO ZINGIRAN			KAMUGISHA
48	SEPERATIUS RUTA			KAMUGISHA
49	FRANSISI SERESINI MUKO			KAMUGISHA
50	JOSEPH LOTATUNGA			KAMUGISHA
51	JOSEPHATI JOSEPH AAN			KAMUGISHA
52	JUMATINE KAMUKA			KAMUGISHA
53	ISSAK ERISITA			Jawan
54	KWIZERA ERISITA			Issak
55	IDD1 MOTHMERD			Idd
56	ENOCK GUWABURWA			KAMUGISHA
57	KAMUGISHA PASCHAL			KAMUGISHA
58	JERARD SEBASTIAN TUND			Jerd
59	ALBERT FERESIAN			Jerd
60	ERIND KAZOBWATHO			Jerd
61	BEVIDI KAZOBWATHO			Jerd
62	SAMURI THOMAS			Jerd
63	RUS			Jerd

Mtendaji wa Mji wa Rusumo
City - Rusumo

JINA	Kamari	Kamari	Guthu
61	Rosia X. YONNA	" - " -	
62	BATHATI WILLIAMU	" - " -	
63	SAMBA NYUKI	" - " -	SITUKA
64	MISA BURINDO	" - " -	
65	BATIGWAKI LATIGWAKA	MJIMBES/KIJI	
66	PASCAL BURINDO	" - " -	
67	RUKIZA REORUB	" - " -	
68	IBRAHIMU SUKATI	BALAZI	
69	ERIKANA SIMONI	" - " -	ERIKANA
70	XPERIA PIUSI	" - " -	
71	ERIBA GABRIEL	" - " -	
72	JOSEPH KISESE	" - " -	
73	MUSSA MEREKIDY	" - " -	MUSSA
74	AMAMU MEREKIDY	" - " -	
75	DAUDI NYAMBWA	" - " -	
76	BARONTO AMOSI	" - " -	
77	PAUL BUSIRA	" - " -	PAUL
78	ELISI PATRIKI	" - " -	
79	JIMMI BWEREZA	MTENDAJI KIJWI CHA RUSUMO NGARA	JIMMY
80	KIRSPAN MEBADI	" - " -	
81	SANDAN KIRSPANI	" - " -	
82	ANTIBIUS T. LABERWA	" - " -	ANTIBIUS
83	NIIBA BIRAMA	" - " -	
84	MALIA WILLISONI	" - " -	
85	ELISA MINGWA	" - " -	
86	PASCAL NESTORY	" - " -	Christopher
87	CHRISTOPHER SEBATA	" - " -	Pascal
88	MALISELINA SEGESA	" - " -	MALISELINA
89	JAMES BUKURU	" - " -	

Appendix II: Consulted Stakeholders & Minutes of Ngara DC Meeting

HALMASHAURI YA WILAYA

MUHTASARI WA KIKAO CHA KAMATI YA WATAALAM CMT KUJADILI TATHIMINI YA ATHARI ZA MAZINGIRA NA KIJAMII KWA MIRADI PENDEKEZWA AWAMU YA II CHINI YA LADP

WAJUMBE WALIOHUDHURIA

1. BW. SOLOMON. O. KIMILIKE	-	MKURUGENZI MTENDAJI
2. EGIDY TEULAS	-	MKUU WA IDARA YA UTAWALA/UTUMISHI
3. YONA CHARUGAMBA	-	MKUU WA IDARA YA FEDHA NA BIASHARA
4. CONSTANTINE F. MSEMWA	-	MKUU WA IDARA YA MIPANGO, TAKWIMUNAUFUATILIAJI.
5. NGERANGERA TRESPHORY	-	MKAGUZIWA NDANI (W)
6. PETRONILA L. KAGIMBO	-	KAIMU AFISA EIMU MSINGI (W)
7. DIDMUS BAMUHIGA	-	KAIMU MRATIBU WA LADP
8. ADELINA MAPUNDA	-	KAIMU AFISA BIASHARA
9. EMMANUEL M. VICTOR	-	KAIMU AFISA TEHAMA
10. ENOCK G. NTAKISIGAYE	-	AFISA ELIMU SEKONDARI (W)
11. ENOCK MPONZI	-	AFISA ARDHI (W)
12. ATHANASIO ANDREW	-	KAIMU AFISA MAZINGIRA (W)
13. JOSEPH J. MRIANGA	-	KAIMU AFISA MALIASILI (W)
14. EMMANUEL KULWA	-	MKUU WA IDARA YA MAENDELEO YA JAMII,
15. SIMON MTUKA	-	KAIMU MKUU WA IDARA YA UJENZI (W)
16. REMIGIUS E. KAWISHE	-	KAIMU MKUU WA IDARA YA KILIMO, MIFUGO/ USHIRIKA
17. JOSEPHATSANGATATI	-	MKUU WA IDARA YA MIFUGO NA UVUVI
18. SAKINA Y. CHAMITI	-	MRATIBU WA TASAF
19. GABRIEL GIBSON	-	LADP CONSULTAT
20. DR. DAVID S. MAPUNDA	-	KAIMU MGANGA MKUU (W)
21. PERPETUA O. RUTWAZA	-	KAIMU AFISA UGAVI (W)

SEKRETARIET

1. BI. VIVIAN MARUHE	-	MWANDISHI WAWIKAOVYA HALMASHAURI
2. BI. PERAGIA J. NABUDINDI	-	MWANDISHI WAWIKAO
3. JONAS P. NSEKAMBABAYE	-	MHUDUMU

AGENDA NA. 1/1/11/2021/2022: KUFUNGUA KIKAO

Mwenyekiti aliwasalimia wajumbe na kuwakaribisha katika kikao, pia alieleza kwamba lengo la kufanyika kwa kikao ni kujadili au kutoa maoni juu ya tathimini ya athari za mazingira na

kijamii kwa miradi pendekezwa awamu II chini ya LADP. Aidha alieleza kwamba katika kikao kinachofanyika yupo Mtaalam Mshauri wa Mazingira ambaye amekuja kwa ajili ya kufanya kazi, ya kuandika maandiko kwa niaba ya Halmashauri ya Wilaya ya Ngara hivyo ataeleza dhumuni la kikao ambapo wajumbe watatakiwa kuchangia kwa kina. Kikao kilifunguliwa rasmi saa 4.00 asubuhi

AGENDA NA. 2/1/11/2021/2022 KURIDHIA AGENDA

Wajumbe walipitia agenda na kuridhia zianze kujadiliwa

AGENDA NA. 3/1/11/2021/2022: TATHIMINI YA ATHARI ZA MAZINGIRA NA KIJAMII KWA MIRADI PENDEKEZWA AWAMU YA II CHINI YA LADP

Iliwasilishwa kwamba Mtaalam Mshauri wa Mazingira alipewa kazi ya kuandaa andiko la athari za kimazingira na kijamii kwa miradi itakayotekelezwa na mradi wa LADP II kwa niaba ya H/W ya Ngara, hivyo aliwaomba wajumbe kutoa maoni yao kwa uhuru na uwazi kwa kila mradi uliowasilishwa katika Nyanja zifuatazo;

- a) Faida za kimazingira na kijamii kwa kila mradi uliopendekezwa
- b) Hasara za kijamii na kimazingira zinazoweza tokea wakati na baada ya kukamilika kwa mradi
- c) Njia mbalimbali za kukabiliana na athari mbaya za kimazingira na kijamii kwa kila mradi

Pia Mtaalam Mshauri wa Mazingira alitaja orodha ya miradi inayopendekezwa kutekelezwa kwa kipindi cha cha awamu ya pili chini ya LADP kwa ufadhili wa benki ya dunia ambayo ni:

1. Construction of Ngara District Head Quarter Administration Block
2. Completion of Nzaza–Kabanga strategic market
3. Construction of Strategic Benaco trucks parking bay
4. Construction and equip Rulenge Health centre Complete and put in use Rusumo and Lukole Health centres built during LADP I by constructin fence around both health centers, procure medical Equipment and furniture for both High voltage Electric Lines to connect both Rehabilitation gravel access road to Rusumo HC and procure Ambulance for Rusumo HC
5. Procure furniture to equip Bukiro Secondary School
6. Construction of infrastructure at Ngara High school and equip them (Admin Block, Dining Hall, Dormitory and High voltage line to connect the school
7. Construct High voltage Electric Line to connect Rusumo Water Project power source to run water pump after construction
8. Construction and equip Muhweza Dispensary
9. Construct Strategic Market at Kahaza in Rusumo village

Mtaalam Mshauri wa Mazingira alieleza kwamba ameshafika katika Vijiji na maeneo ambako miradi inatarajiwa kutekelezwa kwa ajili ya kuongea na wananchi katika maeneo husika pamoja na kukusanya taarifa mbalimbali na kusema kote alikopita wanajamii wamejitokeza katika mikutano na kutoa ushirikiano.

Wajumbe walipokea taarifa na kujadili/ kutoa maoni kama ifuatavyo;

Mjumbe aliuliza swali “Je kuna umuhimu gani kwa wao kutoa maoni wakati wananchi wa maeneo husika wameshatoa maoni kwa miradi yao waliyopendekeza?”

Ufafanuzi ulitolewa kuwa katika kufanya tathimini ya athari za mazingira na kijamii kwa miradi kuhusisha/kushirikisha wadau wa ngazi mbalimbali ili kuhakikisha miradi/mrudi unakuwa na manufaa chanya kwa jamii na mazingira na hivyo kupunguza au kuzuia kabisa athari mbaya za mradi kwa jamii na mazingira, pia aliongezea kwa kusema kuwa wajumbe wa CMT ni moja ya wadau muhim sana katika miradi hii.

Mjumbe mwingine alisema kuwa endapo miradi pendekezwa itapatiwa fedha kwa ajili ya utekelezaji itakuwa na faida kubwa kwa wakazi wa maeneo husika na wilaya kwa ujumla kwa kuwa vijana wetu wenye ujuzi na wasio na ujuzi watapata ajira kipindi cha ujenzi wa miradi, hivyo alisisitiza wakandarasi watakapatiwa kazi wahakikishe wanajaza fomu ya makubaliano kuwa ahakikishe wazawa wanapewa kipaumbele katika utoaji wa ajira wakati wa ujenzi.

Kuna mjumbe alitoa ushauri kuwa miradi kama ya masoko na paking ya malori itasaidia kuongeza mapato kwa H/W na hivyo kuiiongezea uwezo H/W kutoa huduma za kijamii kwa wananchi vijijini kama vile kujenga zahanati, kupeleka miundombinu ya maji safi kwa wananchi katika halmashauri ya Ngara.

Mjumbe alisema kuwa katika utekelezaji wa miradi/mrudi wa aina yoyote ule kuna wakati huwa inajitokeza changamoto ya vibarua kutolipwa stahiki zao na hivyo kupelekea vibarua kudhulumiwa na kuleta manung’uniko katika jamii, je kuna mikakati gani ya kuhakikisha jambo kama hili halijitokezi au likijitokeza ni hatua zipi zitakazo chukuliwa katika kupatiwa ufumbuzi?

Ufafanuzi ulitolewa kuwa ili kukabiliana na changamoto ya aina hii, mkandarasi sharti lazima awe na mikataba kwa wafanyakazi wake wote bila kujalisha ni mfanyakazi mwenye ujuzi au asie na ujuzi, pia ufatiliaji na ukaguzi wa kila wiki unapaswa kufanywa na Halmashauri ili kuhakikisha kuwa wafanyakazi watapewa mkataba pindi tu anapoajirwa na mkandarasi.

Pia ilielezwa kuwa ni muhimu kuwa na mfumo wa namna ya jamii kwa ujumla kutoa malalamiko yao juu ya kero zinazoweka kujitokeza kutokana na utekelezaji wa mradi/miradi, mfumo huo wa wananchi kutoa malalamiko ni lazima uwe rahisi na Rafiki wa walalamikaji.

Mjumbe mmoja alitoa shukrani zake kwa miradi iliyotekelezwa kwa awamu ya kwanza na kusema imekuwa na faida kubwa wa wananchi na kusema mfano ni ujenzi wa miundombinu katika shule ya msingi makugwa ambapo awali walimu walikuwa hawana nyumba ya kuishi, wanafunzi walikuwa wanapeana zamu kutumia darasa kwa sababu ya upungufu wa vyumba vya madarasa, hivyo anaomba na miradi ya awamu ya pili ipatiwe fedha kwa ajili ya utekelezaji ili kupunguza changamoto katika jamii.

Wajumbe walisitiza kuwa swala la utunzaji wa mazingira lipewe kipaumbele kwa miradi yote itakayopatiwa fedha na kutekelezwa hususani katika swala la upandaji miti ya vivuli na matunda ipandwe mapema ili mkarandi awe anaimwagilia mpaka kufika kumaliza ujenzi iwe imekwisha chipua.

pia kuna mjumbe alisema kuwa katika ujenzi wa jengo ofisi za halmashauri kutahusisha ubomoaji wa baadhi ya majengo yaliyochakaa na hivyo kupelekea uwepo wa vumbi, na je

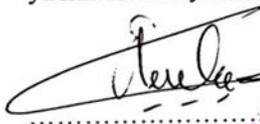
hatuoni kama vumbi hilo litatuadhili sisi wafanyazi na hata kupelekea kuugua kikohozi na mafua?

Ufafanuzi ulitolewa kuwa katika andiko kutakuwa na mpango wa uthibiti wa athari ambapo mkandarasi atawajibika kuzuia vumbi hilo kwa kumwagilia maji na kuweka uzio ili kutenga eneo la kazi na maeneo mengine, wajumbe walichangia pia kwa kusema wanafanyakazi kwa kipindi hicho ni vyema pia kupewa vifaa vya kujikinga vumbi, pia ilishauriwa kuwa ubomojai wa majengo chakavu uwe unafanywa nyakati za jioni ambapo watumishi wa halmashauri wanakuwa wameshatoka mao fisini.

Kuna mjumbe alishauri kuwa miradi ya ujenzi wa masoko mkakati yakishakamilika, kipindi yanafanya kazi kutakuwa na uzalishaji wa taka wa kila siku, hivyo basi nivyema katika usanifu wa miradi hiyo ni muhimu kuwepo na miundombinu ya ukusanyaji taka kwa muda kabla ya kuondolewa na kulepekwa dampo na pia lazima halmashauri ionyeshe mpango namna itakavyokuwa inaondoa taka kutoka kwenye vizimba vya soko na kuzipeleka dampo ili kuepuka mrundikano wa taka kipindi soko linafanyakazi na hivyo kutokuwa kero kwa wafanyabiashara na wakazi wa maeneo ya karibu na soko.

AGENDA NA. 4/1/11/2021/2022: KUFUNGA KIKAO

Mwenyekiti aliwashukuru wajumbe kwa michango na maoni yaliyotolewa juu ya tahimini ya athari ya kimazingira na kijamii kwa miradi itakayotekelezwa katika mradi wa LADP II. Baada ya kutamka hayo kikao kilifungwa saa 9.10 alasiri.


.....

Katibu

UMETHIBITISHWA NA;


.....
Mwenyekiti

Tarehe...10...1...11... 2021.

MKURUGENZI MTENDAJI
HALMASHAURI YA WILAYA
NGARA

Appendix III: TARURA Land Use Permit/Ownership

 **JAMHURI YA MUUNGANO WA TANZANIA**
OFISI YA RAIS

TAWALA ZA MIKOA NA SERIKALI ZA MITAA
WAKALA WA BARABARA ZA VIJINI NA MIJINI-
TANZANIA (TARURA)

TANZANIA RURAL AND URBAN PSADA AGENCY
TARURA
P.O.BOX 168,
NGARA.

KUMB. Na.NG/TARURA/T.2/VOL.3/48 02 /12/2021.

MKURUGENZI MTENDAJI,
S.L.P 30,
NGARA.

LADP-COORDINATOR
Shughulika
M. DEO
03/12/2021

**YAH: KIBALI CHA KUKARABATI BARABARA KIWANGO CHA
CHANGARAWE KUTOKA BARABARA KUU YA BENACO – RUSUMO
HADI KITUO CHA AFYA RUKOLE (KM 1)**

Tafadhari husika na mada tajwa hapo juu. Pia rejea barua yako ya tarehe 29/11/2021
yenye Kumb. Na. AE.582/944/01/21 ikihusiana na mada tajwa hapo juu.

Kwa barua hii ofisi imetoa kibali cha kuruhusu matengenezo ya barabara tajwa hapo
juu kwa kiwango cha changarawe ili kuwarahisishia wananchi na wasafirishaji kupita
kwa mwaka mzima. Pamoja na hayo, ofisi inatoa shukrani za dhati kwa ufadhili huo.

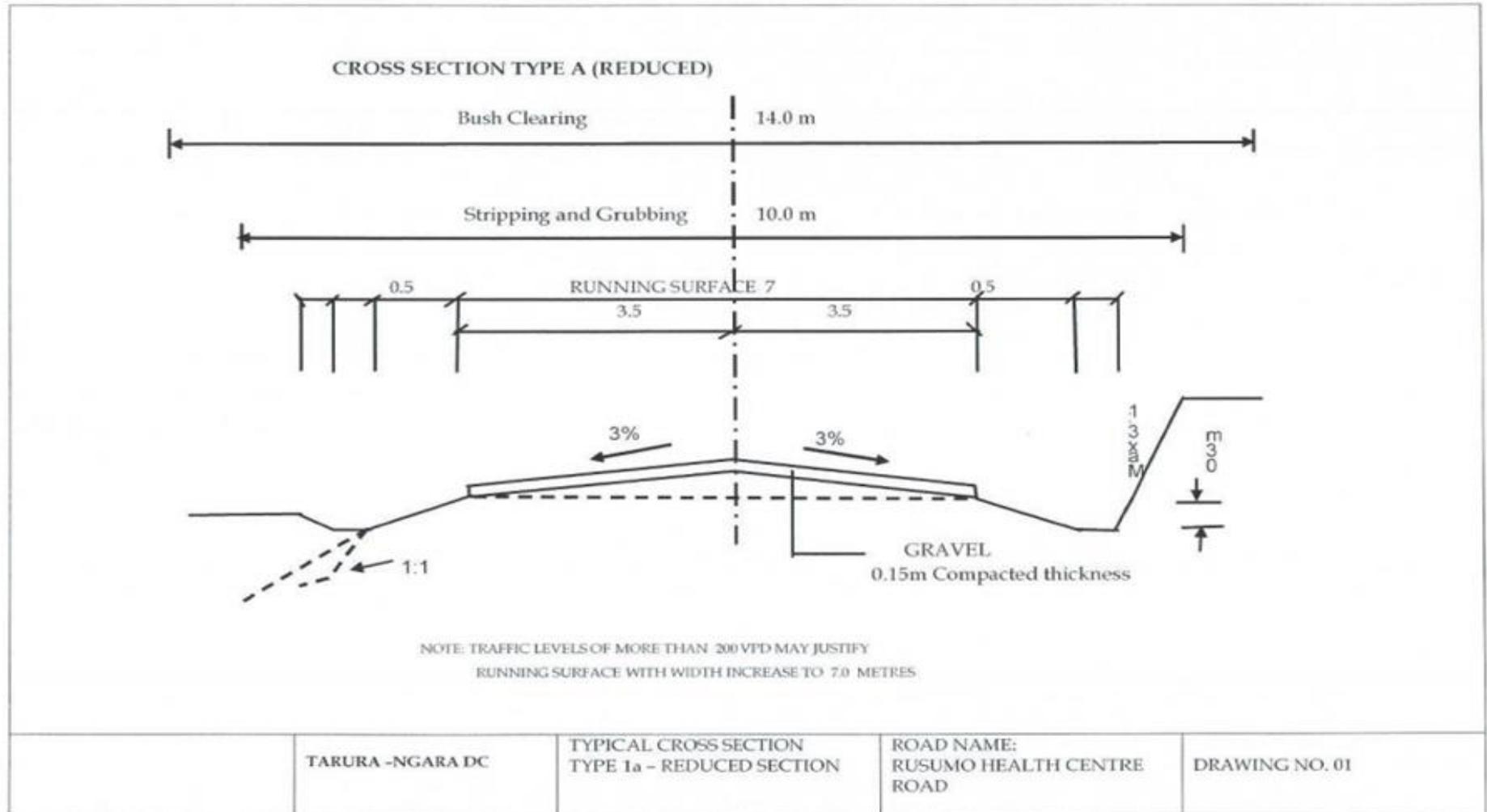
Nakutakia kazi njema.

Meneja wa Halmashauri
TARURA
S.L.P 168, Ngara

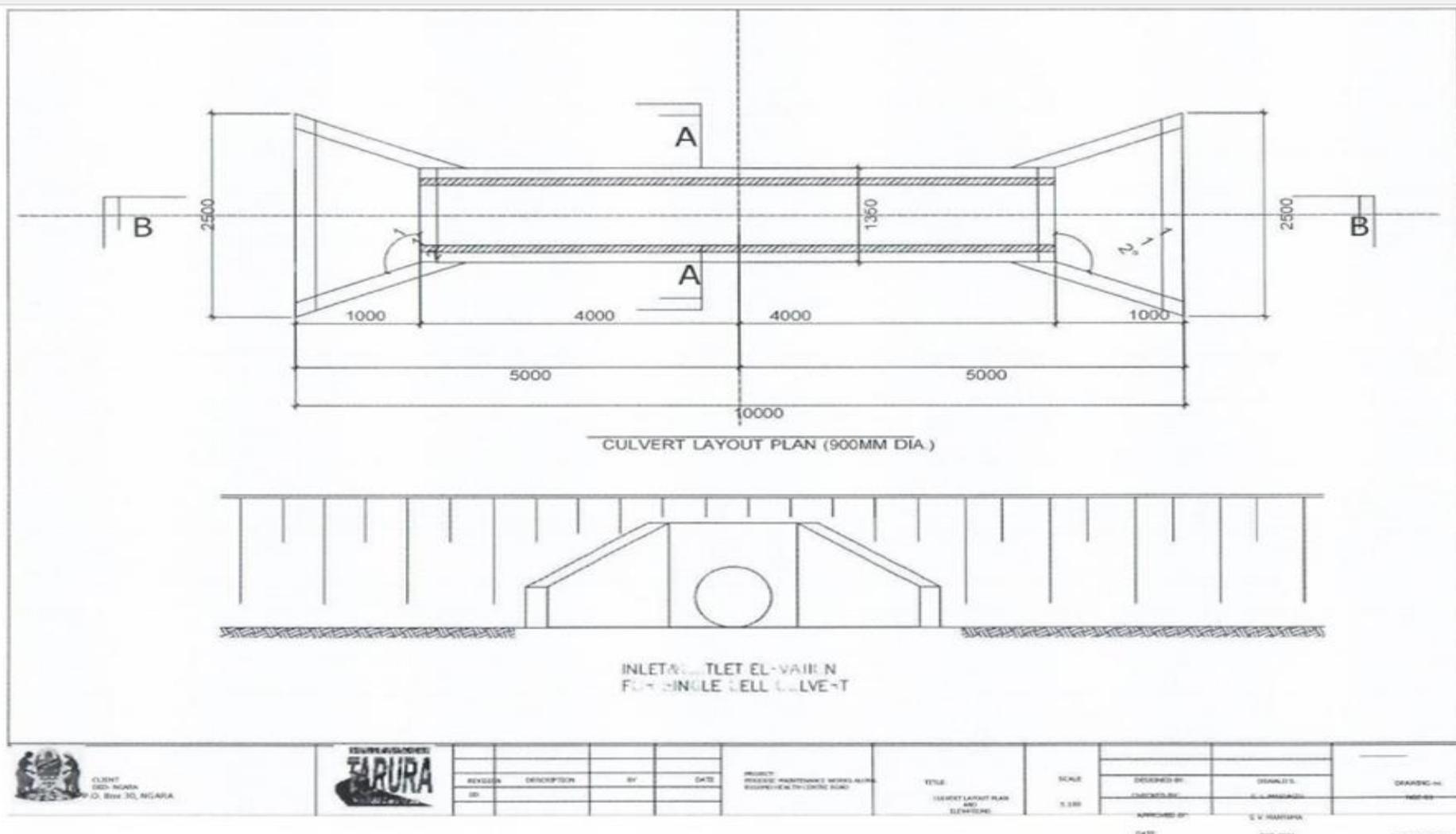
CHM
Eng. Christopher L Masunzu
K.N.Y MENEJA TARURA
NGARA

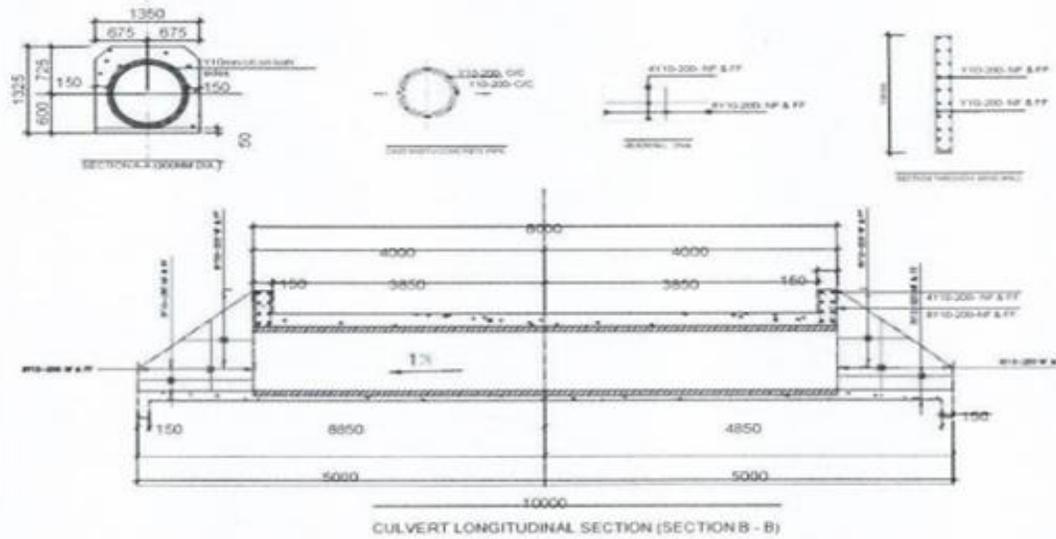
Simu: 026-2322929 Nukushi: 026-2322929 Barua pepe: ceo@tarura.go.tz Tovuti: www.tarura.go.tz
TARURA ni Wakala uliopo chini ya Ofisi ya Rais, Tawala za Mikoa na Serikali za Mitaa (TAMISEMI)
ulioanzishwa chini ya Sheria za Uanzishwaji wa Wakala "Executive Agency Act, CAP 245"

Appendix IV: Rusumo Health Centre Access Road Cross section



Appendix V: Rusumo Health Centre Access Road-Culvert Layout Plan





CLIENT
DED NGARA
P.O. Box 30, NGARA



APPROVED	DESIGNED	BY	DATE

PROJECT
PHYSICAL MAINTENANCE ALONG
RUSUMO HEALTH CENTRE ROAD
TITLE
RUSUMO HEALTH CENTRE ROAD

SCALE
1:200

DESIGNED BY	DRAWN BY
E.L. PALINDI	NO.02
EXTENDED	

DWG. 002 SHEET NO. 02

Appendix VI: GBV Code of Conduct

Contractor's Gender-based Violence and Child Protection Code of Conduct

The Contractor shall create and maintain an environment which prevents gender-based violence (GBV) and child abuse/exploitation (CAE) issues, and where the unacceptability of GBV and actions against children are clearly communicated to all those engaged on the project. The following core principles and minimum standards of behavior will apply to all employees of the Contractors without exception:

1. GBV or CAE constitutes acts of gross misconduct and are therefore grounds for sanctions, penalties and/or termination of employment. All forms of GBV and CAE including grooming are unacceptable be it on the work site, the work site surroundings, or at worker's camps. Prosecution of those who commit GBV or CAE will be pursued.
2. Treat women, children (persons under the age of 18), and men with respect regardless of race, colour, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status.
3. Do not use language or behaviour towards women, children and men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
4. Sexual activity with children under 18—including through digital media—is prohibited. Mistaken belief regarding the age of a child and consent from the child is not a defence.
5. Sexual favours or other forms of humiliating, degrading or exploitative behaviour is prohibited.
6. Sexual interactions between contractor's and consultant's employees at any level and member of the communities surrounding the work place that are not agreed to with full consent by all parties involved in the sexual act are prohibited. This includes relationships involving the withholding/promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex – such sexual activity is considered "non-consensual" within the scope of this Code.
7. All staff, volunteers, consultants and sub-contractors are highly encouraged to report suspected or actual GBV and/or CAE by a fellow worker, whether in the same contracting firm or not. Reports must be made in accordance with Standard Reporting Procedures.
8. All employees are required to attend an induction training course prior to commencing work on site to ensure they are familiar with the GBV and CAE Code of Conduct.
9. All employees must attend a mandatory training course once a month for the duration of the contract starting from the first induction training prior to commencement of work to reinforce the understanding of the institutional GBV and CAE Code of Conduct.
10. All employees will be required to sign an individual Code of Conduct confirming their agreement to support GBV and CAE activities.

I do hereby acknowledge that I have read the foregoing Code of Conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to GBV and CAE. I understand that any action inconsistent with this Code of Conduct or failure to take action mandated by this Code of Conduct may result in disciplinary action.

For the Company

Signed by _____

Title: _____

Date: _____

Individual Gender Based Violence and Child Protection Code of Conduct

I, _____, acknowledge that preventing gender-based violence (GBV) and child abuse/exploitation (CAE) are important. GBV or CAE activities constitute acts of gross misconduct and are therefore grounds for sanctions, penalties or termination of employment. All forms of GBV or CAE are unacceptable be it on the work site, the work site surroundings, or at worker's camps. Prosecution of those who commit GBV or CAE will be pursued as appropriate.

I agree that while working on the Project I will:

- Consent to police background check.
- Treat women, children (persons under the age of 18), and men with respect regardless of race, colour, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status.
- Not use language or behaviour towards women, children or men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
- Not participate in sexual activity with children—including grooming or through digital media. Mistaken belief regarding the age of a child and consent from the child is not a defence.
- Not engage in sexual favour or other forms of humiliating, degrading or exploitative behaviour.
- Not have sexual interactions with members of the communities surrounding the work place and worker's camps that are not agreed to with full consent by all parties involved in the sexual act. This includes relationships involving the withholding or promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex—such sexual activity is considered “non-consensual” within the scope of this Code.
- Attend and actively partake in training courses related to HIV/AIDS, GBV and CAE as requested by my employer.
- Report through the GRM or to my manager suspected or actual GBV and/or CAE by a fellow worker, whether in my company or not, or any breaches of this code of conduct.
- Wherever possible, ensure that another adult is present when working in the proximity of children.
- Not invite unaccompanied children into my home, unless they are at immediate risk of injury or in physical danger.
- Not sleep close to unsupervised children unless absolutely necessary, in which case I must obtain my supervisor's permission, and ensure that another adult is present if possible.
- Use any computers, mobile phones, or video and digital cameras appropriately, and never to exploit or harass children or to access child pornography through any medium.
- Refrain from physical punishment or discipline of children.
- Refrain from hiring children for domestic or other labour which is inappropriate given their age or developmental stage, which interferes with their time available for education and recreational activities, or which places them at significant risk of injury.
- Comply with all relevant local legislation, including labour laws in relation to child labour.

Use of children's images for work related purposes

When photographing or filming a child for work related purposes, I must:

- Before photographing or filming a child, assess and endeavour to comply with local traditions or restrictions for reproducing personal images.

Individual Gender Based Violence and Child Protection Code of Conduct

I, _____, acknowledge that preventing gender-based violence (GBV) and child abuse/exploitation (CAE) are important. GBV or CAE activities constitute acts of gross misconduct and are therefore grounds for sanctions, penalties or termination of employment. All forms of GBV or CAE are unacceptable be it on the work site, the work site surroundings, or at worker's camps. Prosecution of those who commit GBV or CAE will be pursued as appropriate.

I agree that while working on the Project I will:

- Consent to police background check.
- Treat women, children (persons under the age of 18), and men with respect regardless of race, colour, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status.
- Not use language or behaviour towards women, children or men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
- Not participate in sexual activity with children—including grooming or through digital media. Mistaken belief regarding the age of a child and consent from the child is not a defence.
- Not engage in sexual favour or other forms of humiliating, degrading or exploitative behaviour.
- Not have sexual interactions with members of the communities surrounding the work place and worker's camps that are not agreed to with full consent by all parties involved in the sexual act. This includes relationships involving the withholding or promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex—such sexual activity is considered "non-consensual" within the scope of this Code.
- Attend and actively partake in training courses related to HIV/AIDS, GBV and CAE as requested by my employer.
- Report through the GRM or to my manager suspected or actual GBV and/or CAE by a fellow worker, whether in my company or not, or any breaches of this code of conduct.
- Wherever possible, ensure that another adult is present when working in the proximity of children.
- Not invite unaccompanied children into my home, unless they are at immediate risk of injury or in physical danger.
- Not sleep close to unsupervised children unless absolutely necessary, in which case I must obtain my supervisor's permission, and ensure that another adult is present if possible.
- Use any computers, mobile phones, or video and digital cameras appropriately, and never to exploit or harass children or to access child pornography through any medium.
- Refrain from physical punishment or discipline of children.
- Refrain from hiring children for domestic or other labour which is inappropriate given their age or developmental stage, which interferes with their time available for education and recreational activities, or which places them at significant risk of injury.
- Comply with all relevant local legislation, including labour laws in relation to child labour.

Use of children's images for work related purposes

When photographing or filming a child for work related purposes, I must:

- Before photographing or filming a child, assess and endeavour to comply with local traditions or restrictions for reproducing personal images.

- Before photographing or filming a child, obtain informed consent from the child and a parent or guardian of the child. As part of this I must explain how the photograph or film will be used.
- Ensure photographs, films, videos and DVDs present children in a dignified and respectful manner and not in a vulnerable or submissive manner. Children should be adequately clothed and not in poses that could be seen as sexually suggestive.
- Ensure images are honest representations of the context and the facts.
- Ensure file labels do not reveal identifying information about a child when sending images electronically.

I understand that it is my responsibility to use common sense and avoid actions or behaviours that could be construed as GBV or CAE or breach this code of conduct. I do hereby acknowledge that I have read the foregoing Code of Conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to GBV and CAE. I understand that any action inconsistent with this Code of Conduct or failure to take action mandated by this Code of Conduct may result in disciplinary action and may affect my ongoing employment.

Signed by _____

Title: _____

Date: _____

Manager's Gender Based Violence and Child Protection Code of Conduct

Managers at all levels have particular responsibilities to create and maintain an environment that prevents GBV and CAE. They need to support and promote the implementation of the Contractor's Codes of Conduct. To that end, they must adhere to the Manager's Codes of Conduct and also sign the Individual Codes of Conduct. This commits them to support and develop systems that facilitate the implementation of this action plan and maintain a GBV free and child-safe work environment. These responsibilities include but are not limited to:

Mobilization

1. Establish a GBV and CAE Compliance Team (GCCT) from the contractor's and consultant's staff to write an Action Plan that will implement the GBV and CAE Codes of Conduct.
2. The Action Plan shall, as a minimum, include:
 - i. Standard Reporting Procedure to report GBV and CAE issues through the project Grievance Response Mechanism (GRM);
 - ii. Accountability Measures to protect confidentiality of all involved; and,
 - iii. Response Protocol applicable to GBV survivors/survivors and perpetrators.
3. Update the Action Plan to reflect feedback and ensure the Action Plan is carried out in its entirety.
4. Provide appropriate resources and training opportunities for capacity building so members of the GCCT feel confident in performing their duties. Participation in the GCCT will be recognized in employee's scope of work and performance evaluations.
5. Ensure that contractor, consultant and client staff are familiar with the GRM and that they can use it to anonymously report concerns over GBV and CAE.
6. Hold quarterly update meetings with the GCCT to discuss ways to strengthen resources and GBV and CAE support for employees and community members.
7. In compliance with applicable laws and to the best of your abilities, prevent perpetrators of sexual exploitation and abuse from being hired, re-hired or deployed.
8. Ensure that when engaging in partnership, sub-grant or sub-recipient agreements, these agreements a) incorporate this Code of Conduct as an attachment; b) include the appropriate language requiring such contracting entities and individuals, and their employees and volunteers to comply with this Code of Conduct; and c) expressly state that the failure of those entities or individuals, as appropriate, to take preventive measures against GBV and CAE, to investigate allegations thereof, or to take corrective actions when GBV and/or CAE has occurred, shall constitute grounds for sanctions and penalties.

Training

1. All managers are required to attend an induction manager training course prior to commencing work on site to ensure that they are familiar with their roles and responsibilities in upholding the GBV and CAE Codes of Conduct. This training will be separate from the induction training course required of all employees and will provide managers with the necessary understanding and technical support needed to begin to develop the Action Plan for addressing GBV and CAE issues.
2. Provide time during work hours to ensure that direct reports attend the mandatory Project's facilitated induction GBV and CAE training required of all employees prior to commencing work on site.
3. Ensure that direct reports attend the monthly mandatory refresher training course required of all employees to combat increased risk of GBV and CAE during civil works.

4. Managers are required to attend and assist with the Project's facilitated monthly training courses for all employees. Managers will be required to introduce the trainings and announce the self-evaluations.
5. Collect satisfaction surveys to evaluate training experiences and provide advice on improving the effectiveness of training.

Prevention

1. All managers and employees shall receive a clear written statement of the company's requirements with regards to preventing GBV and CAE in addition to the training.
2. Managers must verbally and in writing explain the company and individual codes of conduct to all direct reports.
3. All managers and employees must sign the individual 'Code of Conduct for GBV and CAE', including acknowledgment that they have read and agree with the code of conduct.
4. To ensure maximum effectiveness of the Codes of Conduct, managers are required to prominently display the Company and Individual Codes of Conduct in clear view in public areas of the work space. Examples of areas include waiting, rest and lobby areas of sites, canteen areas, health clinics.
5. All posted and distributed copies of the Company and Individual Codes of Conduct should be translated into the appropriate language of use in the work site areas (ex. Kihwahili, English).
6. Managers will explain the GRM process to all employees and encourage them to report suspected or actual GBV and/or CAE.
7. Managers should also promote internal sensitization initiatives (e.g. workshops, campaigns, on-site demonstrations etc.) throughout the entire duration of their appointment in collaboration with the GCCT and in accordance to the Action Plan.
8. Managers must provide support and resources to the GCCT to create and disseminate the internal sensitization initiatives through the Awareness-raising strategy under the Action Plan.

Response

1. Managers will be required to provide input, final decisions and sign off on the Standard Reporting Procedures and Response Protocol developed by the GCCT as part of the Action Plan.
2. Once signed off, managers will uphold the Accountability Measures set forth in the Action Plan to maintain the confidentiality of all employees who report or (allegedly) perpetrate incidences of GBV and CAE (unless a breach of confidentiality is required to protect persons or property from serious harm or where required by law).
3. If a manager develops concerns or suspicions regarding any form of GBV or CAE by one of his/her direct reports, or by an employee working for another contractor on the same work site, s/he is highly encouraged to report the case using the identified reporting mechanism.
4. Once a sanction has been determined, the relevant manager(s) is/are expected to be personally responsible for ensuring that the measure is effectively enforced, within a maximum timeframe of 14 days from the date on which the decision was made.
5. Managers failing to comply with such provision can be in turn subject to disciplinary measures, to be determined and enacted by the company's Chief Executive Officer (CEO), Managing Director or equivalent highest-ranking manager. Those measures may include:
 - i. Informal warning
 - ii. Formal warning
 - iii. Additional Training
 - iv. Loss of up to one week's salary.

- v. Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.
 - vi. Termination of employment.
6. Ultimately, failure to effectively respond to GBV and CAE cases on the work site by the contractor's managers or CEO may provide grounds for legal actions by authorities.

I do hereby acknowledge that I have read the foregoing Code of Conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to GBV and CAE. I understand that any action inconsistent with this Code of Conduct or failure to take action mandated by this Code of Conduct may result in disciplinary action.

For the Employer

Signed by _____

Title: _____

Date: _____

Appendix VII: COVID -19 Contingency Plan

**UNITED REPUBLIC OF TANZANIA
PRESIDENT’S OFFICE - REGIONAL
ADMINISTRATION AND LOCAL GOVERNMENT**

NGARA DISTRICT COUNCIL

Phone: 028 2226016
Fax: 028 2226152
Email:ded.ngara@kagera.go.tz



Health Department
P.O. Box. 30.
**NGARA
KAGERA.**

**NGARA PUBLIC HEALTH EMERGENCIES CONTINGENCY PLAN
MARCH, 2020/2021**

Aidan J. Bahama
DISTRICT EXECUTIVE DIRECTOR
NGARA

Executive Summary

Corona viruses are large family of viruses. There are several known human coronaviruses that usually only cause mild respiratory disease, such as the common cold. However, at least twice previously, coronaviruses have emerged to infect people and cause severe disease. The severe respiratory syndrome (SARS) of unknown etiology among people was first reported on 31st December 2019 in Wuhan City (population of 19 million), capital of Hubei Province (population of 58 million), southeast of China; of which 7 were reported as severe cases. This COVID19 is the different from SARS-Corona Virus of 2003 and MERS- Corona Virus of 2013. 94 countries were reported of COVID19 the entire world like China, Japan, South Korea e.tc. The incubation period is about 1 – 14 days. The sign and symptoms are fever, cough, sore throat, nasal congestion, malaise, headache, and muscle pain or malaise. There is no current evidence from RCTs to recommend any specific anti-COVID19 treatment for patients with suspected or confirmed, but can treat the sign and symptoms. The transmission can be occur either by directly contact of respiratory secretions and droplets. Standard precautions include hand hygiene; use of PPE to avoid direct contact with patients' blood, body fluids, secretions (including respiratory secretions) and Use a medical mask if working within 1-2 meter of the patient.

Acknowledgments

The Ngara District Council wishes to express its gratitude to all experts who participated in developing this Contingency Plan for Public Health Emergency of COVID19. Special gratitude goes to the Ministry of Health, Community Development, Gender, Elderly and Children (MOHCDGEC) for Public Health Emergency Preparedness and Response for the strategic guidance in the development of this Plan and provided Infection Prevention and Control (IPC) and Clinical Management of Novel Corona Virus (nCoV) Pneumonia. Specifically, valuable contributions from Districts Executive Director are also appreciated.

I would also like to acknowledge the team of technical experts from different Health Departments specifically from Curative Services team, Preventive Services team, Health Quality Assurance, Emergency Preparedness and Response and Disease Control, Environmental Health and Sanitation, Health Promotion, who worked tirelessly and contributed to the successful completion of this plan.

Finally but not the least, I would like to extend sincere appreciation to the World Health Organization through Ministry of Health, Community Development, Gender, Elderly and Children (MOHCDGEC) with Regional, for facilitating assessment on District operational readiness for COVID19response.

Abbreviations

DMO	District Medical Officer
COVID19	Corona Virus 2019
HIDTU	Highly Infectious Disease Treatment Unit
IDSR	Integrated Disease Surveillance and Response
WHO	World Health Organization
IEC	Information, Education and Communication
IHR	International Health Regulations
IMS	Incident Management System
IPC	Infection Prevention Control
LGA	Local Government Authorities
MOHCDGEC	Ministry of Health Community Development Gender Elderly and Children
NGO	Non-Government Organization
POE	Point of entry
PPE	Personal Protective Equipment
RMO	Regional Medical Officer
RRT	Rapid Response Team
SOP	Standard Operating Procedure
TOT	Training of Trainers
WHO	World Health Organization
DHO	District Health Officer
DED	District Executive Director
DC	District Commissioner

Key Concepts

The following glossary is from the Tanzania Disaster Management Act (2015) and United Nations International Strategy for Disaster Reduction terminology on disaster risk reduction (2009 version).

Disaster

An occurrence or series of occurrences, whether natural or man-made, man-made calamity that causes or poses a significant disruption or threat to the functioning of a community, causing widespread human, natural, economic or environmental losses which exceed the capacity of that community to cope with the disaster using its own resources.

Disaster response

Any measure taken immediately prior to or following a disaster impact that is directed towards saving life, protecting property and the environment or dealing with the immediate damage and other effects caused by the disaster.

Emergency management

It is also used, sometimes interchangeably, with the term disaster management, particularly in the context of biological and technological hazards and for health emergencies. While there is a large degree of overlap, an emergency can also relate to hazardous events that do not result in the serious disruption of the functioning of a community or society.

Hazard

A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihood and service, social and economic disruption or environmental damage.

Preparedness

The knowledge and capacities developed by governments, response and recovery organizations, communities and individuals to effectively anticipate, respond to and recover from the impacts of likely, imminent or current disasters.

Response

Actions taken directly before, during or immediately after a disaster to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected.

Introduction

Ngara district is among of eight district of Kagera region, 4 Division, 22 Wards and 75 Villages with 34 streets of Mainer Township.

Ngara District is exposed to a number of natural and man-made hazards that impact livelihoods, destroy infrastructure, disrupt the provision of essential services and claim lives. Primary risks are linked to hazards such as road accidents and health epidemics.

For many years now, Ngara is threatened by a number of public health risks which causes a number of deaths, morbidity to affected people and economic disruption. These include; Malaria, road accidents, Ebola, Corona Virus.

The ultimate objective of this Public Health Risk Emergency Response Plan is to consolidate capacity to support response by ensuring that all those charged with tackling the disease (i) know their role; (ii) are competent to carry out the tasks assigned to them; (iii) have access to available resources and facilities; and (iv) work together as a partnership. Therefore, the Plan aims to bring order to the response operations. Additionally, it is concerned with providing a framework for management, coordination and control within which a team of responders can go about their work at times of a major emergency

Background Information

1.1. Geophysical features

Ngara (334,939 people in 2012) is located in northwestern Tanzania near the borders of Rwanda and Burundi. Its elevation is approximately 6,000 feet (1,800 m) and is considered to be in the highlands of Tanzania.

Ngara has four seasons: two dry seasons from June to September and January to February with two rainy seasons from October to December and from March to May. During dry seasons there are sometimes strong winds/hazy air and temperatures vary between 18 and 30 °C (64 and 86 °F), depending on the time of day or night. During the rainy seasons, sudden and heavy downpours may occur daily, lasting from a few minutes to several hours. The rain is sometimes associated with strong winds, floods, mud, fog and temperatures may range between 12 and 26 °C (54 and 79 °F).

Socio-economic issues

The primary occupation is subsistence farming and livestock rearing. Local crops include bananas, passion fruit, papaya, groundnuts, beans, coffee, maize, cassava and a variety of vegetables.

Language

The local language in Ngara is Kishubi and Kihangaza, which are very similar to Rundi and Kinyarwanda, the languages of Rwanda and Burundi. Although Tanzania's national and official languages are Swahili and English, usage in Ngara District is, however, rather limited to official functions, offices, institutions of higher learning and a few other places. Generally, English is understood on a limited scale in the market, and Swahili much more so.

District Public Health Risk management

The overall coordination of the epidemic control activities shall be undertaken within the existing framework of the Emergency Preparedness and Response for outbreak management. The Task force is responsible for designing/adapting strategies, planning, implementation, monitoring and evaluation of all epidemic control activities. The Task force within the district will be getting technical guidance from the National Task Force in terms of policy and strategic orientations, guidelines, etc.

The District Task force will be chaired by the District Medical Officer (DMO) will chair the Task Force at the district level.

The Task Force performs its activities through Technical Committees. Technical Committees are composed of experts in that arm of intervention. The committees are therefore responsible for the technical aspects of the control measures such as developing and designing strategies, planning, implementation, monitoring and supervision of activities.

The key pillars of technical committees include:

1. Coordination
2. Epidemiology/ surveillance
3. Case management and infection prevention and control
4. Laboratory
5. Community Mobilization and Health Promotion
6. Social mobilization/ Psycho-social support
7. Logistics

During preparedness shall hold meetings double within the month and during response shall hold daily, preferably at 2pm to review progress made in implementation of the planned activities and provide guidance. Proceedings of the Task force will be summarized by the end of each day to constitute a press report that will be shared by the media.

The District level subcommittee and Task Force will meet one day before the Rapid Response Team Meeting. The District Task Force will as well convene meeting one day before the Regional Task Force Meeting. This allows the flow of information from the subcommittee to the Regional Task Force.

The above intervention areas or pillars have also five respective objectives as follows:

- a. Ensure all efforts are coordinated and implemented in an efficient and timely manner
- b. Ensure implementation of highly sensitive, timely and coordinated surveillance systems
- c. Ensure effective response to manage cases of (re) emerging communicable diseases
- d. Enhance awareness and support especially for at-risk communities
- e. Ensure timely and effective logistical support for surveillance and response teams

Scope of the Public Health Response Plan

This Response Plan is a multi-disciplinary and multi-agency plan, and is intended combine responses from key government agencies, private organizations and partners within the Districts.

Response Plan cannot be 'fully comprehensive tool' that cannot be implemented for lack of resources. Despite its limitations, this Response Plan is expected to constitute a recognized emergency response framework for: (i) awareness-raising throughout the multi-disciplinary task force; (ii) developing training throughout the responders; and (iii) building partnership for a combined response.

Outbreak Response

In an outbreak, it is vital to know who is going to do what. The clearer the responsibilities and the decision-making processes are key elements for effective response. A brief description of the command structure to response to outbreak operations in Ngara District, with relevant responsibilities and authority is presented below.

Concept of operations

- ✓ In an event of a major outbreak overwhelming the District, the District Commissioner (Strategic level command) should declare the level and magnitude of the outbreak, while working with the Regional Task Force (Tactical Command) and District levels (Operational Command)
- ✓ This Response Plan is based on the concept that the emergency functions assigned to the various government departments and agencies and volunteer organizations will parallel their normal day-to-day functions as closely as possible.
- ✓ Those day-to-day functions that do not contribute directly to emergency operations may be suspended during the outbreak response. The efforts that would normally be required for those functions will be redirected to the accomplishment of outbreak response tasks.
- ✓ At every level of command, the chain of communication should be maintained and recognized. Final decisions should always be made and recognized at the coordination level, while always observing technical advice from the Subcommittee level.
- ✓ At any time of response to Health emergencies, the Rapid Response Team (RRT) will be responsible for assessment and verification of a case before dispatching an ambulance to take the patient to the HIDTU. The RRT will be composed of a Clinician, Nurse, Surveillance Officer and a Laboratory staff.

Ngara District Council is high (refer figure 1 below).

LIKELIHOOD OF OCCURRENCE	Almost certain					
	Very likely					
	Likely				●	
	Unlikely					
	Very unlikely					
		Low	Medium	High	Very High	Severe
	IMPACT					

Figure 1: Risk Matrix.

Health System Structure and Services Provision

The District health system operates in decentralized organization of governance where by public and private health service delivery is primarily at Village level and specialized services are managed by Local government level.

The health system ensures public health risk management to outbreaks through mechanisms for indicator or routine based and community-based surveillance, care and treatment, Port health and social welfare services that are all linked to the above levels. There are three provisions Isolation Centre for COVID19 located in Kabanga, Murusagamba and Rusumo with bed capacity of 2. Out of 3 official point of entries, have mechanism and capacity to implement screening however Murusagamba has one official staff of Port health officer, and two non-official staff of Port health officer and no office.

Recent emergencies and disasters in Ngara District Council

Ngara District Council has been facing manmade emergencies. Recent Ngara District Council experienced fire explore at Rusumo Port of Entry during August 18th 2018 that affected a total of 7 cars and tractor 1 with 1 driver death.

COVID19 Response Coordination Mechanism

Coordination of COVID19 Response at different levels will follow the Incident Management System and will be guided by the concept of operations outlined in the All Hazard Emergency Response Plan (2020). During COVID19 response the District Medical Officer will appoint the District Incident Manager to coordinate District level response.

Triggers for action and activation levels

One suspected or probable case of COVID19 constitutes a public health emergency and therefore it will trigger the activation of the response to level II. Where by a confirmed case of COVID19 in the District will trigger activation to level III. The District PHEOCs, National PHEOC

will function based on the level of activation to facilitate coordination of response as outlined in the All Hazard Emergency Response Plan.

The Overall command of the District emergency and disaster is under the District Disaster Management committee which is chaired by the District Commissioner

District Health Incident command

Committee	Members	Description of tasks
1.Coordination	<p>Chair: District Commissioner</p> <p>Members:</p> <ol style="list-style-type: none"> 1. District Executive Director 2. District Medical Officer 3. Chairman of District Council 4. District Administrative Secretary 5. All Head Department 6. All member of District Security and Defends Committee 	<ol style="list-style-type: none"> 1. Coordinates all operational aspects preparedness and response 2. Convenes meetings and keep all the minutes safely 3. Mobilizes and allocates resources for outbreak preparedness and response <ol style="list-style-type: none"> a. Prepares the Preparedness and response plan with participation of all the technical committees b. Monitors continuously the implementation of the plan c. Identifies and communicates resource gaps in timely manner d. Facilitates motivations e. Establish emergency operations centre and rapid response teams 4. Produces reports and communicates to higher authority and partners
2. Case management and Infection Control and Laboratory	<p>Chair : District Medical Officer</p> <p>Members;</p> <ol style="list-style-type: none"> 1. Medical Officer In charge of District Hospital 2. District Nursing Officer 3. Matron/Patron District Hospital 4. Pharmacist of District Hospital 5. District Hospital Emergency Coordinator 6. District hospital Laboratory manager 7. Emergency Nurse In charges District Hospitals 8. Medical Officer in charge of Lukole Health Centre 9. Matron/Patron of Lukole Health Centre 	<ol style="list-style-type: none"> 1. Ensure Quality 2. Train health workers on management including general infection prevention and control 3. Implements barrier nursing procedures and universal precautions 4. Provides care to patients 5. Initiates activities for safe reintegration of discharged patients in collaboration with psychosocial support team 6. Provides data from treatment facility to the surveillance committee 7. Performs any other duties assigned by the coordination committee. 8. Coordinate sample collection, packaging, processing, transportation and laboratory testing of specimens from suspected cases 9. Follows and receives laboratory results 10. Report laboratory results and sensitivity tests to case management committee 11. Reagent management (Ordering, supply and monitoring)
3. Epidemiology/ Surveillance	<p>Chair: District Health Officer</p> <p>Members;</p> <ol style="list-style-type: none"> 1. District Surveillance Officer 2. District Hospital Health Officers 3. District Vector Control Officers 	<ol style="list-style-type: none"> 1. Trains health personnel on surveillance 2. Establishes transmission chains 1. Manages outbreak data: analyses data regularly for trends and 2. Disinfects homes and environment 3. Provides data from treatment facility to the surveillance committee

	<ol style="list-style-type: none"> 4. All Environmental Health Officer 5. Data Officer 6. District Laboratory Technician 7. Epidemiologist 8. IDSR Fco 9. In charges of Port Health Officer 10. District Veterinary Officer 11. Chair of District Driver 	<ol style="list-style-type: none"> 4. Performs any other duties assigned by the coordination committee.
4. Social mobilization/ psycho social support	<p>Chair: District Community Based Health Care</p> <p>Members;</p> <ol style="list-style-type: none"> 1. District Social Welfare 2. District Communication Officer 3. Education Officer 4. District Community Development officer 5. Head of Religions 6. Director Manager of Radio Kwizera FM 7. Health Promotion and Education Officer 8. Traditional Healers Fco 	<ol style="list-style-type: none"> 1. Reviews and/or develops materials for social mobilization 2. Organizes sensitization of the community 3. Serves as focal point for preparing and verifying information to be released to the press by the Task Force 4. Liaises with the different sub-committees, local leadership and NGOs involved in activities on mobilizing communities 5. Provides psychological and social support to suspected/ probable/confirmed cases; affected families and communities 6. Provides psychological support to the response team 7. Prepares communities for reintegration of convalescent cases/ patients who have recovered 8. Performs any other duties assigned by the coordination committee
6. Logistics	<p>Chair: District Human Resource Officer</p> <p>Members:</p> <ol style="list-style-type: none"> 1. District Procurement Officer 2. Transport Officer 3. Treasurer Officer 4. District Pharmacist 5. Accountant of Health Department 6. Manager of RUWASA 	<ol style="list-style-type: none"> 1. Maps available resources for response and maintains updated inventory 2. Conducts projection of the logistics needs for response 3. Coordinates transport of the different field response teams 4. Provides supplies for the treatment centers and supports stock management

Reporting System

The District gets report from Community, boarders and Health Facility. The Community Health Worker using Rumors book which collects within the community then submitted to the IDSR Fco. The Port Health Officer report to the RRT (DMO) if occur any suspect at port of entry. Also in charge of Hospital, Health Centre or Dispensary report to the RRT (DMO) if get any suspect from their facilities. The DMO after confirmed suspect is associated with Highly Infectious Disease like Corona Virus Disease report to the RMO.

Scenario

The development of this Contingency Plan is based on the Likely Case Scenario that calls for rapid containment of the case. The scenario assumes a case of COVID19 being imported and detected by the surveillance system in all Point of Entry and Health Facilities of Ngara District Council.

Planning Assumptions

- a) An Suspect case was detected in one of a local health facility
- b) Contact tracing teams well trained and equipped to conduct the task
- c) All contacts have been identified and monitored
- d) Patients who meet the case definition have been isolated and treated in the designated HDTU, even though was still not meet the case definition.
- e) Infection prevention and control measures are applied at health facilities and community level

Strategy

5.1 Mitigation Strategy

As described in the risk assessment, mitigation measures are important so as to ensure the health risk of COVID19 importation is addressed in order to avoid importation as well as spread of the infection in the District in case of COVID19 is imported. The risks which have been identified for mitigation includes; COVID19 case importation in the District, spread of COVID19 infection in the District and community fear. Table 1 outlines the health risks and planned mitigation measures per each technical area

Identified health risks	Mitigation measures
EPIDEMOLOGICAL SURVEILLANCE (POE):	
Importation of COVID19 case(POE)	To ensure the PoE specific contingency plan and SoPs for high risk ground crossing are followed
	To ensure the SoPs for identification, notification, management and referral of COVID19 suspects are followed
	With the help of PoE, Engagement of different media and transport agency to convey messages on COVID19 to travellers for affected Countries
COORDINATION:	Mitigation measures
COVID19 cases importation	Secure resources for COVID19 preparedness and response
	Monthly cross sectoral syndication and coordination meetings
	Updated EVD/Marburg/COVID19 contingency plan
RISK COMMUNICATION AND SOCIAL MOBILISATION	Mitigation measures
Community panic towards importation of COVID19	Advocacy and sensitization messages distributed to the community by using ITC.
	Address personal behaviors and soci-cultural factors that influence transmission
Spread of COVID19 infection	Mobilise community mobilisers for community sensitization and awareness
	Conduct community awareness campaign to increase awareness and encourage adoption of preventive behaviors and actions
	Desribution material for social and behavior change communication
	To ensure message and materials dissemination trough media mix

Identified health risks	Mitigation measures
	Train Health Promotion Coordinators and other mobilizers at District and community levels
	Community awareness for IPC at household level
CASE MANAGEMENT & IPC	Mitigation measures
Spread of COVID19 infection	Strengthen Infection Prevention and Control Practices through additional measures for COVID19
	Ensure availability of equipped COVID19 isolation and treatment facilities in high risk Area
LABORATORY	Mitigation measures
Spread of COVID19 infection	Training of laboratory personnel on universal precautions and additional IPC measures for COVID19 and on specimen management to laboratory personnel and other HCW
	Map / identify and sensitize local couriers capable of transporting specimen immediately
	Disseminate SOP for COVID19 sample management
	Develop list of supplies for specimen management

5.3 Preparedness and Response Strategy

As described in the risk assessment, preparedness measures are important so as to ensure readiness to deal with COVID19 in the District. Preparedness measures that have been suggested are geared at improving capacity to respond to COVID19 with altimate reduction of its impact in case an COVID19 case is imported. The preparedness measures varies with the identified health risks that determines response needs to be addressed by the District. The health risks that have been identified include: COVID19 imported cases, High transmissioin and spread of COVID19 infection as well as psychological trauma and fear, other risks include public panic and deaths due to EVD. The response needs for each health risks have been outlined as well as preparedness measures that are suggested for the respective response needs as shown in table 2

COORDINATION:		
Health Risk	Response need	Preparedness measure
COVID19 imported cases	Coordinate and monitor response activities	Conduct working session to finalize and disseminate ERP
		Conduct working session to review r PHEOC SOPs
		Conduct donor mapping
		Advocacy and sensitization to influential people at all levels.
		Conduct functional simulation exercise for PHEOC
Health Risk	Response need	Preparedness measure
	COVID19 Outbreak response plan	Conduct orientations of revised operational documents to high risk in District (ERP & its contingency plans, PHEOC SOPs including Sensitization & orientation of District Authorities about PHEOC)
		Update COVID19 contingency plan and disseminate at all levels
		Identify burial ground
		Develop ToRs & SOPs for RRT in response to potential COVID19 cases
	Supportive supervision for response activities	Develop ToR and checklist for supervision at District level
RAPID RESPONSE TEAMS		
Imported COVID19 Cases	Deployment of COVID19 RRT	Train RRT TOT at District level on COVID19 response
		Conduct training of RRT at District level with priority to high risk Area
	Rapid Risk/need Assessment conducted by RRT	Conduct a simulation exercise for RRT within 60 days if no COVID19 case
		Train multi-disciplinary RRT teams and update inventory, ToR at District level

	Provide COVID19 RRT GO kit	Develop list of items in GO kit for RRT Print Rapid Risk Assessment Manual
BUDGET		
	Operational & Staff welfare support	Develop operational budget Advocate for revisit of Workers Compensation Fund in relation to high risk assignments
	Provide risk allowance for COVID19 responders conducting high risk assignments	Advocate for risk allowance for COVID19 responders conducting high risk assignments
	Adequate resources for response	Advocate for increase in the emergency contingency fund and timely emergency fund release procedures
	Provide basic welfare needs for ETC	Develop resource mobilization package/strategy
PSYCHOSOCIAL SUPPORT:		
Health Risk	Response need	Preparedness measure
Psychosocial trauma and fear among survivors, individual families and community	PSS services to responders and affected i families, community and during burial	Dissemination PSS guideline,
		Identify and train a team of PSS service providers and volunteers at District level and high risk Area
		Map peer support groups, volunteers, and stakeholders that can support families during response in the community at high risk Area
		Assessment of community needs
		Prepare list of items for package with material support (food and non food items) for COVID19 survivals and families that lost relatives
		Establish communication linkage btn PSS team and other responders contact detels (ETC, EOC, Community Mobilizers, nutrition)

EPIDEMIOLOGICAL SURVEILLANCE:		
High transmission of COVID19 cases	Early detection and reporting of COVID19 cases	Operationalization of hotline or emergency number to manage alerts
		Train technical experts at District level on alert processes and requests for information related to COVID19.
		Orient HCWs and IDSR FP at District on use of VHF database, use of COVID19 case definitions and completing case investigation forms in high risk Area
		Orient CHW volunteers, NGOs, traditional healers and community leaders on event based surveillance in high risk Area.
	Contact tracing	Identify contact tracing teams at Community levels (volunteers, NGOs, traditional healers and community leaders) and conduct refresher training on contact tracing and identify a local source of contact tracers for all areas
		Disseminate contact tracing SOPs, reporting SOPs and simplified case definitions for community use to all Areas
POE		
COVID19 imported case (POE)	Early detection, management and referral	Train emergency committees at PoE on IPC, detection, assessment, management and referral of any potential COVID19 cases
		Orient POE stakeholders (POE users, tax drivers, service providers, cleaners) on SOP for identification and notification
		Test PoE specific emergency contingency plan (simulation) for ground crossing at high risk Area
Health Risk	Response need	Preparedness measure
	Proper collection, management and timely reporting of traveller	Equipped observation/isolation areas at PoE high risk Area
		Develop list of items, PPE, cleaning and disinfecting products and sanitisers at PoE.

	information	Develop service and maintenance plan for monitoring and data management equipment at PoE
		Disseminate a communication SoP between PoE and District's surveillance system for followup of travellers from affected country
		Conduct supportive supervision in collaboration with relevant stakeholders of PoE
RISK COMMUNICATION AND SOCIAL MOBILIZATION:		
Increased panic due to importation of COVID19 Case	Community awareness creation on COVID19 prevention	Train Mobilizers for sensitization and awareness rising
		Develop message tailored to targeted audience and disseminate them through media mix
		Conduct media orientation
		Conduct orientation to Health promotion coordinators and other social mobilisation stakeholders at high risk Area
Spread of COVID19 infection in the community.		To conduct assessment for socio-cultural factors (Myth, attitudes, misconception, beliefs, behaviors, practices etc) that influence COVID19 transmission.
		Implement communication plan that identify channel, responsible and message timing.
		Identify existing community social structures that can effectively support community engagement and awareness campaign.
CASE MANAGEMENT		
COVID19 case/s in the country	Isolation of COVID19 patients	Identification and equipping COVID19 isolation facilities and prepare items for surge capacity
	Provide care and treatment of patients	Dissemination and distribution of COVID19 guideline and SOPS/job aids for case management

		Formulation, training and equipping teams for case management and ambulance in District for designated ETC
		Develop plan and implement onjob orientation of all health workers at health facilities in high risk Area on COVID19 by using District TOTs
		Conduct a simulation exercise in case management (drill) at Lukole Isolation facilities in District
		Conduct operational readiness verification visit at the high risk Area (isolation facilities at District levels, IPC materials including PPE)
	Transportation of COVID19 patients	Identification of dedicated transportation facilities (vehicle) and SOPs for transportation
	Ensure 24/7 communication between the HIDTU, EOC and other teams	Develop and mantain contact details with manes, phone contacts of other responding teams
	Ensure provision of commodities, supplies and equipment for COVID case management and IPC	Develop list of minimum required essential COVID19 commodities and supplies and stockpile at the identified Isolation facility
	Mantain records of staff and other teams daily rosters for HIDTU, ambulance, decontamination, burial)	Develop templates of duty rosters of workers at the HIDTU and templates for reports
	Conduct supportive supervision and mentorship to health workers at the HIDTUs	Develop list/inventory of Districtl technical experts on COVID19 case management , TOR and checklists.
Health Risk	Response need	Preparedness measure
Spread of COVID19	Practice additional IPC measures for COVID19 in health facilities and HIDTU	Dissemination and distribution of HIDTU – IPC guideline and SOPs
		Prepare list of waste management facilities in designated HIDTU to be procured for designated health facilities

	Conduct decontamination of households and surroundings where patients or death due to COVID19s has occurred	Formulation, training and equipping the decontamination teams for isolation facilities, vehicles and households
		Develop list of Items for decontamination of house holds to be procured for all high risk Area
		Identify/arrange transport that will be used by household decontamination teams to be linked with surveillance
	Ensure security at the HIDTU	Fencing of the HIDTU or designated health facility
		Arrangement for security services for the HIDTU
Deaths due to COVID19	Provide safe and dignified burial services	Dissemination SOP for Safe and dignified burials
		Identification and training of burial teams at the risk areas
		Identify and designate transport for burial services of COVID19 corpses
	Provide Equipments and supplies for SDB	Develop list of minimum required equipment and supplies for burial services and stockpile at the identified high risk areas
LABORATORY		
Stread of COVID19	Early confirmation of COVID19 case	Identify and Train personnel in Specimen management to be deployed to affected district during response
		Print and disseminate SOP for COVID19 sample management
		Relocate more laboratory staff to testing laboratory
	Transportation of specimen to testing laboratories	Re orientation of curriers at all levels
		Prepare list of required materials for packaging and transportation specimens to be procured and supplied to high risk Areas
Health Risk	Response need	Preparedness measure
	Protection of Laboratory workers	Develop list of items for protection of laboratory personnel (PPE etc)

	against COVID19 infection	
	Sharing of Results	Develop Service and maintainance plan of laboratory quipment
		To prepare and disseminate laboratory linelist forms for COVID19 and report templates

Activation

Alerting

The Rapid Response Team When there is any information or rumor is alerted pending rumor verification.

Stand-by

When there is a confirmed case in any other District/Region/Country that makes Ngara to be in a high risk of being infected, the Rapid Response Team consisting of half of the full team will be mobilized in a standby mode at Lukole HIDTU. The standby rooster will operate 24/7 hours.

Activation (Full Mobilization)

When there is a suspect case that meets Standard Case Definition the Case management Team will be activated to Lukole HIDTU.

COVID19 Emergency Response Plan Activity Implementation

Pillar	Response needs	Action	Responsible
Social Mobilization	Ensure availability of printed awareness materials	Printing of IEC materials	Head of social Mobilization subcommittee Transport Officer
		Distribution and dissemination of IEC materials	
		Conduct media orientation	
	Strengthen community sensitization (Use of mobile vans, media, Pas)	Intensify Community sensitization using sound facility twice in monthly	Head Social Mob and DHS and TO
		Conduct Sensitize schools, colleges (meetings, school health programme and working areas)	Head of social Mobilization subcommittee
Strengthen engagement of community stakeholders	Conduct meeting with influential people (Private sectors, religious leaders, local community leaders)	Head of social Mobilization subcommittee/DED/D MO	
Coordination	Strengthen involvement of stakeholders (mapping and engagement in a response activities)	Conduct stakeholders mapping and develop list of stakeholders with their capacities	DMO/DED
		Conduct meeting with all potential stakeholders for their participation/support in their response (refreshment)	DED/DMO
	Strengthen implementation and monitoring of COVID19 response activities	Conduct regular meetings using the existing response forums	DMO
	Ensure availability of resources to implement response activities (human, financial, transport & logistics support)	Share the coasted plan with stakeholders	DMO
Consider reallocation of existing resources		DED/DMO	

		Recruit Staff who provide services at Lukole H/C and refreshment	DED
Case Management	Strengthen management of patients presenting with symptoms suggestive of COVID19	Print and Distribution of case management Guideline.	Head of District Case Management & Clinical Services Coordinator
		Orientation of healthcare workers on standard case definition and management	Head of District Case Management & Clinical Services Coordinator
		Procure Medical supplier like Glove, Masks, Aprons, googols, sprayer pump, sanitizer, Electronic Dispenser etc	Head of District Case Management & Clinical Services Coordinator
Surveillance & Laboratory	Strengthen use of surveillance data to guide response interventions	Orientation of surveillance officers for consolidation of surveillance data	Head of Surveillance (ie District Surveillance Officer)
	Strengthen adherence to laboratory protocols and testing guidelines for COVID19	Distribution of COVID19 testing guideline	District Laboratory Coordinator
Logistics	Ensure availability of essential commodities for COVID19 control	To ensure are all resource available at Lukole H/C	Chairman of Logistics Team
		To ensure availability all infrastructure which are needed at Lukole H/C	Chairman of Logistics Team
		To ensure availability of fuel for transport, follow up and monitoring of suspect and contacts cases	Chairman of Logistics Team

Appendix VIII: Grievance Redress Mechanisms

GRIEVANCE REDRESS MECHANISMS.

Introduction.

Ngara District Council established a grievance mechanism in accordance with the World Bank Standards to receive and address specific concerns raised by affected communities, employees and other affected stakeholders as a result of the project activities. Methods for documenting and responding to complaints in a reasonable timeframe, explaining response and compensation procedures, and also including monthly reports back to the community on the system and complaint resolution. To ensure its effectiveness, this GRM has been prepared in Consultation with the local Community and timely resolution of complaints through an effective and transparent complaint mechanism will be enhanced for the satisfaction of the employees and the timely completion of the projects.

The Grievance committees will be formulated to include each stakeholder that will be affected by the project from the project levels to the local government level and district level:

The procedures for Grievance Redress Mechanism

In a situation where an affected community, employee, or any other stakeholder wishes to make a complaint about a project, the following process should be followed;

1. COMMUNITY LEVELS;

- ❖ Affected people / employees / communities must fill out a complaint form which shall be available at the local government offices and then complaint shall be registered by the village government officials.
- ❖ The Village Executive Officer shall convene a meeting of the Village Grievance Redress Mechanism committee to perform appropriate investigation. If deemed necessary, the investigation can include a risk assessment. The investigation shall include follow-up meetings between stakeholders and the contractors, where an impartial party is present without impeding access to any judicial or administrative remedies that may be available at the Ward Executive Officer and Ward Councils. Minutes are recorded and added to the grievance database then further be reported to the Contractor's Community Representative.
- ❖ The meeting shall be held by the Grievance Redress committees from each stakeholder i.e. the Village Committee and the Contractor Representatives to resolve the grievance.
- ❖ Once the reported grievance has not been resolved at that stage, it will be reported to the Ward level for further resolution processes and again if not resolved it will be transferred to the District Level Grievance Management Committee.
- ❖ Likewise, the District Executive Director (DED) shall convene the meetings consisting of the relevant District experts for further resolution process.
- ❖ For any resolved grievance, signed agreement to any resolution to a grievance shall be maintained in the archives. Appeals to any grievance shall be allowed in such context the signed agreement shall be revisited to establish the relevance of the appeals. If the grievance is unresolved the records shall remain unresolved and legal actions will be encouraged.

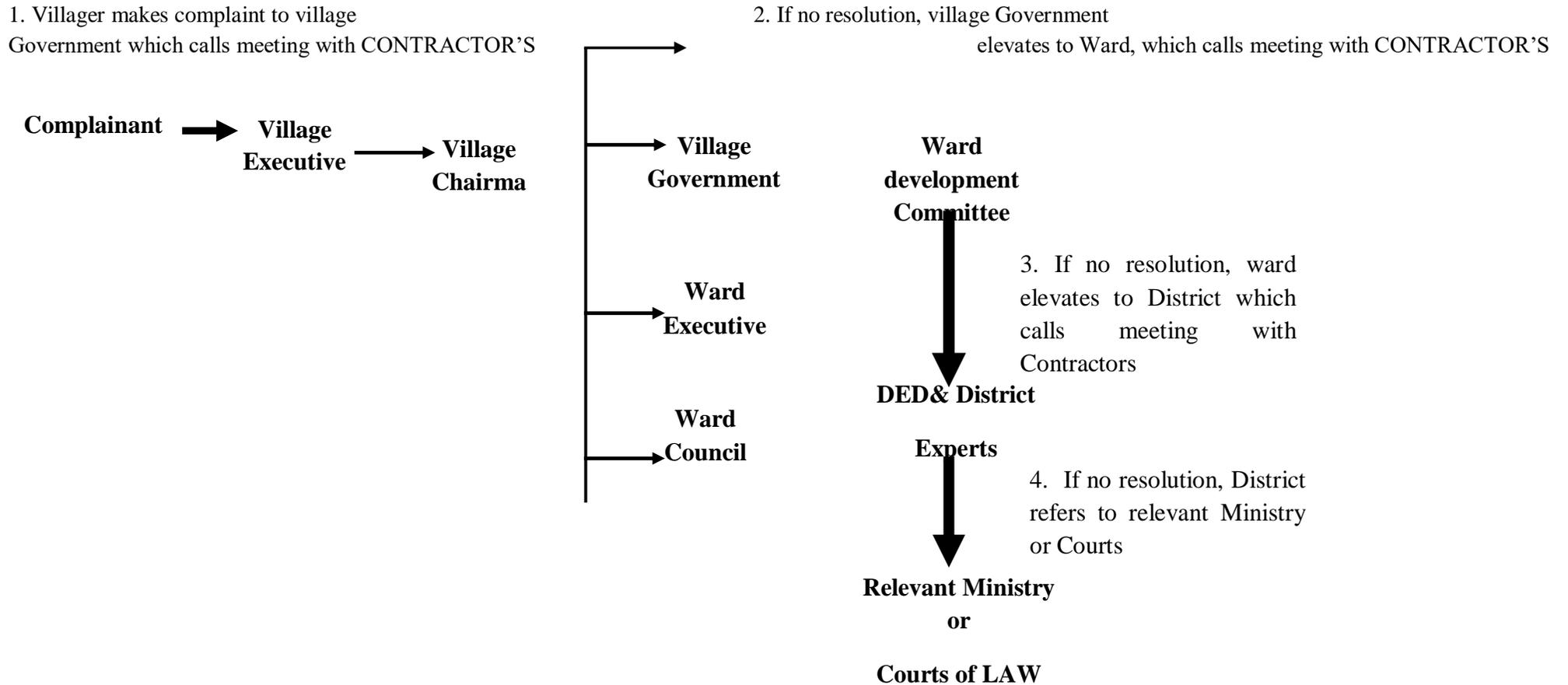
2. AT THE CONTRACTORS LEVELS.

Like in any countries, in Tanzania the labour laws recognise the workers' rights to form and to join workers' organizations of their choosing without interference and to bargain collectively, the Contractor will comply with national law.

CONTRACTOR'S Grievance Mechanism will work as follows:

1. Contractor's complaint & suggestion boxes will be stationed at the contractor's site and other strategic sites.
2. All complaints submitted in boxes will be investigated and resolved by the contractor's sociologist and human resource manager within 48 hours. In the event that the settlement does not follow the predetermined criteria, the case must be presented to management for review. And if unresolved, problem is shared with senior management
 - a) In the event of a serious complaint, the worker's complaints will be referred to the Confederation of Workers (TAMICO and project supervisory engineers).
 - b) The resolution process ends with a written agreement signed by the employee and contractor's management. If not resolved, it will be submitted to the company's environmental, social and health and safety committee. If it remains unresolved, legal action may be taken by an employee.
 - c) Throughout the process, the most important thing is that the documents (resolution agreements, appeals and investigation reports) will be kept in the Contractor's database.
3. Serious complaints will be resolved through the standing procedures described above in the "existing government complaints system"
 - a) "Serious" is defined as including actual or imminent injury (which Contractor will also report to the police), damage to property or crops, water or chemical contamination.
 - b) Complaints will receive an update on its resolution at least every two weeks until the issue is resolved.
 - c) Contractor will meet with the aggrieved individual confidentially to determine the best procedure under which the resolution agreement can be obtained if the complaint is serious and genuine and the group or individual who has posted the complaint chooses not to seek resolution through the standing government grievance system.
4. Resolution Reporting
 - a) All complaints and related resolutions will be reported Monthly to the World Bank and NELSAP and Ngara DC

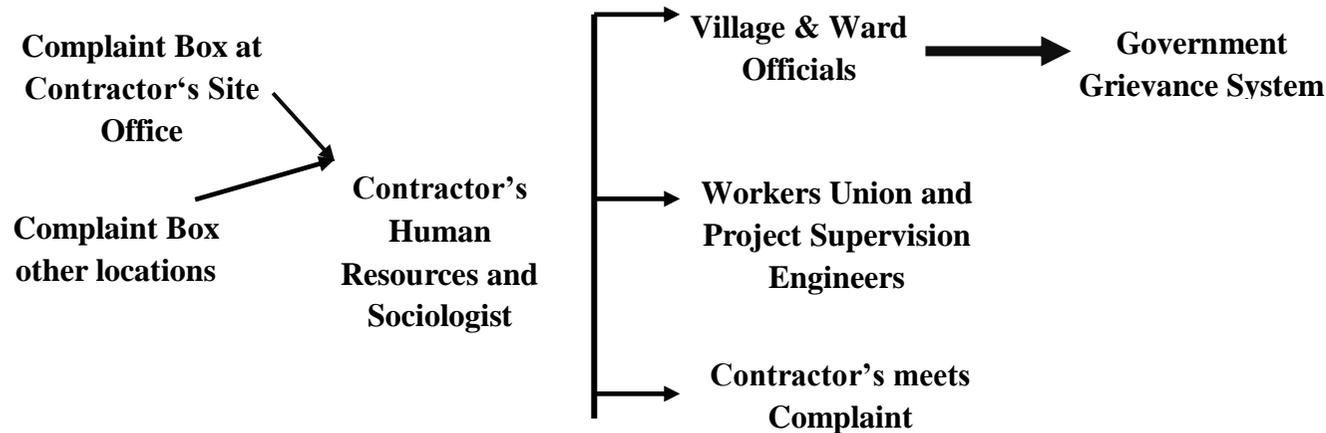
Existing Government Grievance System



CONTRACTOR'S Employees Grievance Mechanism

1. Contractor's Sociologist/Human Resource Officer reviews box complaints within 48 hours

2. Serious complaints referred to government grievance system; labour issues to union; & confidential complaints met privately with appropriate CONTRACTOR'S Staff



Reporting

- *Complaints distributed to village & ward authorities biweekly*
- *Resolution reported at quarterly at World Banks, NELSAP and Ngara DC*