

UNITED REPUBLIC OF TANZANIA
MINISTRY OF WORKS AND TRANSPORT



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**ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR
THE PROPOSED REHABILITATION OF LUSAHUNGA – RUSUMO
ROAD (92KM) TO BITUMEN STANDARD**

Submitted to:

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ABBREVIATIONS AND ACRONYMS

AADT	Average Annual Daily Traffic
ADT	Average Daily Traffic
AAS	Atomic Absorption Spectrophotometer
AC	Asphalt Concrete
AI	Area of Influence
AIDS	Acquired Immune Deficiency Syndrome
A.M.S. L	Above Mean Sea Level
BATNEEC	Best Available Technology Not Entailing Excess Cost
BOQ	Bill of Quantities
BPQSORP	Borrow Pits and Quarry Sites Operation and Reinstatement Plan
CAPP	Child Abuse Protection Plan (CAPP
CBD	Convention on Biological Diversity
CBO	Community Based Organization
CCEP	Community Communication and Engagement Plan
CEC	Code of Ethical Conduct
C-ESMP	Contractor's ESMP
CFP	Chance Finds Procedure
CIF	Cost of Insurance and Freight
CIP	Contractor's Inspection Plan
CRB	Contractors Registration Board
CRR	Crushed Stone Base
CSOs	Civil Society Organization
CTC	Care and Treatment Clinic
DBST	Double Bituminous Surfacing Treated
DEM	Digital Elevation Model
DFO	District Forest Officer
DIZ	Direct Impact Zone

DoE	Division of Environment
EAMGRS	Environmental Assessment and Management Guidelines for Road Sector
FYB	First Year Benefits
	GBV Gender-Based Violence
GDP	Gross Domestic Product
EC	ESIA Certificate
EIA	Environmental Impacts Assessment
EIS	Environmental Impacts Statement
EMA	Environmental Management Act
EMP	Environmental Management Plan
EPRP	Emergence Preparedness and Response Plan (EPRP);
ERB	Engineering Registration Board
ESIA	Environmental and Social Impacts Assessment
ESMP	Environmental and Social Management Plan
EWURA	Energy, Water Utilities Regulation Authority
FGD	Focus Group Discussion
FHIA	Honduran Foundation for Agricultural Research
FoB	Free on Board
GBVPP	Gender Based Violence and Protection Plan
GRM	Grievance Redress Mechanism
GoT	Government of the United Republic of Tanzania
HBC	Home Based Care
HBS	Households Budget Surveys
HDM	Highway and Development Management Model
HBS	Households Budget Surveys
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
HSMP	Health and Safety Management Plan
IDA	International Development Association

IEC	Information, Education and Communication
IIZ	Immediate Impact Zone
IRI	International Roughness Index
IRR	Internal Rate of Return
ISOHDM	International Study of Highway Development and Management
LHS	Left Hand Side
MEAs	Multilateral Environmental Agreements
MoW	Ministry of Works
MVPL	Marginal Value Product of Labour
NACP	National AIDS Control Programme
NEMC	National Environment Management Council
NGO	Non-Governmental Organization
NPV	Net Present Value
NSGRP	National Strategy for Growth and Reduction of Poverty
OCC	Opportunity Cost of Capital
OP	Operational Policy
PAs	Protected Areas
PAPs	Project Affected Persons
PEDP	Primary Education Development Programme
PIT	Project Implementation Team
PITC	Provider Initiated Testing and Counseling
PLHAS	People Living with HIV/AIDS
PMTCT	Prevention of Mother to Child Transmission
RAP	Resettlement Action Plan
RHS	Right Hand Side
RoW	Right of Way
SEA/SH	Sexual Exploitation and Abuse/Sexual Harassment
TANAPA	Tanzania National Parks Authority

TanTIP	Tanzania Transport Integration Project
TECU	TANROADS Engineering Consulting Unit
VEO	Village Executive Officers
v.p.d	vehicles per day
WMP	Waste Management Plan

Environmental and Social Impact Assessment Report for the proposed rehabilitation of the Lusahunga - Rusumo Road (92Km); Kagera Region

Proponent: The United Republic of Tanzania, Ministry of Works and Transport through Tanzania National Roads Agency (TANROADS).

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EXECUTIVE SUMMARY

Introduction

The Government of the United Republic of Tanzania through TANROADS has received a credit from the International Development Association (IDA) towards the cost of the Tanzania Transport Integration Project (TanTIP) and intends to apply part of the proceeds of this credit to eligible payments under the Contract for rehabilitation of Lusahunga - Rusumo Road (92Km). The road rehabilitation is part of the Government strategy to develop its road network to support the socio-economic development of the country.

This ESIA concerns the Lusahunga - Rusumo Road. It is an update from the previous ESIA to incorporate the relevant provisions of the World Bank Environmental and Social Framework (ESF)

The Lusahunga - Rusumo road plays a secondary role as international roads for export/import traffic of Rwanda, Burundi and Eastern Democratic Republic of Congo to and from the Dar es Salaam port, Uganda and the port of Mombasa in Kenya. The road also connects areas with variety of potential economic opportunities such as agriculture, livestock, forestry & minerals, fisheries and wildlife & tourism. Moreover, people living along the road and neighbouring villages will significantly benefit as their agricultural

products will be easily transported to business centers (Ngara, Biharamulo town, Kahama, Bukoba, etc.). On top of that rehabilitation of this road there will be savings in vehicle operating costs (VOC), and travel time leading to reduction in transport costs to the users.

Project Description

The project road starts at Lusahunga village centre through Nyakasanza and Benako and ends at Rusumo at the Tanzania- Rwanda border. Out of 92 Km of the project road, 63 Km are located in Biharamulo district and the remaining 29 Km are located in Ngara District.

The project road traverses through four villages in Biharamulo district namely Lusahunga, Kikoma (Lusahunga Ward), Ngararambe and Nyabugombe, (Nyakahura ward) while on the Ngara district side there are two villages of Kasulo (Kasulo ward) and Rusumo (Rusumo ward). The Lusahunga – Rusumo road was upgraded in 1985 to bitumen standard for a design life of 15 years. The road consists of several concrete box culverts and steel pipe culverts. However, there are no bridges along the 92 km. Rusumo bridge at the end of the road is out of the scope of the TanTIP project. Currently, the road has deteriorated drastically due to pavement aging despite the efforts that are carried out by TANROADS - Kagera Regional Manager, to maintain and repair.

Typical defects include severe potholes, rutting deformation, corrugations, extensive cracking (alligator cracks) and depressions. Generally, the road condition is from fair to bad.

An important feature of the rehabilitation project is the fact that the road will be widened. Currently, the road has a width from a total of 10.5 m (3.25 m lanes, 1.5 m shoulders and 0.5 m outer shoulder); with the rehabilitation project it will have a total width of 12.0 m (3.5 m lanes, 2.0 m shoulders and 0.5 m outer shoulder). The required additional 1.5 m will be taken from the existing road reserve (the Right-Of-Way) and will not need additional land acquisitions or alienation of private land. The number of lanes (two) will remain unchanged.

Policy, Legal, International Standards and Institutional Framework

The Environmental and Social Impact Assessment was conducted in accordance with the requirements of the Environment Management Act No.20 of 2004 and Environmental Impact Assessment and Audit Regulations (2005, amended in 2018) of Tanzania with full cognizance with the Guidelines of the World Bank's Environmental and Social Framework (ESF) and the World Bank Group Environmental, Health and Safety (EHS) General Guidelines and EHS Guidelines for Toll Roads (2007). Other important legal provisions providing guidance on environmental issues pertaining to the road sector such as the Road Act (2007), Environmental Code of Practice for Road works (2009) and Environmental Assessment and Management Guidelines in the Road Sector (2004) have also been used in the undertaking Environmental and Social Impact Assessment.

Subsequently, the ESIA certificate with registration No. EC/EIA/2690 was obtained from the National Environment Management Council in October 2016.

Institutional Framework

The key institutions with major roles and responsibilities for environmental and social management at the various levels in the country are as follows:

National level:

Minister responsible for Environment in the Vice President's Office (Director of Environment);

National Environment Management Council (NEMC);

Chief Executive Officer - TANROADS (Environment and Social Unit);

Regional and District or Municipal level:

Regional Commissioner of Kagera (District Executive Directors, Land Officers and Forest Officers of Biharamulo and Ngara District Councils);

Community level:

Ward, Village, Sub-village "Mtaa", "Kitongoji"

Project Environment

The project area has two rainy seasons. Most of the rains fall between the months of September/October and March to May. Annual rainfall ranges from 800 mm in Bushubi to 1,400 mm in Bugufi. The mean temperatures are around 17 C in Bugufi and 25 C in Bushubi.

The topography through the project area is mainly flat terrain with some rolling and undulating terrain in some sections with an altitude that is fluctuating between 1300 and 1400m above mean sea level. The geology of the project areas is made up of coarse-grained basement rocks and quartz. For most part of the road profile, the soil is characterized by yellowish red clay soil. However, there are some parts with black cotton soil (especially near rivers) to some small extent.

Apart from minor/seasonal streams, the main surface water bodies in the project area include Midaho stream (11+200), Kikukumbo stream (61 +000), Benako water pond (77 +000), Kagera River (91 +700), Nyamozi River, Busiri River and Kagera River. Groundwater is abundant in almost all the villages along the project road. This is evidenced by the fact that shallow wells are one of the sources of domestic water supply for all the villages along the project area.

From the design report and field observations, habitats of the Project area are characterized by mosaics of Miombo woodlands, wooded grassland, exotic/non-native tree plantations, banana and timber plantations as well as small streams and wetlands

mainly used for paddy fields. Exotic street strip and banana farms are found in almost all village centers along the project road, while wooded grassland and miombo woodland are found in between settlements. Outside of the Burigi-Chato National Park, the main wildlife species are ubiquitous species accustomed to settlement and disturbances from the road. The Burigi-Chato National Park, which is about 1,4 km to the road, at its closest point, shelters many large mammals, including threatened species. With current knowledge and based on discussions with the national park management, there are no wildlife corridors that cross the road in the Project area. A Key Biodiversity Area (KBA) is also located close to the road, the South Akagera KBA. Two threatened species of fishes have triggered this KBA. They are found in the Akagera River and its floodplain. The road follows loosely the southern limit of this KBA between chainage 81+500 and 91+440 (end of the road) and is in direct contact with the boundary of the KBA but not in contact with the river and its floodplain (which are the habitats that designated the KBA).

Project Stakeholders and Involvement

During the updating of this ESIA in 2018 and May to July 2022, consultations were held with local stakeholders, including all 523 affected persons (46% of them male and 54% female) in 4 wards and 8 villages along the road. Additional consultations were also done in the preparation of the Resettlement Action Plan (RAP) with persons to be displaced, including 124 street vendors and 237 affected households, including 12 vulnerable persons (2 child heads and 10 widowed and aged women). Other stakeholders consulted included the Local Government Authorities of Biharamulo and Ngara, Utility companies, Wildlife and TFS Authorities, and TARURA.

Public consultation meetings with key stakeholders in villages were conducted as part of the identification and assessment of project environmental, social and health risk and impacts. During these meetings, the concerns and suggestions of community members were solicited and recorded. Questions relating to the proposed project were asked and responses provided. Minutes of these meetings and lists of attendees were compiled, signed by village authorities, and used in the updating of this ESIA. The main stakeholders consulted were:

- Kagera Region Secretariat;
- Ngara District Council;
- Biharamulo District Council;
- Village communities along or near to the project road (road users); and
- Burigi-Chato National Park.

The following issues were highlighted by stakeholders in May and July 2022 consultations:

- **Demolition of Houses.** The project will entail the expropriation of land and other properties, especially houses. Affected owners asked whether they would be compensated and, if so, who was eligible? It was explained that all persons within the 45m RoW would be compensated at replacement cost.
- **HIV/AIDS and other sexually transmitted diseases.** The contractor will be required to conduct relevant awareness seminars and campaigns on HIV/AIDS with workers and local communities.
- **Rehabilitation of borrow areas.** The project will involve the borrowing of materials from various areas. The community is worried that these borrow areas may not be rehabilitated based on their past experiences. The contractor will be required to prepare and execute site-specific management plans for all degraded sites, including borrow areas.

Potential Environmental and Social Impacts

Under World Bank’s Environmental and Social Risk Classification (ESRC), this project is rated as substantial. The environmental risk rating is Substantial because of the impacts and risks associated with the large-scale infrastructure project and off-site facilities (such as borrow pits and quarry sites) may have sensitive environmental issues and risks and road safety issues due to the increase in vehicle speed and volume from the road improvements.

The Social risk is rated Substantial because the direct and indirect social risks and impacts associated with the large scale rehabilitation may entail significant adverse social impacts regarding: involuntary resettlement (for which a standalone Resettlement Action Plan was produced **and publicly disclosed by TANROADS in December 2022¹**); labor and working conditions; failure to ensure inclusion of members of vulnerable groups (including persons with disabilities and women); lack of adequate stakeholder engagement; Gender-Based Violence/Sexual Exploitation and Abuse/Sexual Harassment (GBV/SEA/SH); and the transmission of HIV/AIDs, COVID-19 and other communicable diseases, associated with labor influx and the permanent project workforce, including project worker interactions with local communities.

The development of highways, regional and rural roads, and other transportation systems can cause a range of environmental and social impacts. However, given that this is a rehabilitation project, most impacts are expected to be minor to moderate. The rehabilitation may involve risks inherent in all construction activities. Given the appropriate preventive measures, these can be mainly avoided. Negative impacts during operation are expected to be associated more with increased in traffic than with the road rehabilitation itself, as the Project will not add any additional lanes to the road. Expected impacts are both positive and negative in nature. One positive impact relates to the improvement of road safety, thanks to investment in walkways and improvement of the

¹ <https://www.tanroads.go.tz/common/uploads/disclosure/c006a21eadb542a0fa3b4b1232ab2465.pdf>

road. One of the major social impacts will be the resettlement-related impacts to individual and community properties. A standalone Resettlement Action Plan (RAP)² has been prepared to address these issues.

This ESIA has demonstrated that most risks on biodiversity are avoidable and that no critical habitat will be impacted. Therefore, there is no need to develop a Biodiversity Management Plan for the Project.

The Table below lists the potential E&S risks and impacts identified during the project preparation phase and including the construction and operation and maintenance phases.

N°	Impacts/risks	Recommended main mitigation or enhancement measures (and management plans)
Project preparation		
1	Many biophysical and socio-economic components may be affected if tendering process for contractors do not include specific requirements for their safeguard.	Inclusion of measures developed in the ESMP in tender and contracts. Clear requirement to quantify health and safety measures and other measures in the Bills of Quantities. Inclusion of the framework ES instrument developed as part of TanTIP (such as the GBV action plan, the LMP and ESMF) in tender and in contractual documents. Establishment of the management structure at TANROADS to supervise E&S and H&S aspects of the project as required in the Environmental and Social Commitment Plan (ESCP). Environmental and social screening at selected quarries and sand pits and asphalt batch plant.
2	Resettlement of persons and displacement of assets: road widening and geometry changes will require to resettle people that have settled in the road RoW and displacement of their assets.	A stand-alone Resettlement Action Plan (RAP) has been prepared to address all impacts related to the works and related compensation and assistance.
3	Risk of GBV related to the compensation process: compensation payment of Project-Affected Persons is sometimes associated with GBV as women are	Sensitization of men on the use of compensation. Requirement that both spouse signatures be included on compensation agreements.

² See footnote above containing TANROADS link to the publicly disclosed RAP.

N°	Impacts/risks	Recommended main mitigation or enhancement measures (and management plans)
	often bypassed when compensation is negotiated or subject to threats when it is distributed.	Assistance to open joint bank accounts during compensation. Compensation in kind for female heads of household.
Construction phase		
Biophysical environment		
4	<p>Impact on soil quality from accidental spillage of oil and poor management of waste and sanitation: all construction activities represent risk of accidental spillage of oil and will generate waste that could affect soil quality.</p>	<p>Good management practices such as spill tanks and secondary containment at vehicle maintenance yards. Collection, separation and sending waste, including hazardous waste to the appropriate service providers. Selection of the dumpsite for non-dangerous waste shall be done in close collaboration with district authorities and with the approval of the Supervising engineer based on several ES criteria. Septic tanks for wastewater. Certified spill response kit in all fuel bowsers with granular absorbent, bags and containers to remove polluted earth in case of spills. Stockpiling of bituminous waste for reuse at locations designated by the Supervising engineer. Waste and hazardous material management plan</p>
5	<p>Impact on soil from sealing of additional permeable surface and compaction by machinery: many construction activities will require to seal additional permeable surface and will lead to soil compaction.</p>	<p>Confinement of work within the RoW to avoid unnecessary encroachment.</p>
6	<p>Impact on hydraulic transparency from construction: culverts will be upgraded and widened and new roadside ditches will be created. If not properly sized these could reduce hydraulic transparency. culverts and impact on ecological</p>	<p>Replacing culverts to be done preferably during the dry season. If it is not possible, installation of pumps or temporary diversions shall allow water to flow downstream of work. Installation of culverts partially under the riverbed level to avoid creating perched culverts.</p>

N°	Impacts/risks	Recommended main mitigation or enhancement measures (and management plans)
	<p>continuity of aquatic habitat from culvert rehabilitation</p> <p>Modification of aquatic habitats from widening of culverts: all culverts will be widened and their wingwalls removed in order to accommodate the widened cross section of the road. This will modify small areas of aquatic habitats.</p> <p>Impact on ecological continuity of aquatic habitat from culvert rehabilitation: culvert rehabilitation may impact ecological continuity if work require temporary diversion or blockage of streams.</p>	<p>During culvert replacement, derivation roads shall not ford cross the watercourses (even during the dry season) and the crossing shall use temporary culverts.</p>
7	<p>Impact on surface water quality during construction with expected increase of turbidity: erosion and leaching of stocked material and spoils, runoffs and removal of vegetation on roadsides, lack of sanitation and poor drainage on worker's camp could affect water quality.</p>	<p>When working close or in watercourses, installation of silt fences upstream and downstream of work site to retain suspended solids. Installation of temporary slope stabilization measures during construction such as sediment diverting or catchment basins. Implementation of an Erosion and Sediment Control Plan</p>
8	<p>Impact of accidental spillage of oil and concrete wash water on surface water quality: all machinery that will be used for construction activities represent a risk or accidental spillage of oil. In addition, concrete wash water can seriously pollute surface water by increasing its pH.</p>	<p>Avoidance of all discharge of concrete wash water in waterbodies or on the ground. An Emergency Preparedness and Response Plan (EPRP) shall be developed to prevent and address minor and major spills.</p>
9	<p>Disturbance of aquatic habitats and fish from water abstraction: water will be needed during construction work for concrete. Natural watercourses may be used</p>	<p>Water right before any abstraction of construction water. Small streams shall be avoided due to little base flow. Groundwater from boreholes shall be</p>

N°	Impacts/risks	Recommended main mitigation or enhancement measures (and management plans)
	for this purpose. Abstraction will disturb aquatic habitats and fish and may lead to encroachment from the passage of trucks.	favored as a source of water for construction. Because of the transboundary nature of the Kagera River (Akagera River), it shall not be used as a source of water by the contractor during construction activities.
10	Increase in noise level and vibration: all construction activities will generate noise, some activities will be particularly noisy such as removal of existing bituminous seal and truck transport.	Avoid idling the engines. Certified absorbent noise barrier to limit nuisances for nearby communities is recommended whenever possible. Through engagement activities, schedule of work could be adapted at sensitive receptors based on collected feedback.
11	Emission of air pollutants from machinery and trucks: machinery and trucks will emit air pollutants such as CO ₂ , CO, nitrogen oxide (NO _x), PM ₁₀ , PM _{2.5} , SO ₂ . Trucks and construction machines are high NO _x emitters. Asphalt manufacturing also emits gaseous emissions.	Regular water sprinkling on work sites. Proper maintenance of trucks and engines. Location of the asphalt batch plant to be selected in consultation among TANROADS, local government authorities, customary authorities, and the contractor to ensure that it does not lead to local nuisances. It shall be located at a suitable distance from households.
12	Loss of roadside terrestrial and wetland habitats: road widening, storage of spoil material and work sites will require land and may impact terrestrial habitats and wetlands. Roadside verges are often valuable habitats for small wildlife.	Contractors to commit to maintaining all works within set boundaries to avoid unnecessary impact on habitats.
13	Destruction or disturbance of habitats at raw material extraction sites and off-site facilities: borrow areas, hard stone quarries, sand pits, workers' camp and stone crushing site may affect natural habitats or lead to their	Use existing wasteland for work sites and camps to avoid all conversion of natural habitats. Once exact locations of quarries are known, prior ecological survey shall be undertaken to delineate sensitive habitats, to determine potential

N°	Impacts/risks	Recommended main mitigation or enhancement measures (and management plans)
	destruction.	impacts on habitats and wildlife and possibly to recommend avoidance measures and influence decision-making.
14	Risk of poaching and persecution of wildlife: mobilization of workforce may be associated with an increase in poaching activities and persecution of wildlife, this risk is particularly significant close to the Burigi-Chato National Park.	Provision of extra law enforcement personnel at Burigi-Chato national Park to increase patrol and law enforcement effort during construction activities. Induction sensitization for all workers when work reaches the national park. Code of Conduct to prohibit hunting, fishing and purchasing of any bush-meat or wild animals from communities.
15	Startling of wildlife of the Burigi-Chato National Park: construction work will startle wildlife close to Burigi-Chato National Park.	Speed limits shall be set at 50 km/hour for all vehicles and trucks working close to the national park between chainage 43+000 and 53+500.
16	Risk of encroachment into the Burigi-Chato National Park: setting up work sites and workers camp, mobilization of machinery and workforce could lead to encroachment if the boundaries of the national park are not demarcated and communicated to contractors.	No workers camp, quarry, borrow areas, sand pits or water abstraction or any temporary work sites shall be authorized between chainage 38+000 and 53+500 and after chainage 80+000 on the eastern side of the road due to the presence of the Akagera KBA. Clear signage during construction work along the road between chainage 43+000 and 48+000 to mention the presence of the national park.
17	Risk of disturbance of fish in the Akagera KBA: threatened fish are present in the Akagera KBA which is made of the Kagera river and its drainage basin and floodplain. Work activities could lead to encroachment or accidental spillage if the boundaries of this KBA are not communicated to the contractor.	Replacement of the 11 culverts between 81+500 and 91+400 shall be done outside of the rainy season as a precautionary measure. It is key that contractor be aware of the presence of the KBA and its limits to ensure that special attention be paid during work close to the KBA.
18	Risk of destruction of threatened	For all additional land requirement

N°	Impacts/risks	Recommended main mitigation or enhancement measures (and management plans)
	<p>plant species: natural habitats around the road have the potential to shelter some threatened plant species. Setting up work sites and workers camp, the rest area, mobilization of machinery and workforce could lead to their destruction.</p>	<p>(outside of the existing road reserve) selection of sites shall be preceded by an ecological survey to delineate sensitive habitats, to determine potential impacts on habitats and wildlife and possibly to recommend avoidance measures.</p>
19	<p>Risk of disturbance and direct mortality of threatened wildlife species: natural habitats around the road have the potential to shelter some threatened wildlife species. Construction activities may lead to their disturbance or lead to mortality of some species.</p>	
20	<p>Risk of spread of alien and invasive plant species: land clearing and earth work to increase the road width may facilitate the spread of invasive species.</p>	<p>Cleaning and verification of machinery before commencement of work to ensure that no mud or soil is transported to the site.</p>
Human environment		
21	<p>Possible additional temporary and permanent restrictions on land use during construction: The setting up of work sites and workers' camps, the rest area, mobilization of machinery and workers, arrester beds, and derivation roads will require additional land that was not identified at project preparation.</p>	<p>According to the RAP, the purchase of campsite facilities will be done in priority through a willing-buyer willing-seller (WB/WS) approach. Development of land pre-entry and exit procedures and agreements with landowners and affected communities before start of construction activities (and the integration of these procedures and compensation into the RAP entitlement matrix). Temporary access to businesses during construction works shall be maintained by the contractor.</p>
22	<p>Socioeconomic impacts on displaced persons: Resettlement may lead to socioeconomic and psycho-social impacts on displaced persons.</p>	<p>Mitigation measures for these impacts are found in the stand-alone Project RAP.</p>
23	<p>Worker's influx, workers camp and associated social impacts on</p>	<p>The project will construct the campsites in areas to be selected in</p>

N°	Impacts/risks	Recommended main mitigation or enhancement measures (and management plans)
	<p>communities: The setting up of workers camps and mobilization of workers are associated with multiple risks for host communities.</p>	<p>consultation among TANROADS, local government authorities, customary authorities, and the contractor to minimize environmental and social risks to communities and biodiversity along the road. All project workers will be required to sign a Code of Conduct, which is attached to the project Labor Management Procedures.</p> <p>Induction training and sensitization for all workers (including unskilled workers) on GBV.</p> <p>GBV Action Plan with the Code of Conduct.</p>
24	<p>Strain on local services such as health services, water supply, waste management and electricity from the presence of work and workers: The setting up of workers camps and mobilization of workers may strain local services and public utilities.</p>	<p>Disclosure to local public services of the needs generated by workers' camps and construction sites implementation of measures to minimize pressures on public infrastructure to avoid negative impacts on local communities.</p> <p>Workers' Camp Management Plan.</p> <p>Waste Management Plan.</p>
25	<p>Disturbances to livelihood and economic activities: Street vendors and businesses along the road and tourism at the NP may be impacted by changing road conditions during construction activities and restrictions of access to businesses.</p>	<p>Compensation packages for street vendors are detailed in the RAP.</p> <p>Access to businesses (service and retail) from the road shall be maintained during work to avoid reducing their source of income.</p>
26	<p>Disturbance of local traffic, mobility and congestion impacting economic activities: road users and commuters going to work may be impacted by changing road conditions during construction activities.</p>	<p>Traffic Management Plan</p>
27	<p>Reduction of available water for irrigation in Benaco Pond: water</p>	<p>Public consultations with concerned farmers who use the Benaco reservoir to irrigate paddy fields to determine</p>

N°	Impacts/risks	Recommended main mitigation or enhancement measures (and management plans)
	abstraction from this pond for concrete production would lead to impact on small scale irrigation downstream.	the volume that may be abstracted without impacting downstream agriculture.
28	Job opportunities: construction activities represent an opportunity for temporary employment for members of local communities.	Job offers shall prioritize permanent residents of neighboring communities. Local residents must be certified by customary and local authorities.
29	Impact on connectivity across the road and disruption of access: construction activities will affect connectivity across villages, as most have developed on both sides of the road.	Safe passage at identified crossing sites for pedestrians with appropriate signage using pictograms and adequate protection from work engines and trucks and motorized traffic indicating diversion and entrance. All passage shall be universally accessible to allow people with physical disabilities to safely cross. Traffic Management Plan
30	Health and safety risks for communities during construction: nuisances (noise, dust, odors, presence of spoil materials) and risk of collision during construction activities may affect health and safety of people. Community members using the road, and particularly vulnerable road users such as pedestrians and bicyclists, are particularly at risk. Safety risks from induced traffic on smaller village roads (when trucks and vehicles avoid congestion from construction work) is also a typical issue to foresee.	Pedestrian passage and vehicles passage shall be physically separated with barricades and construction fences to inhibit pedestrian movement into the work site. Work site shall be clearly delineated and create exclusion zones. Construction fences and work exclusion zones shall be visible at night. In addition to regular OHS training for workers, awareness shall focus on ensuring community safety from work.
31	Risk of improper behavior of security personnel: security personnel at work sites and workers camp are sometimes associated with	The terms of the contracts of security personnel must be clearly established and the penalties for misuse of force must be stipulated in the contract.

N°	Impacts/risks	Recommended main mitigation or enhancement measures (and management plans)
	undue use of force and other forms of abuses.	Contract shall include behavior commitments and clear and accessible disciplinary process. Security personnel shall receive procedural training (procedures, proper conduct and ethics and human rights). GBV Action Plan with Code of Conduct. SEP and its GRM. The GRM shall be accessible to community members who wish to file a complaint regarding security personnel behavior.
32	Risk of additional workload burden on women when men are hired for construction work: construction work may attract men to work leaving women with additional burdens.	Impact hardly mitigable, as recruitment of workers will not be able to detect this risk.
33	Disturbance of persons living with disabilities due to loss of access during construction work: persons living with disabilities may find it difficult to use the road and access services during construction activities.	All temporary passages shall be universally accessible to allow people with physical disabilities to safely cross work sites.
34	Spread of HIV: the arrival of workers is often associated with an increase in HIV prevalence.	Raising awareness of the risks of sexually transmitted diseases shall be part of mandatory recruitment training for workers. Registered service provider to test workers. Assistance of an NGO to implement HIV/AIDS awareness campaigns.
35	Risk of child and forced labor: construction activities, the presence of workers' camps, involvement of primary suppliers in the chain of goods and services, and workers engaged through third parties (such as subcontractors, brokers, agents, and intermediaries) present a risk of	As outlined in the project Labor Management Procedures, children under the age of 18 years shall not be hired in relation to the project. Audits to ensure that there is no child or forced labor at the construction sites and quarries. In case of suspected or proven cases

N°	Impacts/risks	Recommended main mitigation or enhancement measures (and management plans)
	forced and child labor.	of abuse, the Supervising Engineer must ensure that Tanroads and the World Bank are formally informed. Labor Management Procedures (LMP)
36	Risk of poor labor conditions due to high level of informality: construction activities, involvement of primary suppliers in the chain of goods and services and workers engaged through third parties (such as subcontractors, brokers, agents, or intermediaries) represent risk of poor labor conditions.	Data log of all workers and implementation of the procedures as set in the Labor Management Procedures (LMP) . Construction-ESMP shall develop procedures to ban any form of disguised employment, misclassification, informality or casual labor.
37	OHS risks to workers: workers will be at risks of accidents and injuries, and they may be exposed to health hazards due to stack dust and fugitive dust and exposure to fumes during road paving. Workers are also at risk of collision with vehicles and trucks circulating on the road during work.	Implementation of the procedures as set in the Labor Management Procedures (LMP) regarding OHS. Work zone safety for construction workers at all times (use of protective barriers to shield workers from traffic vehicles in towns and village centers, use of traffic cones and barrels in rural areas, use of warning lights to avoid using flaggers). OHS preventive measures (training, PPE, hazard and risk identification, procedures for COVID and First Aid). Any injury, accident or near miss shall be described in a medical report by the contractor and Supervising engineer. OHS induction training for all workers, topics to cover during trainings shall cover the requirements from the section 2.2 Communication and Training from the WBG Environmental, Health, and Safety General Guidelines, 2.0 Occupational Health and Safety
38	Risk of an increase in Gender-Based Violence: worker influx is often associated with risk of GBV	GBV Action Plan. GBV-SEA GRM and workers' Code of Conduct Training of Supervising engineer and

N°	Impacts/risks	Recommended main mitigation or enhancement measures (and management plans)
	and sexual harassment in the workplace. Women and girls from neighboring communities are particularly at risk.	contractors by PIT to present the GBV action plan requirements for managers. Induction training to all workers on the GBV action plan. PIT will Conduct a GBV risk assessment and GBV mapping in the project area to inform risk mitigation strategies and update a GBV referral pathway. Contractor shall also adapt its Construction ESMP to address the risks and participate in the prevention of GBV and SEA.
39	Risk of disturbances and destruction to unknown cultural heritage sites: risk of discoveries of artefacts is inherent to all construction involving excavation.	Chance-find procedure
Operation and maintenance phase		
Biophysical environment		
40	Accumulation of pollutants in roadsides: drainage from the road will collect silt, oil and waste which will impact soil quality.	Appropriate signage to truck drivers to avoid littering. The design has foreseen to install drains with erosion checks which will reduce the silt load in streams. Removal of accumulated waste and silts in drains and culverts as part of road maintenance. Truck lay bays shall be equipped with garbage bins to collect domestic waste and waste collection at truck lay bays shall be contracted to a service provider.
41	Infiltration of pollutants from roadsides in groundwater: collected pollutants may reach local groundwater and affect its quality.	
42	Impact on surface water quality from road traffic and surface runoffs: increase of the width of the road will increase surface runoff from the road and therefore silt, oil and dirt transport to watercourses.	
43	Degradation of aquatic habitats from increase in road traffic and surface runoffs: impact on surface water quality from road traffic and surface runoffs will in turn affect aquatic habitats and fish.	
44	Risk of degradation of Akagera KBA floodplains: impact on	

N°	Impacts/risks	Recommended main mitigation or enhancement measures (and management plans)
	surface water quality and surface runoffs may in turn affect Akagera KBA.	
45	Noise from traffic and reduction of noise thanks to road improvement: road traffic will continue to generate noise. However, improved road surface will reduce noise level.	Noise monitoring (baseline and after one year of operation) Should the road cause noise level to unacceptable levels at sensitive sites such as health centers and schools, earthen mounds or vegetation plantation could be envisaged at project implementation.
46	Impact on air quality from road traffic and reduction of dust thanks to road improvement: road traffic will continue to generate air pollution. However, improved road surface will reduce dust emission.	Reduction of the speed of vehicles in village centers to 50 km/hour as required in the Road Safety Screening and Appraisal Tool (RSSAT).
47	Higher risk of wildlife collision and casualties: induced increase of speed thanks to new road conditions will be associated with higher risk of wildlife collision and wildlife casualties. This risk is particularly important at Burigi-Chato National Park. Many vultures are threatened and are particularly at risk because they scavenge on roadkills.	Road sign for wildlife protection at several locations and on both side of the traffic between chainage 38 and 56 (close to the Burigi-Chato National Park). Rumble strip shall be installed at chainage 44 on the western lane of the road (right hand side) and at chainage 56 on the eastern lane (left hand side) to warn vehicles on the presence of the presence of wildlife. At chainage 44 and chainage 56 signs shall be lighted to warn drivers of the presence of the Burigi-Chato National Park. In this section, speed shall also be reduced. Regular monitoring of road kills shall be done along the road with a focus between chainage 38 and 56 in order to assess the extent of road kills and propose additional management measures.
48	Exacerbation of the barrier effect: road widening and induced increase of speed will exacerbate the barrier	At this stage no mitigation is proposed.

N°	Impacts/risks	Recommended main mitigation or enhancement measures (and management plans)
	effect of the road.	
Human environment		
49	Improved transport sector allowing for economic development: the rehabilitated road will reduce time of travelling and ensure safer travel for vehicles and trucks. These will have positive influence of economic development.	No specific enhancement measures.
50	Livestock roadkill: induced increase of speed thanks to new road conditions will be associated with higher risk of livestock roadkill.	Provisions for livestock underpass are foreseen in the design report.
51	Impact on connectivity across the road and disruption of access: the new road may cut-off access of small side roads (local roads) that cross the trunk road. Connectivity for non-motorized transportation will also be affected.	Maintaining access for vehicles and non-motorized transportation between the trunk road and small side roads (local roads).
52	Improved safety for motorized and non-motorized road users: Increase in road traffic and speed will increase the risk of collision and accidents. However, at the same time the project design has foreseen to improve several aspects of the road to improve road safety, notably by installing walkways in villages, by installing arrester beds and climbing lanes.	The design has foreseen the installation of 15 raised pedestrian crossing. Pedestrian crossings will be preceded and followed by rumble strips. additional engagement activities shall be undertaken at all villages that are crossed by the road to determine whether additional pedestrian crossings are necessary. Increasing the length of existing walkways from 4.24 km to 5.04 km and upgrading them. 6.6 km of new walkways are recommended in 10 small villages. Speed reduction from 70 to 50 km/hour in villages.
53	Health issues for population living along the road: on-going noise level and air pollution represent	Little realistic mitigation could be recommended.

N°	Impacts/risks	Recommended main mitigation or enhancement measures (and management plans)
	health hazards for community members living along the road.	
54	Universal access to the road and walkways: walkways will be developed in villages; this will improve universal access to persons living with disabilities.	Development of additional walkways in selected villages.

Environmental and Social Management Plan (ESMP)

The options to minimize or prevent the identified adverse social and environmental impacts as well as a monitoring plan have been suggested in this report and are contained in the ESMP. Many of them are based on good engineering practices. The ESMP describes the implementation schedule of the proposed mitigation measures as well as planning for long-term monitoring activities. It defines the roles and responsibility of different actors of the plan. The contractor has a specific role of implementing the ESMP supervised by the Resident Engineer (Supervising engineer) whereas TANROADS and other authorities have the role of monitoring the contractor's implementation and performance. Some of the costs for preparation and implementation of the proposed mitigation measures shall be included into the Bill of Quantities (BoQ). These safeguards mandatory tool shall also be mentioned in the tender and bid documents of the contract to be prepared and implemented by the Contractor.

Other important safeguard tools were developed for the TanTIP, which will be implemented for this Project:

- Environmental and Social Management Framework (ESMF)
- Stakeholder Engagement Plan (SEP) and Grievance Redress Mechanism (GRM)
- Gender Based Violence Action Plan (GBV) which includes a Code of Conduct for all workers and staff. The GBV action plan is in appendix VI.
- Labour Management Procedures (LMP) which include a workers' Grievance Redress Mechanism (GRM). The LMP are in appendix V.
- Resettlement Policy Framework (RPF)
- Vulnerable Groups Planning Framework (VGPF)

Contractor's ESMP

The main contractor's engaged ESHS Officer will be responsible initially, for preparation of Construction-ESMP (C-ESMP) whose main objectives will be to ensure that all

mitigation and enhancement measures proposed in this ESIA report and other safeguards documents for the project are appropriately and effectively implemented.

The C-ESMP shall include the following plans: workers’ Code of Conduct and Chance Finds Procedures), Occupational Health and Safety (OHS) Management Plan; Emergency Preparedness and Response Plan (EPRP); Borrow Pits and Quarry Sites Operation and Reinstatement Plan (BPQSORP); a Waste Management Plan; Community Communication and Engagement Plan (CCEP); Traffic Management Plan (TMP), and an Erosion and Sediment Control Plan.

Also, the main contractor shall integrate, in its C-ESMP, the following safeguards tools which were prepared for the TanTIP:

- Gender Based Violence Action Plan (GBV) which includes a Code of Conduct for all workers and staff
- Labour Management Procedures (LMP) which include a workers’ Grievance Redress Mechanism (GRM)

Both these plans shall be adopted and adapted by the contractors during mobilization phase and this requirement shall be stated clearly into works contract.

Summary of ESMP Costs

The assessment has revealed that, to a large extent, almost all the identified and predicted major negative environmental and social impacts associated with the project can be mitigated, avoided, eliminated or reduced by using engineering and non-engineering solutions during the design, construction and operation phases. Such engineering solutions include: construction of new climate change resilient and sustainable drainage systems, provision of recommended road synergy of good standards to control road traffic accidents, installation of walkways in villages and raised pedestrian crossings. Non-engineering solutions will include education and awareness campaigns to address HIV/AIDS problems, compensations for the affected properties, gender-based violence prevention and management of labor conditions.

Table 0-1 Summary of project environmental/social management costs

	TSHS
Mitigation measures	210,000,000
Monitoring measures	124,000,000
Total	334,000,000

Conclusion

Implementation of the proposed rehabilitation of the Lusahunga - Rusumo road entails no deterrent impacts provided the recommended mitigation measures are adequately and timely put in place and implemented. The identified adverse impacts shall be managed through the proposed mitigation measures and implementation regime laid down in this ESIA. TANROADS is committed to implementing all the recommendations given in the ESIA and further carrying out monitoring and environmental auditing as per legal requirements. TANROADS will ensure that the requirements of the Contractor to prepare the mandatory C-ESMP plans are included into tender documents and into some clause of the BOQ and Contracts for smooth implementation of the road project.

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1 INTRODUCTION

1.1 Project Background and Rationale

The project road section is a Class T3 under Tanzanian Classification. Traffic volume was about 400 ADT (Average Daily Traffic) in 2012. The rehabilitation of Lusahunga Rusumo road in Tanzania will link the city of Kayonza – Kigali in Rwanda and will participate in the improvement of economic activities in the region. The regional road is the most important link between Rwanda and Tanzania, as it is the only direct connection to the coastal ports of Dar es Salaam and Mombasa as far as road transportation is concerned.

TANROADS, which was established in 2000 by the Executive Agencies Act 30 of 1997, is responsible for the day-to-day management of trunk and regional roads network in Tanzania. Its primary function includes the maintenance and development of the road network to support the economic and social development of Tanzania. TANROADS is a semi-autonomous Government Executive Agency under the Ministry of Works and Transport.

The Government of the United Republic of Tanzania through TANROADS has received a credit from the International Development Association (IDA) towards the cost of the Tanzania Transport Integration Project (TanTIP) formally called Tanzania Development Corridors Transport Project (DCTP) and intends to apply part of the proceeds of this credit to eligible payments under the Contract for rehabilitation of Lusahunga - Rusumo road (92Km). The road rehabilitation is part of the Government strategy to develop its road network to support the socio-economic development of the country.

The Lusahunga – Rusumo road section (92 Km), forms part of the T3 (Central Corridor Highway) which connects the Dar es Salaam port with the land locked neighboring countries of Rwanda and Burundi. The project road starts at Lusahunga centre through Nyakasanza and ends at Rusumo Border (Tanzania and Rwanda). The Lusahunga – Rusumo road was upgraded in 1985 to bitumen standard for a design life of 15 years. The road consists of 27 box culverts 52 steel pipe culverts and 8 reinforced concrete culverts. Currently, the road has deteriorated drastically due to pavement aging despite of efforts that are been carried out by the Regional Manager-TANROADS-Kagera, to maintain and repair it. Typical defects include severe potholes, rutting deformation, corrugations, extensive cracking (alligator cracks) and depressions. Generally, the road condition is bad.

The Lusahunga - Rusumo road plays a secondary role as international road for export/import traffic of Rwanda, Burundi and Eastern Democratic Republic of Congo to and from the Dar es Salaam port, Uganda and the port of Mombasa in Kenya. The road also connects areas with variety of potential economic opportunities such as agriculture, livestock, forestry & minerals, fisheries and wildlife & tourism. Moreover, people living along the road and neighbouring villages will significantly benefit as their agricultural products will be easily transported to business centers (Ngara, Biharamulo town, Kahama, Bukoba etc). On top of that, rehabilitation of this road shall lead to savings in

Vehicle Operating Costs (VOC), and travel time leading to reduction in transport costs to the users.

The original design was done in 2014 by M/s Nicholas O'Dweyer Co. Ltd., and the original ESIA was done also in 2014 by the independent firm M/s Techniplan International Consulting. Due to changes in the project design such as pavement, levels, road signs, drainage systems in order to accommodate the EAC design standards, the M/s H.P. Gauff Ingenieure were appointed by East Africa Community to undertake the review of the existing Feasibility Study, Environmental and Social Impact Assessment Study and the Design of the project.

In order to incorporate the recommendations of the Design Review in the ESIA, TANROADS Safeguards Environment and Social Consultants updated the ESIA in September, 2018 as well as 2022 to accommodate some changes regarding pavement design, road levels to tackle climate change issues as well as and road safety measures and incorporates the relevant provisions of the World Bank Environmental and Social Framework (WB-ESF) requirements who is project financier.

Due to changes in the project design, in 2018 M/s H.P. Gauff Ingenieure were appointed by East African Community to undertake the review and update of the existing Feasibility Study, Design report, Environmental and Social Impact Assessment Study of the project. The ESIA was again updated in August 2022 by TANROADS Engineering Consulting Unit (TECU). Currently, the 2018 ESIA has been updated in by the independent Consultant in collaboration by TANROADS Safeguards Team by ensuring it incorporates the relevant provisions of the World Bank (WB- ESF) requirements who is project financier.

1.2 Project Development Objectives

This project is being conceived in line with the Government commitment to the rehabilitation of infrastructure in the bid of stimulating economy and quality of life in Ngara and Biharamulo Districts and Kagera Region as a whole.

1.3 Rationale of the ESIA

To ensure that no segment of the population is adversely affected, and environmental impacts are given due attention, this ESIA study was carried out to identify constraints, risks and mitigation measures on the project affected communities. The ESIA provides inputs to the design proposals of the investments. The ESIA findings and recommendations contained in this report will be incorporated in the overall project design, specifically to assist in the development of mitigation and enhancement measures of the identified risks, opportunities and impacts.

Since this project will be funded by the World Bank, the following WB policies and related guidance shall be observed during design and implementation of the project and these are: World Bank Environmental and Social Framework; WBG EHS General Guidelines, and the World Bank Group Environmental, Health, and Safety Guidelines for Toll Roads. Therefore, this ESIA preparation is part of fulfillment of the above WB-ESF

requirements as well as national laws and regulations before lending procedures are finalized. In this case, it is a legal obligation of any developer to conduct an ESIA of his/her envisaged development proposal meant to be implemented in Tanzania.

1.4 Scope of Work

The scope of this work is outlined in the ToR and includes:

- To identify, predict, evaluate and mitigate the significant environmental impacts (positive and negative);
- To identify key social issues relevant to the project objectives, and specify the project's social development outcomes;
- To determine magnitude of adverse environmental and social impacts and identify the safeguards instruments as per World Bank's ESF, Country laws and regulations;
- To predict and assess in quantitative terms as far as possible, the impacts from changes brought about by the project on the baseline environmental conditions;
- To establish the mitigation measures that are necessary to avoid, minimize or offset predicted adverse impacts and, where appropriate incorporate these into Environmental and Social Management Plan (ESMP);
- To identify stakeholders who are directly affected and carry out stakeholder analysis to determine their role in achieving social development outcomes;
- To inform, consult and carry out dialogues with stakeholders on matters regarding project design alternatives, implementation of environmental and social mitigation measures and to provide recommendations on project design that may require adjustments in project design;
- To provide an environmental and socio-economic profile of the population and available infrastructure facilities for services and community resources;
- To develop monitoring and evaluation mechanism to assess effectiveness of mitigation measures including resettlement outcomes during and after project completion; and
- To carryout environmental cost – benefit analysis of the project.

1.5 Approach and Methodology

1.5.1 Approach

In order to properly address the environmental and social issues, a safeguards team participated in review and updating the ESIA Study which was initially updated in 2018. The experts included Environmentalists, Sociologists, Health and Safety Experts, Environmental Engineers, Highway Engineers. The team conducted desk review, site verification, public consultation and finally updated the Environmental and Social Impact Assessment (ESIA) to ensure that environmental and social standards (ESSs) of the WB are incorporated accordingly. Sections 1.5.2 and 1.5.3 provide descriptions of the approach and methodology of ESIA respectively.

1.5.2 Social Impact Assessment Methodology

A comprehensive desk review, site verification and consultation on the social aspects were carried to meet the requirements of WB-ESSs and the EIA Regulation, guidelines and the TOR. The Team reviewed all relevant documents, specifically those related to the WB-ESF requirements in order to comply and implement the assignment as per requirements. Secondary data focusing on the socio-economic situation of the potentially affected population along the road project. The methodology used for updating the SIA study includes the following.

1.5.2.1 Documentary

Terms of Reference were studied carefully together with other relevant documents and reports to clearly understand and eventually work on the assignment as stipulated in the ToR and World Bank ESF requirement. The Ngara and Biharamulo district councils' socio-economic profiles and villages' data / information were collected reviewed, analyses and update

1.5.2.2 Courtesy Call and officials Consultations

This included consultations with regional, districts and ward officials and tentative schedule for conducting public consultation meetings in project affected villages for Ngara and Biharamulo districts.

1.5.2.3 Household interviews

The enumerators conducted household interviews with 237 PAP household heads, during updating of the ESIA in 2018 and 2022, to collect quantitative and qualitative data on relevant issues in the project area. A total of 108 males and 129 females in villages affected by the project were interviewed in these exercises via tailored questionnaires

1.5.2.4 Public Consultations

During updating of ESIA 2018 and May to July, 2022 a number of consultation were undertaken to communities and stakeholders along the road, whereby the total of 523 (46% males and 54% female) affected communities were consulted in 4 wards and 8 villages along the road. Among them, are persons that will be physically and/or economically displaced: 124 were street vendors and 237 were affected households including 12 vulnerable people (2 children who are headed family that own crops and 10 women who are widows and aged). Other stakeholders consulted includes Local Government Authority of Biharamulo and Ngara, Utility companies, Wildlife and TFS Authorities and TARURA.

In this respect, field activities were preceded by visiting to all villages for self-introduction, briefing about the project preparation, public consultation meetings and households interviewed to be administered per village, (Village Executive Officers, VEO and Ward Executive Officers, WEO) of each village were consulted in order to obtain their views regarding the project. During the meetings, concerns, burning issues and suggestions were collected from community members. Questions related to the proposed project were raised and responses were provided satisfactorily. Minutes of the meetings

were recorded, whereby lists of attendance were taken and stamped by village authorities and collected information and data were used for updating this ESIA report. More details are presented in chapter 5 and Appendix II of the report.

1.5.3 Environmental and Social Impact Assessment Methodology

Superimposing project elements/activities onto the existing social and environmental natural conditions has identified the potential environmental impacts of the project road rehabilitation. A correlation matrix checklist method for impacts has been used to identify the impacts. This matrix has been used to predict impacts of major concern.

The environmental and social assessment has been undertaken in close interaction with the project planning and design team. In this process, environmental impacts have been evaluated for various alternatives. Several project alternatives were considered; these include that of not implementing the project at all. The fundamental environmental protection strategy and environmental and social considerations influencing engineering design were incorporated. However, technological feasibility and economic capability were taken into account. Inter alia, the assessment entailed the following.

1.5.3.1 Collection of Baseline Data

The collection of baseline data was conducted subsequent to defining the scope of the ESIA. These data allow the study team to determine whether more detailed information on environmental conditions at the development site and its surroundings are needed and where such information can be obtained and how.

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 (as explained in the previous section). Secondary data were obtained from various relevant sources of information such as district profiles, Preliminary Environmental Assessment for the project road, design report for the project road and many other official and non-official documents.

1.5.3.2 Policies, Legal and Institutional Framework for Environmental Management

Several National policies and pieces of legislation as well as World Bank ESF guidelines and frameworks on environmental and social management are applied to operationalize the project.

1.5.3.3 Impact Identification and Evaluation

The rehabilitation of the project road can cause a wide range of environmental and social impacts on a number of receptors. The ESIA identifies these impacts for the purposes of mitigating the adverse impacts and enhancement of the beneficial ones. Impact identification is a process designed to ensure that all potentially significant impacts are identified and taken into account in the ESIA process. A number of 'tools' are available to assist in impact identification.

The approach for impact identification and evaluation is presented in the chapter 7.

1.5.3.4 Identifying Mitigation and Management Options

The options for dealing with identified and predicted impacts were considered after comprehensive evaluation. This enabled the study team to analyze proposed mitigation measures. A wide range of measures have 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.

1.6 Report Structure

This report is divided into eleven chapters:

- Chapter one contains the introduction on the background information of the proposed project, its development objectives, rationale and the proposed project implementation arrangements.
- Chapter two contains the project description, in which there is a description of the location and relevant components of the project and their activities.
- Chapter three illustrates policy, legal and administrative framework, which are the relevant Tanzanian environmental policies and legislation and international guidelines and standards applicable to construction projects.
- Chapter four has the baseline information relevant to environmental characteristics, which gives details concerning the Bio-physical environment and socio-economic environment at the project area.
- Chapter five express the consultation exercise at the project area detailing the list of stakeholders consulted and the issues raised.
- Chapter six is the assessment of Project alternatives.
- Chapter seven describes the positive and negative environmental impact of the project that are likely to be generated from the different phases (the planning and designing, construction, operation and maintenance and the demobilization phases) and gives the mitigation measure for the potential negative impact of the project.
- Chapter eight gives the main conclusions of the study
- Chapter nine presents the Environmental and Social Management Plan (ESMP) and presents the Environmental Monitoring Plan that contains the proposed institutions to carry out the monitoring activities, the monitoring indicators, time frame and the proposed budget for monitoring.
- Chapter ten gives the cost benefit analysis of the project.
- Chapter eleven provides the decommissioning plan for the proposed project however the decommissioning is not anticipated in the foreseeable future.
- References of the ESIA are provided in the last chapter.
- Several annexes are also included in the report.

The appendices, containing some key primary information collected during the study are attached at the end of this report. Generally, the report structure flows in conformity with

that specified in the World Bank's Guidelines for Conducting ESIA and National EIA & Environmental Audit Regulations (2005).

2 PROJECT DESCRIPTION

The project components and project facilities of the road are planned and designed to meet the Standard Specifications for Road works (2000) of the Ministry of Works and Transport. The components include:

- i. Reclamation of the existing pavement to form new subgrade.
- ii. Construction of Lower subbase layer.
- iii. Construction of Upper subbase layer.
- iv. Construction of new CRR base course.
- v. Surfacing by asphalt concrete and single bituminous seal of shoulders.
- vi. Construction of drainage structures.
- vii. Provision of pedestrian crossings, speed humps and rumble strips in all built up areas and community trading centers.
- viii. Landscaping of degraded areas and establishment of vegetation for functional and aesthetic purposes on cut and fill slopes.
- ix. Establishment of detours which to maintain a usable route during the construction period. and
- x. Construction and demobilization of workers' camps

2.1 Location

The project area is located in Biharamulo and Ngara districts, Kagera Region which is one of Tanzania's 30 administrative regions. The region is located in the northwestern corner of Tanzania on the western shore of Lake Victoria. The region shares borders with Uganda to the north, Rwanda and Burundi to the west, the Kigoma Region to the south, and the Geita Region to the east. Kagera Region lies just south of the equator between 1°00' and 2°45' south latitudes. Longitudinally, it lies between 30°25' and 32°40' east of Greenwich.

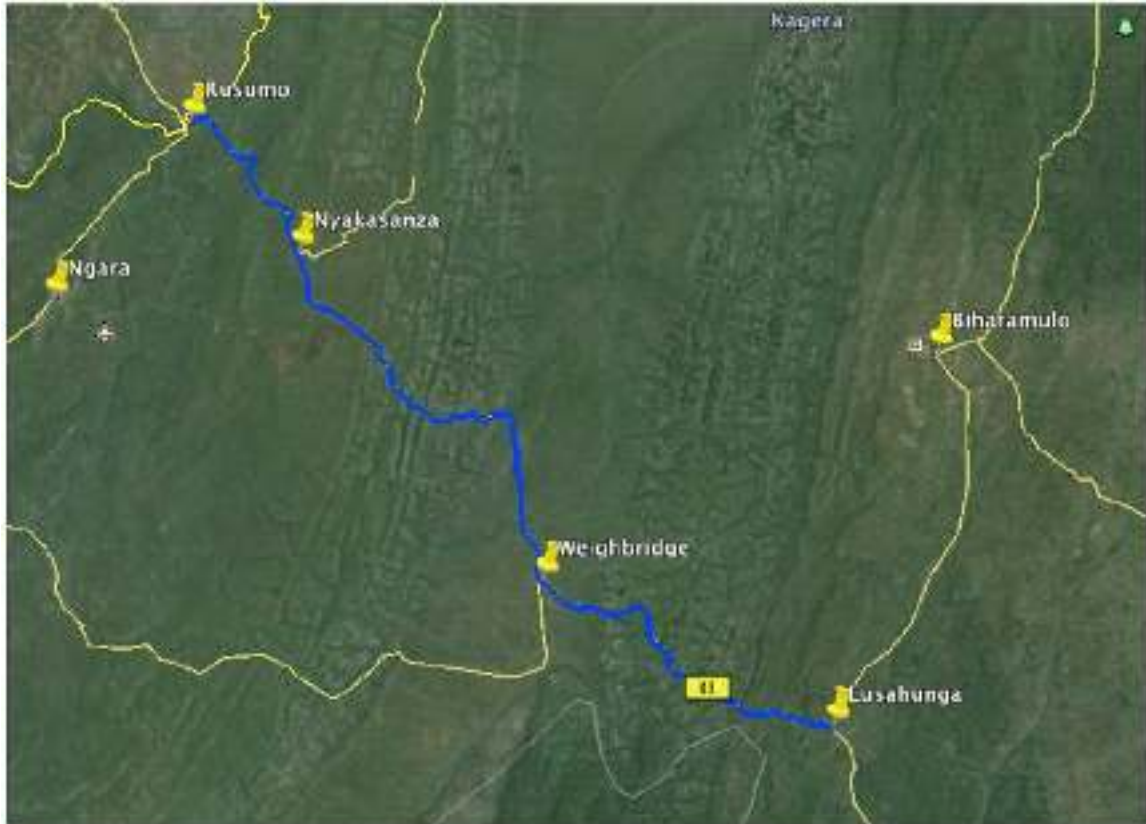


Figure 2-1 Map Showing the road

Ngara District is one of the eight districts of the Kagera Region of Tanzania. It is bordered to the north by Karagwe District, to the east by Biharamulo District, to the south by the Kigoma Region, to the north-east by Muleba District and to the west by the countries of Rwanda and Burundi. Its elevation is approximately 6,000 feet (1,800 m) and is considered to be in the highlands of Tanzania.

Biharamulo district is one of the seven districts comprising the Kagera region. It is situated between 2°15' and 30.15' South of the equator and between 31°00'- 32°00' east of Standard Meridian. The district has an area of 5,627 square kilometers. The district shares boundaries with Muleba and Karagwe districts in the north and Geita and Chato districts in the east. Bukombe district adjoins it in the south whereas Kibondo and Ngara districts are on the west.

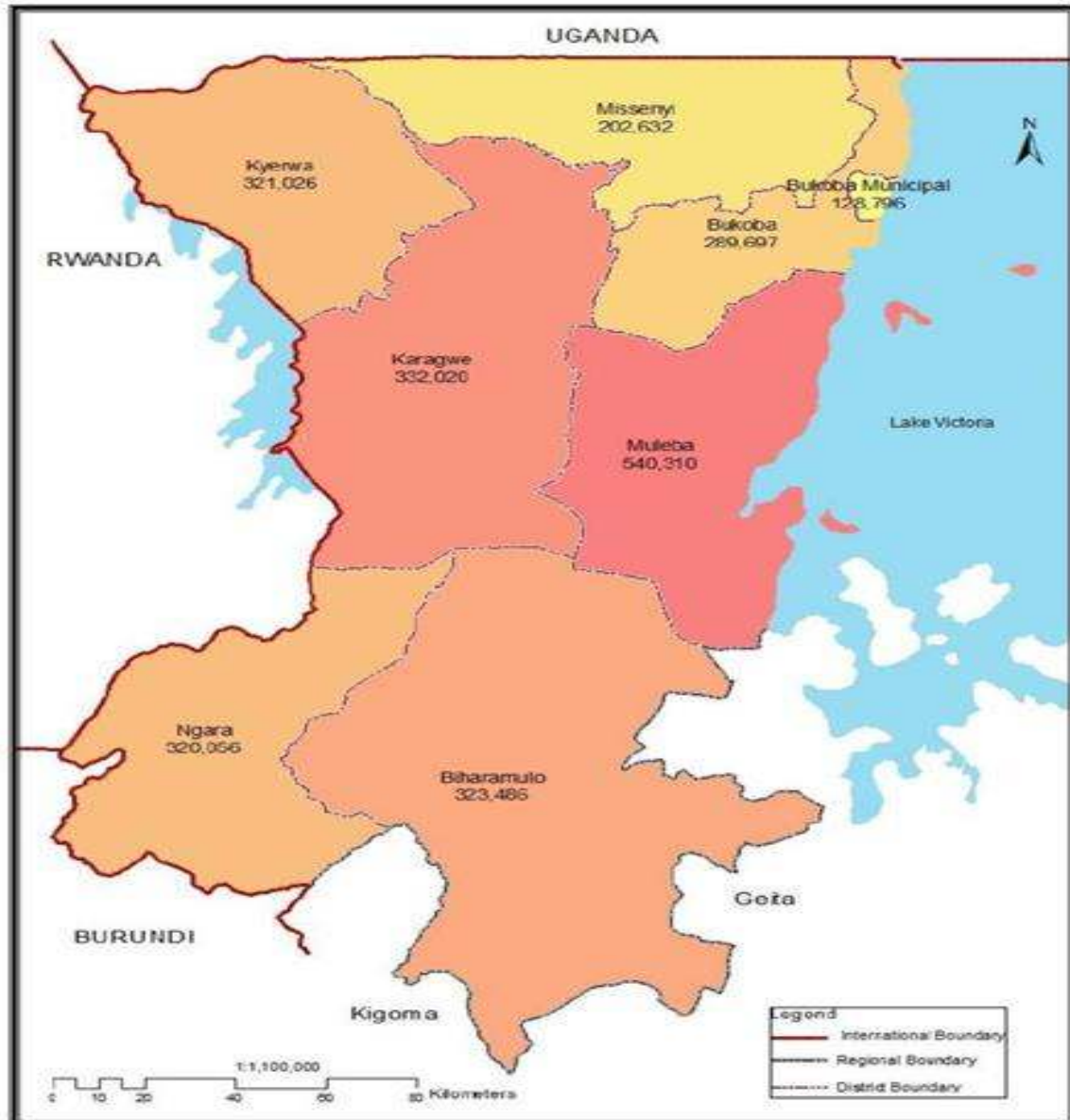


Figure 2-2 Map of Ngora and Biharamulo Districts (NBS 2012)

The project road starts at Lusahunga Centre through Nyakasanza and Benako and ends at Rusumo Border (Tanzania and Rwanda). Out of 92Km of the project road 63Km are located in Biharamulo district and the remaining 29Km are located in Ngara District.

The Project Road traverses through four important administrative villages in Biharamulo district namely Lusahunga and Kikoma (Lusahunga Ward), Ngararambe and Nyabugombe, (Nyakahura ward) while on the Ngara district side there are two important villages: Kasulo (Kasulo ward which include Benaco center), and Rusumo (Rusumo ward).

Table 2-1 Administrative division

District	Ward	Village
Ngara district	Rusumo (rural ward)	Rusumo village
	Kasulo (rural ward)	Kasulo (which include Benaco center)
Biharamulo district	Nyakahura (rural ward)	Ngararambe
		Nyabugombe
	Lusahunga (rural ward)	Kikoma
		Lusahunga

PROJECT ROAD MAP



Figure 2-3 Road Network Map showing project road

This is rehabilitation of the existing tarmac road, therefore project road will retain the existing horizontal profile except for some segments which shall undergo very minor re-alignments such as sharp corners and steep slopes at several places of the road.

In addition, an important feature of the rehabilitation project is the fact that the road will be widened. Currently, the road has a width from a total of 10.5 m (3.25 m lanes, 1.5 m shoulders and 0.5 m outer shoulder) with the rehabilitation project it will have a total of 12.0 m (3.5 m lanes, 2.0 m shoulders and 0.5 m outer shoulder). **However, the project will not add any additional lanes and will remain with two lanes.**

The cost for implementing the rehabilitation of the Lusahunga - Rusumo road (92Km) is estimated to around USD 82.3 million according to PAD (May 2022).

2.2 Traffic volume along the road

In the past, as reported in the Detailed design, there was no night traffic along the project road sections because traffic was not allowed to travel during the night for security reasons. Today, there are no restriction on night traffic.

The types of fuel that vehicles usually use are diesel and gasoline. The following information are showing traffic count undertaken in 2012 in the framework of the Detailed design.

The Average Annual Daily Traffic (AADT) for 2012 which provide the average daily traffic is presented in the next table. The percentage of bus and trucks is significant as shown in the table.

Table 2-2 Traffic in 2012

Road section	Motorcycles	Cars	Utility Vehicle (UV)	Bus (\leq 25 seats)	Bus (\geq 25 seats)	Light Truck (< 3.5t)	Medium Truck (>3.5t and \leq 10t)	Heavy Truck (>10t)	Very Heavy Truck	Total
Lusahunga – Nyakasanza 68.0km	17	51	47	37	8	24	48	11	248	491
Nyakasanza – Benako 4.5km	98	136	66	20	5	5	42	7	183	562
Benako - Rusumo 18.5km	100	59	21	8	1	4	20	3	160	376

The AADT of 562 along Nyakasanza – Benaco section is the highest for the Lusahunga – Nyakasanza – Benako – Rusumo road section. The higher traffic volume is caused by the traffic travelling to/from Karagwe District along the Kayanga – Benaco regional road. The number of heavy trucks is comprised mainly of transit traffic which is significant.

Based on the previous table and the fact that there is usually no night traffic, it can be estimated that there is an average of 31 to 45 vehicles passing along the road per hour (AADT divided by 12 hours) and that trucks make between 50 and 70% of the traffic.

According to the Detailed design, there is no noticeable difference in traffic based on the day of the week.

The Detailed design estimated increase in traffic AADT as follow for the year 2022 and 2025.

Table 2-3 AADT

	Very heavy trucks	Heavy truck	Large bus	Light truck	Medium trucks	Minibus	Cars	Motorcycle	Total AADT
2022	477	21	15	39	87	84	301	114	1138
2025	614	26	19	50	112	105	382	144	1452

These data represent 94 to 121 vehicles passing along the road per hour and trucks representing between 50 and 60% of the traffic (in 2022).

2.3 Project Design and Activities in General

This ESIA study was undertaken parallel with the preliminary design work which later was subjected to detailed design. The ESIA finally included the details of the detailed design. In broad terms, rehabilitation will involve a combination of overlaying the existing road, partial reconstruction and/or total reconstruction of road sections as necessary. The rehabilitation and/or replacement of existing drainage structures including culverts will be resilient to accommodate erratic flood storms due to climate change. The construction of new additional drainage structures are also important features of the road rehabilitation works. Pertinent features of the road design as reviewed to meet Standard Specifications for Road works (2000) of the Ministry of Works and Transport include:

- The width of the bitumen carriageway will be 7m (will be increased by 0.5 m);
- The width of the (paved) shoulders will be 2m each side (will be increased by 0.5 m on each side);
- Outer shoulders will be 0.5m each side;
- A road corridor of 30m from the center line of the road;
- Cross-drainage structures, intersections and ancillary road works;
- The road will have 20-year design life;
- The design speed of the road will be adjusted as necessary through villages and areas with a high concentration of people and animals; and
- The climbing lanes at the climbing sections before and after the curves.

In general, the road has 60m (i.e., 30m from the center line) of the road reserve and compensations are paid to PAPs within 45m of the road RoW, (i.e., 22.5m from the center line of the road).

Road Network HDM-4

The project road network has been pre-defined under the name Lusahunga - Rusumo road network in the Road Network folder in HDM4. The road has been considered as one homogenous section based on traffic, geometrical and pavement considerations. A summary of the key existing physical homogenous road attributes for each section is as shown below.

Table 2-4 road current characteristics

Item	Lusahunga – Rusumo, current conditions
Length (Km)	91.97
Carriageway width (m)	6.5
Shoulder width (m)	1
Number of lanes	2
Flow direction	Two ways
Rise and fall (m/km)	27.7
Rise and fall (no/km)	3.3
Average horizontal curves (deg/km)	123.93
Altitude (m)	1,687
Paved surface type	Surface dressing
Number of surface layers	1
Surface layer thickness (mm)	30
Base type	Crushed stone base (CRS)
Number of base layers	1
Thickness of base layers (mm)	150
Relative compaction (%)	98
Subgrade CBR (%)	15

Item	Lusahunga – Rusumo, current conditions
Structural number	2.61
Area of all cracks (%)	85.72
Area of wide cracks (%)	58.8
Raveled area (%)	0.56
Number of potholes	5.6
Mean rut depth (mm)	8.5
Edge break (m ² /km)	1.29
Roughness (m/km)	3.8
Skid resistance (SCRIM) 50km/hr	0.4
Average texture depth (mm)	1.57
Drainage condition	Good

2.3.1 Other important project features

2.3.1.1 Culverts

Several culverts will be either entirely replaced or enlarged to accommodate the new width of the road. According to the Design review (2018), there are 131 culverts along the road:

- 20 box culverts will be retained and widened to accommodate the new width of the road
- 9 arched metal pipes will be fully replaced by concrete box culverts.
- The 102 others are mainly corrugated metal pipes that will be fully replaced by concrete pipe culverts.

The following table shows the location of the box culverts along the road.

Table 2-5 20 Box culverts to be widened and new box culverts

Chainage	Modification of the length of the culvert (LHS: Left Hand Side, West. RHS: Right Hand Side, East)
Existing box culvert to be widened	
0+861	Extend 3m LHS & 1.5m RHS & Provide gabion mattress in the outlet & guard rail
3+812	Extend 3.5m LHS & 2.0m RHS & Provide guard rail
7+239	Extend 3.0m LHS & 3.0m RHS & Provide guard rail and opening of

(Kirakacheusi Stream)	outlet drains
7+260 (Kirakacheusi Stream)	Extend 3.5m LHS & 3.0m RHS & Provide guard rail and opening of outlet drains
9+527 (Midalo Stream)	Extend 2.0m LHS & 2.5m RHS & Provide guard rail and opening of outlet drains
9+553 (Midalo Stream)	Extend 1.5m LHS & 3.0m RHS & Provide guard rail and opening of outlet drains
11+294 (Midalo Stream)	Extend 3.0m LHS & 3.5m RHS & Provide guard rail and opening of outlet drains
11+328	Extend 3.5m LHS & 3.0m RHS & Provide guard rail and opening of outlet drains
13+808 (Busiri Stream)	Extend 1.0m RHS & Provide guard rail, grass cutting and opening of outlet drains
13+829 (Busiri Stream)	Extend 1.5m RHS & Provide guard rail, grass cutting and opening of outlet drains
15+523	Retain, provide guard rail, grass cutting and opening of outlet drains
16+583	Retain, provide guard rail, grass cutting and opening of outlet Drainage
17+267	Extend 2.0m RHS & Provide guard rail, grass cutting and opening of outlet drains
18+115	Extend 2.5m LHS & Provide guard rail, grass cutting and opening of outlet drainage
20+922	Extend 1.5m LHS & Provide guard rail, grass cutting and opening of outlet drainage
24+488	Extend 1.0m LHS & 3.5m RHS & Provide guard rail
27+998	Extend 1.5m RHS & Provide guard rail
28+198	Extend 3.0m LHS & Provide guard rail, grass cutting and opening of outlet drainage
37+262	Extend 2.0m LHS & 2.0m RHS & Provide guard rail
42+800	Extend 3.0m LHS & 2.0m RHS & Provide guard rail
Arched culverts to be fully replaced by box culverts	
25+597	New concrete box culvert
50+535	New concrete box culvert
53+941	New concrete box culvert
54+279	New concrete box culvert
57+023	New concrete box culvert
57+651	New concrete box culvert
63+852	New concrete box culvert
68+455	New concrete box culvert

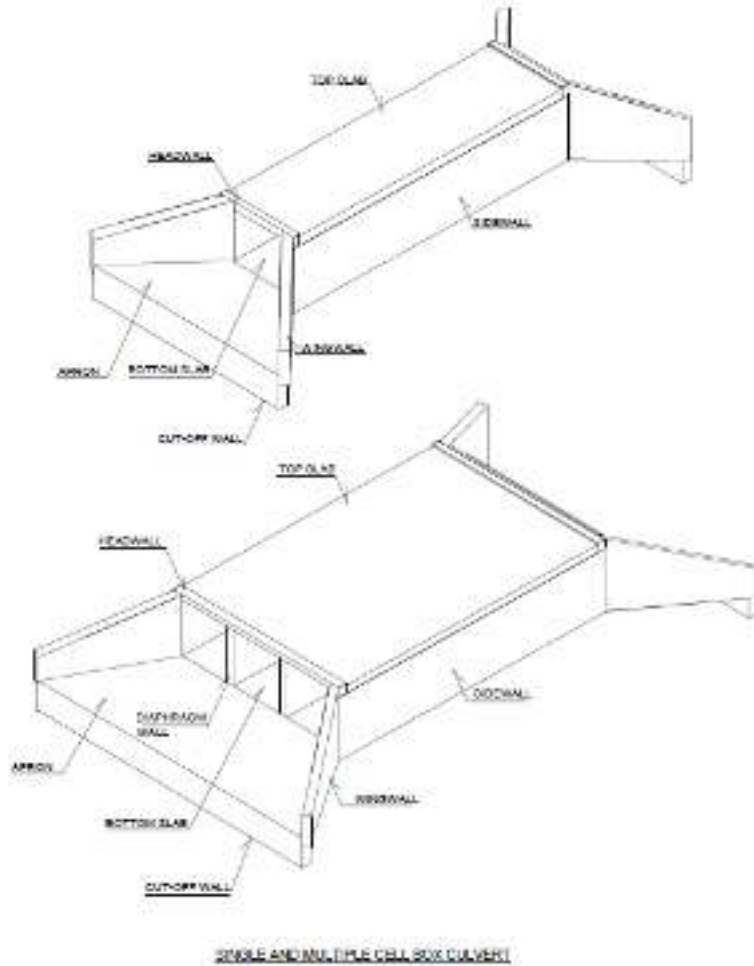


Figure 2-4 Example of box culverts

2.3.1.2 Worker's camp

The project will establish two types of campsites. There will be a permanent campsite that is referred as the Supervising Engineer's campsite (the main camp) with permanent structures and the temporally contractor's campsite which is normally of temporary structures. The Supervising Engineer's campsite (the main camp) will be built with permanent structures that are handed over to the government after completion of construction works for public use such as offices, school, dispensaries, etc.

In this report, all camps are referred to as "Workers' camp" and the provided mitigation measures apply for both types of camps.

The Design Review has identified three locations to which can be used by the contractor for the main campsite. The identified locations includes:

- Lusahunga Junction

- Benako area
- Rusumo.

Lusahunga and Rusumo are at the ends of the project road which is not favorable as compared to Benako which is located at 76+000km.

The acquisition of campsite land is normally through a willing-buyer willing-seller approach and not through involuntary acquisition. But in the event that this will be through compulsory acquisition, it may lead to loss of property and land acquisition that will necessitate resettlement. Any such acquisition will be undertaken in accordance with the provisions of the RAP for this Lusahunga-Rusumo Road project. The selection of campsite is normally involving number consultation and involvement of the tripartite stakeholders including design consultant, TANROADS and the local authority along the project prior finalizing design. The decision to select campsite also depends on number of factors such as environmental and social sensitivity of the area, including impacts on health and safety of local communities, such as increased risks of Gender Based Violence/SEA/SH and of transmission of HIV/AIDS, COVID-19 and other communicable diseases, distance from the community, ecological function of the areas, distance from the construction site, the future use of the permanent structure after demobilization, accessibility of the project workers as well as construction logistic. The TanTIP LMP and SEP, and the Lusahunga- Rusumo Road RAP contain relevant provisions to address the risks and impacts related to GBV/SEA/SH, transmission of communicable diseases, possible social tensions arising out of the labor camps, and other community health and safety issues concerning the labor influx and other elements of the project workforce to be accommodated at the campsites.

The Benako area was found to be suitable over the others due to the fact that, there will be no compensation as the area belong to the local government as well as the village has population of 28,200 people and hence at the end of the project the permanent buildings will be functional to provide social services such as school, dispensary etc.

2.3.1.3 Additional infrastructures

Bus bays will be built along the road at the following chainage.

Table 2-6 Locations of bus bays

SCHEDULE OF BUS BAYS		
RHS	LHS	REMARKS
0+385	0+170	LUSAHUNGA
0+100	0+190	
0+125	0+215	
0+145	0+230	
31+520	31+805	NYAKAHURA
31+335	31+625	
31+560	31+650	
31+500	31+605	
72+575	72+670	BENACO
72+590	72+690	
72+615	72+715	
72+635	72+730	
73+905	73+205	BENACO
73+000	73+225	
73+025	73+250	
73+045	73+255	

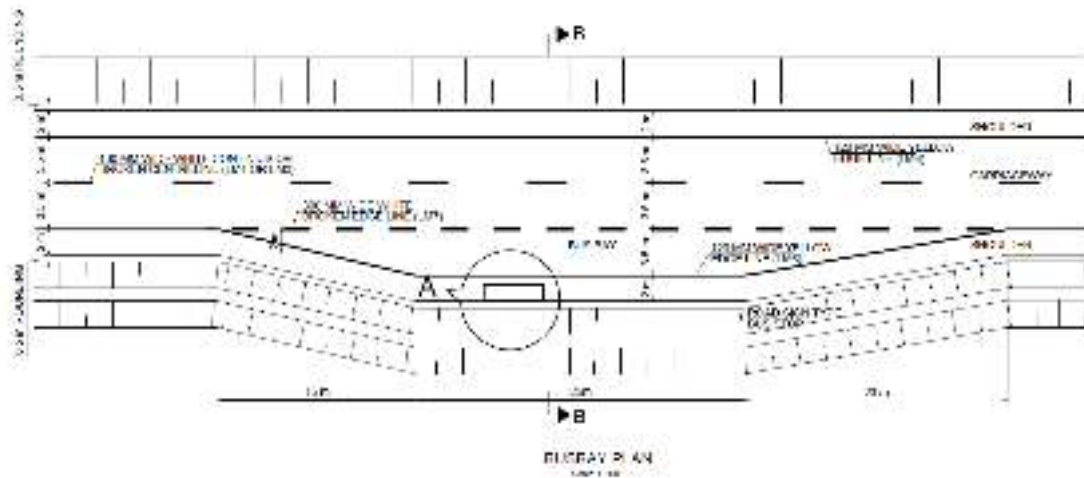


Figure 2-5 Bus bays

Truck bays will be built between the following chainages on space that is already used as truck bays.

Table 2-7 Truck bays

Location	Location	Location	Village
31+500	32+050	Left side (West of the road)	Nakahura
72+500	72+900	Right side (East of the road)	Benaco
73+200	73+600	Left side (West of the road)	Benaco

A roundabout is foreseen at KM 73+200 (Benaco Center roundabout).

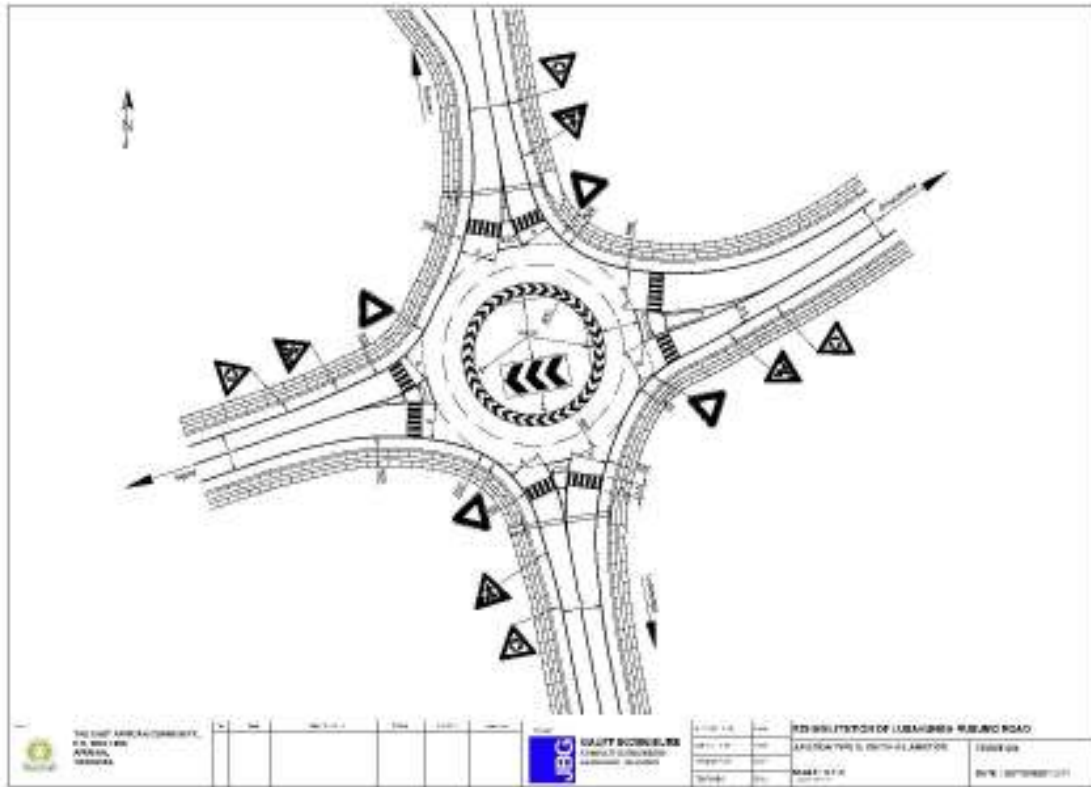


Figure 2-6 Benaco roundabout

Crossings for pedestrians will be installed along the road at 15 locations. These will be raised pedestrian crossings (zebra crossings). These will be preceded by rumble strip to warn drivers of the presence of a pedestrian crossing.

Schedule Of Zebra Crossing		
S/No.	Start	Location Name
1	0+158	Lusahunga
2	6+500	Nyamalagala
3	12+000	Midaho
4	14+750	Busii
5	29+850	Nyakahura
6	31+593	Nyakahura
7	53+340	Nyamugombe
8	59+200	Nyamugombe
9	64+500	Kapfua
10	71+900	Benaco
11	72+652	Benaco
12	73+094	Benaco
13	73+145	Benaco
14	84+500	Rusumo
15	89+650	Rusumo

Figure 2-7 Location of raised pedestrian crossings

The design report has foreseen to improve existing pedestrian walkways in the following villages, these will have street lights.

Table 2-8 Existing walkways to be improved

Village name	Chainage	Length of the village/town (km)
Lusahunga	0+000 to 0+800	0.8
Nyakahura	31+400 to 32+100	0.7
Benaco	72+400 to 73+700	1.3
Rusumo	90+000 to 91+400	1.44
Total length of walkways		4.24 km

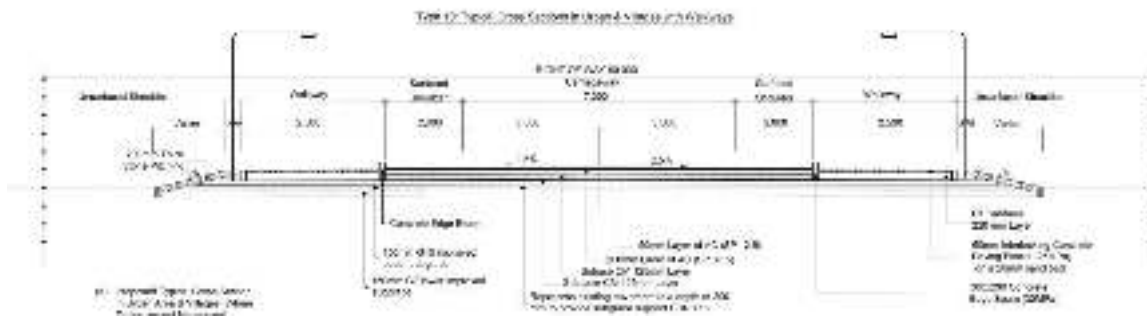


Figure 2-8 Lights along walkways

A model of cattle underpass is proposed in the Detailed design, however it does not mention where it/they will be installed and highlights that the Resident engineer will decide of the location of cattle underpasses.

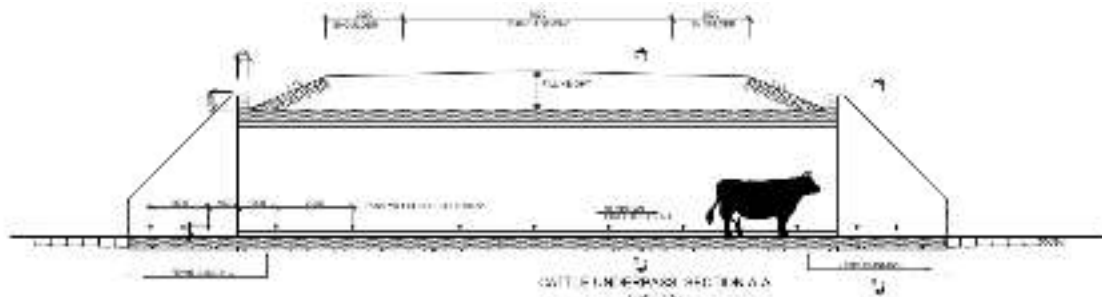


Figure 2-9 Cattle underpass

The existing weighbridge station will be rehabilitated. The weighbridge is called Nyakahura weighbridge. There is no proposed shift of location. The weighbridge is located at around 31+360

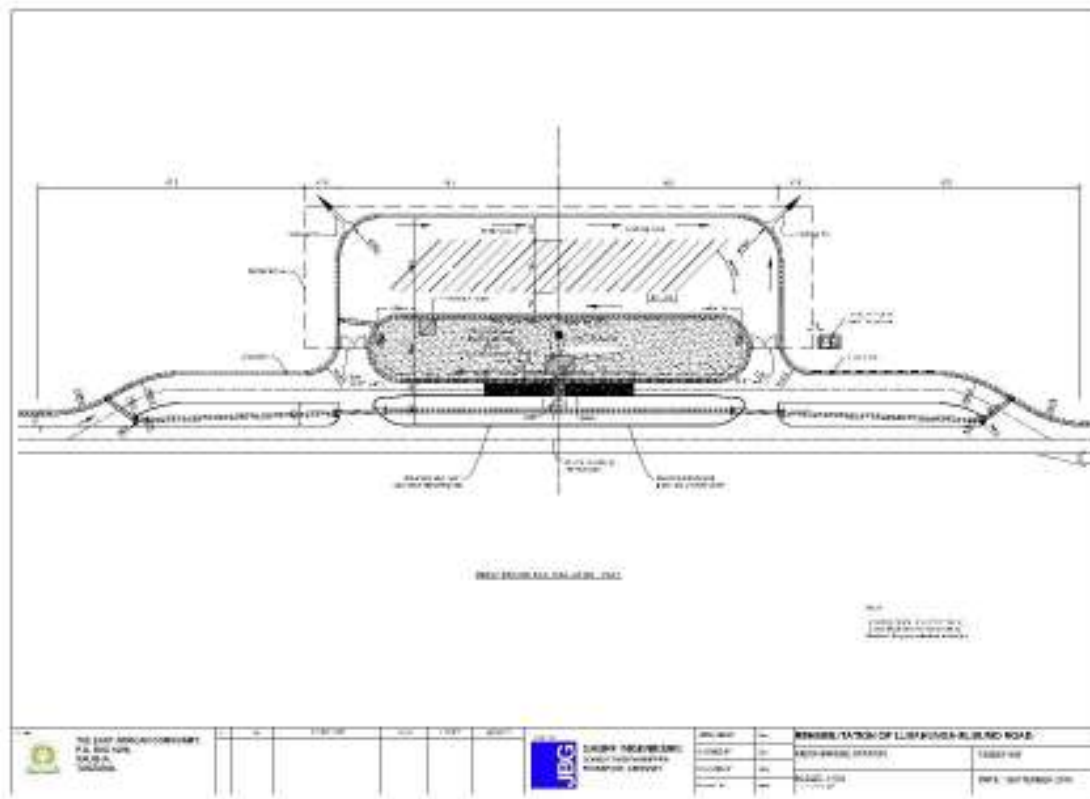


Figure 2-10 Weighbridge station

A rest area will be built between 51+800 and 52+000, it will include space for possible restaurant, parking spaces, washrooms and a septic tank and space for possible stalls. This area is currently nonexistent.

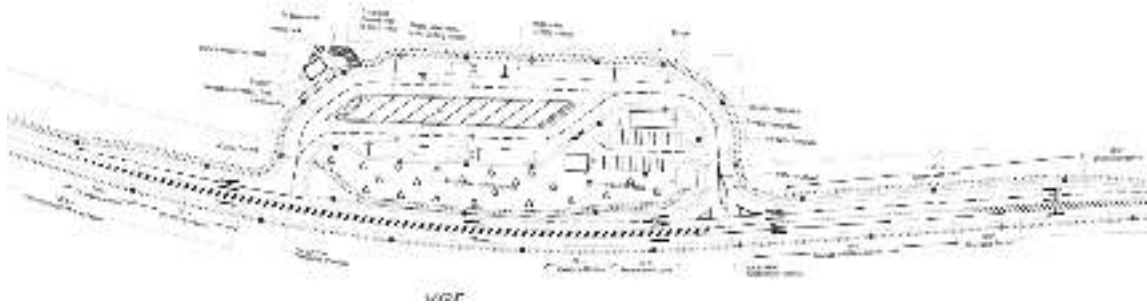


Figure 2-11 Rest area

According to the Design review (2019), arrester beds will be implemented to sections of the alignment with long steep grades in order to assist out of control heavy vehicles to safely stop. The suitability of the locations and determination of final locations will be determined on site by the Engineers' Representative after discussion with the Client.

Section From	Section To	Lengths between high and Low points	Grade
22+296	22+983	687 m	-9.80 %
61+149	62+078	929 m	10.15 %
68+440	69+634	1,194 m	7.47 %
78+892	79+817	925 m	8.14 %
84+693	85+424	731 m	9.34 %
89+543	90+472	929 m	-10.00 %
90+766	91+438	671 m	-9.70 %

Figure 2-12 Location of arrester beds

2.3.2 Mobilization or Pre-Construction Phase Activities

About 1000 workers, both skilled and unskilled, will be recruited during the project duration, in accordance with project phasing requirements. This phase entails mobilization of the labor force (300 workers are expected in this phase), the majority (80%) of whom will be daily local workers. These are not expected to be residing at the campsite but rather at their homes in the surrounding villages. The Contractor will mobilize equipment, machinery, and the installation of plants (asphalt and concrete) and construction of campsite facilities (permanent residential houses for the Supervising Engineer, offices, a laboratory, etc.), construction of temporary facilities for the Contractor (residential tents, offices, toilets, workshop, storage houses, oil storage tank, waste storage facilities, water storage tank/pond, security fence and gate), as well as the

acquisition of permits required by law. Other activities in this phase include route selection, the Topographical Survey, Geo-Technical Investigation, soils and materials investigation, land acquisition, materials storage and preparation, and identification of borrow pits, quarry sites and sources of water.

Duration

The duration of this phase will be four (4) months.

Types and Sources of Project requirements

Types and sources of project requirements during the pre-construction phase are shown in the following table.

Table 2-9 Project requirements during pre-construction phase

Requirements	Type	Source
Raw Materials	Aggregates	See next Section
	Fill/Gravel	See next Section
	Sand	See next Section
	Water	See next Section
	Cement	Dar es Salaam
	Reinforcement bars	Dar es Salaam
	Timber	Bukoba local vendors
Energy	Electricity	TANESCO (National Grid)/Generators
	Fuel	Ngara and Biharamulo vending stations
Total project Manpower at pre-construction stage (300 workers)	Skilled	Contractor (30%)
	Unskilled	Local People along the road (70%)
Equipment	Dump Truck	Contractor
	Graders	Contractor
	Dozer	Contractor
	Water Boozers	Contractor

	Vibrators	Contractor
	Excavator	Contractor

Transportation

Materials (fine and coarse aggregates) from quarries will be transported by trucks covered with canvas to avoid air pollution to the construction site. Water will be moved by water boozers to construction site and at the campsite. Other materials like cement, timber and reinforcement bars will be transported by Lorries to the construction site.

Storage

Some of the materials from borrow pits will be used directly after delivery and as such no stockpiles will be expected. Other materials like aggregates and sand will be stored at the backyard of the camp site ready for use. Cement and reinforcement bars will be stored in special storage rooms. Timber will directly be used at the required areas and consequently there will be no stockpiling of timber at the campsites. Fuel will be stored in tank and drums located at the Contractor campsite storage yard.

Types, Amounts and Treatment/Disposal of Wastes

Types, amounts and treatment/disposal of wastes during the pre-construction phase are shown in the following table.

Table 2-10 Types and amounts of wastes during the pre-construction phase

Waste	Types	Amount	Treatment/ Disposal
Solid waste (degradable)	Vegetation (Trees, Shrubs and Grasses) and remnants of timber.	40m ³ (Clearance for campsites)	Source of energy for cooking at the camp site or villages nearby.
	Food remains, cardboards and papers	1.6kg/day (based on generation rate of 20g/day/ person and 80 workers)	Collected in a large skip bucket at the campsite then collected to formal disposal site
Solid waste (Non-degradable)	Top soils	1000 m ³ (Based on removal of 10cm topsoil from the (200x50) m ² area for Contractor's and Engineer's camps	To be used for landscaping

Waste	Types	Amount	Treatment/ Disposal
	Scrap metals and plastics	10- 15kg per day	Sold to recycle agents
	Tins, glasses	2- 3 kg per day	Collected at a stationary container at the site before taken to the Authorized dumpsite at Nyarubungo - Biharamulo
Liquid waste	Sewage	2.56 m ³ (Based on 80 people, 40l/capita/day water Consumption and 80% becomes wastewater)	Septic tank, Soak away system at the campsites
	Oils and greases	Non	Car maintenance will be done at proper garages in Ngara/Biharamulo

2.3.3 Construction Phase

Construction phase activities are many. However, according to the design review report, the major construction/ rehabilitation activities comprise:

- Reprocessing 300 mm of the existing pavement to form new subgrade;
- Construction of Lower subbase layer 150 mm class C1 cement stabilized gravel;
- Construction of Upper subbase layer 150 mm class C2 cement stabilized gravel;
- Construction of new CRR base course;
- Recruitment of about 700 workers to compliment the 300 workers recruited during pre-construction phase of which 30% skilled and 70% unskilled.
- Management of 1000 worker's affairs during project implementation in accordance with LMP.
- Surfacing by using 50mm asphalt concrete and single bituminous seal of shoulders;
- Construction of drainage structures;
- Provision of pedestrian crossings, speed humps and rumble strips in all built up areas and community trading centers;
- Landscaping of degraded project areas and establishment of vegetation for functional and aesthetic purposes on cut and fill slopes in accordance with the requirements of the MoW Standard Specification for Road Works;
- Establishment of detours which will be required to maintain a usable route during the construction period; and

- Along road construction, demobilization of workers' camps will most likely happen every time the camp moves to a new location.

Duration

The duration of this phase including defect notification period will be three (3) years.

Types and Sources of Project requirements

Types and sources of project requirements during the construction phase are shown in the following table.

Table 2-11 Sources of project requirements during the construction phase

Requirements	Type	Source
Raw Materials	Aggregates	See next section
	Fill/Gravel	See next section
	Sand	See next section
	Water	See next section
	Bitumen	South Africa/Saudi Arabia
	Cement	Dar es Salaam
	Reinforcement bars	Dar es Salaam
Manpower (700) skilled and unskilled workers)	Skilled (30%)	Contractor
	Unskilled (70%)	Hire from local communities
Equipment	Dozers	Contractor
	Graders	Contractor
	Pay Loaders	Contractor
	Excavators	Contractor
	Vibro Rollers	Contractor
	Tandem Rollers	Contractor
	Macadam Rollers	Contractor
	Tire Rollers	Contractor
	Dump Trucks	Contractor
	Mixer Trucks	Contractor

Requirements	Type	Source
	Water Trucks	Contractor
	Tractor w/Trailers	Contractor
	Tire cranes	Contractor
	Cargo Crane Trucks	Contractor
	Cargo Trucks	Contractor
	Crusher Plant	Contractor
	Screen Unit	Contractor
	Concrete Batch Plant	Contractor
	Asphalt Plant	Contractor
	Asphalt Finisher	Contractor
	Asphalt Distributor	Contractor
	Air Compressors	Contractor
	Generators	Contractor
	Fuel Trucks	Contractor

Transportation

Materials (fine and coarse aggregates) from quarries will be transported by trucks to the construction site. Water will be moved by water boozers. Other materials like asphalts, cement, timber and reinforcement bars will be transported by trucks to the construction site.

Storage

Some of the materials from borrow pits will be used directly after delivery and as such no piling up is expected. Other materials like aggregates and sand will be stored at the backyard of the camp site ready for use. Cement and reinforcement bars will be stored in special storage rooms. Timber will directly be used at the required areas and consequently there will be no stockpiling of timber at the camp sites. The asphalt will be stored in their respective containers which will be kept in the storage rooms. Fuel will be stored in drums at depot areas.

Types, Amounts and Treatment/Disposal of Wastes

Types, amounts and treatment/disposal of wastes during the construction phase are shown in the following table.

Table 2-12 Amounts of waste during the construction phase

Waste	Types	Amount	Treatment/ Disposal
Solid Waste (Degradable)	Vegetation (trees, grasses) and Remnants of timber. Food remains, cardboards and papers	About 1,000-1,200m ³ of biomass 2.4kg/day (based on generation Rate of 20g/day/person for 120 people)	<ul style="list-style-type: none"> • Source of energy for cooking at villages nearby. • Collected in skip bucket at the campsite then transported for disposal at formal dumpsite in Ngara/Biharamulo;
Solid Waste (Non-Degradable)	Bitumen and granular base; Scrap metals, drums and plastics, glasses; tins,	92,000m ³ (based on removal of 50mm); Bituminous layer 5-7kg per day and 150mm granular base from existing road.	<ul style="list-style-type: none"> • To be stockpiled before reuse; sold to recycle agents; • Taken to authorized • Agents for specified disposal technique; • Stockpiled before reuse or sold to recycle agents.
Liquid waste	Sewage Oils and greases	3.84m ³ /day (Based on 120 people, 40l/capita/day; Water consumption and 80% becomes wastewater);	<ul style="list-style-type: none"> • Septic tank, Soak away system at the camp site and mobile toilets along the route. • Car maintenance will be done at proper garages at Ngara/Biharamulo and Bukoba;

2.3.4 Demobilization Phase

Activities

- At this stage the number of workers is expected to be reduced to about 100 (skilled and unskilled) for demobilization phases activities
- There not will any temporally campsite that will be handled to local governments, instead the permanent structures which was used by Supervising engineer will be

handled to the LGAs for schools or health facilities which fit-for-purpose structural integrity.

- Dismantle ring of machinery and plants and non-mobile campsite and remove it from the site.
- Demobilization of temporarily workers' camps will most likely happen every time the camp moves to a new location.
- Other activities include rehabilitation of the workshop and stockpile yard, rehabilitation of affected areas within the campsite
- Rehabilitation of borrow pits and quarry site at least to the reasonable conditions that influence ecological function.
- Stockpiled materials be removed from the road site and used for rehabilitation of borrow pits.
- Undertake landscaping in all degraded areas at the campsite and along the road as part of beatification.
- Ensure removal of all sorts of wastes including used oil, sewage, solid wastes (plastics, use tiles, bitumen drums, used batteries, wood, metal scrapers, papers, etc.) by authorized waste dealers to disposal site.
- Continue with termination of temporary employment to the reasonable required number.

The permanent workers' camp will be handed over to the community after construction work.

Duration

Demobilization stage will last for a period of three (3) months.

Types and sources of project requirements

Types and sources of project requirements during the demobilization phase are shown in the following table.

Table 2-13 Types and sources of project requirements during demobilization phase

Requirements	Type	Source
Manpower (Reduced to 100 workers)	Skilled (30%)	Contractor
	Unskilled (70%)	From the local community in the project area
Equipment	Bull dozer	Contractor
	Motor grader	Contractor
	Roller Compactor	Contractor
	Plate compactor	Contractor

Requirements	Type	Source
	Tippers	Contractor

Types treatment/disposal of Wastes

The demobilization of the temporary structures will result mainly into liquid wastes such as used oil, sewage and solid wastes such as plastics, use tiles, bitumen drums, used batteries, wood, metal scrapers, papers, timber, iron sheets and rubbles etc. from demobilization activities. The Contractor will ensure removal of all sorts of wastes including used oil, sewage, solid wastes (plastics, use tiles, bitumen drums, used batteries, wood, metal scrapers, papers, etc. by authorized waste dealers to disposal site at Nyarubungo in Biharamulo and Nyachonga in Ngara.

2.3.5 Operation phase

Activities

The actual usage of the road is expected to commence after the construction works. The project road is under “trunk road” category and therefore will be directly managed by TANROADS. The design period is 20 years, after which re-surfacing will be needed. During this time, TANROADS will carry out routine maintenance by attending to potholes, clearance of vegetation within the RoW (road reserve area) and monitoring.

The project road was designed to a design speed of 70 km/hr. as per the design report. The design speed of the road will be adjusted as necessary through villages and areas with a high concentration of people and animals.

Once the construction phase is completed, the roads will start to operate to serve the intended purposes. The activities that are expected to be executed during operational phase include:

- Transportation of goods, agriculture produce and services
- Traffic management
- Road and Facilities maintenance

Due to consistent use of the road during operational phase there will be a routine road maintenance as the results of wear and tear of the road that will affect its quality. Therefore, the road will require maintenance throughout the project life.

Other activities include replacement of damaged road signs, thermo-plastic road marking, reinforcement and replacement of road furniture, control of litter accumulation on road sides, awareness rising on proper road use and environmental management to the communities, undertake regular road safety awareness campaign to road users, regular maintenance of drainage and culvert structures, monitoring and evaluation, management to reduce pollutant concentrations in runoff, disposal of wastes from road maintenance activities, storage and management of maintenance materials and equipment.

Duration

The lifespan of the rehabilitated road will be twenty (20) years.

2.4 Construction materials

The main construction materials for the road include sand, gravel, hard stones (aggregates), reinforcement iron bars, water and bitumen. Most of the materials shall be obtained locally (within Tanzania) except bitumen which shall be imported. Material investigations have been made with the aim of identifying sources for suitable construction materials including borrow pits, sand pits, construction water sources and quarry sites. The spoiled materials shall be stockpiled at the site/location to be approved by the RE in order to be used later for rehabilitation and landscape purposes.

2.4.1 Borrow Areas

Natural gravels are intended to be used as sub-base, materials to be stabilized for sub-base and fill materials.

According to the Design Review of 2018, the borrow areas identified in the design were depleted or taken over by local residences. The Design Review identified 15 new borrow areas as shown in the following map. However, nice borrow areas were found along the project road and samples were taken for laboratory tests to check the quality of the available materials for pavement construction. The following table gives a summary of the 9 locations of the potential borrow areas and their estimated quantities.

Table 2-14 Borrow Areas and Estimated Quantities

SN	Chainage (km)	Name	Estimated Quantities (m3)	Remarks
1	Chainage 0+800 RHS	Ihigi	42,750	Existing
2	Chainage 7 +000 LHS	Nyamalagala	29,250	Existing
3	chainage 17+ 000 LHS	Busili	31,500	Existing
4	chainage 33+ 700 LHS	Nyakahura	40,500	New
5	chainage 41+000 LHS	Mihongola	40,500	New
6	chainage 62+000 RHS	Kikukumbo	36,000	Existing
7	chainage 69+000	Lumasi	36,000	New

SN	Chainage (km)	Name	Estimated Quantities (m3)	Remarks
	LHS			
8	chainage RHS 79+000	Ngoma	40,500	Existing
9	chainage RHS 89+000	Gwabilulu	40,500	New

Source: Design review report (Gauff Ingenieure, May 2018) chainage



Figure 2-13 Kikukumbo borrow area

The results show that the materials from borrow areas at km 33+700, 41+000 and 62+000 along Lusahunga - Rusumo road conform to the requirements of G45. Materials from all other borrow pits conform to the requirements of G15 and C1 except for the borrow pit at km 7+000 along Lusahunga - Rusumo road which qualifies only as G15 material all this material are required during different stage of road construction. G45, G15 (natural gravel) and C1 (cemented material) are specified road fill materials for earthworks which are placed above the roadbed on which the improved subgrade layers, subbase, base course, shoulders are to be constructed. These materials are used to replace unsuitable material in the roadbed.

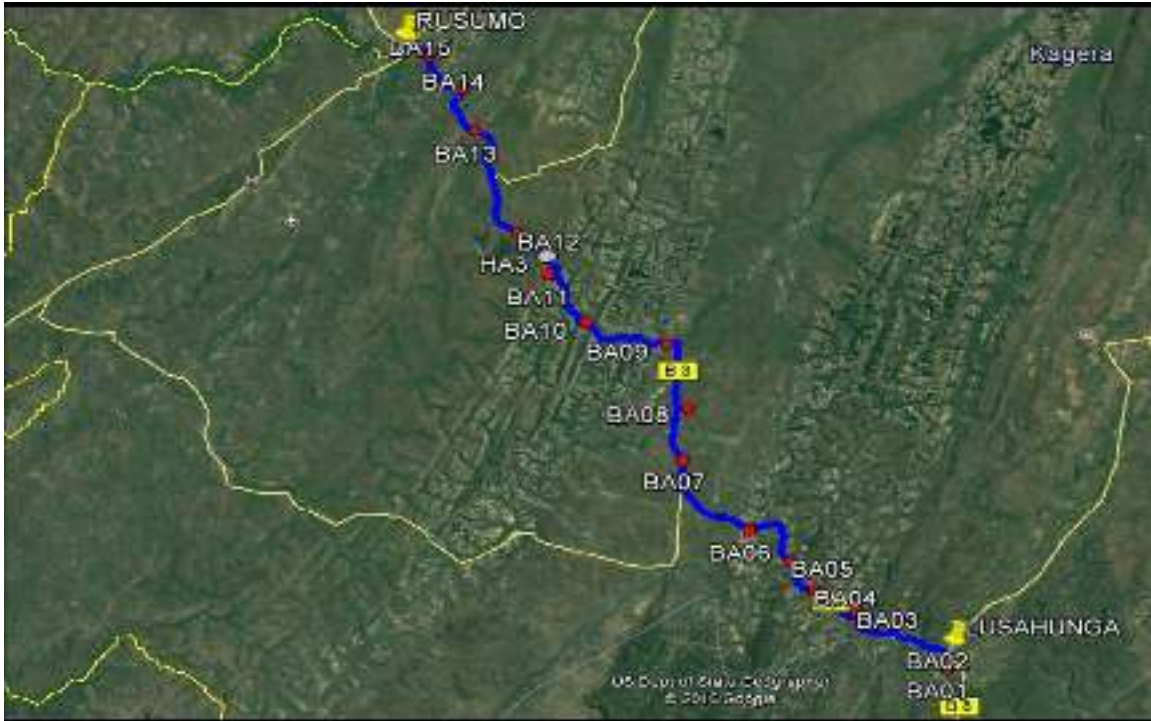
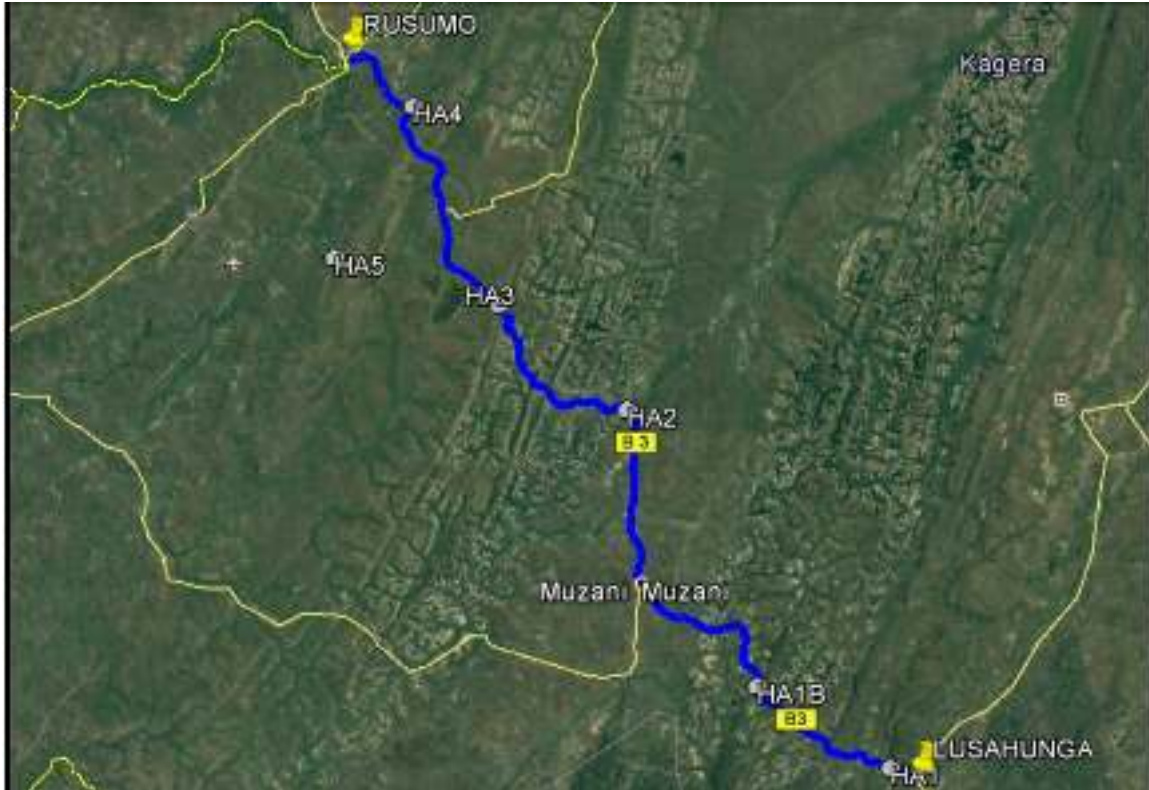


Figure 2-14 Location of borrow areas

2.4.2 Hard stone source

According to the Design Review of 2018, there are six potential sources of hard stones which will be used as crushed stone base, aggregate for bituminous surfacing and structural concrete as shown in the following maps.



- HA1A is the Ihigi site at 2+400 located 90 meters from the road on the eastern side (right hand side). It is a new site that was not exploited before.
- HA1B is along the road, but little information on its location and the estimated quantity available is provided.
- HA3 is the Kafua site at 65+000 located 2 km from the road on the on the eastern side (right hand side).
- HA4 is the Gwabilulu site at 84+00 located 50 meters from the road on the on the eastern side (right hand side). It is an existing quarry that was exploited before
- HA5 is off site, estimated quantity have not been assessed.

Table 2-15 Hard stone sources

No.	Chainage	Name of Area	Status	Estimated quantity available (m ³)
1.	2+400, 90m RHS (East)	Ihigi	New	More than 100,000m ³
2.	65+000, 2.0km RHS (East)	Kafua	New	More than 100,000m ³
3.	84+000, 50m RHS (East)	Gwabilulu	Existing	More than 100,000m ³



Figure 2-15 Ihigi (L) and Gwabilulu (R) hard stone source

Close to HA1A, Ihigi site it appears that houses are nearby the site (about 70 m). This area shall be avoided due to safety risks.

2.4.3 Sand source

Sand will be used for fine aggregate for concrete.

According to the Design Review of 2018, suitable natural sand sources are scarce in the vicinity of the road. Of the four sources identified, only one meets the requirements of the specification. Its location is not provided in the Design review report.

2.4.4 Water sources

The following water body have been considered by the Design Review of 2018 as source of water for the construction.

- Midalo stream at 11+200
- Nyakahura borehole at 31+500
- Kikukumbo stream around 61+000
- Benaco dam at 77+000
- Nyamozi River
- Busiri River
- Kagera River at the end of the road at the border

Table 2-16 Location of Water sources

SN	Name of Source	Location (km)	Offset Distance	Remarks
1.	Midalo stream	11+200	Cross the project road	Seasonal used for irrigation, cattle and domestic
2.	Nyakahura Borehole	31+ 500	1km LHS (West)	used for

SN	Name of Source	Location (km)	Offset Distance	Remarks
				irrigation, cattle and domestic
3.	Kikukumbo stream	Around 61+000	Cross project road	Seasonal
4.	Benako Water Pond	77+000	30m RHS (East)	Large quantity of water used for irrigation, fishing, domestic, and cattle
5.	Kagera River	91+700	At the boarder	Perennial used for cattle, domestic, irrigation and fishing

2.4.5 Sources of manufactured materials for road construction

Traditional construction materials to be used in road works are usually tested by TANROADS accredited laboratories including the Central Materials Laboratory (CML) for compliance and for those manufactured materials are as describes hereunder.

Cement- Cement is easily available in the mainland, packed in 50kg bags and sourced from the factories in Dar es Salaam.

Reinforcement Steel- Reinforcing steel for structural works is also available in the mainland from various factories in Dar es Salaam or abroad. Strength and other properties of reinforcing steel to be confirmed by testing of samples in approved testing laboratories.

Bitumen- Bitumen for road works is generally readily available from either TPDC or Saudi Arabia. Bitumen properties need to be checked by testing representative samples in approved laboratories.

Lime- Industrial Hydrated Lime properties need to be checked by testing representative samples in approved laboratories. TANROADS Kagera Laboratory shall perform the checks.

2.5 Resettlement

The project Resettlement Action Plan (RAP) has been prepared, including consultations with 237 PAPs (108 males and 129 female), 12 of them vulnerable (2 child household heads and 10 widows and elderly women). Affected properties include 35 residential buildings and 3702 trees and crops along the project construction corridor belonging to 202 owners. The consultations undertaken during ESIA and RAP preparation found no community utilities (e.g., water pipes owned by water user associations) in the vicinity of

the road corridor, hence no impacts on such facilities are considered. The Livelihood Restoration Plan (LRP) will assist persons economically affected by the project with support to transportation, obtaining new residences, alternative land for buildings and farming, support to SMEs, and financial literacy and other forms of training. These arrangements will be implementation by TANROADS/PIT E&S staff in coordination with the LGAs of the respective districts, as detailed in the RAP, at an estimated cost of Tshs. 50,000,000.00.

In view of the above, the RAP involves impacts on properties of project affected persons (PAPs) and establishes the value of the affected properties for compensations as detailed the RAP report. The table below shows the number of affected PAPs, properties (i.e., buildings/structures, and trees) and their compensation costs, as well as livelihood restoration costs.

Table 2-17 Project affected properties and compensation value

Component		Cost (Tzs)
237 Total PAPs including (108 male) and (129 female)	Compensation for Structures (35 buildings which are residential houses)	423,418,134.56/=
	Trees and crops within the construction corridor (3702)	204,112,973.45/=
Other costs		
Expenses for two committees of GRM (Sitting and Transport allowances)		6,000,000.00/=
Cost of Livelihood Rehabilitation and Restoration Plan		50,000,000.00
RAP implementation administrative cost		200,000,000.00
Total		843,531,108.01/=

2.6 Personnel and Manpower

Road construction works is generally technical and labor-intensive component. Recruitment of about 1,000 workers will be for the whole project duration whereby, 300 workers will be engaged during pre-construction, 700 workers will be recruited during construction and finally workers will be reduced to 100 workers during demobilization. 30% of all workers will be skilled and 70% of workers will be unskilled. The 80% of all project workers (skilled and unskilled) will be living out of the campsite (daily workers to be recruited from the surrounding communities along the road project). Workers shall be paid in accordance to Wage Order, 2013 that stipulates the minimum wage required for

each sector and shall be given contracts and registered to social security funds and worker's union.

TANROADS and the TanTIP PIT shall be required to ensure that all project contractors and subcontractors provide equal opportunity to everyone eligible for working without gender bias, including persons with disabilities and other members of vulnerable groups.

3 POLICY, ADMINISTRATIVE AND LEGAL FRAMEWORK

3.1 Environmental Management Regulation in Tanzania

A clean and safe environment is the constitutional right of every Tanzanian citizen. Regulation on environmental management in the country is mainly vested on two public institutions, the National Environment Management Council (NEMC) and the Division of Environment (DoE) in the office of the Vice President. The NEMC undertakes enforcement, compliance, and review of environmental impact statements whereas the DoE provides the policy formulations and technical back-up and executes the overall mandate for environmental management in the country. There are many policies and pieces of legislation on environmental management in Tanzania, the relevant ones to this project area briefly discussed below.

3.2 National Policies

Environmental awareness in the country has significantly increased in recent years. The government has been developing and reviewing national policies to address environmental management in various sectors. Among others, the objective of these policies is to regulate the development undertaken within respective sectors so that they are not undertaken at the expense of the environment. The national policies that address environmental management as far as this project is concerned and which form the corner stone of the present study include the following policies.

3.2.1 National Environmental Policy (NEP) of 1997

Tanzania currently aims to achieve sustainable development through the rational and sustainable use of natural resources and to incorporate measures that safeguard the environment in any development activities. The environmental policy document seeks to provide the framework for making the fundamental changes that are needed to bring consideration of the environment into the mainstream of the decision-making processes in the country.

The National Environmental Policy, 1997 stresses that for a framework law to be effective, environmental standards and procedures have to be in place. For example, Chapter 4 of the policy (Instruments for Environmental; Policy), Section 61, states that “As part of the (National Environmental Policy) strategy in the implementation of the National Environmental Guidelines, specific criteria for EIA conduct will be formulated”.

The National Environmental Policy as a national framework for environmental management emphasized that the transport sector shall focus on the following environmental objectives:

- Ensuring sustainability, security and the equitable use of resources for meeting the basic needs of the present and future generations without degrading the environment or risking health or safety.
- To prevent and control degradation of land, water, vegetation and air which constitute our life support system.

- To conserve and enhance our natural and man-made heritage, including the biological diversity of the unique ecosystem of Tanzania.
- To improve the condition and productivity of degraded areas including rural and urban settlement in order that all Tanzanians may live in safe, healthful, productive and aesthetically pleasing surroundings.
- To raise public awareness and understanding of the essential linkages between environment and development and to promote individual and community participation in the environmental action.
- To promote international co-operation on the environment and expand our participation and contribution to relevant bilateral, sub-regional, regional, and global organizations and programs, including implementation of treaties.
- With specific regard to the transport sector, the National Environmental Policy (in Section 51) focuses on the following
 - Rehabilitation in mass transport systems to reduce fuel consumption, traffic congestion and pollution;
 - Control and minimization of transport emission gases, noise, dust and particulates;
 - Disaster/spills prevention and response plans and standards shall be formulated for transportation of hazardous/dangerous materials.

On addressing the issues of poverty alleviation, the policy recognizes its impact to the environment. The policy focuses on the satisfaction of basic needs of citizens with due cognizance to protecting the environment. This project will ensure that the above policy objectives are met.

The NEP advocates the adoption of Environmental Impact Assessment (EIA) as a tool for screening development projects which are likely to cause adverse environmental impacts.

3.2.2 National Transport Policy (2003)

The vision of this policy is “to have an efficient and cost-effective domestic and international transport service to all segments of the population and sectors of the national economy with maximum safety and minimum environmental degradation”. Its mission is to “Develop safe, reliable, effective, efficient and fully integrated transport infrastructure and operations which will best meet the needs of travel and transport at improving levels of service at lower costs in a manner which supports government strategies for socio-economic development whilst being economically and environmentally sustainable”.

The National Transport Policy acknowledges that in the rural areas of Tanzania the transport situation is highly affected by poor infrastructure, specifically roads. Hence the key objective of the transport policy is to improve the transport infrastructure to enable easier movement of agricultural and livestock inputs and outputs to and from rural and urban areas. Agricultural and Livestock inputs need to be transported into villages and

surplus outputs need to be transported to markets which are normally located in urban areas. To facilitate such goals, efficient and all weather roads are needed.

On transport sector, the main objective of the policy is to improve infrastructure whilst minimizing wasteful exploitation of natural resources and enhancing environmental protection. Improving infrastructure assists in poverty reduction and eradication which is a major goal in Tanzania. Most activities in the project area depend in one way or another on the environment and therefore protection of the environment is vital.

In order to promote environmental protection whilst reducing poverty in rural areas, the policy direction is to:

- Influence use of alternative energy sources such as biogas and solar available at the residential localities instead of travelling long distances in search of firewood as a source of power; and
- Raise environmental awareness.

Sections 5.9 and 6.13 on Road Transport and Environment and Rural Transport and Environment respectively give policy directions towards enhancing environmental protection through environmentally friendly and sustainable transport infrastructure both in the rural and urban areas. This project is the Implementation of this policy since the Project Road shall provide a reliable means of transporting goods and agriculture products to from the farms to the Markets.

3.2.3 National Mineral Policy (1997)

The National Mineral Policy requires that mining activities are undertaken in a sustainable manner. Reclamation of land after mining activities is recommended. Section 3.3.12 states that "To ensure Sustainability of mining there is a need to Integrate Environmental and Social concerns into Mineral development programmes. Sustainable mining development requires balancing the protection of flora and fauna and Natural Environment with the need for social and economic development." As far as this project is concerned, mining activities refer to quarrying and gravel extraction activities.

3.2.4 National Construction Industry Policy (2003)

The road sector is among the key areas covered by this policy. Among the major objectives of the policy, which supports a sustainable road development sector, include the promotion and application of cost effective and innovative technologies and practices to support socio-economic development activities such as road-works, water supply, sanitation, shelter delivery and income generating activities and to ensure application of practices, technologies and products which are not harmful to either the environment or human health. TANROADS shall adopt this policy by using modern technology during construction but with emphasis on value for money for a cost-effective project.

3.2.5 National Land Policy (1995)

The National Land Policy states that, "the overall aim of a National Land Policy is to promote and ensure a secure land tenure system, to encourage the optimal use of land

resources, and to facilitate broad - based social and economic development without upsetting or endangering the ecological balance of the environment". This EIA partly responds to this requirement.

3.2.6 National Energy Policy (2003)

The first energy policy for Tanzania was formulated in April 1992. Since then, the energy sector has undergone a number of changes, necessitating adjustments to this initial policy. These changes include changes in the role of the government from a service provider to a facilitator, liberalization of the market and encouragement of private sector investment. The overall objective of the National Energy Policy of 2003 is to contribute to the development process by establishing efficient energy production, procurement, transportation, distribution and end-user systems in an environmentally sound manner and with due regard to gender issues.

The continuing decline in industrial and agricultural production during the period between 1980 and 1985 led to increased inflation and a decline in the standard of living. In order to arrest this decline, the government gave priority to the rehabilitation of basic economic infrastructure, especially communication, so that they can fully support the production sector. The energy policy considers the condition of roads as a determinant factor in vehicle energy use. Rough and pothole filled roads necessitate frequent braking and acceleration, leading to wasteful use of fuel. The Project Road shall provide smooth, well-surfaced and well-maintained road which lead to energy savings.

3.2.7 National Human Settlements Development Policy (2000)

Among the objectives of this policy that touch the road sector are to improve the level of the provision of infrastructure and social services for the development of sustainable human settlements and to make serviced land available for shelter to all sections of the community. Such infrastructure and services constitute the backbone of urban/rural economic activities. All weather roads (ie Lusahunga - Rusumo) and a reliable and efficient transport system are essential to increase productivity and the establishment of manufacturing industries.

3.2.8 National Gender Policy (2002)

The key objective of this policy is to provide guidelines that will ensure that gender sensitive plans and strategies are developed in all sectors and institutions. While the policy aims at establishing strategies to eradicate poverty, it puts emphasis on gender quality and equal opportunity of both men and women to participate in development undertakings and to value the role-played by each member of society.

The ministry of works and TANROADS have adopted the policy through the provision of equal opportunities to both men and women in road works and related activities. This project will also ensure that rural women, who are the main users of the rural infrastructure, will be adequately involved at all levels of project planning to implementation.

3.2.9 The National Water Policy (2002)

The overall objective of this policy is to develop a comprehensive framework for the sustainable management of the national water resources. The policy seeks to ensure that water plays an important role in poverty alleviation. Section 2.15 notes that the size of Tanzania means that communication is time consuming and expensive. Inadequate communication systems (including poor roads) affect the effective implementation of water resources management activities in terms of higher cost of monitoring, supervision, management, policing and data transfer. The Lusahunga - Rusumo Road project will help to alleviate accessibility problems and thus facilitate the enhancement of water resources management within the project influence area.

3.2.10 National Forestry Policy (1998)

The national forest policy is based on macro-economic, environmental and social framework. Its overall aim is to manage Tanzania's forest resources as a national heritage on an integrated and sustainable basis to optimize their environmental, economic, social and cultural values. The policy drives towards implementing the directives contained in the National Environmental Policy (1997) in regard with forest resources management. For instance, the forest policy advocates and directs the conduction of EIA for development projects that will affect forest reserves including services crossing them (e.g., roads). The Project Road pass through thick timber forests; the contractor shall observe this policy during Construction.

3.2.11 Agricultural and Livestock Policy (1997)

The number and nature of guidelines that constitute Tanzania Agricultural and Livestock policy is complex. However, the overall aim is to promote and ensure a secure land tenure system to encourage the optimal use of land resources, and facilitate broad-based social and economic development without upsetting or endangering the ecological balance of the environment. The major theme is the conversion of land into an economic asset to which all citizens should have equal access, especially in response to the vulnerability of smallholders and livestock keepers who do not produce a surplus. The focus is therefore on the commercialization of agriculture so as to increase income levels and alleviate poverty.

On the other hand, the villages are required to develop land use plans where by a certain amount of land is put aside for livestock grazing while the area for agriculture is also categorized. This is done to minimize conflict between farmers and livestock keepers. It also has an advantage on proper land management and conservation. However, during the study it was observed that the land use plan do not exist in almost in all villages. The lack of land use plan result into conflicts between different land users. Enhancing Agriculture in the project area is the one of the main objectives of this Project.

3.2.12 National Policy on HIV/AIDS (2001)

The National Policy on HIV/AIDS (2001) was formulated by the Government of Tanzania (GOT) under technical support from the World Health Organization Global Programme on AIDS (WHO-GPA) that led to the establishment of National HIV/AIDS

Control Programme (NACP) under the Ministry of Health. However, due to its multi-sectoral nature there was a need to involve all sectors and community participation was found to be crucial. One of the government strategic initiatives is to establish Tanzania Commission for AIDS (TACAIDS) under the Prime Minister's Office. The Commission provides leadership and coordination of national multi-sectoral response to the HIV/AIDS epidemic. The management functions, institutional and organizational arrangement of TACAIDS are outlined in the National Policy.

The policy identifies HIV/AIDS as a global disaster, hence requiring concerted and unprecedented initiative at national and global levels. It recognizes HIV/AIDS as an impediment to development in all sectors, in terms of social and economic development with serious and direct implication on social services and welfare. Thus, the policy recognizes the linkage between poverty and HIV/AIDS, as the poor section of the society are the most vulnerable.

The main policy objective is reflected well in the establishment of TACAIDS. However, the policy has also set a number of strategic objectives to deal with specific HIV/AIDS problems:

- Prevention of transmission of HIV/AIDS;
- HIV Testing;
- Care for People Living with HIV/AIDS (PLHAS);
- Enhance Sectoral roles through participation and financial support;
- Promote and participate in research on HIV/AIDS-including dissemination of scientific information and development of HIV vaccine;
- Creating a legal framework through enactment of laws on HIV/AIDS-governing ethical issues and legal status of HIV/AIDS affected families;

Other objectives:

- monitoring and safeguarding rights of infected or affected people;
- prevent human rights abuse, discrimination and social injustice;
- provide effective treatment for opportunistic diseases;
- promote fight against drug substance abuse;
- Prohibit misleading advertisements of drugs and other products for HIV/AIDS prevention, treatment and care.

This project can be a precursor of Incidents of HIV/AIDS due to the influx of people into the area including construction workers. This would result in an increase in the incidence of diseases including STI, and HIV/AIDS.

3.2.13 The Wildlife Policy of Tanzania (2007)

The vision of the wildlife sector for the next 20 years conforms to the Development Vision 2025 on sustainable environmental and socio-economic transformation. Inter alia, the vision of the wildlife sector is to:

- Promote conservation of biological diversity;
- Administer, regulate and develop wildlife resources;
- Involve all stakeholders in wildlife conservation and sustainable utilization, as well as in fair equitable sharing of benefits;
- Promote sustainable utilization of wildlife resources; and
- Contribute to poverty alleviation and improve the quality of Tanzania.

The Wildlife Policy envisages addressing several national challenges. For instance, conserving representative areas of the key habitats with great biological diversity; continuing to support and where necessary, enlarge the protected area network as the core of conservation activities; integrating wildlife conservation with rural development; and minimizing human-wildlife conflicts whenever it occurs.

The Project Road can interfere with such challenges for which the policy needs to tackle. All stages involved in the project are able to contribute some impacts on the wildlife. In this particular case with the neighboring protected areas (PAs) there is much possibility for profound impacts especially on small animals like reptiles, birds and their habitats, amphibians etc.

3.2.14 The Tanzania 2025 Development Vision

The Tanzania Vision 2025 aims at achieving a high-quality livelihood for its people attain good governance through the rule of law and develop a strong and competitive economy. Specific targets include:

A high-quality livelihood characterized by sustainable and shared growth (equity), and freedom from abject poverty in a democratic environment. Specifically, the Vision aims at: food self-sufficiency and security, universal primary education and extension of tertiary education, gender equality, universal access to primary health care, 75% reduction in infant and maternal mortality rates, universal access to safe water, increased life expectancy, absence of abject poverty, a well-educated and learning society.

Good governance and the rule of law moral and cultural uprightness, adherence to the rule of law, elimination of corruption.

A strong and competitive economy capable of producing sustainable growth and shared benefits a diversified and semi-industrialized economy, macro-economic stability, a growth rate of 8% per annum, adequate level of physical infrastructure, an active and competitive player in regional and global markets.

Good roads are one of the most important agents to enable Tanzania achieve its Development Vision objectives (both social and economic), such as eradicating poverty, attaining food security, sustaining biodiversity and sensitive ecosystems. Rehabilitation

of the Lusahunga - Rusumo road through this project contributes to the attainment of the 2025 Vision.

3.2.15 The National Biodiversity Strategy and Action Plan (NBSAP) 2015-2020

By 2025, biodiversity and ecosystems are well protected, restored and used sustainably, ecosystem functioning maintained, so that they perpetually deliver sustainable intrinsic benefits for socio-economic development.” The mission to realize the vision is: “Take effective action to reduce biodiversity loss and ecosystem degradation, and long-term ecosystems functioning is ensured in order that by 2020 Tanzania’s rich biodiversity is secured and contribution of biodiversity and other ecosystem services to the well-being and economic prosperity of the people is guaranteed, through capacity building, knowledge management, funding and mainstreaming biodiversity across government and society, and involvement of all stakeholders.” The five defined strategic goals for intervention provide a clear guidance for the development of national targets and an action plan with priorities for biodiversity protection.

3.2.16 Nationally Determined Contribution (NDC)

The nationally determined contribution (NDC) provides a set of interventions on adaptation and mitigation, which are expected to build country resilience to the impacts of climate change and contribute to the global effort of reducing greenhouse gases (GHG) emission.

The United Republic of Tanzania is committed to effectively meet the objectives of the NDC and engage in national and international processes to fast-track its implementation. The United Republic of Tanzania commits to reduce greenhouse gas emissions economy-wide between 30-35% relative to the Business-As-Usual (BAU) scenario by 2030.

3.3 Legal Framework

3.3.1 Environmental Management Act No. 20 of (2004), Cap. 191

The Environmental Management Act (EMA) is a piece of legislation that forms an umbrella law on environmental management in Tanzania. Its enactment has repealed the National Environment Management Council Act. 19 of (1983) while providing for the continued existence of the National Environment Management Council (NEMC).

Among the major purposes of the EMA are to provide the legal and institutional framework for sustainable management of the environment in Tanzania; to outline principles for management, impact and risk assessment, the prevention and control of pollution, waste management, environmental quality standards, public participation, compliance and enforcement; to provide the basis for implementation of international instruments on the environment; to provide for implementation of the National Environmental Policy; to provide for establishment of the National Environmental Fund and to provide for other related matters.

Part III, Section 15(a) states that "in matters pertaining to the environment, the Director of Environment shall coordinate various environment management activities being undertaken by other agencies to promote the integration of environment considerations into development policies, plans, programmes, strategies projects and undertake strategic environmental assessments with a view to ensuring the proper management and rational utilization of environmental resources on a sustainable basis for the rehabilitation of the quality of human life in Tanzania".

Part VI of the EMA deals with Environmental Impact Assessments (EIA) and other Assessments and directs that an EIA is mandatory for all development projects. Section 81(2) states that "An Environmental Impact Assessment study shall be carried out prior to the commencement or financing of a project or undertaking", while Section 81(3) states "a permit or license for the carrying out of any project or undertaking in accordance with any written law shall not entitle the proponent or developer to undertake or to cause to be undertaken a project or activity without an environmental impact assessment certificate issued under this Act". This EIA is conducted for this project in order to abide to this law.

3.3.2 The Land Act No. 4 of 1999 and the Village Land Act No. 5 of (1999)

These laws declare all land in Tanzania to be "Public land" to be held by the state for public purposes. The Acts empower the President of the United Republic of Tanzania, to revoke the "Right of Occupancy" of any landholder for the "public/national interest" should the need arise. The laws also declare the value attached to land.

Land tenure system

The existing land ownership system has a history of more than forty years. At present the Land Act (1999) and the Village Land Act (1999) provide guidance to land ownership in Tanzania. The laws vest all land in the President and grant occupancy rights to individuals, legal persons and territorial communities. The President holds land in trust

for all citizens and can acquire land for public use and benefit, for instance, to resettle people from densely populated areas to sparsely populated areas, settle refugees and so forth. The President can also acquire land for other national projects, like road construction.

Compensation rules

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. In many cases whilst the holders agree to leave their land, they are not happy with the amount and delay of the compensation. Often, for example, rehabilitation that they have made to the land are omitted or underrated. The expropriation should match the price that rehabilitation can fetch if sold in the open market. Replacement value (defined as the cost of putting up a structure equivalent to the evaluated one) makes allowance for age, state of repair and economic obsolescence.

The compensation must therefore include:

- The replacement value of the un-exhausted rehabilitation
- Disturbance and transport allowance
- Loss of income
- Cost of acquiring or getting an equivalent land
- Actual value of the present property/utility available in the land and

Any other immediate costs or capital expenditure incurred in the development of the land.

This project shall involve resettlement of people and their properties, this law, as well as World Bank requirement as set forth in the RAP, shall govern the whole process of valuation and compensation.

3.3.3 The Road Act, 2007

For purposes of this project, the Road Act 2007 serves as a guide to the use of the road reserve. Contrary to previous informal understanding the reserve is exclusive to road related activities that do not include other utilities. However, clause 29 (2) does give provision for the request and terms of approval for use of the road reserve by utilities such as power lines and water pipes.

On land acquisition the Act clearly states in part III, Section 16 that ‘where it becomes necessary for the road authority to acquire a land owned by any person, the owner of such land shall be entitled to compensation for any development on such land in accordance with the Land Act and any other written law’. TANROADS shall observe this law for the conservation of the road reserve.

3.3.4 The Water Resources Management Act No. 11 of 2009

This is a new legislation that has repealed the Water Utilization (Control and Regulation) Act (1974). The 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.

In accordance with this law, all water resources in mainland Tanzania shall continue to be public water and vested in the President as the trustee for and on behalf of the citizens. The power to confer a right to the use of water from any water resource is vested in the Minister responsible for water. A number of perennial and seasonal rivers cross the project road. Their surface water bodies and ground water are managed by Lake Tanganyika Basin Offices. This authority shall be consulted before starting working in the Rivers and before abstraction of water from the water bodies.

3.3.5 Public Health Act 2009

An Act provide for the promotion, preservation and maintenance of public health with the view to ensuring the provision of comprehensive, functional and sustainable public health services to the general public and to provide for other related matters. Section 54 of this law states that " A person shall not cause or suffer from nuisance, likely to be injurious or dangerous to health, existing on land, premises, air or water". Therefore, TANROADS shall develop this project road so that no body suffer from nuisance or cause danger to people's life.

3.3.6 Land Use Planning Act (2007)

The Act provides for the procedures for the preparation, administration and enforcement of land use plans; to repeal the National Land Use Planning Commissioning Act and to provide for related matters. Among the objectives of the Act as given in Section 4 are to facilitate the orderly management of land use and to promote sustainable land use practices. The project entail taking additional 7.5m on both sides of the road which is change of land use as the land was used for other purposes. This change in land use shall cause change in livelihood, therefore TANROADS must comply with the provisions of this act. Any infringement on existing land use shall need consultation with land use planning authorities.

3.3.7 Occupation Safety and Health Act (2003)

The law requires employers to provide a good working environment to workers in order to safeguard their health. The employers need to perform medical examinations to determine fitness before engaging employees. Employers must also ensure that the equipment used by employees is safe and shall also provide proper working gear as appropriate. TANROADS and contractor shall observe this law during construction.

3.3.8 Local Government Laws (Miscellaneous Amendment) Act, 2006

The Local Government Act directs the registrar of villages to register an area as a village and issue a certificate of incorporation which enables the village council to become a corporate body with a perpetual succession and official seal; in its corporate name a village is capable of suing and being sued; and a village is capable of holding and purchasing or requiring in any other way any movable or immovable property.

The Act gives authority to local governments to regulate matters that are local. A pertinent example of such authority to the project road is that the local government may opt to regulate extraction of minerals or building material, through their by-laws. Despite the authority of local governments, the by-laws should not derogate any principal legislation e.g. in the case of extraction of material, the Mining Act.

3.3.9 The Standards Act No. 2 of 2009

An Act to provide for the promotion of the standardization of specifications of commodities and services, to re-establish the Tanzania Bureau of Standards (TBS) and to provide better provisions for the functions, management and control of the Bureau, to repeal the standards Act, Cap.130 and to provide for other related matters. This act is relevant to this project as the quality of the Bitumen/Asphalt, and other products to be imported by Contractor during construction will have to abide to the standards set by TBS.

3.3.10 National Forest Act, 2002

This Act deals with the protection of forests and forest products in forest reserves and the restrictions and prohibitions in forest reserves. Forest Management plans are administered under the Forest ordinance (1957). Any contravention of the restrictions and prohibition is considered an offence under this ordinance and subject to enforcement. The law was revised in 2002 to meet the new requirements under the Forest Policy.

The new Forest Act No 14 of 2002 requires that for any development including mining development, construction of dams, power stations, electrical or telecommunication and construction of building within a Forest Reserve, Private Forest or Sensitive Forest, the proponent must prepare an Environmental Impact Assessment for submission to the Director of Forestry. The law also requires licenses or permits for certain activities undertaken within the national or local forest reserves, such as, among others, felling or removing trees, harvesting forest produce, entering a forest reserve for the purpose of tourism or camping, mining activities, occupation or residence within the reserve, cultivation, erecting any structures. The project will not affect any forest reserves.

3.3.11 Explosives Act, 56/63

This Act gives the Commissioner for Mines responsibility for regulating explosives. First, section 3 stipulates that no import, manufacture, possession, acquisition, or disposition of explosives is allowed unless the substance is approved for use by the Commissioner. Sections 7-9 stipulate that a person must have a license from the Commissioner for Mines to legally manufacture explosives. Penalty for failure to have a

license is 5,000 and/or 2 years. Part V of the Act further requires a permit for transport of explosives. Part VI requires a permit for acquisition, possession, and disposal of explosives. Part VII requires a permit for storage of explosives. Part VIII requires a permit for use of explosives. An explosives permit can give conditions. The required applications and permits include the following.

- Application for Import Permit
- Import Permit
- Import Permit (General Authority to Import Explosives)
- Application for License to Purchase or Acquire Explosives
- License to Purchase or Acquire Explosives
- Magazine License
- Explosive Store License
- Application for Blasting Certificate
- Blasting Certificate
- Return of Explosives

In addition to these general permitting requirements, section 12 provides that "the person in charge of the explosives is liable if an "unauthorized person" has access thereto or possession thereof. Section 51 establishes general penalties of Tsh. 4,000 and/or 1 year". Also, under section 53, "the Commissioner has authority to revoke a license or blasting certificate". For this project road, this applies to use of material from any quarries where blasting is to be employed.

3.3.12 Regional and District Act No 9, 1997

The Act provides for Regional Commissioners to oversee Regional Secretariats, with District Commissioners directly supervising the District Councils. Local authorities oversee the local planning processes, including establishing local environmental policies.

The National Environmental Policy establishes a policy committee on Environment at Regional level chaired by the Regional Commissioner, mirrored by environmental committee at all lower levels, i.e. at the District, Division, Ward and Village or Mtaa Councils.

Under the EMA 2004, the Regional Secretariat is responsible for coordination for all advice on environmental management in their respective region and in liaison with the Director of Environment. At Local Government level, an Environmental Management Officer should be designated or appointed by each City, Municipal, District or Town Council. In each City or Municipality or District Environmental Committees should be established to promote and enhance sustainable management of the Environment. The Village Development Committee is responsible for proper management of the environment in their respective areas. The District Council designates for each administrative area as township, ward, village, sub-street and Environmental Management Officer to coordinate all functions and activities related to protection of environmental in their area. TANROADS and Contractor shall observe all local

environmental bylaws set by Ngara and Biharamulo District Council and Kagera Region Secretariat.

3.3.13 Mining Act (2010)

This Act states that “building material” includes all forms of rock, stones, gravel, sand, clay, volcanic ash or cinder, or other minerals being used for the construction of buildings, roads, dams, aerodromes, or similar works but does not include gypsum, limestone being burned for the production of lime, or material used for the manufacture of cement.

This act make sure minerals are well controlled and Section 6(1) states that "no person shall, on or in any land to which this act refers, prospect for minerals or carry-on mining operations except under the authority of Mineral Right granted or deemed to have been granted under this Act." In additional section 50. -(1) (v) of the act states that "The Minister shall grant an application for a mining license for minerals which has been properly made under section 49 and a successful application for a mining license made under section 71 unless the applicant has not included the relevant environmental certificate issued under the Environment Management Act". For this Project the Contractor shall apply for Mining permit before starting Quarrying Activities.

3.3.14 The Land Acquisition Act 1967

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.

Land shall be deemed to be acquired for a public purpose where it is required, 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 rehabilitation of any existing city, municipality, township or minor settlement; etc.

Upon such acquisition of any Land the President is compelled on behalf of the Government to pay in respect thereof, out of moneys 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.

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 belongs 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. Any land acquisition that shall be done during the implementation of this project shall be guided by this law.

3.3.15 The Wildlife Conservation Act No 5/09 of 2009

The prime purposes of this Act are

- To make better provisions for the conservation, management, protection and sustainable utilization of wildlife and wildlife products
- To repeal the Wildlife Conservation Act Cap. 283 and
- To provide for other related matters

Section 74 of the Act states that "A human activity, settlement or any other development that will adversely affect wildlife shall not be permitted within five hundred meters from the wildlife protected area borderline without the permission of the, Director."

Road construction and its use can be deleterious to the biological diversity of any place and any kind regardless whether the area is protected or not. This project does not traverse near the protected areas, however TANROADS shall see to it that all provisions of this Act are observed during construction.

3.3.16 Employment and Labour Relations Act No. 6 Of 2004

The Act makes provisions for core labour rights; establishes basic employment standards, provides a framework for collective bargaining; and provides for the prevention and settlement of disputes. TANROADS shall see to it that the Contractor adheres to employment standards as provided for by the law.

3.3.17 Engineers Registration Act and its Amendments 1997 and 2007

The Acts regulate the engineering practice in Tanzania by registering engineers and monitoring their conduct. It establishes the Engineering Registration Board (ERB). Laws require any foreigner engineer to register with ERB before practicing in the country. Foreign engineers working with this project shall abide to the law requirement.

3.3.18 The Contractors Registration Act (1997)

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. TANROADS shall comply with the law requirement during the recruitment of contractors for project implementation.

3.3.19 The HIV and AIDS (Prevention and Control) Act of 2008

The law provides for public education and programmes on HIV and AIDS. Section 8(1) of the law states that "The Ministry (Health), health practitioners, workers in the public and private sectors and NGOs shall for the purpose of providing HIV and AIDS

education to the public, disseminate information regarding HIV and AIDS to the public”. Furthermore, Section 9 states that “Every employer in consultation with the Ministry (Health) shall establish and coordinate a workplace programme on HIV and AIDS for employees under his control and such programmes shall include provision of gender responsive HIV and AIDS education...”. This project shall abide to HIV/AIDS Act in the fight against the disease during construction.

3.3.20 The Industrial and Consumer Chemical (Management and Control) Act, 2002

The Act provides for among other issues, importation, transportation, storage, use and disposal of chemicals in Tanzania. Road Contractor/TANROADS is required by law to have a certificate from the Chief Government Chemist for importation, storage or disposal of any chemicals (Asphalt, Lime etc.). Furthermore, Road Contractor/TANROADS as any other individual dealing with chemical is required to comply with all provisions/regulations regarding packaging, handling, storage, use and disposal of chemicals, as set by this Act. The minister appoints an inspector from time to time to ensure compliance. Failure to compliance might lead to revocation of the certificate. This law shall guide the contractor and TANROADS on importation of construction materials such as asphalt.

3.3.21 The Petroleum Act, 2015

This act makes provisions for Importation, Exportation, Transportation, Transformation, Storage and wholesale and retail distribution of petroleum products in a liberalized market and to provide for related matters. Section 173. Provides that “A person shall not transport petroleum product using vehicle, vessels or facility unless such vehicle, vessels or facility complies with the standards set out by the Tanzania Bureau of Standards” as the project involve petroleum products such as vehicle gas and bitumen, TANROADS and the contractor shall see to it that the provisions of this law are taken into task during construction of the Lusahunga - Rusumo Road.

3.3.22 Antiquities Act of 1964 and the Antiquities Rules of 1991

The Antiquities Act of 1964 and its amendment of 1979 and the Antiquities Rules of 1991 govern archaeological research in Tanzania. Under the Act, all objects (relics) that were made or modified by man before the year 1863 are automatically protected under the law.

Section 16 of the 1964 Act gives powers to Local Government Authorities to pass by-laws (with the approval of the Minister responsible for Antiquities) with respect to the preservation of the archaeological heritage in their areas of jurisdiction. They also have mandates to spearhead developments in districts and urban centers (for cities and municipalities) respectively.

Section 10 (1) provides that, any person who discovers a relic or monument or any object or site which may reasonably be supposed to be a relic or monument in Tanzania, otherwise than in the course of a search or excavation made in accordance with a license granted under Section 13, and the occupier of any land who knows of any such discovery

on or under such land, shall forthwith report the same to an administrative officer, the Director, the Conservator or the Curator of the Museum.

The Division of Antiquities is a statutory body within the Ministry of Natural Resources and Tourism responsible for conservation, preservation, protection and management of cultural heritage resources in Tanzania.

The project involves soil excavations, which may result into destruction of archaeological artefacts. The Contractor will protect archaeological materials and report on any archaeological findings to the Director of Antiquities and the relevant Local Government Authorities.

3.3.23 Graves (Removal) Act, 1969

This is an Act to provide for the Removal of Graves from land acquired for public purposes. Subject to Section 3 of this Act, “where any land on which a grave is situated is required for a public purpose the Minister may cause such grave and any dead body buried therein to be removed from the land and, in such case, shall take all such steps as may be requisite or convenient for the reinstatement of the grave and the re-interment of the dead body in a place approved by him for the purpose”.

Under Section 7, the removal, transportation and reinstatement or re-interment conditions of a grave or dead body authorized under this Act shall be undertaken:

- As far as is possible, with due regard to the views of the persons interested and the religious susceptibilities of the members of the religious community to which the person belonged whose grave or dead body it is;
- With due solemnity and respectful treatment of the dead;
- So far as is practicable, without unnecessary damage to the grave and the dead body;
- So that a dead body which is disinterred is transported and reinterred without undue delay;
- Under such conditions of privacy as ensures that no dead body is exposed to public view;
- In a manner which is not injurious to public health; and
- In accordance with such directions as may be given by a public officer appointed by the Minister to supervise the undertaking.

The compensation payable under Section 9 shall be limited to the reasonable expenses incurred in the removal, transportation, reinstatement and re-interment of the grave or dead body and any placatory or expiatory rites or other ceremony accompanying such removal and re-interment.

Relevance to the project:

This act is presented to be relevant to this project, only if there will be any graves removal identified during the land acquisition of borrow pits or quarry site establishment

which at this time it is not possible to identify. From site visit and public consultation, it was revealed that, project does not involve and graves removal along the project road, hence no compensation is expected.

3.4 Relevant Regulations and Guidelines

3.4.1 The Explosives Regulations of 1964, GN 56/64

The Explosives Regulations of 1964, GN 56/64, establish conditions for licensing stores, magazines and general precautions for explosives. They also stipulate the nature of work which is permissible when blasting, and the requirement that storage places for explosives be at a certain distance from other buildings. A condition on all of the licenses is that the explosives must be stored in a licensed magazine or store or approved storage boxes. The contractor for this project shall apply for a license before the use of explosives for blasting.

3.4.2 Land (Assessment of the Value of Land for Compensation) Regulations, 2001

These regulations provide criteria for the assessment of compensation on land, as per market value for real property; disturbance allowance is calculated as a percentage of market value of the acquired assets over twelve months; and transport allowance calculated at the cost of 12 tons hauled over a distance not exceeding 20 km.

The other criteria include loss of profit on accommodation based on business audited accounts and accommodation allowance equivalent to the rent of the acquired property per month over a 36-month period. These regulations shall guide the compensation exercise in this project.

3.4.3 Mining (Environmental management and Protection) Regulations, 1999

These regulations apart from other things give the Minister responsible for mining the mandate to exempt or ask for environmental information during application for mining license. Section (4) of this regulation states that “Except in cases where an exemption has been to require EIA granted under section 64 (2) of the Act, an environmental impact statement and environmental management plan must accompany applications for Mineral Rights in all special mining license applications”. These regulations require the contractor to apply for mining license for new quarry sites. The application should be accompanied by the undertaken EIA study of an area.

- The borrow pit and quarry sites in the ESIA are only potential sites at ESIA stage. These sites are subject to the evaluation of civil contractors after their field visit and quality test of source materials.
- Civil work contractor is requested to assess the impacts and risk of the source materials sites (e.g. borrow pits and quarry sites), prepare relevant management and rehabilitation plan (as part of Contractor ESMP), obtain approval/permits from TANROADs as well as government authorities (NEMC, OHSA) before allowed to use these sites.

For this Project, the identified existing borrow pits and newly borrow pits both will be used for extracting of construction materials, hence ascertain relative risks to the surrounding environment.

3.4.4 The Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018

These Regulations state out the regulatory requirements for the conduct of EIA and identify projects for which environmental assessment is mandatory (Type A projects). This project falls under the seventh category of the Type A projects listed in the first schedule of the Regulations, which includes the development of construction and/or expansion of trunk roads (9.(a)). The administrative and technical procedures for the preparation of several output documents in the EIA process are thoroughly presented in the Regulations. The Regulations require EIA studies to be led by registered EIA experts and necessitate public participation. These requirements have been met in the execution of this EIA.

3.4.5 National Strategy for Growth and Reduction of Poverty (2005)

One of NSGRP objective is to improve the quality of life and social well-being. This can be achieved through improving passable (good/fair condition) rural roads from 50% in 2003 to at least 75% in 2010. The strategy will also ensure that the health facilities are improved and accessible and drugs are made available throughout the year (NSGRP, 2003). Construction of the Lusahunga - Rusumo road shall contribute to Poverty Reduction within the project area.

3.4.6 Environmental Assessment and Management Guidelines for the Road Sector (2011)

The Environmental Assessment and Management Guidelines for the Road Sector (EAMGRS) were developed in December 2004 (Signed in 2011), just after EMA (2004) was enacted. The guidelines give procedures for the EIA process as briefly explained in the following table.

Table 3-1 Developed EIA Procedures in the Road Sector

<i>EIA PROCEDURES IN THE ROAD SECTOR (as per EAMGRS 2011)</i>
<p><i>Administrative Procedures:</i></p> <p><i>EIA administrative procedures vary based on the significance of the environmental impacts. The Minister for Environment is responsible for projects with potential major environmental impacts. The EIA of projects with potential non-major environmental impacts are carried out under the Ministry responsible for the road sector and the Road Sector-Environmental Section (RS-ES).</i></p>
<p><i>Environment Application and Screening Process:</i></p> <p><i>EA procedures in the road sector are initiated when the Road Implementing Agency (RIA) submits an Environment Application Form to the RS-ES during the Project</i></p>

Identification or Project Planning/Feasibility Study Phase. An environmental screening of the proposed project will determine whether the project will require: An Initial Environmental Examination (IEE); a Limited Environmental Analysis (LEA); or a detailed Environmental Impact Assessment (EIA).

Environmental Screening is done based on the information presented in the Environmental Application Form. The RS-ES is responsible for screening projects and this may acquire a reconnaissance study by an environmental specialist, especially if the project traverses sensitive areas or when there is potential for complex environmental issues.

All road projects with non-major environmental impacts shall be subject to an Initial Environmental Examination (IEE) or a Limited Environmental Analysis (LEA). Projects with major environmental impacts are subject to EIA. The RS-ES will register non-major-impact-projects. For major-impact-projects, the registration is done by NEMC.

3.5 The World Bank's ESSs, 2018 and the EHS Guidelines

The World Bank Environmental and Social Framework (ESF) sets out the World Bank's commitment to sustainable development. The ESF protects people and the environment from potential adverse impacts that could arise from Bank-financed projects and promotes sustainable development. Launched on October 1, 2018 and effectively replacing the Bank's Safeguards Policies; the ESF enables the World Bank and Borrowers to better manage environmental and social risks of projects and to improve development outcomes. The ESF also places more emphasis on building Borrower governments own capacity to deal with environmental and social issues.

The ESF is made of 10 Environmental and Social Standards (ESSs), together with their annexes, set out the requirements for Borrowers relating to the identification and assessment of environmental and social risks and impacts associated with projects supported by the Bank through Investment Project Financing. The Bank believes that the application of these standards, by focusing on the identification and management of environmental and social risks, will support Borrowers in their goal to reduce poverty and increase prosperity in a sustainable manner for the benefit of the environment and their citizens.

The standards:

- support Borrowers in achieving good international practice relating to environmental and social sustainability;
- assist Borrowers in fulfilling their national and international environmental and social obligations;
- enhance non-discrimination, transparency, participation, accountability and governance; and

- enhance the sustainable development outcomes of projects through ongoing stakeholder engagement.

3.5.1 Assessment and Management of Environmental and Social Risks and Impacts (ESS1)

ESS1 sets out the Borrower’s responsibilities for assessing, managing and monitoring environmental and social risks and impacts associated with each stage of a project supported by the Bank through Investment Project Financing, in order to achieve environmental and social out-comes consistent with the Environmental and Social Standards (ESSs).

Borrowers will conduct environmental and social assessment of projects proposed for Bank financing to help ensure that projects are environmentally and socially sound and sustainable. The environmental and social assessment will be proportionate to the risks and impacts of the project. It will inform the design of the project, and be used to identify mitigation measures and actions and to improve decision making.

Borrowers will manage environmental and social risks and impacts of the project throughout the project life cycle in a systematic manner, proportionate to the nature and scale of the project and the potential risks and impacts.

ESS1 includes three annexes (1) Environmental and Social Assessment; (2) Environmental and Social Commitment Plan; and (3) Management of Contractors which form part of ESS1 and sets out certain requirements in more detail.

3.5.2 Labor and Working Conditions (ESS2)

ESS2 recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. Borrowers can promote sound worker-management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions. Among ESS2 objectives include:

- To promote safety and health at work;
- To promote the fair treatment, nondiscrimination and equal opportunity of project workers;
- To protect project workers, including vulnerable workers such as women, persons with disabilities, children (of working age, in accordance with this ESS) and migrant workers, contracted workers, community workers and primary supply workers, as appropriate; and
- To prevent the use of all forms of forced labor.

Project workers for the proposed rehabilitation of Lusahunga – Rusumo road will be provided with information and documentation that is clear and understandable regarding their terms and conditions of employment. The information and documentation will set out their rights under national labor and employment law (which will include any applicable collective agreements), including their rights related to hours of work, wages,

overtime, compensation and benefits, as well as those arising from the requirements of this ESS 2. This information and documentation will be provided at the beginning of the working relationship and when any material changes to the terms or conditions of employment occur.

Labour Management Procedures (LMP) have been prepared for TanTIP to ensure the requirements of ESS2 and national laws are observed and included in the specifications for contractors. The project contractors shall adhere to the requirements under regular audits to be conducted by TANROADS, Supervising Engineer, and other government agencies like the Occupational Safety and Health Authority (OSHA) to ensure that the project workers are treated fairly and provided with safe and healthy working conditions.

3.5.3 Resource Efficiency and Pollution Prevention and Management (ESS3)

ESS3 recognizes that economic activity and urbanization often generate pollution to air, water, and land, and consume finite resources that may threaten people, eco-system services and the environment at the local, regional, and global levels. The current and projected atmospheric concentration of greenhouse gases (GHG) threatens the welfare of current and future generations. At the same time, more efficient and effective resource use, pollution prevention and GHG emission avoidance, and mitigation technologies and practices have become more accessible and achievable.

Among ESS3 objectives include:

- To promote the sustainable use of resources, including energy, water and raw materials;
- To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities;
- To avoid or minimize project-related emissions of short and long-lived climate pollutants;
- To avoid or minimize generation of hazardous and non-hazardous waste; and
- To minimize and manage the risks and impacts associated with pesticide use.

On pollution prevention and management, the Borrower will avoid the release of pollutants or, when avoidance is not feasible, minimize and control the concentration and mass flow of their release using the performance levels and measures specified in national law or the EHSs, whichever is most stringent.

The proposed rehabilitation of Lusahunga - Rusumo road will significantly reduce emissions as a result of enhanced road conditions and improvements in vehicle fuel consumption efficiency. Among the efforts to reduce emissions are national policies which have stressed on importation of vehicles with not more than 10 years from manufacturing date. During construction, the contractor shall adhere to all recommended actions to reduce GHG emissions from operating vehicles, equipment and plants.

Furthermore, the construction activities will generate dust, erosion, sediments, solid and liquid wastes that will be properly managed via ESMPs and waste management plans

(WMPs). More or less similar impacts are likely to be experienced during operation phases and will be managed by the same tools as well as operation and maintenance plans.

3.5.4 Community Health and Safety (ESS4)

ESS4 recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts. In addition, communities that are already subjected to impacts from climate change may also experience an acceleration or intensification of impacts due to project activities.

ESS4 addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of Borrowers to avoid or minimize such risks and impacts, with particular attention to people who, because of their particular circumstances, may be vulnerable.

Objectives of the ESS4 include:

- To anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project life cycle from both routine and non-routine circumstances;
- To promote quality and safety, and consider actions relating to climate change, in the design and construction of infrastructure, including dams;
- To avoid or minimize community exposure to project-related traffic and road safety risks, communicable and other diseases, and hazardous materials; and
- To ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities.

ESS4 requires the Borrower to design, construct, operate, and decommission the structural elements of the project in accordance with national legal requirements, the EHSs and other GIIP, taking into consideration safety risks to third parties and affected communities.

Where the project involves provision of services to communities, the Borrower will establish and implement appropriate quality management systems to anticipate and minimize risks and impacts that such services may have on community health and safety. In such circumstances, the Borrower will also apply the concept of universal access, where technically and financially feasible.

TANROADS will identify, evaluate and monitor the potential traffic and road safety risks to workers, affected communities and road users throughout the project life cycle and, where appropriate, will develop measures and plans to address them. TANROADS will incorporate technically and financially feasible road safety measures into the project design to prevent and mitigate potential road safety risks to road users and affected communities.

Construction activities (excavation, vehicle operations, work at height, use of chemicals, use of crane or other heavy equipment, etc.) may have irreversible effects of disability or

fatality to community. Localized negative impacts (like dust emissions, accidents, etc.) to sensitive receptors such as schools, religious buildings and community centers will need to be managed. The Project will require Contractors to prepare appropriate plans for emergency preparedness and response, management and safety of hazardous materials, traffic and road safety, security personnel, etc. as per the requirements of ESS4.

Implementation of the Project will trigger influx of workers or job seekers and their followers into the Project area. The project workforce could facilitate an increase risk in the incidence of SEA/SH/GBV, and as well as the transmission of communicable diseases, such as HIV/AIDS and COVID-19, to members of the local/host communities.

As the situation permits and depending on the public health circumstances, the project will ensure compliance with national law, policies and protocol requirements as well as World Health Organization and World Bank guidance regarding the COVID-19 situation in relation to stakeholders' consultations, project worksites and related areas.

3.5.5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement (ESS 5)

ESS5 recognizes that project-related land acquisition and restrictions on land use can have adverse impacts on communities and persons. Project-related land acquisition or restrictions on land use may cause physical displacement (relocation, loss of residential land or loss of shelter), economic displacement (loss of land, assets or access to assets, leading to loss of income sources or other means of livelihood), or both. The term “involuntary resettlement” refers to these impacts. Resettlement is considered involuntary when affected persons or communities do not have the right to refuse land acquisition or restrictions on land use that result in displacement. The project RAP, in line with national law, the TanTIP RPF and ESS5 addresses these resettlement-related issues.

Objectives of ESS5 include:

- To avoid involuntary resettlement or, when unavoidable, minimize involuntary resettlement by exploring project design alternatives;
- To avoid forced eviction;
- To mitigate unavoidable adverse social and economic impacts from land acquisition or restrictions on land use by: (a) providing timely compensation for loss of assets at replacement cost and (b) assisting displaced persons in their efforts to improve, or at least restore, their livelihoods and living standards, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher;
- To improve living conditions of poor or vulnerable persons who are physically displaced, through provision of adequate housing, access to services and facilities, and security of tenure;
- To conceive and execute resettlement activities as sustainable development programs, providing sufficient investment resources to enable displaced persons to benefit directly from the project, as the nature of the project may warrant; and

- To ensure that resettlement activities are planned and implemented with appropriate disclosure of information, meaningful consultation, and the informed participation of those affected.

Involuntary land acquisition, restrictions on land use and involuntary resettlement will take place during the implementation of the proposed rehabilitation of Lusahunga – Rusumo road Project. In line with TanTIP’s Resettlement Policy Framework (RPF), a Resettlement Action Plan (RAP) has been prepared in tandem with this ESIA report for the proposed rehabilitation of Lusahunga – Rusumo road Project.

3.5.6 Biodiversity Conservation and Sustainable Management (ESS6)

ESS6 recognizes the importance of maintaining core ecological functions of habitats, including forests, and the biodiversity they support. This ESS also addresses sustainable management of primary production and harvesting of living natural resources. ESS6 recognizes the need to consider the livelihood of project-affected parties, including Indigenous Peoples, whose access to, or use of, biodiversity or living natural resources may be affected by a project. The potential, positive role of project affected parties, including Indigenous Peoples, in biodiversity conservation and sustainable management of living natural resources is also considered.

Objective of ESS6 include but not limited to:

- To protect and conserve biodiversity and habitats;
- To apply the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity;
- To promote the sustainable management of living natural resources; and
- To support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities.

The proposed rehabilitation of Lusahunga – Rusumo road Project passes through less sensitive ecological habitats and this ESIA addresses the requirements of ESS6 by providing a detailed baseline social and biological conditions so as to inform thorough consideration of direct, and indirect project-related impacts on habitats and the biodiversity they support.

3.5.7 Cultural Heritage (ESS8)

This ESS sets out general provisions on risks and impacts to cultural heritage from project activities.

Objectives of the ESS8 include:

- To protect cultural heritage from the adverse impacts of project activities and support its preservation;
- To address cultural heritage as an integral aspect of sustainable development;

- To promote meaningful consultation with stakeholders regarding cultural heritage; and
- To promote the equitable sharing of benefits from the use of cultural heritage.

Through the environmental and social assessment, the Borrower will determine the potential risks and impacts of the proposed activities of the project on cultural heritage. Para 9 of ESS8 requires the Borrower to avoid impacts on cultural heritage by observing Chance Finding Procedures. When avoidance of impacts is not possible, the Borrower will identify and implement measures to address impacts on cultural heritage in accordance with the mitigation hierarchy.

3.5.8 Stakeholders Engagement and Information Disclosure (ESS10)

This ESS 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.

Objectives of ESS10 are:

- To establish a systematic approach to stakeholder engagement that will help Borrowers identify stakeholders and build and maintain a constructive relationship with them, in particular project-affected parties;
- To assess the level of stakeholder interest and support for the project and to enable stake-holders' views to be taken into account in project design and environmental and social performance;
- To promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life cycle on issues that could potentially affect them;
- To ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format; and
- To provide project-affected parties with accessible and inclusive means to raise issues and grievances, and allow Borrowers to respond to and manage such grievances.

The TanTIP has prepared a Stakeholder Engagement Plan (SEP) which guided consultations during the preparation of this ESIA report for the proposed rehabilitation of Lusahunga – Rusumo road project. As presented in this ESIA report, two phases of detailed stakeholder's engagement and consultations were conducted, in May and July, 2022 to update the ESIA.

3.5.9 The World Bank Group General Environmental, Health and Safety (EHS)

The Environmental, Health, and Safety (EHS) Guidelines are technical reference documents with general and industry-specific examples of Good International Industry

Practice (GIIP). The applicability of the EHS Guidelines should therefore be tailored to the impacts and risks identified for projects on the basis of the results of an environmental assessment in which site-specific variables, such as assimilative capacity of the environment and other project factors are taken into account.

Effective management of environmental, health, and safety (EHS) issues entails the inclusion of EHS considerations into project operations in an organized, hierarchical approach that includes the following steps:

- Identifying EHS project hazards and associated risks as early as possible in the facility development or project cycle, including the incorporation of EHS considerations into the site selection process, engineering planning process for capital requests, engineering work orders, facility modification authorizations, or layout and process change plans.
- Involving EHS professionals, who have the experience, competence, and training necessary to assess and manage EHS impacts and risks, and carry out specialized environmental management functions including the preparation of project or activity-specific plans and procedures that incorporate the technical recommendations presented in the ESIA document that are relevant to the project.

Understanding the likelihood and magnitude of EHS risks, based on:

- the nature of the project activities, such as whether the project will generate significant quantities of emissions or effluents, or involve hazardous materials or processes;
- the potential consequences to workers, communities, or the environment if hazards are not adequately managed, which may depend on the proximity of project activities to people or to the environmental resources on which they depend.
- Prioritizing risk management strategies with the objective of achieving an overall reduction of risk to human health and the environment, focusing on the prevention of irreversible and /or significant impacts.
- Favouring strategies that eliminate the cause of the hazard at its source.
- When impact avoidance is not feasible, incorporating engineering and management controls to reduce or minimize the possibility and magnitude of undesired consequences.
- Preparing workers and nearby communities to respond to accidents, including providing technical and financial resources to effectively and safely control such events, and restoring workplace and community environments to a safe and healthy condition; and
- Improving EHS performance through a combination of ongoing monitoring of facility performance and effective accountability.

Also, the project should implement the relevant requirements from the Environmental, Health, and Safety Guidelines for Construction Materials Extraction.

3.5.10 The World Bank Group Environmental, Health, and Safety Guidelines for Toll Roads

The EHS Guidelines contain the performance levels and measures that are generally considered to be achievable in new projects / facilities by existing technology at reasonable costs. Application of the EHS Guidelines to existing facilities may involve the establishment of site-specific targets, with an appropriate timetable for achieving them.

The applicability of the EHS Guidelines should be tailored to the hazards and risks established for each project on the basis of the results of an environmental assessment in which site-specific variables, such as assimilative capacity of the environment, and other project factors, are taken into account.

The applicability of specific technical recommendations should be based on the professional opinion of qualified and experienced persons. When host country regulations differ from the levels and measures presented in the EHS Guidelines, projects are expected to achieve whichever is more stringent. If less stringent levels or measures than those provided in these EHS Guidelines are appropriate, in view of specific project circumstances, a full and detailed justification for any proposed alternatives is needed as part of the site-specific environmental assessment. This justification should demonstrate that the choice for any alternate performance levels is protective of human health and the environment.

The EHS Guidelines for Toll Roads include information relevant to construction, operation and maintenance of large, sealed road projects as well.

In addition, Environmental, Health, and Safety Guidelines for Construction Materials Extraction are also applicable for quarries and borrow pits.

3.6 International Agreements

Tanzania has ratified a number of Multilateral Environmental Agreements (MEAs) and consequently is bound by obligations under these agreements. The most relevant MEAs to this particular project are as included in the table below.

Table 3-2 International Conventions

Type of Convention	Name of Convention	Relevance
Biodiversity related Conventions	Convention of Biological Diversity, (1992) ratified by Tanzania in 1996), Convention to combat, desertification, particular Africa, Paris 1994,	Mitigations measures were developed in this ESIA for the protection of biodiversity.

Type of Convention	Name of Convention	Relevance
	The Cartagena Protocol on Bio safety to the convention on Biological Diversity (2000)	
Climate change conventions	The United Nations Framework convention on climatic change (1992), Kyoto Protocol (1997)	
ILO Conventions	<p>Forced Labour Convention, 1930 (No. 29)</p> <p>Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87);</p> <p>Right to Organise and Collective Bargaining Convention, 1949 (No. 98);</p> <p>Equal Remuneration Convention, 1951 (No. 100);</p> <p>Abolition of Forced Labour Convention, 1957 (No. 105);</p> <p>Discrimination (Employment and Occupation) Convention, 1958 (No. 111);</p> <p>Minimum Age Convention, 1973 (No. 138);</p> <p>Discrimination (Employment and Occupation) Convention, 1958 (No. 111);</p> <p>Minimum Age Convention, 1973 (No. 138);</p> <p>Worst Forms of Child Labour Convention, 1999 (No. 182);</p> <p>Worst Forms of Child Labour</p>	TanTIP has developed Labor Management Procedures.

Type of Convention	Name of Convention	Relevance
	Convention, 1999 (No. 182)	
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora	The project will implement a Code of Conduct that will address the fight against poaching.
Nile Basin Conventions	Nile basin agreement	Nile basin agreement was signed by four Nile Basin countries in Uganda on 14 May 2010. The agreement was signed by Ethiopia, Rwanda, Tanzania and Uganda for changing the way the river waters are shared.
Other conventions	<p>Basel convention on the control of Trans boundary movements of Hazardous Waste and their Disposal, 1989;</p> <p>Stockholm Convention on Prior Informed Organic Pollutants;</p> <p>Vienna Convention on protection of Ozone Layer;</p> <p>The Montreal protocol on substances that deplete the ozone layer, Montreal, 1987;</p> <p>Protocol on Liability and compensation on Damage resulting from Trans boundary movement of Hazardous waste and their disposal, 2000;</p>	All wastes generated along the project road will never be moved beyond Tanzania Boundaries. Permitted disposal will be done in Tanzania.

3.7 Institutional Framework

3.7.1 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.

Part III, Section 13(1) of EMA (2004) states that the Minister responsible for environment shall be in overall in -charge of all matters relating to the environment and shall in that respect be responsible for articulation of policy guidelines necessary for the promotion, protection and sustainable management of environment in Tanzania.

The legal institutions for environmental management in the country include:

- Vice President’s Office - Minister responsible for Environment
- National Environment Management Council (NEMC);
- Local Government Authorities

3.7.2 Summary of institutions and their responsibilities

The outline of the responsibilities of different institutions and personnel at national and local levels in implantation of the Environmental Management and Monitoring Plans for the road project is presented in the next table.

Table 3-3 Relevant Institutions to the project

Authority Level	Institution and personnel designation	Responsibilities
National level	Chief Executive Officer - TANROADS	<ul style="list-style-type: none"> • To ensure that the proposed road is designed in accordance with existing national legislation, policies, guidelines and regulation • To coordinate and facilitate EIA study and resettlement issues for project affected people (PAPs) • To ensure that Contractors are implementing the proposed road project in compliance to ESMP for the project and the conditions of EIA Certificate • To ensure that the environmental monitoring and internal auditing are carried out regularly.
	Permanent Secretary - Ministry of Works and Transport (Safety	<ul style="list-style-type: none"> • To issue guidance on development and management of Infrastructures in the country • To advise on and, in collaboration with other

Authority Level	Institution and personnel designation	Responsibilities
	and Environment Division).	<p>bodies prepare and review the policies of the Government on the protection and management of the environment.</p> <ul style="list-style-type: none"> • To ensure compliance by the Ministry with the requirement of Environmental Management Act 2004. • To coordinate all activities related to the environment in implementation of road project • To develop and review the environmental standard, for road sector • To oversee the preparation an implementation of an Environmental Impact Assessment for investments in the infrastructure development sector including development and maintenance projects. • To undertake the analysis of Environmental Impact of the sector legislations, regulations, policies, plans strategies and programs through strategic environmental assessment.
	Chief Government Valuer - the Ministry of Lands and Human Settlement	<ul style="list-style-type: none"> • To review and approve the Resettlement Action Plan and Property Valuation Report for compensation of affected properties. • To survey and allocate new plots to the project affected people and other required sites for the project facilities
	Minister responsible for Environment - Director of Environment	<ul style="list-style-type: none"> • Responsible for matters relating to environment, and articulation of policy guidelines necessary for the promotion, and sustainable management of environment in Tanzania • Advise the Government on legislative and other measures for the management of the environment or the implementation of the relevant international agreements in the field of environment

Authority Level	Institution and personnel designation	Responsibilities
	Director General - the National Environment Management Council (NEMC)	<ul style="list-style-type: none"> • To review the EIA reports • To recommend for project approval to the Minister of Environment and issuance of EIA Certificates • To ensure EMA Act, 2004 enforcement and compliance by development projects • To monitor project environmental compliance
	Treasurer for Ministry of Finance	<ul style="list-style-type: none"> • To allocate funds for Resettlement /Compensation
	Ministry of Tourism and Cultural Heritage (Director of Antiquities)	<ul style="list-style-type: none"> • Identify the areas of cultural; important • To gazette identified relics • To ensure cultural and tourism sites are protected
Regional and District/ Municipal level	Regional Commissioner of Kagera	<ul style="list-style-type: none"> • To advice on the implementation of development projects including road project activities in relation to laws and regulations requirements. • To ensure that land is surveyed and allocated to the project affected people.

Authority Level	Institution and personnel designation	Responsibilities
	District Executive Directors (DEDs), Land Officers, District Environmental Management Officer, Forest Officers and other Officials of Biharamulo and Ngara District Councils	<ul style="list-style-type: none"> • To ensure proper Urban planning in order to accommodate population influx as a result of road project implementation • To facilitate and coordinate land surveys for allocating new lands to the project affected people. • To provide information on local situation and available social services, socio-economic profiles for baseline data on Land use planning, health, social and economic conditions of project area. • To ensure security of the forest products • To ensure conducive working environment for the road contractors during project implementation. • To provide guidelines for management of land within project area and area of influence, • To undertake/participate in land valuation and participate in compensation arrangement and procedures • To provide the required technical support & advice and participate in road surveys and design • To participate in environment management and project monitoring during project implementation • To provide expertise on HIV/AIDS prevention awareness and testing to the project workers and communities • Enforcement of laws and regulations relevant to the road project • Ensure enforcement of the Environmental Management Act in their respective areas, • Advise the Environmental Management Committee on all environmental matters, • Promote awareness in their areas on the

Authority Level	Institution and personnel designation	Responsibilities
		<p>protection of the environment and conservation of natural resources,</p> <ul style="list-style-type: none"> • Collect and manage information on the environment and the utilization of natural resources, • Prepare periodic reports on the state of the local environment, • Monitor the preparation, review and approval of EIAs for all local investors, • Review by-laws on environmental management and on sector specific activities related to the environment, • Report to the DoE and the Director General of the NEMC on the implementation of the Environmental Management Act, • Perform other functions as may be assigned by the local government authority from time to time.
Local Government Authorities	Local Leaders and general public of Wards and villages	<ul style="list-style-type: none"> • To oversee general development plans and project support to the Ward and Villages.

Authority Level	Institution and personnel designation	Responsibilities
(Township, Ward, Village, Sub-village “Mtaa”, “Kitongoji”)	located along the project road sections.	<ul style="list-style-type: none"> • To assist in recruitment of project construction workers to be obtained from the village • To assist in project monitoring as watchdog for the environment, ensure well-being of residents and participate in project activities • To ensure a workable environment for the contractor by providing reliable support and security to the Contractor • To participate in HIV/AIDS awareness campaigns to be conducted by the project • To provide link between the project developer and the community by providing information on local social, economic, environmental situation • To view socio-economic and cultural value of the sites and on the proposed road operations. • To render any required assistance and advice on the implementation of the project • Ensure enforcement of the Environmental Management Act in their respective areas, • Advise the Environmental Management Committees on all environmental matters • Promote awareness in their areas on the protection of the environment and conservation of natural resources.

4 BASELINE ENVIRONMENTAL AND SOCIAL CONDITIONS

4.1 Delineation of study areas

Two Study areas are defined in this ESIA:

- **The Extended study area:** which cover the two districts. The Extended Study Area is delineated based on possible indirect impacts (both positive and negative).
- **The Limited study area,** which covers the road and off-site facilities (such as quarries, borrow areas, workers camp). This area is where impacts and risks are more likely to be felt on immediate environmental and social receptors. Its delineation includes a 500 meters zone on both side of the road. The rationale for the selection of this width is arbitrary but it will allow to consider impacts from construction work nuisances such as noise, air pollution and dust and displacement of private assets. It includes the road Right-of Way (RoW).

In this ESIA, in addition to the Study areas, several terms are also be used to spatially describe project components, baseline project setting, impacts or mitigations:

- **Chainage:** which a measurement of distances along the road and allows to localize components and impacts.
- **RoW:** which is the space occupied by the road reserve.
- **Project Site:** Project Site means the land and spaces, including the Project RoW and any temporary construction easements, that are necessary for construction of the Project.

4.2 Biophysical environment

This section describes the biophysical environment of the road. The description is based on secondary data as well as information collected during meetings with stakeholders and field work. A description by chainage of the environmental setting is also included in Appendix III.

4.2.1 Topography, land use and cover

The topography along the road is mainly flat terrain with some rolling and undulating terrain in some sections with altitude that is fluctuating between 1300 and 1650m above mean sea level. The first 15km are relatively flat followed by a stretch of about 57km which has a rolling terrain undulating with broad ridged hill masses and large expanses of swamps in valleys. The terrain is mainly highland characterized by hills which are deeply dissected by narrow valleys with fast flowing streams in the remaining 20 km.



Figure 4-1 Flat (L) and Undulating (R) terrain of the project road

Source: Consultant field work,2019

Regarding land cover, the Kagera basin has faced large scale human induced land cover changes in recent years with a progression of cropland and a reduction of dense forest cover, woodland and savanna. Farmland progresses at an expansion rate of 0.57% per year (Wasige et al., 2013).

In the Limited Study area, land cover and land use can be summarized as follow:

- Most land on both side of the road are occupied by agriculture. Paddy farms occupy wetlands and floodplains found along the road. Other crops are found such as millet and banana, sugarcane, beans, maize, sunflower, tomatoes and casava.
- Pine and eucalyptus plantations are also an important feature of the Limited Study area.
- Villages and small centers occupy about 12 % of the length of the road. At more important village, there are truck stops and restaurants and guesthouses for truckers.
- Natural habitats are mainly modified habitats composed of remnant miombo woodlands, wetlands, small streams and rangelands.



Figure 4-2 Typical remnant woodland along the road

4.2.2 Geology and soils

Most part of the road profile is characterized by yellowish red clay soil. However, there are some parts with black cotton soil (especially near rivers). Soil in the Ngara and Biharamulo Districts are reported to have low water holding capacity and at risk of considerable soil erosion.

All rocks within the project area are part of the Bukoban system, consisting of Precambrian sediments which include shales, siltstones, sandstones and metamorphic rocks (quartzites). Underlying the topsoil in many areas is a band of lateritic gravel, in some cases as much as 2 meters deep, and is the product of insitu weathering of the rocks beneath (Vol.2 Design Report, 2014).

According to the Map Land Resource Zone of Tanzania, the Project lies within the Highlands, Western zone. According to the Soils and Physiography Map from the FAO-Project Crop Monitoring and early warning system, the Project lies in the Western Highlands and more specifically in the W3, W4, W5 and W7 zones.

- W3 zone is made of strongly dissected hills formed by parallel ridges of sandstones and quartzite and deep, broad or narrow valleys, mainly developed on phyllites, often with permanent swamps. The zone is at high altitude (1300-1800 m).
- W4 zone is made of undulating to rolling plains developed on phyllites with protruding ridges of resistant quartzite often capped by iron-stone. The zone is at medium altitude (1400-1500 m).
- W5 zone is made of flat to gently undulating valleys developed on alluvium and colluvium derived from phyllites. The zone is at medium altitude (1150-1300 m)

- W7 zone is made of dissected, hilly plateaux formed by parallel ridges and intervening narrow valleys, developed on sandstones. The zone is at medium altitude (1200-1600 m).



Figure 4-3 Geology and soil (the road is shown in orange)

Source: Soils and Physiography Map from the FAO-Project Crop Monitoring and early warning system, 1983

According to the Geological Map of Tanzania, the Project lies in the A and B zones:

A zone is characterized by Phyllite, low grade schist, quartzite, sandstone.

B zone is characterized by Mudstone, shale and phyllite, sandstone, arkose, quartzite, conglomerate, limestone.

A small section of the road is passing by a granite zone (gs)

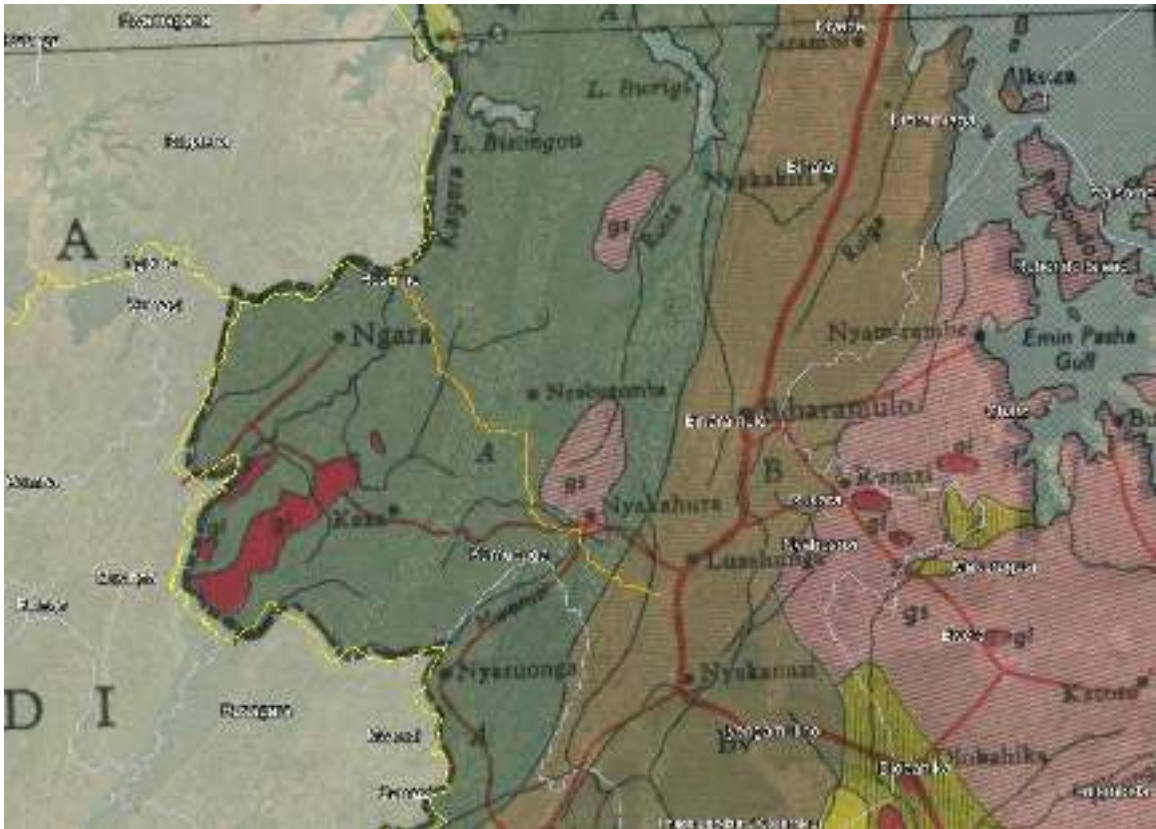


Figure 4-4 Geology (the road is shown in orange)

Source: Geological Map of Tanzania, Tanganyika Geological Survey, 1959

4.2.3 Climate

According to the Köppen-Giger Climate Classification, the Project area is in the As/Aw climate area, which is the Tropical savanna Climate. The Project area has a tropical type of climate with a fairly unimodal rainfall regime. Convective rainfall is dominant due to the influence of the Lake Victoria and the highlands of the region.

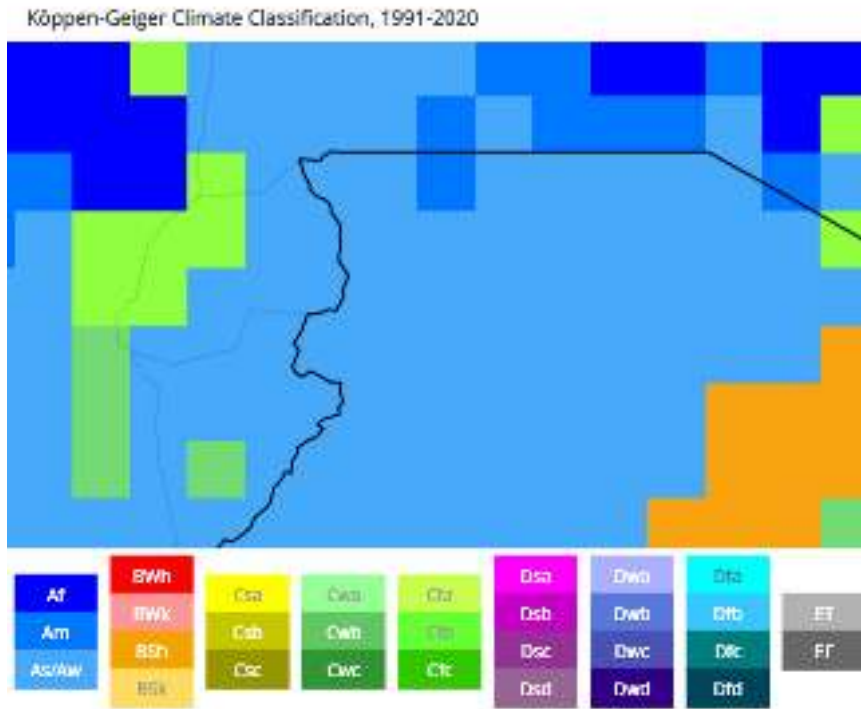


Figure 4-5 Köppen-Giger Climate Classification

Source: World Bank Climate Change Knowledge Portal (2022)

The low-lying areas of Biharamulo District and parts of Ngara District which lie between 1,100m and 1,200 masl receive less rain ranging between 500mm and 1,000mm which comes in a single season with a peak in April.

The highlands of Ngara with altitude of 1,300m to 1,900 masl receive moderately high rainfall with annual rainfall reaching 1,000mm to 1,400mm. It rains from November to May with a peak in April for the long season and December for the short season. The dry season occurs between June and early October with another short dry spell between January and February.



Figure 4-6 Climatic zone of Tanzania

Source: Vol 2 Design Study, 2014

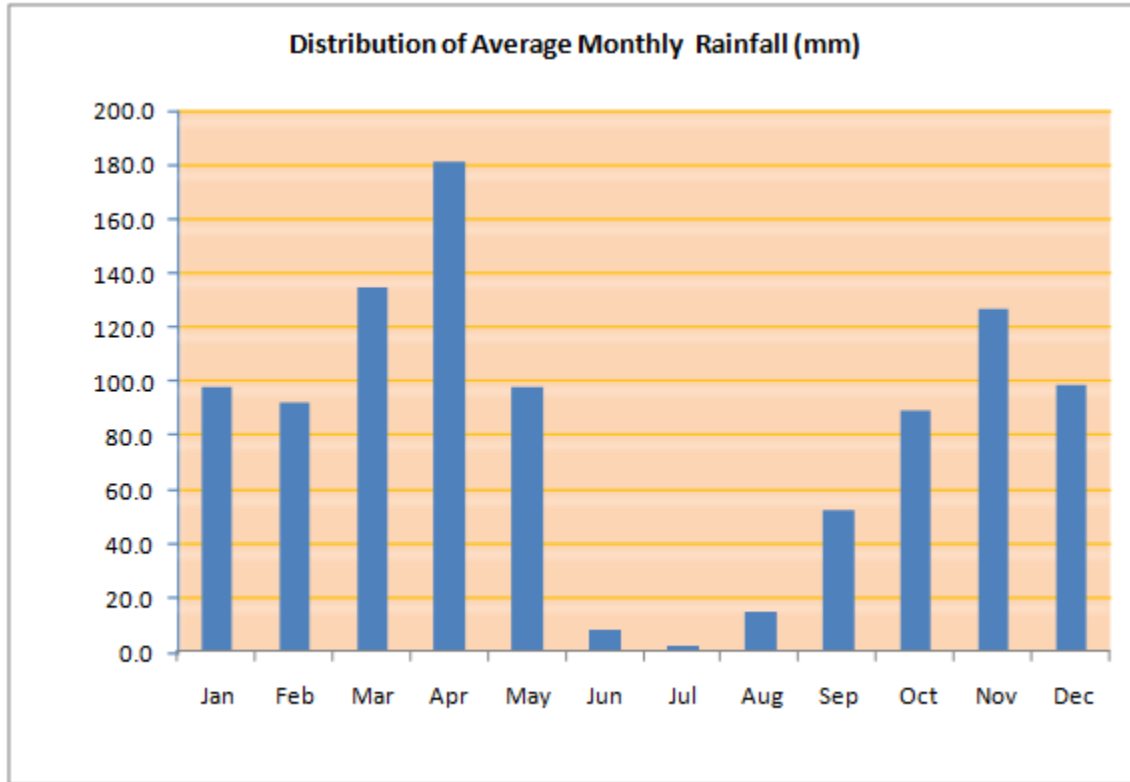


Figure 4-7 Kagera average precipitation (from Ngara rainfall station)

Source: Vol.5 Detailed design study, 2014

According to the World Bank Climate Change Knowledge Portal (2022), the Kagera region will experience a slight increase in average temperature between 0.6 and 0.9 degrees under the SSP1-2.6 scenario (which is the optimistic scenario with no or slight increase in GHG) for the year 2020 to 2039 as shown in the following figure. The representation shows the multi-model ensembles which represent the range and distribution of the most plausible projected outcomes of change in the climate system.

Projected Mean-Temperature Anomaly for 2020-2039
 Kagera, Tanzania; (Reference Period: 1995-2014), SSP1-2.6, Multi-
 Ensemble

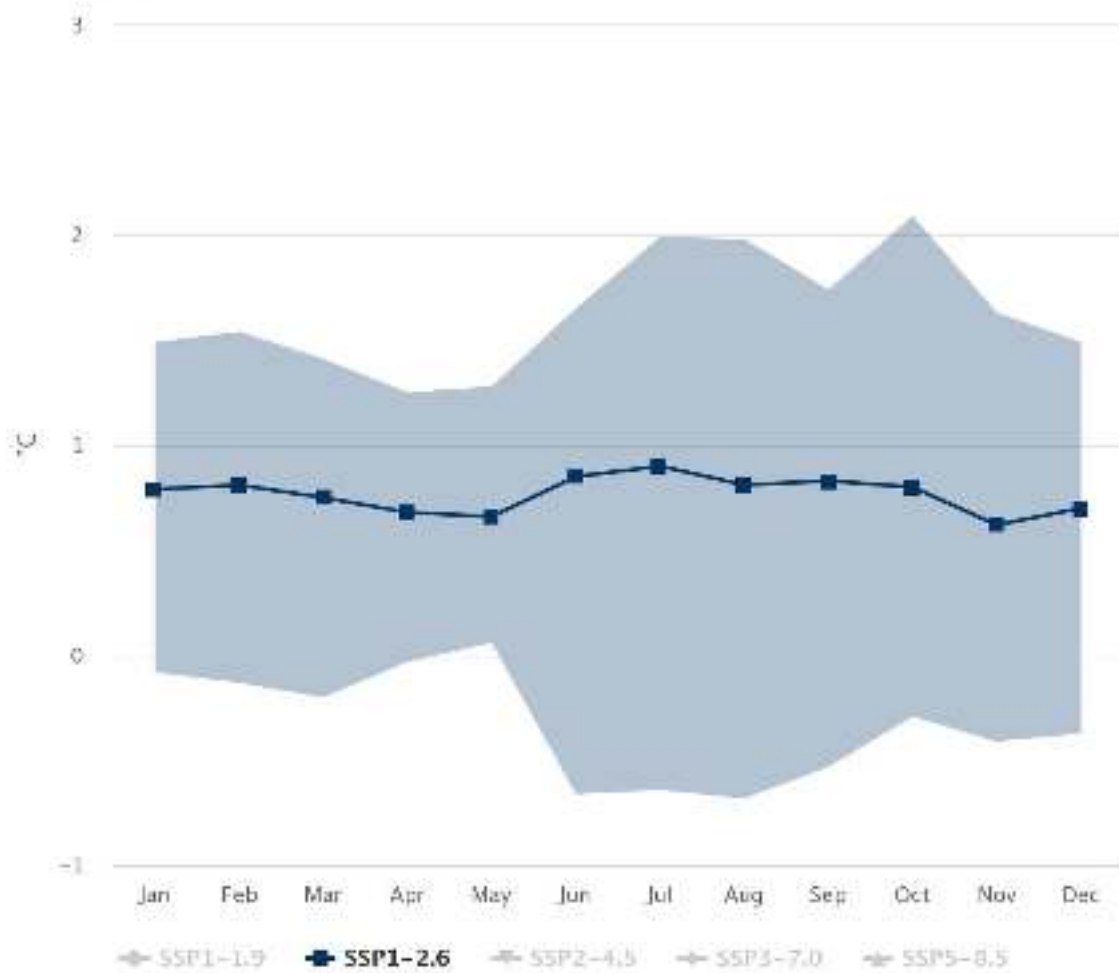


Figure 4-8 SSP1-2.6 scenario for mean temperature projection for 2020-2039

Source: World Bank Climate Change Knowledge Portal (2022)

In terms of precipitation, according to the World Bank Climate Change Knowledge Portal (2022), the Kagera region will experience a slight variation of precipitation under the SSP1-2.6 scenario (which is the optimistic scenario with no or slight increase in GHG) for the year 2020 to 2039 as shown in the following figure. The representation shows the multi-model ensembles which represent the range and distribution of the most plausible projected outcomes of change in the climate system.

Projected Precipitation Anomaly for 2020–2039
Kagera, Tanzania; (Reference Period: 1995–2014), SSP1–2.6, Multi-1
Ensemble

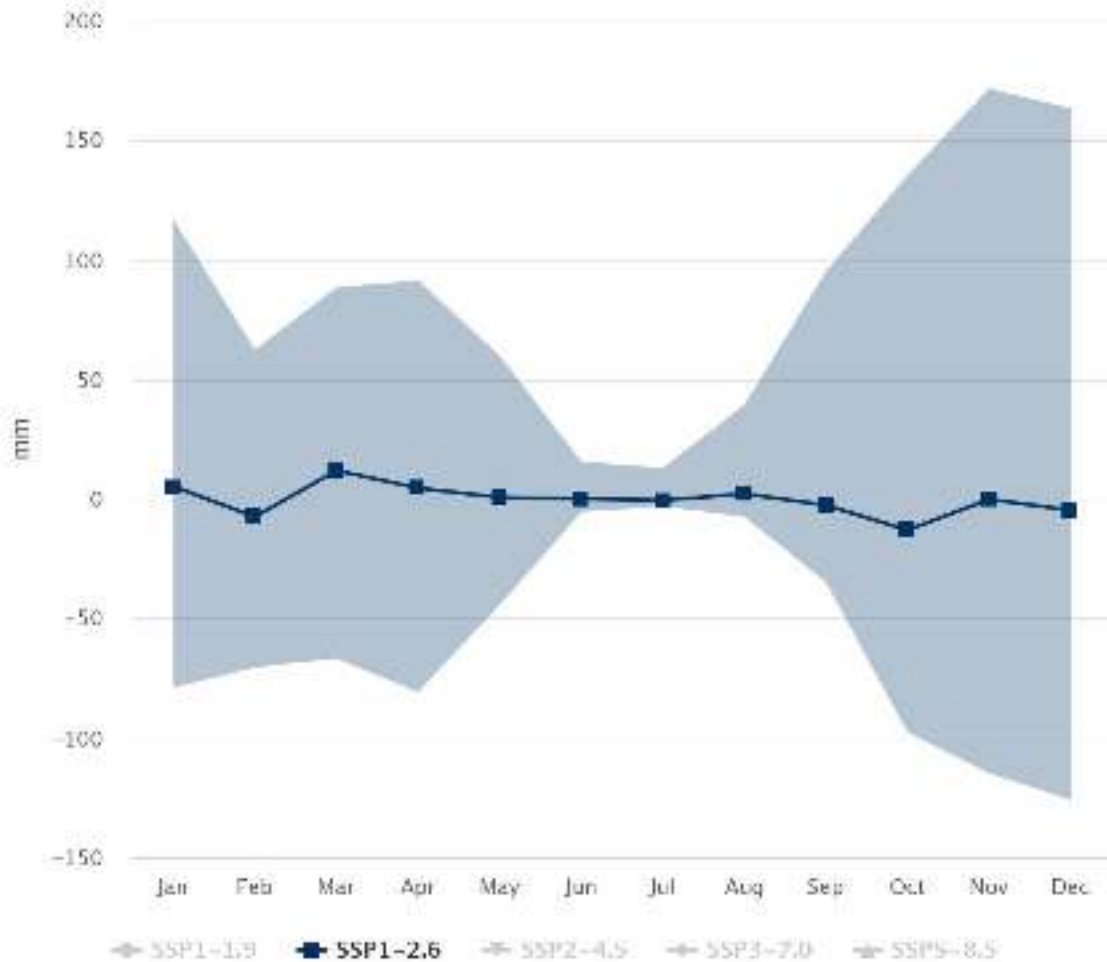


Figure 4-9 SSP1-2.6 scenario for average precipitation projection for 2020-2039

Source: World Bank Climate Change Knowledge Portal (2022)

4.2.4 Hydrology

The road is located between two water basins : Lake Victoria water shed (in the Kagera River basin) and Lake Tanganyika water shed (through the Malagarasi River basin). The southern part of the road is located in the Lake Tanganyika water shed while the northern part is located in Lake Victoria water shed.

The main water course is the Kagera River which is located at the end of the road.

According to the Detailed design (2014), there are 50 sub-catchments along the Lusahunga - Rusumo road and a total of 121 culverts along the road. The Design Review report corrected the number of culverts to 131. Most of these structures are crossed by

seasonal streams with no name and little base flow. Amongst these 131 culverts, 20 will be retained and widened to accommodate the new width of the road and 9 new box culverts will be installed. The 29 concrete box culverts indicate larger and permanent streams, their chainage is provided in section 2.3.1.1. The 102 others are corrugated culverts that will be fully replaced by concrete pipe culverts (these drain smaller streams with little base flow).

The catchment areas vary between 0,50 and 140 km² with an average of 19km². Peak flows are experienced during the rainy season.



Figure 4-10 Example of an area a metal pipe will be replaced by a box culvert

The main surface waterbodies are shown in the following table.

Table 4-1 Main surface waterbodies

Water body	Location (km)	Offset Distance	Remarks
Midaho stream	11+200	Cross the road	Seasonal
Kikukumbo stream	61 +000	Cross the road	Seasonal
Benako Water Pond	77 +000	Located on the western	Reservoir

		side of the road	
Kagera River	91 +700	Located at the border	Perennial. <i>The Project does not include modification of the bridge across the river.</i>



Figure 4-11 Benako pond

Source: Consultant field work,2019

4.2.5 Groundwater resources

According to the consultation with the communities, it was confirmed that groundwater is abundant in almost all the villages along the road. This is supported by the fact that shallow wells are one of the main sources of domestic water supply for all the villages along the project.

The Kagera aquifer, which covers the Extended study area, is shared by Burundi, Rwanda, Tanzania and Uganda. It covers an area of 5,780 km² with most of its area within the Nile Basin catchment.

4.2.6 Water quality

Data on water quality from rivers, stream, boreholes and shallow wells was not available to the Consultant during the study. The rivers and streams originate from the mountains in the vicinity with no observable contamination from industrial discharges. As most watercourses floodplains are used by communities mainly for paddy field, their quality may be impaired by erosion leading to high turbidity and use of fertilizers and pesticides. Livestock rearing also lead to impacts such as degradation of rivers banks and increase in fecal coliforms. When streams are crossed by the road, sediments and debris are discharged in natural water courses from road drainage and surface run-offs.

Regarding the quality of ground water, the interviews made with communities indicate that water from almost all the shallow wells and boreholes along the road is not objectionable.

4.2.7 Noise and vibration

No noise data was collected by the Consultant in the framework of the ESIA. However, a rough estimate of the noise level from traffic is provided in this section.

Given the rural setting, the road is the most prominent source of noise.

With 94 to 121 vehicles passing along the road per hour and with trucks representing between 50 and 60% of the traffic (see section 2.2 for project traffic), it can be estimated that noise level is at 62-65 dBA plus the additional noise from trucks which typically add between 6.5 to 7.0 dBA to background noise. Therefore, average level of noise typically ranges between 68 to 73 dBA at a distance of 15 meters from a road used predominantly by large trucks. The passing of a truck (single event) can produce punctual maximum noise level of 80 dBA, which is typically 8-10 dBA higher than cars.

Given that noise level is usually reduced by 6 dBA for each doubling of distance and that there is no vegetation between the road and houses that would allow to abate noise level and no building tall enough to create a barrier effect, average daily noise level (L_{Aeq} from 06 to 20h00) can be expected to be between 62 to 67 dBA after 30 meters, 56 to 61 dBA after 60 meters at baseline. Based on the IFC noise thresholds from the Environmental, Health, and Safety (EHS) Guidelines, acceptable noise level of 55 dBA are currently not reached before about 60 meters from the road.

Because of the presence of the road, the Limited Study area is not a quiet rural area with low level of background noise, except at night since there is usually no night truck traffic on the road.

4.2.8 Air quality

No air quality data was collected by the Consultant in the framework of the ESIA.

The typical air pollutants from road transportation sources are Carbon Monoxide (CO), Carbon Dioxide (CO₂), Nitrogen Dioxide (NO₂), Sulphur Dioxide (SO₂) and volatile organic compounds; and particulate matters (PM_{2.5} and PM₁₀). Given the rural setting of the Extended study area, as for noise, the road network is probably the sole source of air pollution. The project road is made of tarmac which limits dust dispersion. However, no physical or natural obstacles limits pollution dilution/dispersion.

Roads usually influence air quality in a radius of 150 to 200 meters, pollutant concentrations are higher when wind speed are low. After this distance, pollution rapidly decreases to background concentration on the upwind side. However, on the downwind side, concentration do not generally reach background level until 300 to 500 meters. Small particulate matter (PM_{2.5}) tends to decrease more rapidly. Pollutant concentrations are also higher with certain activities such as stop-and-go movement (at truck stops or across village centers) or during acceleration in slopes. Pollution also varies depending

on the type of vehicle, heavy-duty diesel trucks can emit more of certain pollutants (e.g., NOx and PM) and contribute disproportionately to the emissions from all motor vehicles. Gasoline-powered passenger cars also generally emit more of other pollutants (e.g., CO, and benzene, a volatile organic compound (VOC)) (EPA, 2014, WHO, 2013).

Because of the presence of the road, air quality in the Limited Study area can be considered to be strongly influenced by the presence of the road. Level of pollution are most likely higher during the dry season.

4.2.9 Natural hazards

According to ThinkHazard! portal from the World Bank, the following hazards are encountered in Biharamulo and Ngara Districts.

Table 4-2 Type of natural hazards

District	Type of natural hazards				
	River flood	Earthquake	Landslide	Extreme heat	Wildfire
Biharamulo	Low	Low	Very low	Low	High
Ngara	High	Low	Low	Low	High

4.2.10 Terrestrial habitats and wetlands and associated flora and wildlife

The flora of the Extended study area is characterized by mosaics of Miombo woodlands, wooded grassland, floodplains along streams in valleys, plantations of introduced trees and banana. Plantations are found at almost all village centers along the project road, while wooded grassland and miombo woodland are found in between settlements.

The Extended study area is located in the Miombo woodland ecoregion.

Common trees and shrub species found in the Miombo woodland in the area include:

- *Pericopsis angolensis*
- *Brachystegia spiciformis*
- *Combretum Molle*
- *Terminalia kilimandscharica*
- *Albizia brachycalyx*
- *Arundinaria alpina*

In the Limited study area, Miombo woodlands are mainly secondary forests that are used by local population. High degradation of the woodland is associated with poor farming practices and overgrazing. According to Global Forest Watch (2022), Ngara District experienced a net reduction of 1,9200 ha (-2.8%) in tree cover from 2000 to 2020 and Biharamulo District experienced a net reduction of 37,500 ha (-12%) in tree cover from 2000 to 2022.

Wooded grassland cover much of the area outside of the Miombo forest where there are no settlements. *Combretum* species and *Acacia* species are dominating the landscape.

Timber plantations are common along the road, planted species include eucalyptus, gravellier trees (*Grevillea robusta*) and pine trees (*Pinus* species such as *P.patula*, *P. elliottii* and *P. caribaea*) as well as Indian lilac (*Azadirachta indica*), and mango trees.

Wetlands of the Limited study area are found in valleys and occupy small floodplains of seasonal streams and are largely used for agriculture (small scale flood recession agriculture and paddy fields). They are found in the drainage lines and small rivers of the important north–south ridges that characterize the landscape. The main floodplains in the Limited study area are located along box culverts and arched culverts. The main ones are located at the following chainages:

- 0+861
- 3+812
- 7+239 (Kirakacheusi Stream)
- 7+260 (Kirakacheusi Stream)
- 9+527 (Midalo Stream)
- 9+553 (Midalo Stream)
- 11+294 (Midalo Stream)
- 11+328 (Midalo Stream)
- 13+808 (Busiri Stream)
- 13+829 (Busiri Stream)
- 15+523
- 16+583
- 17+267
- 18+115
- 20+922
- 24+488
- 27+998
- 28+198
- 37+262
- 42+800
- 25+597
- 50+535
- 53+941
- 54+279
- 57+023
- 57+651
- 63+852
- 68+455
- 76+657



Figure 4-12 Example of floodplain along the road

A few small perennial marshes are scattered around the Limited Study area. Perennial marshes are year-round inundated wetlands. In these wetlands, water level is high enough to limit tall grass colonization to their margins. Riparian forests are very rare in the Limited study area and found in steep and narrow valleys. Riverine grasslands are found along river and streams. Herbaceous plants are dominated by sedges (such as the *Cyperus papyrus*), cattails (*Typha*), reed grass (*Phragmites*), *Isoetes* and *Juncus*. In waterlogged areas, common plants include the Common Water-plantain (*Alisma plantago-aquatica*), Common Duckweed (*Lemna minor*) and plants in the family of *Alismatales*.

Wildlife species that may be found in the Limited Study area are most likely ubiquitous species that tolerate human presence and the road.

The terrestrial biodiversity in the Extended study area is presented in the next paragraphs. Information is based on IBAT list of species in a 50 km radius from the road as shown in the following figure.

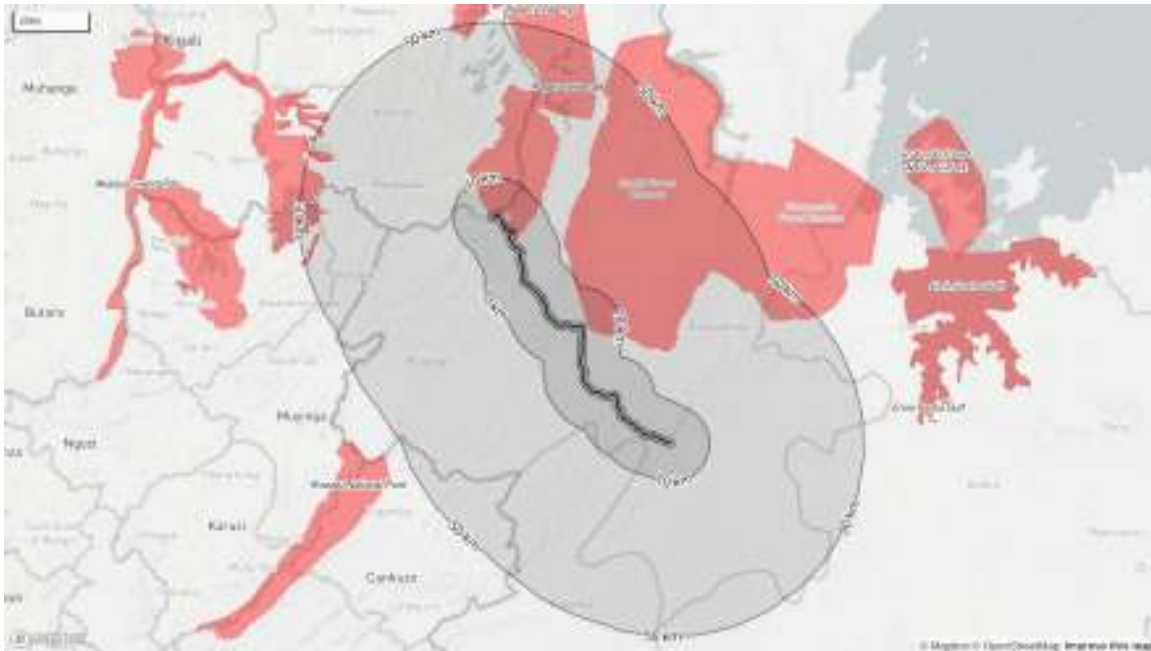


Figure 4-13 Road and sensitive habitats

A total of 245 species of insects and arachnids were reported by IBAT. The most reported order is the Odonata (dragonflies and damselflies) with 161 species. Odonata are associated with wetlands and are found on tall grass along rivers and their floodplains. One species of Odonata is Vulnerable according to the IUCN (*Agriocnemis palaeforma*, Papyrus Wisp). 30 species of Lepidoptera were reported (butterflies) some of which are full migrant species. IBAT reported 21 species of Coleoptera (beetles) and 16 species of Orthoptera (grasshopper).

A total of 11 species of Decapoda are present (Crayfish) are found in wetlands and streams. One species, the Deckenia (*Deckenia mitis*) is categorized as Near Threatened.

Wetlands are also inhabited by Anurians (amphibians). 31 species were reported by IBAT, none of which has an IUCN status.

Regarding reptiles, IBAT reported 58 species, including two threatened species, the Central African Rock Python (*Python sebae*) which is Near Threatened and the Gaboon Viper (*Bitis gabonica*) which is Vulnerable.

Birds are very diverse. According to IBAT, 536 species were observed in a 50 km radius from the road. 55 birds of prey and scavengers are present and 16 species of ducks (Anatidae). 232 species of passerine birds are present. About half are water dependent and 176 are migratory birds. 30 birds are Threatened according to the IUCN status.

Mammals are represented by several large orders. Most of which are found in the nearby Burigi-Chato National Park :

- Carnivora: with 29 species including Canidea (African Wild Dog, Side-striped Jackal, Black-backed Jackal and the African Wolf), Felidea (Serval, Cheetah, Lion, Leopard, Afro-Asiatic Wildcat), herpestidea (Mongoose), Hyaenidae (Hyaena) and Mustelidae (otter, weasel, badger)
- Cetartiodactyla: with 23 species of Bovidea (ungulates) which include giraffes, and hippopotamus
- Chiroptera: with 43 species of bats.
- Primates: with 12 species of monkeys.
- Rodentia: with 41 species of rodents.
- Soricidae: with 11 species of shrews.

In addition, there are rhinos, pangolin and zebras and other smaller orders. 27 species are threatened according to IUCN red list.

IUCN Red list species are further assessed in the section 4.2.15.

The main issue affecting terrestrial habitats are indiscriminate harvesting of logging, timber, and charcoal and smuggling of timber. Overstocking of livestock leading to overgrazing and degradation of grazing pastures and biodiversity is also an important issue. Uncontrolled burning of vegetation including natural forests are also affecting terrestrial habitats.

4.2.11 Aquatic habitats and fish

The most common fish that are caught in permanent streams are the African catfish and tilapia. During field survey, these two species were the only fish species mentioned by community fishermen mainly in Benako Water Pond as the perennial water bodies are rare along the project road.

The road is located at the crossroad of two water sheds, the Lake Victoria water shed (in the Kagera River basin) and the Lake Tanganyika water shed (through the Malagarasi River basin), all rivers (except for Kagera River) are small and most are seasonal streams with floodplains heavily encroached by agriculture. Outside of the Kagera river and its floodplain, there is limited potential for diverse fish biodiversity.

According to the Field Guide to the Freshwater fishes of Tanzania from the FAO (1992), seven families of fish are potentially present in the Extended study area. These are mainly represented by Cichlidae (Tilapias), Clariidae (Clarias) and Cyprinidae (Labeo and Labeobarbus). There are two reported threatened fish in the area (Labeo victorianus and Synodontis ruandae), their presence in streams that are crossed by the road is unknown. IUCN Red list species are further assessed in the section 4.2.15.

The main threat to aquatic habitats in the Limited study area comes from the encroachment of seasonal water courses for agriculture, mainly paddy.

4.2.12 Nationally protected areas

Two nationally protected areas are found in the Extended study area:

- The Burigi-Chato National Park
- The Biharamulo Forest Reserve

4.2.12.1 Burigi-Chato National Park

The National Park encompasses three protected areas:

- Burigi Forest and Game Reserve.
- Biharamulo Forest and Game Reserve.
- Kimisi Game Reserve.

It also overlaps almost entirely with the limits of the Burigi-Biharamulo Game Reserves KBA and Important Bird Area (IBA) (see section 4.2.13).

Based on collected information from park management by the Consultant, the limits of the National Park are not consistent with data collected on websites of protected areas (Protected Planet and IBAT), this is probably because the designation of this national park is recent (2019).

Tanzania National Parks Authority (TANAPA) manages the National Park.

The closest point between the road and the National Park is around chainage 44+500, at this location the park is unfenced and at 1.4 km from the National Park.

The following figures show the limits of the National Park as shared by Park Management.



Figure 4-14 Limit of the National Park as shared by park management



Figure 4-15 Burigi-Chato National Park

According to IBAT, the National Park is home to 163 mammals including IUCN Red List threatened species as shown in the following table.

Table 4-3 Threatened mammals of the Burigi-Chato National Park

Scientific Name	Common Name	IUCN Red List Category	Population Trend	Publication Year
<i>Diceros bicornis</i>	Black Rhino	CR	Increasing	2020
<i>Diceros bicornis ssp. michaeli</i>	Eastern Black Rhino	CR	Increasing	2020
<i>Diceros bicornis ssp. minor</i>	South-eastern Black Rhino	CR	Stable	2020
<i>Phataginus tricuspis</i>	White-bellied Pangolin	EN	Decreasing	2019
<i>Piliocolobus tephrosceles</i>	Ashy Red Colobus	EN	Decreasing	2020
<i>Loxodonta africana</i>	African Savanna Elephant	EN	Decreasing	2021
<i>Acinonyx jubatus</i>	Cheetah	VU	Decreasing	2022
<i>Panthera leo</i>	Lion	VU	Decreasing	2016
<i>Panthera pardus</i>	Leopard	VU	Decreasing	2020
<i>Hippopotamus amphibius</i>	Hippopotamus	VU	Stable	2017
<i>Smutsia temminckii</i>	Temminck's Pangolin	VU	Decreasing	2019
<i>Hyaena hyaena</i>	Striped Hyaena	NT	Decreasing	2015
<i>Aonyx capensis</i>	African Clawless Otter	NT	Decreasing	2021
<i>Hydrictis maculicollis</i>	Spotted-necked Otter	NT	Decreasing	2021
<i>Syncerus caffer</i>	African Buffalo	NT	Decreasing	2019
<i>Otomops martiensseni</i>	Large-eared Free-tailed Bat	NT	Decreasing	2017
<i>Eidolon helvum</i>	African Straw-coloured Fruit-bat	NT	Decreasing	2020
<i>Equus quagga</i>	Plains Zebra	NT	Decreasing	2016

According to secondary data, consultation made with the TANAPA and District Natural Resources Office 2019, the wildlife population of this National Park is not significant in comparison with other large National Parks in Tanzania. This is due to the fact that the Burigi Chato National Park is the newest one in Tanzania which was established in 2019 by government initiative. Wildlife conservation activities are recent with the transfer in Burigi Chato National Park of some of large mammals such as elephants and lions from other national parks such as Ruaha and Mikumi. The area has also suffered from intense poaching activities when refugees from Rwanda settled in its vicinity. Today, most refugees have returned to Rwanda and pressure on wildlife has reduced.

Wildlife corridors

Since the National Park shelters many large mammals, an analysis of wildlife corridors is included in this report.

A meeting with National Park Management (Park supervisor, Park ecologist and Park civil engineer) was undertaken during a site visit of the ESIA consultant in May 2022.

Park management confirmed that there is neither large mammal corridor nor migration route crossing the Project site in the vicinity of the entrance gate where the road is passing since there is no animal sanctuary on the other side of the road.

However, park management explained that, since the Park has no physical boundaries, animals sometimes move to the nearby Nyabugombe village which is close to the roads. Commonly encountered species by villagers in the area close to Burigi-Chato national park includes hyena, impala, greater kudu, bushbuck, bush pig, olive baboon. These are commonly seen in miombo woodland and bushland habitats.

No case of animal collision with vehicles has been recorded along the road.

According to the study Wildlife Corridors in Tanzania (Tanzanian Wildlife Research Institute, TAWIRI, 2009), there are two types of corridors from the Burigi -Chato National Park:

- The first type of corridor is between the Kimisi Game Reserve (the western part of the Burigi -Chato National Park) and the Akagera National Park in Rwanda. It is a potential corridor without any documentation on animal movement. The study has categorized this corridor as a Type B corridor: “Uncultivated lands between protected areas without documentation on animal movement”. This potential corridor is not concerned by the road rehabilitation project.
- The second type of corridor is between the Burigi and Forest and Game Reserves and other game reserves 100 km to the south (the Moyowosi and Kigosi Game Reserves). It is a potential corridor with anecdotal information on animal movements. The study has categorized this corridor as a Type C corridor: “Continuous or semi-continuous non agricultural land between protected areas with anecdotal information on animal movements”. Based on a sketch, the study provided rough location of this anecdotal corridor. This anecdotal corridor crosses the Lusahunga-Rusumo road around chainage 11+000 to 14+000. The corridor was estimated by TAWIRI to be in a critical state for elephant, meaning that there was about 5 years left for this corridor to be viable (TAWIRI, 2010).

This study confirms that in the area where the road is closer to the national park, there are no confirmed wildlife corridors that cross the road.

A more recent study assessed, through a model, landscape connections between protected areas that are potentially open to wildlife movement. This study determined that the corridor between Burigi -Chato National Park and the Moyowosi and Kigosi Game Reserves is still potentially open to wildlife movement. However, according to this study, this corridor does not cross the Lusahunga-Rusumo road (as mentioned by TAWIRI,

2009) but links the Burigi -Chato National Park with the Moyowosi and Kigosi Game Reserves through the southern part of the Biharamulo Forest Reserve (Riggio, 2017) as shown in the following figure in orange.



Figure 4-16 Wildlife corridor (in orange) between Burigi-Chato National Park and Moyowosi and Kigosi Game Reserves

4.2.12.2 Biharamulo Forest Reserve (southern part)

This forest reserve covers 1462 km². Its closest point is located 2.5 km south of the road at chainage 0+000.

Another forest reserve with the same name is located near the Burigi Forest reserve and is integrated in Burigi -Chato National Park.

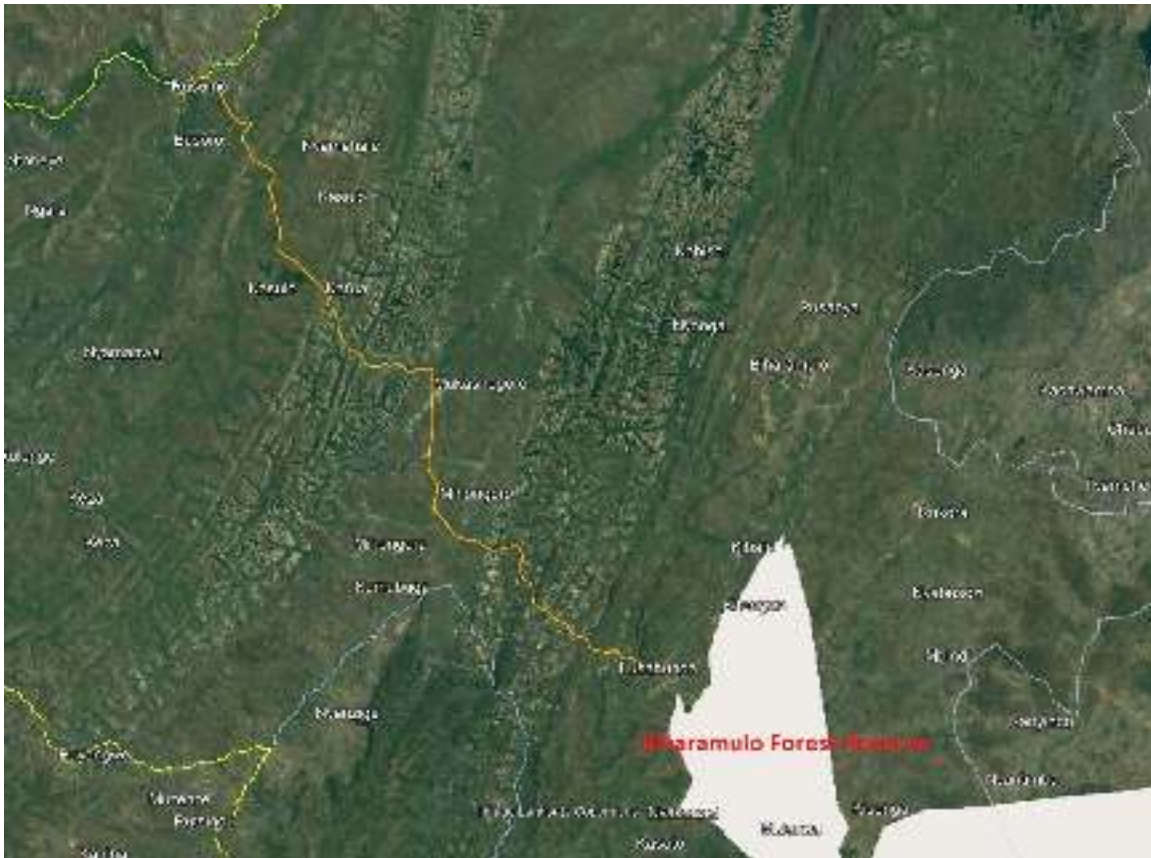


Figure 4-17 Biharamulo Forest Reserve and the Project (in orange)

According to the Tanzanian Forest Service Agency (TFS) which manages this forest reserve, this protected area was gazetted in 1954 through Government Notice (GN) No. 292 and map JB No. 200, which underwent variation to GN No. 311 in 1959.

Main habitats include Miombo woodlands, Itigi-Sumbu thicket, savanna-grasslands and shrublands.

The miombo woodlands in this forest reserve are composed of native trees as presented in the following table.

Table 4-4 Trees of the Biharamulo Forest Reserve

Scientific name	English name	IUCN Red List status	Trend
<i>Combretum molle</i>	Velvet bushwillow	Least Concern	Stable
<i>Tamarindus indica</i>	Tamarind	Least Concern	Stable
<i>Terminalia sericea</i>	Silver terminalia	Least Concern	Stable
<i>Lannea humilis</i>	Small-leaved Lannea	?	?
<i>Harrisonia abyssinica</i>	?	Least Concern	Stable
<i>Catunaregam spinosa</i>	Mountain Pomegranate	Least Concern	Stable

Scientific name	English name	IUCN Red List status	Trend
<i>Combretum adenogonium</i>	Four-leaved bushwillow	Least Concern	Stable
<i>Philenoptera violacea</i>	Apple-leaf	Least Concern	Stable
<i>Faidherbia albida</i>	Apple-ring acacia	Least Concern	Stable
<i>Brachystegia spiciformis</i>	Zebrawood	Least Concern	Decreasing
<i>Brachystegia boehmii</i>	Prince of Wales' feathers	Least Concern	Stable
<i>Anisophyllea pomifera</i>		Least Concern	Unknown
<i>Pericopsis angolensis</i>		Least Concern	Stable

Source: Tanzania Forest Service Agency (TFS), 2022

Encroachment for agriculture, human settlements, tree felling for charcoal, lumbering and firewood, cattle grazing, and mining led to degradation of this reserve.

In degraded parts of the forest reserve, the government has planted *Pinus caribea* trees in 2017.

4.2.13 Internationally recognized areas of high biodiversity value

Two internationally recognized areas of high biodiversity value are found in the Extended study area:

- The South Akagera Key Biodiversity Area (KBA)
- The Burigi-Biharamulo Game Reserves KBA and Important Bird Area (IBA)

There are no Ramsar wetland in the Extended study area.

The two sites with regard to the road are presented in the following figure.

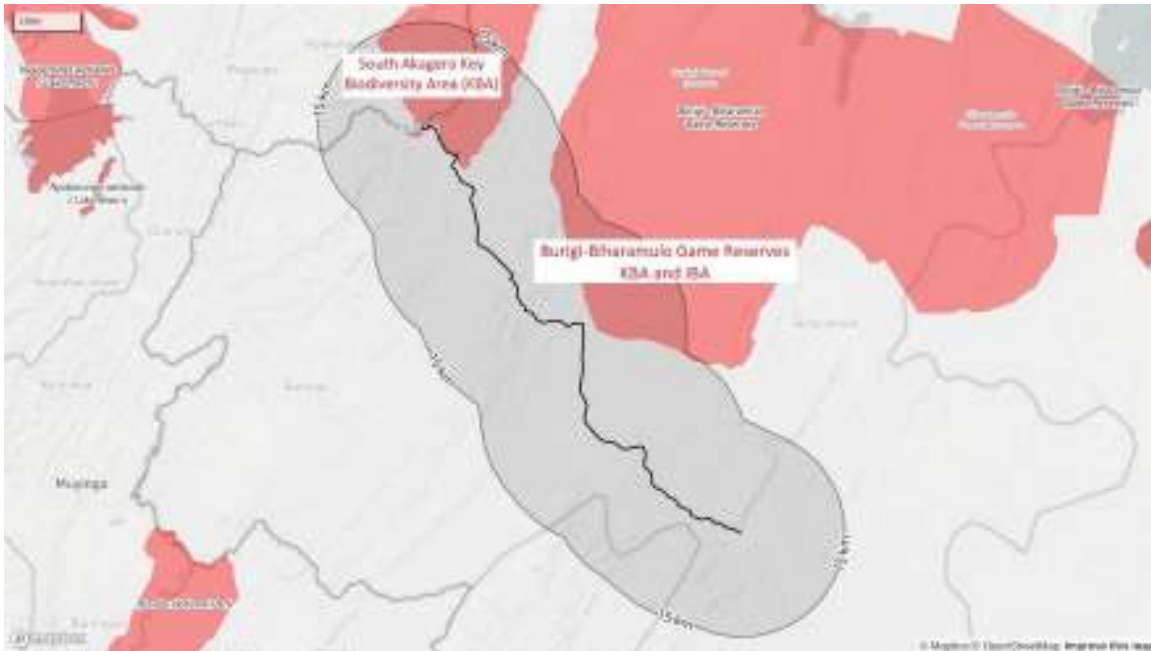


Figure 4-18 KBA and IBA sites close to the road

4.2.13.1 South Akagera KBA

This transboundary KBA covers both Rwanda and Tanzania. It covers 527 km², with 250 km² in Tanzania.

The KBA boundaries follows loosely the Kimisi Game reserve. This KBA has no formal protection and no management in place as it is not integrated in a protected area.

The habitat covered by this KBA is the Akagera River which is a transboundary river as well as its floodplain and buffer area.

The road follows loosely the southern limit of this KBA between chainage 81+500 and 91+440 (end of the road) and is in direct contact with the boundary of the KBA but not in contact with the river and its floodplain (which are the habitats that designated the KBA). Between these chainages, in the vicinity of the road there is no particular aquatic or wetland habitat that would be hydrologically connected to the river and its floodplain, as most areas are occupied by cropland, settlements or infrastructure associated with road transport. 11 small culverts are found between 81+500 and 91+440. Given their size, these drain small seasonal streams that do not seem to be directly connected to the floodplain of the Akagera River.

The two species that have triggered this KBA are presented in the next tables (Key Biodiversity Areas Partnership (2022); BirdLife International (2022); UNEP-WCMC (2022)).

Table 4-5 Biodiversity elements triggering KBA criteria in the South Akagera KBA

Taxonomic Group	Scientific name	Common name	IUCN Red List Category	KBA Criteria
Fish	<i>Labeo victorianus</i>	Ningu	Critically Endangered	A1c
Fish	<i>Synodontis ruandae</i>		Vulnerable	A1b

A1 criteria apply to IUCN species that are globally threatened according to IUCN Red List Categories and Criteria.

A1c: $\geq 0.1\%$ of global population size and ≥ 5 reproductive units of a species listed as CR/EN due only to past/current decline

A1b: $\geq 1\%$ of global population size and ≥ 10 reproductive units of a VU species

Table 4-6 Ecology of the threatened species in the South Akagera KBA

Species	Distribution	Biology*	Habitat	Critical period*	Main threats (IUCN Red List and KBA)
<i>Labeo victorianus</i>	Endemic to the Lake Victoria drainage	Anadromous species (spawn in fresh water) Upstream migration at beginning of rains Ascending both large rivers and streams during floods and spawning in floodwater pools or inundated grasses at margins of rivers.	River Akagera (Kagera). Shallow water in the floodplain during the rainy season (March to May).	March to may Upstream migration to spawn in floodplain	Overfishing and decline in vegetation in floodplains
<i>Synodontis ruandae</i>	Akagera River system	Benthic species	River Akagera (Kagera) in shallow waters and vegetation	Unknown	Decline in vegetation in floodplains. Sedimentation due to excessive soil erosion (road and building

Species	Distribution	Biology*	Habitat	Critical period*	Main threats (IUCN Red List and KBA)
					construction, cultivation on steep slopes, etc.)

*Source : Fishbase, 2022

4.2.13.2 Burigi-Biharamulo Game Reserves KBA and IBA

This KBA/IBA covers 3,500 km². Both game reserves are integrated in the Burigi-Chato National Park and are therefore managed by the Tanzania National Parks Authority (TANAPA).

The habitat covered by this KBA/IBA is made of forest, shrubland and some wetlands. Burigi Lake is a permanent water source partially located in the KBA/IBA and characterized by swampy papyrus beds and riverine forests surrounded by wooded hills.

The road is located some 1.4 km away from the KBA (at chainage 44+500) but is not in direct contact with the game reserves.

The four species that have triggered this KBA are presented in the next tables.

KBA criteria are those from the IBA, therefore only IBAs criteria are presented.

Table 4-7 Populations of IBA trigger species

Species	Current IUCN Red List Category	Season	Year(s) of estimate	Population estimate	IBA Criteria Triggered
Ring-necked Francolin <i>Scleroptila streptophora</i>	Near Threatened	resident	2000	present	A3. Biome-restricted species
Shoebill <i>Balaeniceps rex</i>	Vulnerable	resident	-	present	A1. Globally threatened species
Red-faced Barbet <i>Lybius rubrifacies</i>	Near Threatened	resident	2000	present	A1. Globally threatened species A2. Restricted-range species A3. Biome-restricted species
Black-lored Babbler <i>Turdoides sharpei</i>	Least Concern	resident	2000	present	A3. Biome-restricted species

Source: BirdLife International (2022)

Table 4-8 Ecology of the threatened species in the Burigi-Biharamulo Game Reserves KBA and IBA

Species	Distribution	Biology	Habitat	Critical period	Main threats
Ring-necked Francolin <i>Scleroptila streptophora</i>	Burundi, Cameroon, Kenya, Rwanda, Tanzania and Uganda	Native resident bird	This species inhabits stony hillsides with sparse grass and shrub cover, and wooded grasslands at 600-1,800 m	Nesting takes place in April in small holes on the ground	Moderately rapid decline due to agriculture, livestock farming and logging.

Species	Distribution	Biology	Habitat	Critical period	Main threats
Shoebill Balaeniceps rex	Widely but very locally distributed in large swamps from South Sudan to Zambia	Native resident bird	Large swamps	Nesting takes place at the end of the rainy season in May	Continuing decline owing to hunting, nesting disturbance and the modification and burning of its habitat. Swamps conversion to cropland and pastureland. Trafficking for trade.
Red-faced Barbet Lybius rubrifacies	Restricted to eastern Rwanda and Burundi, and north-west Tanzania	Native resident bird	Wooded grassland, riverine wood and cultivated areas with scattered trees	Breeding is thought to take place in February-March and October	In Tanzania, habitat for this species is not currently under threat, but it occurs at very low densities
Black-lored Babbler Turdoides sharpei	Widespread in the region. Locally common in the Democratic Republic of the Congo and widespread in Rwanda and Burundi	Native resident bird	Found low or on the ground in or near dense woody vegetation, including in cultivated areas	Nesting in March to June	Population in decline owing to ongoing habitat destruction and fragmentation

Source: BirdLife International (2022)

Poaching, wood collection, unprotected Burigi lakeside habitats are the main threats to this KBA.

4.2.14 Threatened plant species

Limited data on threatened plant species is available from secondary sources. According to the District Natural Resources Officer that was met by the ESIA Consultant, the only

rare species found in the area are the *Pterocarpus angolensis* (“Mhinga” in local name), *Azelia quanzensis* (“Mkongo” in local name) and *Albizia versicolor* (“Mtanga”). These tree species are found within the miombo woodland along and off the project road. They are rare due to unsustainable and illegal logging for timber. These species are not threatened according to the IUCN Red List.

According to IBAT, in a 50 km radius of the road, there are 18 threatened plant species. No other species of conservation interest was reported in secondary data. A rapid assessment of the probability to find these plants in the Limited study area is presented in the last column.

Scientific name	IUCN Red List status	Potentially present along the Limited study area
<i>Cyperus afroalpinus</i>	Near Threatened	No, this species occupies clearings in upper montane forest. There is no such habitat in the Limited study area.
<i>Bulbostylis clarkeana</i>	Near Threatened	No, this species occurs in <i>Miscanthidium</i> swamps and other perennially wet bogs. There is no such habitat in the Limited study area.
<i>Thunbergia bogoroensis</i>	Vulnerable	No, punctual observations were done far from the Limited study area.
<i>Aloe bukobana</i>	Vulnerable	No, punctual observations were done far from the Limited study area.
<i>Ipomoea macrosepala</i>	Vulnerable	No, punctual observations were done far from the Study area. This species is a perennial herb or subshrub which is found in deciduous bushland. There is no such habitat in the Limited study area.
<i>Englerina schubotziana</i>	Vulnerable	Yes, this is a shrub found in forest edges and along rivers. However punctual observations were done far from the Limited study area.
<i>Ficus tremula</i> subsp. <i>acuta</i>	Vulnerable	No, this species is found in upland moist or wet forest. There is no such habitat in the Limited study area.
<i>Tridactyle virgula</i>	Vulnerable	Yes, was observed at Rusumo falls in 2016. However, it is found in montane rainforest epiphyte.

Scientific name	IUCN Red List status	Potentially present along the Limited study area
<i>Clutia stuhlmannii</i>	Vulnerable	Yes, was observed in 2018 400 meters from the road at chainage 2+500 (to the East). This species is a perennial herb or subshrub which grows in burned grassland, secondary scrub and deciduous woodland.
<i>Prunus africana</i> (African Cherry)	Vulnerable	No, found in moist montane forest. There is no such habitat in the Limited study area.
<i>Mimusops bagshawei</i>	Vulnerable	Yes, it was observed close to Rusumo falls. This species is a large tree which grows in forest and riverine forest.
<i>Thunbergia laborans</i>	Endangered	Yes, this perennial herb is native to Rwanda and Tanzania. It was observed at Rusumo falls in 2018.
<i>Ipomoea lepidophora</i>	Endangered	Yes, this species was observed in 2018 15 km away from the road. It is a perennial herb which grows in grassland and park savanna which is sometimes burned.
<i>Carpha angustissima</i>	Endangered	No, the range of the species is outside of the Limited study area. This species is found in montane or afro-alpine bogs. There is no such habitat in the Limited study area.
<i>Aeschynomene bullockii</i>	Endangered	Yes, it was observed in 2017 several km away from the road. It is a subshrubby herb from a woody rootstock. Its habitat is grassland on stony soil, <i>Brachystegia</i> woodland
<i>Craterostigma pusillum</i>	Endangered	No, punctual observations were done far from the Limited study area.
<i>Albertisia exelliana</i>	Endangered	Yes, this species is a liana which grows in riverine forest along small stream and closed forest. However, punctual observations were done far from the Limited study area.
<i>Oldenlandia duemmeri</i>	Endangered	Yes, this perennial herb grows on grassland. However, punctual observations were done far from the Limited study area.

Source: IUCN Red List, 2022

4.2.15 Threatened wildlife

Threatened mammals are presented in the description of Burigi-Chato National Park.

In addition to the threatened species found in this national park, IBAT also reported the following threatened bird species in the Extended study area, most of them are scavengers (within a radius of 50km). Many scavengers are known to follow roads looking for road kills.

Scientific name	English name	Status	Habitat requirements (IUCN Red List)	Threats and possible interaction with the Project (IUCN Red List)
<i>Gyps africanus</i>	White-backed Vulture	Critically endangered	Lowland species of open wooded savanna, particularly areas of Acacia	Minor threat from road traffic, with individuals occasionally killed by vehicles
<i>Balearica Regulorum</i>	Grey Crowned Crane	Endangered	Inhabits wetlands such as marshes, pans and dams with tall emergent vegetation, riverbanks, open riverine woodland, shallowly flooded plains and temporary pools with adjacent grasslands, open savannas, croplands.	Loss and degradation of wetland breeding areas through drought-related changes in land-use. Live-trapping (for trade), egg-collecting and hunting
<i>Neophron percnopterus</i>	Egyptian Vulture	Endangered	Nests on ledges or in caves on cliffs	Poisoning and loss of wild ungulate populations
<i>Polemaetus bellicosus</i>	Martial Eagle	Endangered	Inhabits open woodland, wooded savanna, bushy grassland, thornbush	Direct persecution (shooting and trapping) by farmers, indirect poisoning
<i>Ardeola idae</i>	Madagascar Pond-heron	Endangered	Freshwater wetlands, particularly shallow waterbodies fringed with vegetation and adjacent trees	Human disturbance and harvesting of eggs and chicks

Scientific name	English name	Status	Habitat requirements (IUCN Red List)	Threats and possible interaction with the Project (IUCN Red List)
<i>Necrosyrtes monachus</i>	Hooded Vulture	Critically endangered	Associated with human settlements. Open grassland, forest edge, wooded savanna	Non-targeted poisoning, capture for traditional medicine and bushmeat
<i>Gyps rueppelli</i>	Rüppell's Vulture	Critically endangered	Open areas of Acacia woodland, grassland and montane regions. Colonies on cliff faces and escarpments at a broad range of elevations	Habitat conversion to agro-pastoral systems, loss of wild ungulates leading to a reduced availability of carrion, hunting for trade, persecution and poisoning
<i>Trigonoceps occipitalis</i>	White-headed Vulture	Critically endangered	Mixed, dry woodland at low altitudes. Nests and roosts in trees, most nests being in Acacia spp.	Reductions in populations of medium-sized mammals and wild ungulates, as well as habitat conversion through agricultural intensification and development. Deliberate poisoning
<i>Torgos tracheliotos</i>	Lappet-faced Vulture	Endangered	Dry savanna, arid plains.	Accidental poisoning. Nest predation by humans, reduced food availability
<i>Terathopius ecaudatus</i>	Bateleur	Endangered	Open country, including grasslands, savanna	Poisoned baits, pesticides, trapping for international trade, nest disturbance from spreading human settlements, and increased intensification and degradation of agricultural land

Scientific name	English name	Status	Habitat requirements (IUCN Red List)	Threats and possible interaction with the Project (IUCN Red List)
<i>Aquila nipalensis</i>	Steppe Eagle	Endangered	The species is migratory, with birds wintering in south-east Africa	Reduction in the area of suitable habitats and availability of food
<i>Sagittarius serpentarius</i>	Secretarybird	Endangered	Open landscapes, ranging from open plains and grasslands to lightly wooded savanna, but is also found in agricultural areas. Nests in a flat-topped Acacia or other thorny tree	Excessive burning of grasslands may suppress populations of prey species

In addition to the threatened fish species found in the South Akagera KBA, IBAT also reported the following threatened fish species in the Extended study area (within a radius of 50km).

Scientific name	Status	Habitat requirements (IUCN Red List)	Threats and possible interaction with the Project (IUCN Red List)
<i>Labeobarbus claudinae</i>	Vulnerable	Inshore waters in lakes and rivers, even in torrential waters	Regression of swamps and other wetlands around lakes and rivers due to farming extension. Sedimentation due to excessive soil erosion (mining activities, road and building construction, cultivation on steep slopes, etc.).
<i>Labeobarbus acuticeps</i>	Near Threatened	Inhabits inshore waters and the main channels of rivers. Papyrus swamps and ditches	Regression of swamps and other wetlands around lakes and rivers due to farming extension. Sedimentation due to excessive soil erosion (mining activities, road and building construction, cultivation on steep slopes, etc.).
<i>Labeobarbus ruandae</i>	Near Threatened	Fast flowing major rivers where it feeds on varied benthic food	Water turbidity due to erosion on watershed and agriculture extension is a threat.

IBAT reported one threatened Decapoda species: the Deckenia (*Deckenia mitis*) which is Near Threatened. It was observed in wetlands of nearby protected areas and around Lake Victoria. Because this species exhibits a preference for areas with stagnant surface water in habitats that include wetlands, streams, and slow-flowing rivers, it is considered potentially present in the Limited study Area.

IBAT reported one threatened insect, the Papyrus Wisp (*Agriocnemis palaeforma*), a Vulnerable damselfly. This species is found in papyrus swamps with clean and flowing water. Because this habitat is found in the Limited study area, it is considered potentially present.

IBAT reported two threatened reptiles, the Central African Rock Python (*Python sebae*) a Near Threatened species and the Gaboon Viper (*Bitis gabonica*) a Vulnerable species. The Rock Python is closely-associated with swampy areas and the banks of permanent watercourses. Because these habitats are found in the Limited study area, it is considered potentially present. The Gaboon Viper is found in moist and dry forests. Because this habitat is found in the Limited study area, it is also considered potentially present.

4.2.16 Critical habitats

“Critical habitats” are defined by ESS6 as areas with high biodiversity importance or value, including:

- (a) Habitat of significant importance to Critically Endangered or Endangered species, as listed in the IUCN Red List of threatened species or equivalent national approaches;
- (b) Habitat of significant importance to endemic or restricted-range species;
- (c) Habitat supporting globally or nationally significant concentrations of migratory or congregatory species;
- (d) Highly threatened or unique ecosystems; and
- (e) Ecological functions or characteristics that are needed to maintain the viability of the biodiversity values described above in (a) to (d).

South Akagera, because of the presence of two restricted fish range species (criteria b), one of which is critically endangered (criteria a), would qualify as a critical habitat for the two fish species. This critical habitat would be located on the floodplains of the Akagera River, outside of the Limited study area.

As shown in section 4.2.13:

- *Labeo victorianus* fish has triggered the A1c KBA criteria which concerns area with $\geq 0.1\%$ of global population size and ≥ 5 reproductive units of a species listed as CR/EN due only to past/current decline.
- *Synodontis ruandae* fish has triggered the A1b KBA criteria which concerns areas with $\geq 1\%$ of global population size and ≥ 10 reproductive units of a vulnerable species.

Burigi-Chato National Park, which encompasses the Burigi-Biharamulo Game Reserves KBA and IBA, would qualify as critical habitat for endangered and critically endangered mammals (criteria a) (see section 4.2.12 for the list of critically endangered species). However, it is not a critical habitat for birds, as there are no reported significant concentrations of migratory or congregatory species (criteria c) in the IBA and the IUCN Red List birds species are neither endangered nor critically endangered species (criteria a). This critical habitat would be located in the National Park, some 1.4 km away from the road, therefore outside of the Limited study area.

The Biharamulo Forest Reserve (southern part) does not shelter threatened species and would not qualify to any of the critical habitat criteria.

The Limited study area does not have any habitat with highly threatened or unique ecosystems (criteria d).

Many threatened species are potentially present close to the Limited study area, for some of them their presence and location are confirmed in KBAs and IBAs and protected areas. However, outside of these recognized high biodiversity value habitats, natural habitats of the Limited study area are overall degraded by the presence of agriculture and settlements. Even if some of these habitats could shelter threatened species, they are very unlikely to be critical habitats for these species. Therefore, the Limited study area does not have any critical habitat.

4.2.17 Alien and invasive plant species

Alien and invasive plant species are known to colonize disturbed areas such as roadsides and areas where earth movement is taking place. Given the nature of the project, a description of invasive plants is necessary.

According to the Global Biodiversity Information Facility, several sites have been surveyed for invasive plant species along the road between Kasulo and Rusumo. These surveys focused on agricultural invasive and alien plant species (weed) by the CABI (Centre for Agriculture and Biosciences International). The survey revealed the presence of 15 species.

Scientific name	Form	English name	CABI comments, issue for the project
<i>Ageratum conyzoides</i>	Herbaceous plant	Billy goat weed	Invasive, noxious weed in agricultural lands and as a coloniser of open fields and degraded areas, causing crop yield reductions and affecting biodiversity.
<i>Biancaea decapetala</i> (Caesalpinia decapetala)	Shrub	Mysore thorn	Swamping native vegetation, changing the composition of the flora and creating a barrier to the movement of people and animals.
<i>Canna generalis</i>	Herbaceous	Canna lily	Has the ability to form dense

Scientific name	Form	English name	CABI comments, issue for the project
	plant		stands in moist lowland areas, displacing native plant species and the organisms associated with them.
Casuarina sp.	Tree	Casuarina	Fast growing species with prolific seeding ability which is able to take advantage of disturbed sites for colonization. Where it establishes it may form dense, low biodiversity stands with negative impacts on native flora, fauna, soil character and dynamics.
Euphorbia tirucalli	Tree	Indian-tree spurge	Grows forming thickets mostly in disturbed sites, abandoned gardens, deciduous forests, semiarid sites, and along roadsides.
Grevillea robusta	Tree	Silky oak	It seeds heavily and regenerates strongly after disturbance along riverbanks
Jacaranda mimosifolia	Tree	Jacaranda	Intentionally introduced for its ornamental purposes
Lantana camara	Shrub	lantana	Ornamental shrub. Deleterious to biodiversity and has been reported as an agricultural weed.
Opuntia ficus-indica	Cactus	Prickly pear	Commercially important cactus is widely introduced as a commercial fruit and fodder crop
Pinus patula	Tree	Mexican weeping pine	The major problem of P. patula is its aggressiveness and weediness. It is an invasive species of both fire-climax grasslands and woodland.
Psidium guajava	Tree	Guava	It can form dense thickets which displace native vegetation. Guava production in many countries occurs in smallholdings and gardens
Ricinus communis	Shrub	Castor bean	Toxic seeds. Dense thickets shade out native flora it is able to have negative impacts on biodiversity.
Senna spectabilis	Tree	Whitebark senna	The species is fast-growing and spreads profusely, traits that maximize its capability to

Scientific name	Form	English name	CABI comments, issue for the project
			compete with cash crops and native flora.
<i>Solanum mauritianum</i>	Shrub	Tobacco tree	The weed invades natural forests, forestry plantations, riparian zones, urban open space and various disturbed areas
<i>Tithonia diversifolia</i>	Herbaceous plant	Mexican sunflower	Invade disturbed sites, along roadsides and in ruderal areas near cultivation.

Source: CABI, 2022

4.3 Socio-economic and cultural environment

The Project is an upgrade of an existing infrastructure, the socio-economic context is therefore considering this important project feature where people's livelihood and everyday life are already interlinked with the road in many aspects.

The Project setting is a rural context where people have mainly land-based livelihoods. The most predominant land use is agriculture. At important road junctions, the proportion of casual labor and business-based livelihoods is more prevalent.

The Lusahunga-Rusomo road is classified as a trunk road. As such, it is a high-volume road extensively used by trucks transporting goods on long distances.

At road junctions, small markets have developed where people can stop and purchase food and goods. Truck stops are also present, with shops, guesthouses and restaurants. Street vendors are also selling goods such as vegetables, charcoal and animal products. Important road congestion is common at the end of the road, close to Rusumo and the Rwandans border.

This chapter includes results of baseline data collected and analyzed during the socio-economic survey covering the project affected villages. Various aspects related to socio-economic, cultural, demography, land use, etc. are presented in this chapter.

4.3.1 Social and political organization

The road is located in the Kagera region. Kagera Region is also divided in districts and wards. The road crosses two districts: Ngara and Biharamulo. Four wards are crossed by the road as presented in the next table.

Table 4-9 Administrative division

Region	District	Division	Ward
Kagera	Ngara	Nyamiyaga	Rusumo (rural ward)
		Nyamiyaga	Kasulo (rural ward)
	Biharamulo	Lusahunga	Nyakahura (rural ward)
		Lusahunga	Lusahunga (rural ward)

Nationwide, the administrative structure of the Local government is divided into two categories: The Rural councils and the Urban Councils. The road area falls under Rural Councils category of government administration as shown in the following figure.



Villages are divisions under wards. The road crosses several villages as shown in the following table. In total, the road crosses 12 villages or town centers with settlements with occupy 11.04 km of the total length of the road (12%).

Table 4-10 Main villages and centers along the road

Village name	Chainage	Length of the village/town (km)
Lusahunga	0+000 to 0+800	0.8
Ihigi (or Higi)	2+400 to 2+900	0.5
Nyamalagala	5+100 to 6+100	1.0
Midalo centre	10+300 to 10+800	0.5
Busili Village	13+800 to 15+100	1.3
Ngalambe	27+000 to 27+600	0.6
Nyakahura	31+400 to 32+100	0.7
Nyamakaza	50+700 to 50+900	0.2
Nyabusumo	52+200 to 53+900	1.7
Kasulo	64+000 to 65+000	1.0
Benaco	72+400 to 73+700	1.3
Rusumo	90+000 to 91+400	1.44
Total length of villages crossed by the road		11.04

There are several tribes along the road with more or less similar and shared cultural traditions and customs as well as spoken languages. The tribes include Wahangaza, Wasubi, Wanyambo, Wahaya, Wasukuma, Wangoni, Wajaluo, Wajita, Wachaga and Wanyaturu. The major ones are the Wahangaza, Wanayambo, Wahaya, Waha and Wasubi. Wahangaza are the majority among all tribes and even the majority of people speak Kihangaza and Kiswahili, which is the national language. Due to close relationship

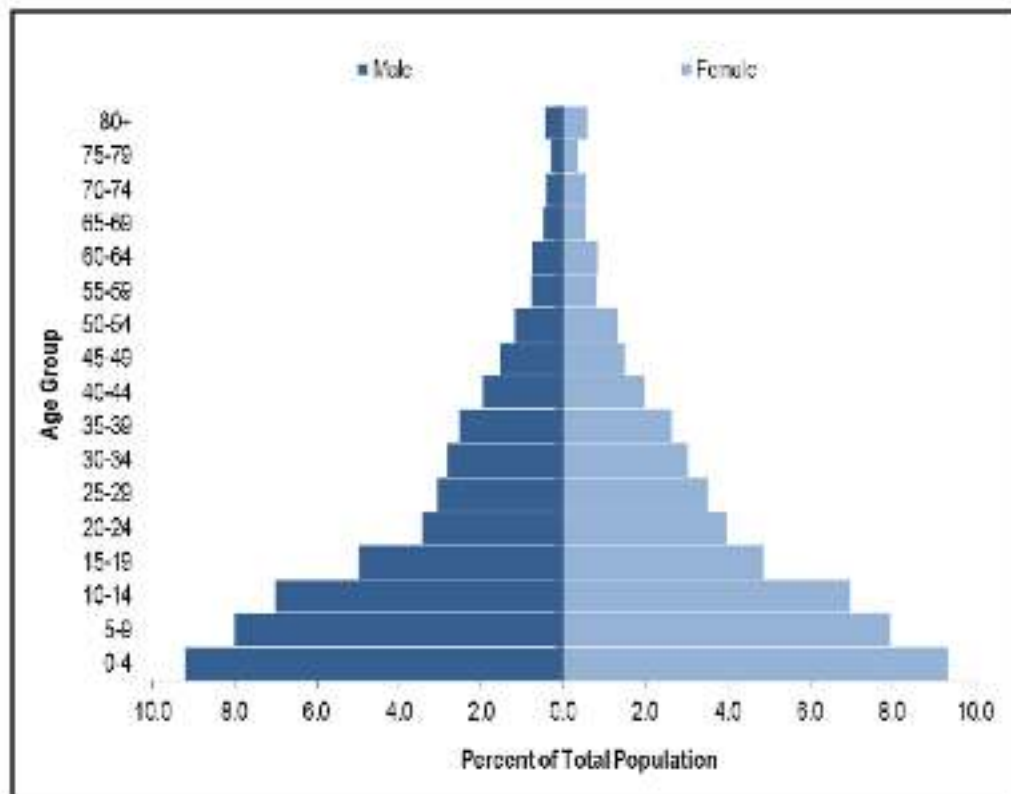
and interaction and cooperation existing among tribes, there are minimal cultural differences between them.

Christianity and Islam are the major religious groups found in the project areas. Under Christianity, there are dominant denominations namely KKKT, Roman Catholic and Anglican. The followers of these religious groups and respective denominations cooperate and participate in different (both informal and formal) socio-economic and development activities. Villages leaders reported that religious contributed to maintain harmony and peace in their project areas and are also useful to channel information to people.

4.3.2 Population distribution and settlement pattern along the road

The population density in the Kagera region is 87 persons per km². It is higher than the mainland average of 50 persons per km². It occupies 3% of the country total area but accounts for 5.6% of its population.

Population age pyramid for the Kagera region in rural areas is shown in the following figure (based on 2012 census).



The last national population and housing census was done in 2012, published data are therefore not up to date (the 2022 census has not been completed yet). However, according to the World Bank data on population growth in Tanzania, an annual increase of its population of 3% took place between 2012 and 2022 (World Bank, 2022). Based on this percentage, the population of the Extended Study area can be estimated as follow.

Table 4-11 Population by ward and density

Ward	2012 population (based on national census)	2022 population estimate based on 3% annual growth	2012 population density (based on national census)	2022 population density estimate based on 3% annual growth
Rusumo (rural ward)	12,925	17,370	68.28/km ²	91.76/km ²
Kasulo (rural ward)	18,432	24,771	29.46/km ²	39.59/km ²
Nyakahura (rural ward)	26,123	35,107	17.96/km ²	24.14/km ²
Lusahunga (rural ward)	37,234	50,039	61.85/km ²	83.12/km ²
Total	94,714	127,288	Average: 44.4/km ²	Average: 59.7/km ²

Settlement pattern along the road is mainly nucleated with houses clustered around the road on both sides.

An estimation of the number of persons that live in the Limited study area is difficult, since the 2012 census only provide the number of people per administrative village and there are certain villages or settlement that are not mentioned. Estimation of the number of persons based on ward population density would underestimate the number of persons, since the population density is much higher along the road than in other areas of the ward.

According to 2012 census, the population per main villages (administrative division) is as follow. The table estimates 2022 population based on an annual population growth of 3%.

Ward	Villages	Population 2012 based on the national census	2022 population estimate based on 3% annual growth
Rusumo (rural ward)	Rusumo	7,211	9,691
Kasulo (rural ward)	Kasulo (which include Benaco)	18,432	24,771
Nyakahura (rural ward)	Ngararambe	9,985	13,419
	Nyabugombe	3,587	4,821
Lusahunga	Kikoma	8,587	11,540

(rural ward)	Lusahunga	7,820	1,051
Total		48,584	65,293

Based an estimate that about two third of these persons live along the road in a 500 meters radius, the Limited study area has a population of about 43,500 persons.

In the Extended study area, which includes Ngara District and Biharamulo District, based on 2012 population census and an annual increase of 3%, there are about 864,867 persons.



Figure 4-19 Typical village center along the road



Figure 4-20 Typical truck stop along the road

The majority of the households have an average size of 1-3 people (2018), whereas the district profile indicates that the average household size is 4.7 persons (2012). This indicates a difference on household size between field findings and district profile,

implying that the size declined with time whereby the average size was 4-7 in 2012 and has dropped to 1-3 in 2018. The reason for this decline is unknown.

Based on social surveys, 73.5% of interviewed households were male headed as compared to 9.4% headed by females, while 10.3% are headed by elders of the family / household and these are likely orphans who have lost their parents. The other 6.8% households are jointly headed by both men and women. With 73.5% of male-headed households it implies that in most cases, power is vested on male which could also mean male-dominance as a result of cultural values.

4.3.3 Social indicators

4.3.3.1 *Housing conditions*

Different building materials used by residents for their houses were observed and confirmed during household interviews.

Findings of social surveys revealed that most of the houses (71.2%) constructed along the road project have earth floors, whereas 22.6% of the floors of the interviewed households were made up of permanent concrete cement. The rest 6.2% were floors made up of tiles. Likewise, the walls of most of the houses (56.4%) are distinctively constructed with permanent materials such as clay burnt bricks / blocks (34%). Apart from burnt bricks there are other building materials used to erect walls of houses such as concrete blocks (37%), mud blocks (14%) and mud block with plaster (6%). The remained 9% are built of reeds/stick.

The roofing materials also varied accordingly among households, though the variation in number among different materials is minor. The highest number of houses is those roofed with corrugated iron sheets, which is 39.1% followed by 28.6% of houses roofed with a combination of corrugated iron sheets, thatch and plastic materials while 24.6% are houses with thatch only. Houses roofed with tiles represent 1.4%.

The majority of houses are solely residential, a small percentage of houses have combined residential and businesses.

4.3.3.2 *Education and literacy rate*

In the Kagera region, adult literacy rate was 74.8 % in rural areas according the 2012 census.

Regarding the level of education reached by social survey respondents in the project area, it was noticed that the majority i.e. 89% had reached the level of primary education, while 2% had attained secondary education and 9% had never gone to school implying illiteracy level of the respondents.

Every project affected village has one or more primary schools. Kasulo Ward has 7 primary schools and 2 secondary schools while Rusumo Ward has 4 primary schools and one secondary school. There are no colleges in the village along the road at the moment.

4.3.3.3 Water supply

According to Kagera Socio-economic profile, 2015, the main sources of water for the rural population in Kagera Region were the rainwater harvesting tanks (50.7 %), followed by springs (18.2 %), shallow wells (15.8 %), piped schemes (8.4 %), bore holes (4.6 %) and rivers (1.9 %).

Generally, people in the project areas access water for multiple uses from different sources of water. According to social surveys, those obtaining water from protected communal source are represent 26.4%, while 24% of households access their water from the river as their sources. Other water sources include traditional wells (18%) and domestic piped connection (19,6%).

The amount of water consumed by each household is dictated by several factors and therefore it varies from a household to another depending on availability, distance to and from the source, size of the family and uses. About one third of the households use 3-4 buckets of 20 liters per day, while another third consumed 4 or more buckets. The last third used 1-2 buckets per day or less than a bucket. During dry period, residents invest a lot of time and energy in searching water instead of engaging in other socio-economic activities or income generation activities.

4.3.3.4 Health services

Biharamulo District has 22 dispensaries and only 5 ward health centers (among 17 wards).

Ngara District has 3 hospitals, 5 ward health centers and 52 dispensaries. Nyamiaga division, that include the two wards crossed by the road, has 2 hospitals, 1 health center and 17 dispensaries.

According to Kagera Socio-economic profile, 2015, in spite of the achievement reached so far in health sector, the Region lags behind in the implementation of the health policy which requires each ward to have a health center and a dispensary in each village.

People in the project areas are subjected to different diseases as mentioned by households and captured during the social surveys. Malaria is leading among the mentioned diseases followed by respiratory problems and stomach problems.

4.3.3.5 Sanitation facilities

Very few households have septic tanks and the most common way of disposing human waste is through pit latrines.

Lusahunga – Rusumo road project passes through a number of rural village settlements and small-town centres of Nyakahura and Kasulo. The majority of the population residing along the road rely on traditional pit latrines as their sanitary facilities. Field findings indicate that 93% rely traditional pit latrines while the remaining 7% rely on improved flash toilets.

4.3.3.6 Domestic waste management

Domestic waste are disposed of by households through various methods, mainly burying, burning and throwing in the open space especially in farms. The vast majority of the households, dispose their refuses by burying in their compounds or nearby, while the others throw their domestic waste in their farm (16.2%).

There are no waste landfills in the Extended study area but only local dumpsites. One of the them is located in Nyarubungo – Biharamulo.

4.3.3.7 Communication

The villages located along the road communicate through various means including private cell phone companies. Network is available in many places with some exceptions.

People in the project area travel by using different means of transport such as mini-buses, taxis, bicycles and motorcycles commonly known as *bodaboda*. Buses are used only transporting for long trips like Ngara to Mwanza and Dar es Salaam. Short trips, that is within the district, people chiefly rely on min-buses, taxis and public motorcycles. People usually do not own cars.

4.3.3.8 Source of energy

Households rely upon different sources of energy for cooking, lighting and or other uses as reported during social surveys.

For cooking, firewood dominates as the major source of energy in the households, which is represented by 44% of the interviewed households. Charcoal is used by 23% and the rest uses a mix of firewood and charcoal (28%). During social surveys, people complained of expensiveness of kerosene, occasional unreliability of electricity and short supply of firewood in small towns.

According to the 2017-18 Household Budget Survey report, Kagera region has the largest percentage of households using firewood as a source of energy for cooking in the country (87,5%) (the country's average is 61%). Charcoal represents 11%. This demonstrates the availability of woodland in the area.

For lighting purposes, about 60% of respondent rely on battery lamp or solar lamp. The use of electricity was mentioned for 19% of respondents. Other sources for lighting included kerosene.

According to the 2017-18 Household Budget Survey report, the percentage of households connected to the grid is 13.9% in the Kagera region. This survey has showed that the main source of energy for lighting is battery lamps (30%) followed by kerosene lanterns (17,5%), solar lanterns (22%) and electricity (13%) other sources of energy are minor.

In Biharamulo district, in 2015 there was only 3,127 domestic customers using Tanesco electricity and in Ngara only 720 domestic customers.

4.3.4 Livelihood and economic activities

In the Kagera Region, 79.4% of people are farmers as their main livelihood activities according to the 2012 population census. Agriculture is dominated by subsistence agriculture, but it is also the main source of cash income for people. After crop cultivation, other economic activities include livestock keeping, trees cultivation for firewood, charcoal, and timber production, honey and beeswax production, tourism, small and medium scale industries activities.

There are no large-scale industries in the Extended study area. Small scale industries are found in the two districts, these are mainly related to food processing and grain milling.

According to the National Survey on household's income and expenditure in 2011/2012, Biharamulo is the second poorest district in Tanzania.

About 90% of the population in Biharamulo and Ngara districts depends largely on agriculture for subsistence. The principal food crops grown include bananas, cassava, sweet potatoes, maize, beans, groundnuts, sorghum, and finger millet. The main cash crops are coffee, cotton, and tobacco. The average farm size per household ranges from 0.5 to 2 Ha. Banana is mainly grown in Ngara district while cassava is mainly grown in Biharamulo. In addition, paddy is grown in Biharamulo (in wetlands). Banana and beans are both the major food and cash crops grown in Kagera Region. Other cash crops which contribute significantly to the regional economy are coffee and tea. Cotton, tobacco, sugar cane, finger millet, millet, vanilla and groundnuts are relatively minor sources of livelihood to the residents of Kagera Region.

Livestock holding is an important activity and more prevalent in Biharamulo than in the other rural districts of Kagera. About 54 percent of households own large livestock and/or small livestock (Biharamulo District Investment Profile, 2016). Livestock is mostly owned by individual households.

Agriculture is the source of income of the majority of the interviewed people during social surveys. Some people are engaged in small scale businesses such as guest houses, restaurants, shops, charcoal and vegetable stalls operating at village centers along the project road. Given the location of villages along the road, many undertake both agriculture, individual pine trees plantations and small businesses. A minority of people depend upon formal employment as their major sources of income. Livestock keeping is also an important activity along the road which comprised of cattle, goats, sheep, pigs, donkeys and poultry. Livestock grazing along the road is often observed.

Fishing is not an important activity, given the relatively small size of watercourses.

Another important feature of the area is the presence of numerous small-scale pine and eucalyptus plantations found along the road. These provide additional source of incomes.

According to the 2017-18 Household Budget Survey, 7.4% of households have at least one member with a bank account in the Kagera region. This is below the national average of 12%

4.3.5 Community use of the road and safety aspects

People living along the road are using it in various ways, either as a source of livelihood to sell products alongside the road or for their personal mobility to access public services, to go to work, to purchase goods, to travel to other villages. The presence of the road has provided an economic boost and has improved their quality of life. On the other hand, the road is also leading to nuisances and safety risks for communities.

The following table shows the typical number of pedestrians and cyclists that use the road to travel based on the Road Safety Screening and Appraisal Tool (RSSAT) report (data are from counts made in 2021). The first table shows the villages with pedestrian walkways and the second table the villages without any pedestrian walkways. These data show the significance of the road for these non-motorized means of transport.

Table 4-12 Pedestrians and bicyclists counts in village with pedestrian walkways

Village/center name	Hourly flow		Daily flow	
	Pedestrians	Cyclists	Pedestrians	Cyclists
Lusahunga	157	47	1884	564
Nyakahura	304	115	3648	1380
Rusumo primary school	93	4	1116	48
Benaco center	221	51	2652	612
Rusumo one-stop border post	265	5	3180	60

Table 4-13 Pedestrians and bicyclists counts in village without pedestrian walkways

Village/center name	Hourly flow		Daily flow	
	Pedestrians	Cyclists	Pedestrians	Cyclists
Ngalambe	32	34	384	408
Busili	163	35	1956	420
Midalo center	383	249	4596	2988
Nyamalagala	286	118	3432	1416
Kasulo	130	40	1560	480

Along the existing road, most villages or centers do not have any walkways for pedestrians as shown in the following table. Absence of walkways represents a safety hazard to pedestrians and bicyclists especially given that the road is mainly use by trucks transporting merchandise.

Table 4-14 Villages with and without walkways

Village name	Chainage	Length of the village/town (km)	Presence of a pedestrian walkway
Lusahunga	0+000 to 0+800	0.8	Yes
Ihigi (or Higi)	2+400 to 2+900	0.5	No
Nyamalagala	5+100 to 6+100	1.0	No
Midalo centre	10+300 to 10+800	0.5	No
Busili Village	13+800 to 15+100	1.3	No
Ngalambe	27+000 to 27+600	0.6	No
Nyakahura	31+400 to 32+100	0.7	Yes
Nyamakaza	50+700 to 50+900	0.2	No
Nyabusumo	52+200 to 53+900	1.7	No
Kasulo	64+000 to 65+000	1.0	No
Benaco	72+400 to 73+700	1.3	Yes
Rusumo	90+000 to 91+400	1.44	Yes
Total length of villages crossed by the road		11.04	



Figure 4-21 Midalo village



Figure 4-22 Nyamalagala village

In addition to motorized transportation and non-motorized road users, road users include street vendors, farmers who are travelling with donkeys and livestock owners crossing the road.

During fieldwork for the ESIA, an in-depth interview was done with Police officers. They have reported that the traffic flow of goods, vehicles, and passengers increases between June and October (dry season) when secondary roads are passable. It is also the harvesting season. The situation changes in November to April (rainy season) where there is a decline in the traffic flow of vehicles and passengers due to poor and impassable secondary roads. In this period, many traffic flows and public transport operations becomes low.

Consulted stakeholders in the framework of the ESIA pointed out that rate of accident associated with dense population is very high along the road, most of these accidents are caused by poor road conditions (rutting), steep or gentle slopes with curved corners which reduce visibility. Also, stakeholders mentioned that men aged between 25-45 years are the most common victims and more vulnerable to road accident than females because the majority of them is involves in business activities (paddy, maize, tomatoes, onions, etc.), and transfer between districts are more frequent for males than females.

According to a peer reviewed scientific article, road traffic injuries in 2014 in Tanzania were mainly caused by motorcycles (53.4%) followed by four wheel vehicles (42.5%), and bicycles (3.7%). In terms of injuries and fatalities, drivers represented the majority of victims brought to a hospital (35.4%), pedestrians represented 25.5% and the rest (1.1%) were unknown (Boniface et al., 2016). Helmet and seat belt use among motorcyclists and occupants of vehicles were recorded in 43.3% and 24.4% of patients respectively. Alcohol consumption was reported in 21.7% of patients. The vast majority of victims admitted to hospital emergency are males (76.6%). This study included low-volume rural

roads (Boniface et al., 2016). The Global Road Safety Facility (GRSF) from the World Bank Group (2022), provides road-fatality estimates for the country. GRSF estimated that four-wheel vehicle users represent 45% of fatalities, pedestrian 42%, motorcyclist 7%, cyclist 6% and other 1%. National seatbelt, drink driving and helmet laws does not require for back seat passenger to put a seatbelt and there is no age restriction for motorcycle passengers.

In terms of road safety, Tanzania’s position in the region in terms of fatality rates per habitants is similar to Kenya and Rwanda as shown in the following table.

Table 4-15 Road safety statistics

Country	2016 WHO Estimate d Road Fatalities	2016 GBD Estimate d Road Fatalities	2016 WHO Estimated Fatality Rate/100,000 pop.	2016 GBD Estimate d Fatality Rate/ 100,000 pop.	% Trend in Fatality Rate/100,000 (2013-2016)	Motorization Registered Vehicles/100,000 pop.
Tanzania	16,252	5,496	29.2	10.46	-3.6%	3,893
Kenya	13,463	5,416	27.8	11.47	-6.7%	4,536
Rwanda	3,535	2,623	29.7	21.48	-5.6%	1,512

Source: GRSF, 2022

According to the road Safety Screening and Appraisal Tool (RSSAT) report (2021), accident data for the Lusahunga-Rusomo road were collected from the Traffic Police in order to identify accident blackspot areas. In 2021, along the road there was 5 fatalities reported from the Traffic Police, including one motorcyclist and one pedestrian and 3 occupants of a vehicle.

4.3.6 Land tenure

The system or method of accessing and owning land differs from one household to another depending on the availability, location, leadership of the person and affordability. Multiple land tenure systems exist across the districts. Customary land tenure and statutory right of occupancy are the dominant forms. Findings show that there are three ways of obtaining land for multiple uses. The first system consists of 59% who acquired their land by purchasing from the private individuals or sellers. Purchasing is followed by inheritance from the ancestors which is 27% of the household respondents. 14% of the respondents were allocated the land by village government. Many villagers that have purchased land from other owners are immigrants from other areas of the country and neighboring countries of Rwanda and Burundi.

4.3.7 Ecosystem services

In the Kagera Region, the number of household practicing irrigation is increasing. The main source of water used for irrigation is from rivers (37% of households with

irrigation), followed by canals (33%) and wells (15%). Dams and lakes as a source of water for irrigation are very few (7% and 5% respectively). Hand bucket is the most common means of getting water for irrigation followed by hand pumps. In Biharamulo and Ngara Districts, flood irrigation is also common.

Utilization of miombo woodlands is often unsustainable and inefficient.

4.3.8 Gender aspects

Literacy rate is still lower amongst women with 72.5%, in comparison to men with 81.5. However, since the last census of 2002, the gender disparity is getting smaller between men and women.

In the agricultural sector, men usually spend less time on the field as women but are still regarded as owner of the farms.

Male dominance is still prevailing due to traditions and customs which are perpetuated through socialization and culture, where patriarchal system is dominant. Gender imbalance is manifested in ownership of properties / assets such as land, houses, heading of the families. It was also found out during social surveys that division of labor is based on gender as well as age, whereby women are overburden by household chores as well farming activities.

During consultations with communities, it was revealed that gender inequality still persists among all tribes due to cultural elements which perpetuate the male dominance system along the project area. The existing prohibitive traditions and customs tend to favor men and this is passed from generation to another through socialization. It was noted that some of the women are denied of their rights, deprived of the right to own resources / assets like land and houses and are disempowered in terms of making decisions. There are also cases where some men want to disinherit women after death of their husbands and when women resist it ends up into conflicts.

However, local councils have been conducting a number of programs at village, ward and district levels aiming at awareness creation, correction of gender related adverse custom, norms and values. Awareness emphasizes on people's rights, gender equity, reviews of bylaws and interpretation of regulations governing gender issues as well as mainstreaming gender issues in council development plans. It has been learnt that changes are taking place because of the efforts been taken by the government and CSOs to sensitize communities on gender equality and empowerment of women in leadership, economic activities, ownership of properties.

4.3.9 Vulnerable groups/persons

In the Project area, there are different forms of vulnerabilities, and some may be aggravated by the rehabilitation work. One of the project-induced vulnerability is the resettlement of vulnerable persons. The RAP has identified vulnerable persons:

- Female-headed households or child headed households. In the Kagera region, 32 % of all private households are headed by females.

- Elderly persons.
- The widows.
- Persons with disabilities.
- Persons lacking any legal or other claim to the land they occupy and/or use.
- Person living below the poverty line.

Project-induced vulnerability can take various forms. For example, street vendors that sell their produce are often vulnerable when roads are rehabilitated because they may temporarily lose their access to their customers to sell their goods. After road rehabilitation, street vendors may be permanently impacted when law enforcement regarding access to the road for vendors become more stringent (for safety reasons). In the Kagera region, street vendors represent about 7% of the active population in urban centers (Kagera Region, Basic Demographic and Socio-Economic Profile, 2016).

Persons living with disabilities may also see their vulnerability aggravated during rehabilitation work, when access is hindered by work sites. In the Kagera region, 8.35% of people live with a disability according to the 2012 population census. Lastly, persons living with disabilities have lower access to employment opportunities.

The 2011/12 Tanzania Household Budget Survey has shown that poverty rates increase with household size and female-headed households are more likely to be poor compared with male-headed households.

4.3.10 HIV and AIDS situation

During social surveys, HIV & AIDS epidemic is among the diseases which was mentioned by a small percentage of households (2 out of 117 households that were surveyed). Kagera region has a HIV prevalence rate of 6.5%, which has increased from the previous surveys. The national prevalence rate is 5.0% (THIS, 2019). During public consultative meetings it was noted that people are aware about the problem of HIV and AIDS epidemic, though some pointed out that they missed comprehensive knowledge about the pandemic.

In Tanzania, 60.6% of HIV positive persons are aware of their HIV status, well below the UNAIDS' goal of 90%. Women have higher HIV incidence and prevalence compared to men. Annually, there are two new HIV infections of women for each new infection of men (THIS 2019).

Factors attributed to the spread of new HIV infections were stated during consultation meetings, which comprised of unfaithfulness among partners, low income / poverty versus wealth, resistance to test health status among the population, ignorance, excessive alcohol taking, and negligence and unsafe sexes. Parking centers of trucks crossing the borders (Rusumo and Kabanga) were cited as areas where spread of HIV infections takes place due to interactions of different people with different behaviors.

4.3.11 Benchmark assessment of child labor and forced labor

In Tanzania, according to ILO (2020), child labor is concentrated in agricultural work within the family unit. In the construction sector, a small percentage of child labor is also found in stone quarrying. Because of the hazardous nature of this work, such as breaking rocks to produce gravel, it is considered as one of the worst forms of child labor. Another sector that employs children, which may interact with the project, is street work including vending.

Children in Tanzania are subjected to the worst forms of child labor. Tanzania is a source, transit, and destination country for child trafficking for forced labor and commercial sexual exploitation. Girls are often subjected to child trafficking, including for domestic work or commercial sexual exploitation. This frequently occurs in construction areas. Although trafficking of children primarily occurs within Tanzania, children from Burundi and Rwanda are brought into Tanzania for forced labor (ILO, 2020).

4.3.12 Benchmark of poor labor conditions

As for all major construction activities, it is expected that unskilled workers will be drawn from local project-affected communities. In Tanzania, hiring of unskilled workers from communities is often associated with informality. The construction sector heavily depends upon informal construction workers (Gervas et al., 2022). Even though, informal construction activities are important in providing employment and income to project-affected communities, a significant number of workers work without contracts (are not on the payroll of the contractors), without pensions and without any health insurance benefits. The level of informal sector earnings is also often lower than that of the formal sector (Mkenda and Aikeaeli, 2015).

In Tanzania, the management of OHS on construction sites is also an area of concern and management commitment to safety is an issue. Poor OHS practices and the precarious nature of informal work in the construction sector limit workers power to request enforcement of OHS, mainly because of the fear of losing their jobs. Moreover, informal workers have insufficient knowledge and awareness on OHS risks. A study also revealed that in Tanzanian work site, managers often do not provide adequate HS training prior to employment onsite, safety equipment is not adequately supplied, and workers have insufficient rest time (Gervas et al., 2022).

4.3.13 Benchmark assessment of gender-based violence

According to the World Bank Guidance Good Practice Note on Gender-Based Violence (2018), GBV is an umbrella term for any harmful act that is perpetrated against a person's will and that is based on socially ascribed gender differences. GBV includes acts that inflict physical, mental, sexual harm or suffering; threats of such acts; and coercion and other deprivations of liberty, whether occurring in public or in private life. GBV arises when consent is not voluntarily and freely given. GBV can take different forms:

- Defilement, child pregnancies and early marriages, trafficking and child labour;

- Workplace sexual harassment;
- Physical violence;
- Emotional abuse (such as humiliation, controlling behaviour, degrading treatment, insults, and threats);
- Economic abuse and the denial of resources, services, and opportunities (such as restricting access to financial, health, educational, or other resources with the purpose of controlling or subjugating a person);
- Sexual exploitation which is an actual or attempted abuse of a position of vulnerability for sexual purposes, including profiting monetarily, socially or politically from the sexual exploitation of another;
- Sexual abuse which is defined as the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions.

GBV is a growing concern for lenders and the Tanzanian government and is becoming the centre of attention of many policies and country wide strategies. Due to the presence of large work forces made of men with paid wages, many projects such as road projects represent a risk that prevailing GBV may worsen.

According to the World Bank, in Tanzania, 40% of all women aged 15-49 years have experienced physical violence, while 17% have experienced sexual violence. Of women aged 15-49, 44% have experienced either physical or sexual violence by an intimate partner. Spousal violence prevalence is highest in rural areas, averaging 52% and almost 30% of girls experience sexual violence before the age of 18.

In the Project area, incidents of GBV are substantial. Forced and early marriage of girls is a common cultural practice. School enrollment and retention rates among girls in the project region are exceptionally low as a result of their domestic responsibilities, child marriage, teenage pregnancy, lack of money for school fees, long distances to schools, and lack of sanitation facilities and supplies among other factors heightening GBV risks.

There are no centers or service providers for assistance to women such as one-stop centers in villages crossed by the road project.

4.3.14 Cultural heritage

In the project area, there are no documented physical cultural properties (PCPs) observed or reported during the socio-economic survey or reported in the bibliography.

5 STAKEHOLDER CONSULTATIONS AND PUBLIC INVOLVEMENT

5.1 Introduction

This Chapter presents all the stakeholders identified, consulted and elaborates on the main issues and concerns raised by these stakeholders. Detailed stakeholder consultative meetings were carried out as an integral part of this EIA study in compliance with the EIA and Audit Regulations 2005, EIA & Audit (Amendment) Regulations 2018, and the World Bank ESS10 (Stakeholders Engagement and Information Disclosure). Stakeholders are persons or groups who are directly or indirectly affected by a project, as well as those who may have interests in a project and/or the ability to influence its outcome, positively or negatively. In this project, emphasis has been placed on the involvement of the key stakeholders, their fundamental concerns and incorporation of the stakeholders' issues in the decision-making process and entire project life cycle

Identification of the relevant stakeholders as well as conducting public consultation was main aspect of ESIA study. Public consultation was one of the ways of obtaining relevant information related to the study. Public consultation helped in identifying the issues and concerns related to the project. The consultations were done mainly to technocrats in Ngara District Council, Biharamulo District Council, as well as TANROADS (Kagera Regional office). Public consultative meetings in the villages were conducted to probe for the social implications of the project.

5.2 Objective of Consultation and Public Participation

The overall objective of the consultation process was to solicit concerns, opinions, views, and attitudes of the stakeholders; disseminate project information and to incorporate the views of stakeholders in the project design and operation including environmental and social mitigation measures, management and monitoring plans. The specific objectives (aligned with WB-ESS10 and national legislative requirements) of the consultation process were to:

- Ensure the community and other key stakeholders are aware of the project process and operations;
- Reduce problems of institutional coordination; Identify local leaders with whom further dialogue and be continued in subsequent stages of the project;
- Gather the information needed to complete the assessment;
- Improve project design and, thereby, minimize conflicts and delays in implementation;
- Obtain stakeholders' inputs into the scope of the EIA, impact identification, potential sources of cumulative impact and impact mitigation;
- Solicit stakeholders' questions and concerns from stakeholders and ensure these are addressed in the EIA;
- Increase long term project sustainability;
- Reduce problems of institutional coordination; and
- Incorporate the stakeholders' concerns in the project development and life cycle.

5.3 Stakeholder Identification and Engagement Process

In compliance to World Bank ESS10 (Paragraph 14), EIA & Audit Regulations 2005 (Part XIV, Section 178-(1-5)), public consultation for the Lusahunga – Rusumo road project entails an inclusive, culturally appropriate and an on-going transparency process which involves sharing information and knowledge, seeking to understand the concerns of key stakeholders and building relationships based on collaboration. It allows stakeholders to understand the risks, impacts and opportunities of the Project in order to achieve desired positive outcomes. The public participation process was designed to provide information to and receive feedback from stakeholders for use throughout the EIA process and overall road project phases, thus providing TANROADS and other interested parties with an opportunity to raise concerns and make comments and suggestions regarding the Lusahunga – Rusumo road project.

The identification process was crucial for ensuring presence of representative range of stakeholders, particularly those most vulnerable and directly affected, which are incorporated within the EIA engagement strategy. Particular attention was paid to the identification of vulnerable people which could be directly affected by the project.

The main stakeholders were identified among and drawn from categorical groups of project proponents, relevant administrative and regulatory authorities, agencies, project beneficiaries, PAPs and other interested parties. The relevant project beneficiaries considered to be the members of the urban and rural communities along the road who will use the road or benefit from the use of the road.

Before conducting ESIA, letters were sent to the TANROADS (Kagera Regional office), Ngora District Commissioners, and Ngora and Biharamulo District Executive Directors. These letters were sent during scoping study. Apart from giving the project information in brief, the client requested the above-named government leaders to inform their respective Village Executive Officers about initiation of the project activities.

Private sector was equally considered during consultations with stakeholders because of its importance and socio-economic benefits associated with improved road. The invitation to public consultation meetings per each village targeted all groups and during the moderation of the meetings all sectors were covered, like transportation, businesses, farmers, vulnerable groups, etc. These are reflected in the summary tables on public consultations.

5.4 The Consultation Process

An environmental and social safeguards team participated in the review and updating of the ESIA in 2018, and the same Team since undertook additional consultations in the most recent updating of this ESIA in May and July 2022. Consultations were held in all four affected wards (Lusahunga, Nyakahura, Kasulo, and Rusumo), including eight villages (Lusahunga, Kikoma, Busiri, Ngararambe, Nyabugombe, Rwakaremela, Mshikamano, and Rusumo) by the TANROADS team. District officials in Biharamulo and Ngora, utilities such as TANESCO, TTCL, RUWASA, and TARURA, and Burigi-

Chato National Park officials were consulted, and women, youth, and persons with disabilities were consulted at the community level. Technical experts involved included Environmental Specialists, Sociologists, Health and Safety Experts, Environmental Engineers, and Highway Engineers. The results of these consultations are found in Appendix II. The team also conducted a desk review, site verification, public consultation, and final updating of the ESIA to incorporate the information collected.

Public consultations were held along with the fieldwork targeting specific stakeholder groups. During updating of this ESIA in 2018 and May to July, 2022 new consultations were done with some 523 stakeholders (46% male and 54% female) in affected communities in 4 wards and 8 villages along the road, including 124 street vendors and 237 affected households. Household interviews and consultations also included women and vulnerable persons. No local NGOs/CBOs were identified along the road during the consultation process. Other stakeholders consulted include the Local Government Authorities of Biharamulo and Ngara, utility companies, wildlife and TFS authorities, and TARURA.

These consultations included public meetings, key informant interviews, and focus group discussions. In-depth interviews were held with staff members/key informants from government, private institutions, and agencies at the regional and district levels, depending on the type of data required. Interview further targeted project beneficiaries and PAPs residing in the vicinity of the proposed project route. Public meetings were held at community level in several areas in and around the project footprint with the assistance of Ward and village/mtaa leaders. Data collected during these public meetings included data on the particulars of the community members and their opinions on the proposed project, following a checklist of guiding questions/themes. Consultations with local communities included women, elderly persons, and other members of vulnerable groups, to inform them on the project and record their views for incorporation into the project development process. The discussion allowed the community members to present their views and preferences with regard to the proposed project, as part of the identification of impacts and development of mitigation measures. The stakeholder views and opinions collected are summarized in Appendix II of this Report. TANROADS will continue to undertake consultations with project affected communities on a regular basis throughout the project cycle.

5.4.1 Approach and Methodology

The aim of the consultations was to inform key stakeholders on the proposed project and obtain key information and feedback from them. Specific aims were to:

- Increase long-term project sustainability and ownership;
- Strengthen institutional coordination;
- Provide information on the project to the concerned communities;
- Obtain information on project risks and impacts, on the affected persons' sources of livelihood and living standard for incorporation into the design of mitigation measures in the ESMP and RAP;

- Register the views, concerns, and opinions of the affected population and their representatives on the project and their preferred mitigation measures; and
- Identify local leaders with whom to maintain further dialogue in subsequent stages of the project.

The modes of consultation applied during the survey included:

- One-on-one interviews with selected informants, (e.g., DC, DED, TD, MD. Planners, Education Officers, Livestock Development Officers, Agricultural Extension Officers, Community Development Officers, Water Engineers and District Engineers); and
- Meetings with Local Government Authorities and villagers (Lusahunga, Ngarambe, Nyabugombe, Kasulo, and Rusumo).

The agenda for these consultations included the following:

- Presentation of the Project;
- Presentation of the proposed road (using maps);
- Definition of the Regional/District institutional framework;
- Discussion of previous experience along the road corridor with respect to compensation eligibility criteria and entitlement packages;
- Obtaining from authorities their socio-economic concerns and perceptions regarding the proposed road; and
- Discussion of the the role of authorities in public information dissemination, monitoring and management plan.

Courtesy Call and Consultations with Local Officials

This included consultations with regional, district, and ward officials, as well as the development of a tentative schedule for conducting public consultation meetings in project affected villages for Ngara and Biharamulo districts.

Household interviews

The enumerators administered household interviews to acquire relevant baseline data, both quantitative and qualitative, from communities in the project areas via tailored questionnaires. A total of 117 households were interviewed during the updating of the ESIA in 2018 and 45 during updating in 2022. The total number of households surveyed was 162. Appendix II includes the minutes and list of consulted stakeholders.

Public Consultations

Stakeholder consultations were conducted in three phases. Phase One was conducted in 2014 during the preparation of the initial assessment, Phase Two in 2018, and Phase 3 in 2022. Field activities were preceded by visits of the SIA team to all villages for introductions, briefings on project preparation, and public consultation meetings and household questionnaires administered in each village. The leaders (VEO and Chairman)

of each village were consulted to confirm the timing and venue of public meetings. The SIA team used this as an opportunity to collect secondary data from each village using a dedicated form designed for that purpose.

Public consultation meetings were conducted in all villages along the project road. During the meetings, key concerns, issues, and suggestions were recorded from community members. Questions related to the proposed project were raised and responses provided. Minutes of the meetings were recorded, lists of attendance taken and stamped by village authorities, and data collected for use in the updating of this Report.

Stakeholder consultation and engagement are a continuous process for TANTIP and further consultations will be conducted by the Contractor, Supervising Engineer, and PIT safeguard experts.



Figure 5-1 Public consultation meeting and questionnaire



5.5 Project information and public disclosure

In compliance with World Bank ESS10 and EIA and Audit Regulations, 2005; disclosure of relevant project information helps affected communities and other interested

stakeholders understand the risks, impacts and opportunities of the project. TANROADS is required to provide affected communities and any other stakeholders with access to relevant information. During consultative meetings and discussions, the following details were further clarified: purpose, nature, and scale of the project; duration of proposed project activities; potential opportunities etc. In this regard, a representative from TANROADS - Kagera Region accompanied the team in order to assist in clarification of issues that are beyond Consultant's reach.

The WB ESSs 1 and 10 require that before a sub-project is approved, the applicable documents (ESIA and RAP) must be made available to the public for review at a place accessible to communities and interested parties (e.g. at a district council office, relevant environmental authority) in a form, manner, and language they can understand. This allows the public and other stakeholders to comment on the possible environmental and social impacts of the project. It also helps the appraisal team to strengthen the frameworks as necessary, particularly measures and plans to prevent or mitigate any adverse environmental and social impacts. Toward this end, this ESIA report will be publicly released through the World Bank's and TANROADS websites and in public locations in TANROADS responsible offices as per World Bank's Access to Information policy.

Table 5-1 Stakeholders consulted

SN	Stakeholder type	Stakeholder/Institution	Names & Position	DATE
1.	Government MDAs	Tanzania National Roads Agency (TANROADS), Kagera	Eng. Daniel Kindole (<i>Regional Manager-TANROAD, Kagera</i>)	13/07/2022
		Tanzania National Parks Authority (TANAPA) - Ruaha National Park	Matabarwa Mgendi (<i>Ag. HRAO</i>)	13/07/2022
2.	District Authorities	Ngara District Council	Mr. Omary J. Mwangama (<i>Ag.MD</i>)	13/07/2022
		Biharamuro District Council	Mr. Robert M. Masunya (<i>DED</i>)	15/07/2022
3.	Utility Authorities	Tanzania Telecommunications Corporation (TTCL)	Eng. Ekael S. Manase (<i>Regional Manager</i>)	16/07/2022
		Tanzania Electric Supply Company Limited (TANESCO)	Eng. Eliseus J. Mhereva (<i>Ag. Regional Manager</i>)	16/07/2022

SN	Stakeholder type	Stakeholder/Institution	Names & Position	DATE
		Water Supply and Sanitation Authority (WASA)	Mr Gilbert Kayange (MD/IRUWASA)	16/07/2022
4.	Villages, <i>Mitaas</i> , hamlets and settlements crossed by the project road	Rusumo	Yoneck Eliah (VEO)	16/05/2022
Fedrick Fanula (Chairman)			13/05/2022	
Annet Bigramungu (F) (Member)			14/05/2022	
Grace Mathias (F) (Member)			14/05/2022	
Rosemary Rwechungula (F) PAPs			14/05/2022	
Rehema Ramadhani (F) PAPs			14/05/2022	
Nisaan Fugutilo (Hamlet Chairman)			15/05/2022	
Nyabugombe		Joseph Kalinga (VEO)	13/05/2022	
		Maria Karogobe (F) (Member)	13/05/2022	
		Mariam Laurante (F) (Member)	13/05/2022	
		Stela Kinyunyu (Member)	19/07/2022	
		Kibashir Shalem (Member)	19/07/2022	
Kikoma		Ibrahim A. Mbeju (Village Chairman)	13/05/2022	
		Leonard Mkwegange (Hamlet Chairman)	13/05/2022	
		Yohanesi Kipilipili	17/05/2022	
Nyakahura		Rashid Maliya (Chairperson)	17/06/2022	
		Atilio Mlilapi (VEO)	18/05/2022	
		Asha Abdalah (F) PAPs	18/05/2022	
		Yakobo Issa (M) PAPs	18/05/2022	
		Yasmin Y. Osmani	18/05/2022	

SN	Stakeholder type	Stakeholder/Institution	Names & Position	DATE
			Lusia Sylivesta (F) PAPs	18/05/2022
			Aulenia Molice (M) PAPs	19/05/2022
			Viceory Mpimika (<i>Member</i>)	19/05/2022
		Kasulo	Daima Luvanda (<i>Village Chairperson</i>)	19/05/2022
			Pendo Methuga (<i>F</i>)	19/05/2022
			Editha Japhet(F) PAPs	19/05/2022
			Angelina Mgisha (F) PAPs	19/05/2022
			Oliver Obeid (M)	19/05/2022
			Janneth Rwethuguru (F)	19/05/2022
			Pendo Methuga (<i>F</i>)	19/05/2022
			Editha Japhet(F) PAPs	19/05/2022
			Charles Mbena (<i>VEO</i>)	19/05/2022
			Jacob Mbogela (<i>Member</i>)	16/05/2022
		Ngararambe	Onam W. Mgeni (<i>Chairperson</i>)	16/05/2022
			Loyce G. Cheyo (<i>VEO</i>)	18/07/2022
			Rehema Ramadhani (F) (<i>Member</i>)	18/07/2022
			Zamaradi Idd (F) (<i>Member</i>)	18/07/2022
		Nyabugombe	Levy Tengwa (<i>VEO</i>) (<i>Member</i>)	18/07/2022
			John Samson (F) (<i>PAPs</i>)	18/07/2022
			Elizabeth Isack(F) (<i>Member</i>)	18/07/2022
			Benadetha Razaro (F) (<i>Member</i>)	18/07/2022
			Mika Sadock (M) PAPs	18/07/2022
		Busiri	Zakayo Njogolo (<i>Member</i>)	18/07/2022
			Maria Karogobe (F) (<i>Member</i>)	18/07/2022

SN	Stakeholder type	Stakeholder/Institution	Names & Position	DATE
			Mariam Laurante (F) (<i>Member</i>)	18/07/2022
			Remigius Daudi (M) (<i>Member</i>)	18/07/2022

5.6 Issues Raised in the Consultative Meetings

The table below constitutes a wide range of issues raised by stakeholders during interviews community members during public consultation meetings. Concerns specifically raised by women are shown in bold.

Table 5-2 Negative Issues raised during public consultative meetings

SN	Village / Institution	Type of issue per village - Negative	Explanation on the issue / Concern
1	Regional level (RAS)	Selection and collection sites of building materials	There have been complaints from communities that contractors collect materials (sand, quarries, stones, etc.) from individual land without compensating owners of such sites. This practice should be looked at by responsible authorities wherever necessary be corrected.
		Diversions during construction	During construction, contractors construct temporary diversions which pass through individuals' farms, residential or plots. People claim that normally, they get no compensation, despite of destruction of their farms or crops therein. Affected persons should be compensated for such losses.
2	Biharamulo District Council	Occurrence of road accidents	Road bumps, marking and road signs should be put in schools and the village center. The sharp corners in the existing roads should be minimized or removed to have a distance and open view for users
		Open borrow pits	Experience shows that when contractors are through with construction they leave without refilling the borrow pits. The open borrow pits shall be refilled and planted with trees to restore the environments.

SN	Village / Institution	Type of issue per village - Negative	Explanation on the issue / Concern
		Delay in compensating affected people	<p>It is common that project-affected-persons are not paid timely, there is always delay and if delayed no additional amount is added or no interest rate based on fixed commercial rate is calculated to pay PAPs, which is unfair to them.</p> <p>The law states that compensation has to be effected 6 months after approval and that upon delay extra money has to be paid to the affected people. However, additional funds are not being provided as per law and people end up losing their rights</p>
		HIV infection and AIDS pandemic	<p>It happens that some project gives pregnancies to local women where campsites are located close to community residential areas.</p> <p>It is good to provide HIV and AIDS preventive education to project staff. The billboards, awareness materials and condoms should be distributed during project implementation</p>
		Air Pollution	<p>There is expected air pollution especially fine dust during construction and in the diversion roads. Watering should be done frequently to suppress dust as there are many complains from the past projects.</p>
		Occupational and safety of workers	<p>Workers has to put on personal protective gears especially hard mats, gloves, boots, dust mask, reflectors etc. to avoid occupational injuries</p>
		Solid waste management	<p>There is a lot of solid wastes that are always produced by the project construction activities. These wastes have to be collected and transported for disposal to the approved dumpsites (Nyarubungo dump site) in Biharamulo. Littering along the project should be avoided.</p>
		Destructions of water sources	<p>There are a number of shallow wells along the project road which may be disturbed during construction. Whenever disturbed it has to be compensated. Generally, all disturbed water</p>

SN	Village / Institution	Type of issue per village - Negative	Explanation on the issue / Concern
			infrastructures should be maintained the soonest.
		On the natural calamities like earthquakes	The region has the history of occurrence of earthquakes, the design of the road should take into consideration this issue
		Unwanted pregnancies	It is well known that the workers move to site without their partners. This may lead for them to have unfaithful relation with the residents especially school girls that may result to unwanted pregnancies. TANROADS should see a way to combat this like providing awareness in the schools
		Denied access to public services areas and individuals	It has been observed in other projects of the same nature that the access road to the public services are destructed without reconstruction. This project should make sure that access is provided to the community
		Lack of areas for the infrastructures that cross the road	The project should provide enough service ducts for the infrastructures that crosses the road like water pipes.
3	Ngara District Council	Resettlement and Compensation	<p>Valuation of properties should involve the district authorities because they are aware of the ownership of land;</p> <p>There is also a problem of over expectation on compensation as some people were compensated directly by the word bank for the Rusumo power station project. People should be educated on the procedures of valuation exercise;</p> <p>The village leaders should be involved at every stage of the project;</p> <p>Vulnerable peoples will be assisted by provided with transport during relocation, assistance through LGAs to access the alternative land and houses.</p> <p>Logistic to build the new houses or purchasing the</p>

SN	Village / Institution	Type of issue per village - Negative	Explanation on the issue / Concern
			<p>new plots.</p> <p>Training on SMEs and agribusiness</p> <p>Saving and banking facilities on receiving funds</p> <p>Any relevant information regarding smooth relocation from the RoW.</p>
		Conflict of Laws	The Urban Planning Act of 2007, specifies that all highways that connect two countries should have 70m RoW, while Road Act of 2007 requires all trunk roads to have 60m width and its reserve. This is a conflict.
		Consultation with other big projects	There are some big projects such as Rusumo water falls project which is taking place right now and they are expecting to lie some of the pipes along the proposed area. Proper consultation should be done so that they may not interfere with the construction activities.
		Filling of the pot holes along the existing road	The condition of the road is worse as it has a lot of pot hoses that are source of majority of accidents that are occurring along this road. TANROADS should continue to maintain the road while waiting for major construction
4	Villages: Rusumo	Valuation exercise and livelihood assistant during relocation.	<p>Villagers wanted the owner to be present during the valuation instead of being represented by a tenant or any person in order to monitor and control the possibility of con man to take chance of the owner</p> <p>Fairness: For example, one person used the reference of one of the past projects which he said it compensated the assets less than the expected value. Thus, he proposed and requested the valuers engaged in valuation of assets to be fair.</p> <p>The village leaders should be involved at every stage of the project;</p> <p>Vulnerable peoples will be assisted by provided</p>

SN	Village / Institution	Type of issue per village - Negative	Explanation on the issue / Concern
			<p>with transport during relocation, assistance through LGAs to access the alternative land and houses.</p> <p>Logistic to build the new houses or purchasing the new plots.</p> <p>Training on SMEs and agribusiness</p> <p>Saving and banking facilities on receiving funds</p> <p>Any relevant information regarding smooth relocation from the RoW.</p>
		HIV new infections	In most cases, development projects bring new people or workers to the villages or project areas and some of whom left their wives in their back home. In due course and as time goes on some men get into unlawful sexual relationships with some women including wives of villagers which in turn mar the image of the contractor and contribute to the spread of new HIV infections.
		Unwanted pregnancies	Unwanted pregnancies and unplanned children are likely to be born, this becomes the problem of the village, since after the project the employees leave without any considerations to the babies and children born during the project implementation.
		Environmental pollution	Sometimes project workers tend to pollute the environments by defecating in bushes due to lack of sanitation facilities and hence jeopardize the health of the people around or down streams.
		Environmental and Properties destruction with heavy equipment	During the construction of the road in the past, heavy equipment and machinery caused cracks to the people's houses at Rusumo and it became expensive to make refurbishment of the affected houses and as a tendency the contractor leave without compensation, which is dangerous to the owners.

SN	Village / Institution	Type of issue per village - Negative	Explanation on the issue / Concern
		Local community's Priorities versus government ones	The government is not taking consideration when it comes to the issue of priorities e.g. they brought parking project while people would like to have social services like market, schools and health centers. This is community's perception on prioritization of development projects.
		Employment opportunities	Employments are given to foreigners and not the people along the project area. This has been experienced in many projects. At least project should give priority to our youth who have no employment.
		Pedestrian crossing	Our center has many people. There is no pedestrian crossing that sometimes lead to accidents. The project should consider pedestrian crossings at the village centers
		Proper location of Bus bays	It has been observed in other project that the bus bays are provided at proper location where people like to catch a daladala. This project should consider provision of enough bus bays at proper location
5	Nyabugombe	Delayed compensation	Valuation of properties for this project has been conducted twice but to date no compensation has been done. The government should expedite compensation process so we can relocate to give a way for the project
		Illness caused by the project impacts	The project will be associated with a lot of dust that may result to different diseases such as TB. TANROADS should device a mechanism to help people who became ill because of the project
		Stockpiling of spoil in the individual land without compensation	It has been a tendency that contractors are stockpiling spoil material anywhere along the project area. Proper consultation should be done to land owner and possibly compensation before starting stockpiling

SN	Village / Institution	Type of issue per village - Negative	Explanation on the issue / Concern
6	Kikoma	Gender discrimination in employment	Most of the time women are discriminated in employment. Most of the time men are the one who get employed by infrastructure projects. The project should see into this. Women should be given priority during recruitment
		Family separation as a result of the project	Most of the time men used to leave their families for other women when they get money. The project should see how to help women who are left by their husbands so that that they can be able to feed their families
		Non compensation of the roads to borrow areas	Sometimes in the course of the project, it may be that the borrow area has no access thus the contractor open a road in the resident's fields without compensation. Negotiation with the owners and compensation should be done in case the contractor opens an access road to the material borrow area.
		Lack of pedestrian lane in most of the road	The existing road has no special lane for pedestrians and other road users rather than vehicle. The design of the project should consider providing the separate lane for pedestrians for safety purposes
7	Nyakahura	Mushrooming of many new centers	Due to economic activities that are taking place in the project area, there is mushrooming of new centers. The design should consider those center as they may have not been there during the design
		Cracking of houses as a result of the compaction in the construction road	Sometimes cracks may appear in the houses near the road as a result of vibrations from the compacting machines. The contractor should compensate whenever such impact occur
		Inadequate compensation in the borrow areas	The contractors used to consult middle men in acquisition of the borrow areas as a result the land owner end up getting small amount of money and the middle men gets most of it. The contractors should use proper channel in acquisition of land.

SN	Village / Institution	Type of issue per village - Negative	Explanation on the issue / Concern
		Corruption for employment	It has been observed in other projects that someone should give corruption in order to get employment in the projects. Employment process should be transparent so that those who have qualification can get employed without corruption
8	Kasulo	Increased crime	The project will involve many people from different areas. It is anticipated that crime can increase in our area being a biggest center in the project road. The authorities should make sure that anyone who come in for the project is recognized
		Theft by the contractor's employees	It has been observed in other projects that some of the unfaithful employees used to steal fuel, cement, oil and other materials from the contractor and sell them to the community. The authorities should control this

Table 5-3 Positive issues raised during public consultative meetings

SN	All villages	Issue	Explanation
1	Lusahunga, Kasulo and Rusumo Nyabugombe, Ngararambe / Nyakahura	Rate of accident	Accident will be minimized
		Condition of the road	Contribution and reconstruction of the road will reduce potholes and hence easy transportation of passengers and goods. Generally, the road brings development in all places where it passes and villages along the proposed road will be stimulated economically The expansion of the road will enable easy transportation of the commodities and passengers to and from Nyabugombe village as one of the positive impact of the expansion of the roads.
		Valuation and compensation	If valuation is done properly then people will benefit from that income.

SN	All villages	Issue	Explanation
			<p>The village leaders should be involved at every stage of the project;</p> <p>Vulnerable peoples will be assisted by provided with transport during relocation, assistance through LGAs to access the alternative land and houses.</p> <p>Logistic to build the new houses or purchasing the new plots.</p> <p>Training on SMEs and agribusiness</p> <p>Saving and banking facilities on receiving funds</p> <p>Any relevant information regarding smooth relocation from the RoW.</p>
		Transportation	Easy to transport commodities / Transport will be improved.
		Local employment	<p>Local people from BENAKO will get employment</p> <p>Creation of employment opportunities to the youths and so communities requested the contactors to post the vacancies to the notice board</p>
		Income generation	<p>Income will increase to the local people of BENACO / Kasulo village. Villagers will benefit by selling items to the employees of the contractors and also contractors hire readily available human resources from the village.</p> <p>The village leaders should be involved at every stage of the project</p> <p>Vulnerable peoples will be assisted by provided with Training on SMEs and agribusiness</p> <p>Saving and banking facilities on receiving funds</p> <p>Any relevant information regarding smooth</p>

SN	All villages	Issue	Explanation
			relocation from the RoW.
2	Regional level / RAS office	Impetus to development	Rehabilitation of the road is pretty idea and is welcome because it is an impetus to development of the country, contributes to economic growth and social development
		Multiple projects	The road rehabilitation will accelerate the development of another on-going project in the region. These include Hydro-electric power project at Rusumo, Kabanga Nickel-2018 and One Border Post and other projects
		Transport for students	For students who stay far from their schools, better transport will easy their movements / travelling to and from schools
		Transportation of school facilities	With improved road, transportation of school goods like books and furniture will be quick and safe.

5.7 Stakeholder questions and responses

Apart from the concerns, views, and suggestions raised in the public consultations, several questions were asked of project authorities. These are summarized in the table below.

SN	Village/ Institutions	Question/issue/concern	Answers/Responses
1	Lusahunga	Is the valuation already done or not? Will there be livelihood restoration programme?	Valuation has already been done and all affected people are known The process of effecting compensation is ongoing. The GRM has already be formulated in all respectively Local Government Offices along the project. Yes, there will be livelihood restoration

SN	Village/ Institutions	Question/issue/concern	Answers/Responses
			<p>programme to PAPs.</p> <p>The village leaders should be involved at every stage of the project.</p> <p>Vulnerable peoples will be assisted by provided with transport during relocation, assistance through LGAs to access the alternative land and houses.</p> <p>Logistic to build the new houses or purchasing the new plots.</p> <p>Training on SMEs and agribusiness</p> <p>Saving and banking facilities on receiving funds</p> <p>Any relevant information regarding smooth relocation from the RoW.</p>
	i.	If the land was used before by the contractor and it happen that area will be needed by contractor for the construction activities on this project, will the owner of the land be compensated?	<p>If that land has already been compensated before will not be compensated again. Compensation is done once.</p> <p>All persons that are compensated shall relocate from the project areas as per valuation Act, requirement.</p>
	ii.	Instead of employ people from other place, the priority should be given to the people from Lusahunga.	<p>The project will give priority to people along the proposed project but does not deny the right of other Tanzanians to be employed by the project</p>
	iii.	During construction contractor should use the removed bitumen and reuse on maintenance of the parking area and market area.	<p>Most of the asphalt from the existing road will be milled and reused. However, the excess can be used for the requested purpose</p>
	iv.	Contractor should also put Zebra crossing sign and put access road to all roads direct to the institutional.	<p>Noted and the design has incorporated it for implementation.</p>

SN	Village/ Institutions	Question/issue/concern	Answers/Responses
	v.	Contractor should locate ponds for livestock use	The contractor may leave some borrow pits or water reservoir for feeding livestock or other uses but is upon being requested officially by the local government authority.
	vi.	The valuer engaged on Compensation should be fair where by the estimated value should be equal to the affected asset.	Noted. Valuation will be done according to the ESF which is more stringent than the national regulations (the ESF requires full replacement value for physical assets compensation and not market replacement costs);
	vii.	If the house is demolished on only one part will it be compensated by part or the whole house	The whole house will be compensated
	viii.	We have water shortage in our area especial during sun, where will the contractor expect to get water	The study has identified different streams, rivers and one dam along the project to be used for construction. Upon permission by water resource authorities, the contractor also may drill boreholes in case of construction water shortage;
	ix.	Forms which we used to fill for the valuation has been written in English don't you think it is the problem to a person who don't understand this language.	Yes. But the valuation forms are written in Swahili. The only form which is written in English here is the questionnaires for socio economic survey
	x.	If borrow pit area is owned by the village who will be paid	The village government will be compensated as the land belong to public.
	xi.	Compensation period is within 90 days, if a person did not satisfy, how do you do to reach the claims	Before compensation there will be an exercise of forming Grievance Redress Committees. These committees will be responsible for compensation claims and resolving the grievances.

SN	Village/ Institutions	Question/issue/concern	Answers/Responses
4	Nyamagala-Kikoma	Employment opportunities should be given to the people along the proposed road	Noted and will be implemented
		What does a person who is in road reserve entitled to be compensated	According to this project a person in the road reserve is entitled compensation of the developments undergone. E.g. crops and buildings. The land will not be compensated because it belongs to the Government.
		How will the government help us on the impacts for diseases	During the implementation of the project there will be the NGO who will be responsible for providing awareness for HIV/AIDS and TB.
		How will the government help us during relocation	<p>Yes, there will be livelihood restoration programme to PAPs.</p> <p>The village leaders should be involved at every stage of the project.</p> <p>Vulnerable peoples will be assisted by provided with transport during relocation, assistance through LGAs to access the alternative land and houses.</p> <p>Logistic to build the new houses or purchasing the new plots.</p> <p>Training on SMEs and agribusiness</p> <p>Saving and banking facilities on receiving funds</p> <p>Any relevant information regarding smooth relocation from the RoW.</p>

SN	Village/ Institutions	Question/issue/concern	Answers/Responses
		How will you help natural habitats during construction period	There will be no unnecessary vegetation clearance. Basically, the road will maintain the existing alignment in most of the sections.
		Will the compensation done before or after the construction	Compensation is always done before construction phase.
		Will trees and crops be compensated	Definitely, Yes all affected properties will be compensated.
		The land which have not developed will it be compensated	The land will be compensated if is out of the road reserve of 22.5m each side of the road
5	Busiri	If the building has both green and red x will it be compensated	It will depend which side is affected more by the project. If is red section will be compensated in this project. Note; compensation is done for the whole house
		If I had a land and sell to another person and he built on that area, who will be compensated.	Everyone will be compensated what he/she owns
		On the issue of employment opportunity, the contractor may come with its people how will you help us to get the priority on this	The project will give employment priority to the community along the project road but this does not deny the right of other Tanzanians to have job in the project. We just urge you to be proactive to respond on the job advertisement as soon as they are announced

SN	Village/ Institutions	Question/issue/concern	Answers/Responses
6	Ngararambe	We propose that before compensation you look for the possibility of finding financial institution to educate people on the use of money	Noted; will be taken to the authorities
		For water source, the contractor should allocate water source which can be used by the society after the end of the project	Noted
		Campsite should be constructed in permanent structure whereby those structures will later be used by the Government.	There are two types of campsites within the construction project, the contractor's campsite which is temporally and the consulting engineer's which is permanent. All permanent structures after the project will revert to the government.
		After being compensated we have to wait for how long before shifting	According to the law you are supposed to relocate within 90 days from the day you receive your compensation
8	DED Ngara	People who built in road reserved will they be compensated?	Yes
		Concerning HIV Issue, usually we only see the billboards we suggest that, people should also be given condoms which will help them whenever they need to have sex	That is also done in line with awareness
		Does Rusumo bridge followed East Africa Standards?	Definitely
		Will compensation process follow the WB guidelines or	Compensation will be done in line with the country laws as well as the WB

SN	Village/ Institutions	Question/issue/concern	Answers/Responses
		Tanzania Guidelines	guidelines
9	Nyantama- Nyabugombe	Road have a lot of dust where should we send our complains	The Grievance redress mechanism will be formed to govern all grievances associated with the project. All grievances including dust will be channeled through a grievance redress mechanism that will be established at the beginning of the project
		We have a problem of poor social services in our village, how will this project help us	Through your good relation with the contractor, he may help you as part of Corporate Social Responsibilities
		Will the graves be compensated	During design review and undertaking public consultation, there were not any graves identified along the project areas of 45m RoW. But in case, any graves at project site are found, they will need to be relocated, all measures will be taken as per Graves (Removal) Act, (1969), the Antiquities Act of 1964 and the Antiquities Rules of 1991.
10	Nyabugombe- Chamakaza	When exactly will the payments be effected so we can demolish our buildings?	Compensation will be issued after signing of the valuation reports by the Chief Government Valuer
		Spoil materials collected in the individual land, will the owner of the area be compensated?	Yes

SN	Village/ Institutions	Question/issue/concern	Answers/Responses
11	Kasulo- Rwakalemera	Why you compensate 22.5m and not 30m	We just need construction corridor. The 22,5 is enough for this rehabilitation
		If diversion pass to my land shall I be compensated	Yes. Any land used by the contractor will be compensated
Type of issue per village - <i>Negative</i>		Explanation on the issue / Concern	

5.8 Issues raised by women during consultations

The following table presents the issues raised by women during consultations.

Table 5-4 Specific issues raised by women's during consultation

Type of issue per village - <i>Negative</i>	Explanation on the issue / Concern
Delay in compensating affected people	<p>It is common that project-affected-persons are not paid timely, there is always delay and if delayed no additional amount is added or no interest rate based on fixed commercial rate is calculated to pay PAPs, which is unfair to them.</p> <p>The law states that compensation has to be effected 6 months after approval and that upon delay extra money has to be paid to the affected people. However, additional funds are not being provided as per law and people end up losing their rights</p>
Unwanted pregnancies	<p>It is well known that the workers move to site without their partners. This may lead for them to have unfaithful relation with the residents especially school girls that may result to unwanted pregnancies. TANROADS should see a way to combat this like providing awareness in the schools</p>
HIV new infections	<p>In most cases, development projects bring new people or workers to the villages or project areas and some of whom left their wives in their back home. In due course and as time goes on some men get into unlawful sexual relationships with some women including wives of villagers which in turn mar the image of the contractor and contribute to the spread of new HIV infections.</p>
Gender discrimination in employment	<p>Most of the time women are discriminated in employment. Most of the time men are the one who get employed by infrastructure projects. The project should see into this. Women should be given priority during recruitment</p>
Family separation as a result of the project	<p>Most of the time men used to leave their families for other women when they get money. The project should see how to help women who are left by their husbands so that that they can be able to feed their families.</p>
Issue raised by an elderly- Lack of pedestrian lane in most of the road	<p>The existing road has no special lane for pedestrians and other road users rather than vehicle. The design of the project should consider providing the separate lane for pedestrians for safety purposes</p>

5.9 Conclusion

Consultations with key stakeholders and public involvement were undertaken in order to obtain views and concerns of the local community on the project.

A combination of methods which complemented each other was used to obtain different relevant information for the project. Various stakeholders were identified and consulted and these comprised of private sector, CBOs, government agencies / institutions at different levels and communities in respective villages where public meetings were conducted. Roles of stakeholders were identified as well as their possible involvement in undertaking some project interventions, such as capacity building (HIV and AIDS interventions, etc.), information dissemination to people, etc.

Through collected and analyzed information especially public and other consultative meetings with stakeholders, engagement activities succeeded to obtain different concerns, constructive views and/or opinions from stakeholders as well as meaningful suggestions for successful implementation of the project. The communities were able to raise questions and challenges that are associated with development projects based on the past experiences, including implementation of the existing road projects, whereby communities showed dissatisfaction on compensation, inadequacy involvement, ignorance or policies and Acts related to road projects, contradiction between government agencies due to weak coordination and cooperation, issues on spread and prevention of HIV infections, according high priority to local people in case of employment opportunities, etc. This was clearly the case for the Lusahunga – Rusumo road project. A number of recommendations have been provided by stakeholders and communities addressing various aspects, which are included in this report for consideration by the responsible authorities.

The crucial concern and sensitive issue that almost dominated all public consultative meetings in villages and even among some government agencies were matters related to valuation of properties and compensation. People, especially those who will be negatively affected insisted upon transparency and participation of the PAPs during the whole process, fairness and immediate compensation for the PAPs.

Overall, stakeholder consultations and public involvement were successfully conducted and intended objectives were met as collected information will be incorporated into the project document for further rehabilitation. Greatly, the stakeholder consultations and public involvement contributed to disseminated project information and clarified issues and questions raised by communities and other stakeholders. Communities appreciated their involvement as a fundamental and recommended TANROADS to continue with this approach. The project was commendable and accepted by the stakeholders as beneficial to their socio-economic development and the country as a whole. The main remark was for the government to ensure that the projects are timely implemented and potential PAPs are fairly compensated to avoid worsening their living conditions as a result of the project compared to their conditions before project interventions.

6 ASSESSMENT OF PROJECT ALTERNATIVES

6.1 Overview

In the ESIA process it is important to consider different alternatives or options which will achieve the project’s objectives. It is also important to include a consideration of what would happen without the project – that is, the no project alternative. Environmental assessment for each alternative is also carried out, since each alternative is likely to have a different set or degree of impacts. The analysis of alternatives is also reflected under “Resources Evaluation” in Chapter 10.

In this ESIA consultations with stakeholders and site visits provided basis for identifying alternatives. The following types of alternatives are presented for consideration.

6.2 No Project Alternative

The no project alternative entails retaining the current status quo with a degraded road. Adopting this option would mean avoiding most of the negative impacts associated with the project and missing all the positive benefits such increased productivity and economic growth in Ngara and Biharamulo Districts. Therefore, adopting a no project alternative would mean failure to implement the transport policy.

The following table compares the “without project” and “with the Project” scenarios regarding vehicle speed, traffic volume, air quality, noise, and road safety.

	Without Project	With project
Construction Phase		Construction will bring construction impacts on several ES components which are mainly within a 500m radius of the road and at the off-site facilities (borrow pits, quarry, asphalt plant) during construction period (about three years).
Operation Phase		
Vehicle speed:	Average vehicle speed will not likely increase due to the road condition.	Average vehicle speed is expected to be increased from 30km/h to 36.8km/h due to reduction of average vehicle travel time (from 3.10 hours to 2.50 hours).
Traffic volume:	Traffic volume is expected to increase with economic development.	Traffic volume is expected to increase with economic development with the same magnitude as the “without project”. Two lanes will remain, with road width

		slightly increased by 0.25m each.
Air Quality	Road congestion brings about vehicle emission. Deteriorating road leads to dust emission. Increase of vehicle fuel efficiency and less road congestion are expected to reduce vehicle emission.	Improved road surface will reduce dust emission. Increase of vehicle fuel efficiency and less road congestion are expected to reduce vehicle emission (no changes from the “without project”).
Noise:	Road congestion and deteriorated road increase noise level.	Re-paved road surface likely reduces vehicle noise level.
Road safety:	The current situation would remain unchanged	Road safety will be improved thanks to the road safety investment (including walkways)

6.3 Alternative Route

The option to use another route apart from using the existing one was considered. However, that option was dropped immediately due to the following reasons

- Adverse environmental impacts (especially loss of vegetation);
- Resettlement of people and properties shall be on the high side;
- The construction costs will be higher;

However, minor realignment is expected to improve the geometric layout of the road has been opted.

6.4 Alternative Design

Two alternatives were considered during economic viability study for this project which includes:

- ALT0 - “Without” project case which represents a continuation of current minimum maintenance practice, consisting of pothole patching when potholing exceeds 1 No/km, and heavy patching when wide structural cracking exceeds 5%.
- ALT1 - “With” project case which represents the implementation of the project by reconstructing it to asphalt concrete (AC) surface standard. After re-construction, the road will receive a more intensive maintenance, apart from patching, crack sealing and edge repair consisting of resealing at every 8 years and overlay at 6 IRI (m/km)

The results of the economic analysis show that the IRR at 21.8% is higher than the cutoff point of 12%. The NPV at 12% discount rate is similarly large and positive over 57 million US\$. This implies the recommended rehabilitation/reconstruction option is economically feasible. As a result of the economic analysis ALT1 (reconstruction to

asphalt concrete (AC) surfacing and double surface dressing of shoulders, new CRR base layer, C2 upper sub-base layer by cement stabilization of existing crushed stone base layer; and C1 lower sub-base layer by stabilization of existing natural gravel sub-base layer) is economically feasible option for implementation.

7 IMPACT ASSESSMENT AND MITIGATION MEASURES

7.1 Method for impact evaluation

Impact evaluation follows a logical order:

- Description of impact and risk generating activities (this approach is presented at section 7.2).
- Identification of impacts and risks in a matrix (this approach is presented at section 7.3).
- Determination of impact and risk significance based on each ES component as presented in the baseline. This approach is presented hereunder.

Impacts significance is assessed using a standardized method based on the integration of 3 criteria:

1. Impact intensity
2. Impact extent
3. Impact duration

In addition, in order to separate risks from actual impacts, the probability of impact occurrence is assessed in all cases.

Criteria #1: Impact intensity

Impact intensity refers to level of disruption on the component. Disruption of natural components refers to death of species, displacement, fragmentation and loss of habitats. Disruption of socioeconomic components refer to loss of income, resettlement, loss of access to services, accidents, etc. The resilience of each component to changes is also taken into account in the assessment.

Four threshold levels of intensities are defined: Negligible, Low, Medium and High.

A negligible impact refers to an impact that is worth noting but that will only slightly affect the component.

A low intensity refers to an impact that will not significantly disturb socioeconomic, physical or biological components and that will not affect the function of the component or its characteristics. High intensity refers to an impact that takes place during a critical phase of a biological components (breeding period, migration, spawning, etc.) or socioeconomic components (harvest, etc.) or will significantly affect a person or a worker. It also relates to important changes to a physical component. It is an impact that affects a component beyond its resilience.

A medium intensity is between low and high.

Criteria #3 Impact extent

Each impact is defined by its geographical extent. Three levels are established: punctual impact, local impact and regional impact.

Punctual impacts affect a component on a very small scale on the Limited Study area, i.e. a small proportion of the study area population (people or wildlife).

Local impacts affect a component on a large part of the Limited Study area while regional impacts affect a component on a larger scale and even outside the Extended Study area boundaries.

Criteria #4 Impact duration

Each impact is described according to its duration. Temporary and permanent impacts are distinguished based on their reversibility: temporary are reversible and permanent are irreversible (have long-lasting effects or last throughout the Project lifespan).

Impact significance determination

Impact significance is based on the three previous criteria. The following table presents the impact importance determination. Positive impact is assessed using the same three criteria.

This type of approach is not precise and subject to interpretation. However, it allows to gauge and compare impacts and to highlight the main risks and impacts that require attention during project development and construction activities.

Impact significance	Major -	Major +
	Moderate -	Moderate +
	Minor -	Minor +
	Negligible	Negligible

Intensity	Extent	Duration	Positive impact significance	Negative impact significance
High	Regional	Permanent	Major +	Major -
		Temporary	Moderate +	Moderate -
	Local	Permanent	Minor +	Minor -
		Temporary	Negligible	Negligible
	Punctual	Permanent	Moderate +	Moderate -
		Temporary	Minor +	Minor -
Medium	Regional	Permanent	Major +	Major -
		Temporary	Moderate +	Moderate -
	Local	Permanent	Minor +	Minor -

	Punctual	Temporary		
		Permanent		
Low	Regional	Temporary		
		Permanent		
	Local	Temporary		
		Permanent		
	Punctual	Temporary		
		Permanent		
Negligible	Regional	Temporary		
		Permanent		
	Local	Temporary		
		Permanent		
	Punctual	Temporary		
		Permanent		

Major impacts represent high level of disturbance on the component, these impacts are seldom mitigable and most of the times require compensation or offsets, followed by long term monitoring measures.

Moderate impacts represent noticeable disturbance to the component; however, these impacts can be mitigated and need to be monitored.

Minor impacts, most of the time, only require mitigation measures without the need for monitoring.

Negligible impacts do not require any particular measures.

Impact occurrence probability

Assessment of the probability that an impact will take place is based on the consultant's experience on similar assignments, project specificities and expert knowledge. It allows to develop preventive measures for risks and mitigation measures for impacts. Three thresholds are used.

High probability -	High probability +	Analysis of the baseline combined with Project characteristics concludes that the impact will take place.
Potential occurrence -	Potential occurrence +	Based on previous experiences, it is possible that the impact will occur.
Risk (low probability) -	Risk (low probability) +	Analysis of baseline combined with Project characteristics only reveals a risk of impact occurrence.

Based on impact assessment, several mitigations will be proposed, the approach will follow the mitigation hierarchy: avoid, reduce, compensate.

- Avoid: avoiding or reducing at source through the design of the project (e.g. avoiding by siting or re-routing activity away from sensitive areas, or reducing by restricting the working area or changing the time of the activity).
- Reduce: reduction can either entail to abate the impact on site or at the receptor to acceptable levels.
- Compensate: where other mitigation approaches are not possible or fully effective, compensation for loss, damage and disturbance might be appropriate to restore and improve livelihoods and assets or to offset for irreversible impacts on biodiversity. Offsets must achieve measurable conservation outcomes.

In addition, for risks, preventive measures are developed to minimize its probability of occurrence.

Presented measures in this ESIA are based on the recommendation of the Environmental, Health, and Safety Guidelines of the World Bank Group for Toll Roads and the Environmental, Health, and Safety General Guidelines.

After mitigation, residual impacts are assessed.

7.2 Impact and risk generating activities

7.2.1 Project preparation phase

Decisions that will be taken at this stage are important milestones that could influence the environmental and social soundness of the Project.

This phase which has started included all technical studies, non-technical studies (E&S instruments such as the ESIA and the RAP) as well as the tender process for the selection of a construction contractor.

The tender process for the selection of a construction contractor represents an important risk that will have to be prevented. Return of experience shows that E&S and H&S criteria for tenders and procurements of goods and services are often not developed or poorly defined. Often, the responsibility of implementing E&S and H&S measures does not cascade down to the contractors.

The need for temporary or permanent physical and or economic displacement were identified at project preparation, this is also an impact generating activity.

In summary, impact generating activities during Project preparation include:

- Finalization non-technical studies (mainly the RAP and ESIA).
- Tendering process for contractors.
- Resettlement and compensation payment of Project-Affected Persons (physically and or economically displaced).

7.2.2 Construction phase (road rehabilitation)

Mobilization, construction and demobilization are considered under project construction phase.

The followings are impact generating activities during construction (road rehabilitation):

- Setting up work sites and workers' camp (both permanent camp and mobile camps), mobilization of machinery and workforce.
- Changing road conditions such as narrow lanes, changing traffic patterns and potential derivation roads.
- Land clearing and earth work to increase the road width from a total of 10.5 meter to a total of 12.0 meters. Some geometry changes will also require land clearing and earth work to reduce deep cut sections and high fill areas. This will be done by shifting the road at some areas of a few meters. Some interventions will be necessary at truck bays and rest areas and at road junctions.
- Removal of existing bituminous seal.
- Removal and stockpiling of the existing granular base course layer for reuse.
- Insitu stabilization of the layer of existing subbase using cement.
- Asphalt paving: surfacing of 50mm thick asphalt concrete over carriageway and shoulder and compaction.
- Construction of 7 arrester beds in areas with long steep grades in order to assist and control heavy vehicles to safely stop.
- Existing concrete box culverts along Lusahunga-Rusumo road section are structurally and hydraulically sound and will be retained, although they require to be extended in order to accommodate the widened road cross. All existing metal culverts along the road are to be replaced with concrete pipe culverts due to age. Arched culverts will be fully replaced by box culverts.
- Construction work will require raw materials from borrow areas, quarries and sand pits. Construction work will also require water to be used in concrete. Blasting and crushing stones are impact generating activities.
- All construction activities will lead to truck and machinery movement.
- All construction activities will produce waste.

The Rusumo Bridge at the Tanzania/Rwanda boarder was rehabilitated in the past (2011) and is not part of this Project.

7.2.3 Operation and maintenance phase

Motorized road traffic is expected to rise of about 22% in 2025, however this increase is not attributed to the road rehabilitation but rather to the development of economic activities in the region. As for many impacts and risks presented for the operation phase, the cause-effect relationship between the road rehabilitation and negative impacts are rather difficult to demonstrate. As demonstrated in the alternative assessment chapter 6, if compared to the “without project”, the road rehabilitation does not likely lead to the significant increase of road traffic volume because (i) the increase of traffic volume is

largely driven by local and regional economic development, which would happen regardless is the road is rehabilitated. (ii) each road lane is increased by 0.25 m mainly due to safety consideration but no additional lanes will be built, (iii) the objective of the road is to improve the safety, climate resilience and to reduce vehicle travel time, and not to increase traffic volume. Therefore, some of the impacts during operation are not new impacts but rather the continuation of pre-existing impacts (on-going effects).

The Detailed design estimated increase in traffic AADT as follow:

Table 7-1 Increase traffic

Year	Daily average number of motorized vehicles								Total AADT
	Very heavy trucks	Heavy truck	Large bus	Light truck	Medium trucks	Minibus	Cars	Motorcycle	
2022	477	21	15	39	87	84	301	114	1138
2025	614	26	19	50	112	105	382	144	1452

These data represent 94 to 121 vehicles passing along the road per hour. Trucks represent between 50 and 60% of the traffic (in 2022).

Improvement of the road condition will reduce the time for travelling from 3.1 hours to 2.5 hours and therefore will increase the average speed from 30 km/hour to 36.8 km/hour (according to the Project Appraisal Document from the World Bank).

One important change that the new road operation will bring is to design additional walkways for non-motorized means of transportation, which will improve overall safety of road users. Other initiative will be implemented to improve safety such as the speed reduction in villages, climbing lanes where the vertical gradient is greater than 7% and the installation of arrester beds to assist out of control heavy vehicles to safely stop.

7.3 Impact and risk identification matrix

The project is a rehabilitation project using the existing road RoW, as such most risks and impacts are concentrated during the construction phase. As demonstrated in the baseline at section 4.2.16, the Limited study area does not have any critical habitat and no impacts on critical habitats are expected.

	Project preparation phase	Construction phase (rehabilitation)	Operation and maintenance
Biophysical environment			
	<p>Many biophysical components may be affected if tendering process for contractors do not include specific requirements for their safeguard.</p>		
Topography, land use and cover		<p>The project will require some land to accommodate the increased width of the road and geometry changes: land clearing will be done for all activities that will require additional land. <i>This impact is presented in other sections.</i></p>	

	Project preparation phase	Construction phase (rehabilitation)	Operation and maintenance
Geology and soils		<p>Impact on soil quality from accidental spillage of oil and poor management of waste and sanitation: all construction activities represent risk of accidental spillage of oil and will generate waste that could affect soil quality.</p> <p>Impact on soil from sealing of additional permeable surface and compaction by machinery: many construction activities will require to seal additional permeable surface and will lead to soil compaction.</p>	<p>Accumulation of pollutants in roadsides: drainage from the road will collect silt, oil and waste which will impact soil quality.</p>
Climate			
Hydrology		<p>Impact on hydraulic transparency from construction: culverts will be upgraded and widened and new roadside ditches will be created. If not properly sized these could reduce hydraulic transparency.</p>	

	Project preparation phase	Construction phase (rehabilitation)	Operation and maintenance
Groundwater resources			Infiltration of pollutants from roadsides in groundwater: collected pollutants may reach local groundwater and affect its quality.
Water quality		<p>Impact on surface water quality during construction with expected increase of turbidity: erosion and leaching of stocked material and spoils, runoffs and removal of vegetation on roadsides, lack of sanitation and poor drainage on workers camp could affect water quality.</p> <p>Impact of accidental spillage of oil and concrete wash water on surface water quality: all machinery that will be used for construction activities represent a risk or accidental spillage of oil. In addition, concrete wash water can seriously pollute surface water by increasing its pH.</p>	Impact on surface water quality from road traffic and surface runoffs: increase of the width of the road will increase surface runoff from the road and therefore silt, oil and dirt transport to watercourses.

	Project preparation phase	Construction phase (rehabilitation)	Operation and maintenance
Noise and vibration		Increase in noise level and vibration: all construction activities will generate noise, some activities will be particularly noisy such as removal of existing bituminous seal and truck transport.	Noise from traffic and reduction of noise thanks to road improvement: road traffic will continue to generate noise. However, improved road surface will reduce noise level
Air quality		Emission of air pollutants from machinery and trucks: machinery and trucks will emit air pollutants such as CO ₂ , CO, nitrogen oxide (NO _x), PM ₁₀ , PM _{2.5} , SO ₂ . Trucks and construction machines are high NO _x emitters. Asphalt manufacturing also emits gaseous emissions.	Impact on air quality from road traffic and reduction of dust thanks to road improvement: road traffic will continue to generate air pollution. However, improved road surface will reduce dust emission
Natural hazards			

	Project preparation phase	Construction phase (rehabilitation)	Operation and maintenance
Terrestrial habitats and wetlands and associated flora and wildlife		<p>Loss of roadside terrestrial and wetland habitats: road widening, storage of spoil material and work sites will require land and may impact terrestrial habitats and wetlands. Roadside verges are often valuable habitats for small wildlife.</p> <p>Destruction or disturbance of habitats at raw material extraction sites and off-site facilities: borrow areas, hard stone quarries, sand pits, workers' camp and stone crushing site may affect natural habitats or lead to their destruction.</p>	<p>Higher risk of wildlife collision and casualties: induced increase of speed thanks to new road conditions will be associated with higher risk of wildlife collision and wildlife casualties.</p> <p>Exacerbation of the barrier effect: road widening and induced increase of speed will exacerbate the barrier effect of the road.</p>

	Project preparation phase	Construction phase (rehabilitation)	Operation and maintenance
Aquatic habitats and fish		<p>Modification of aquatic habitats from widening of culverts: all culverts will be widened and their wingwalls removed in order to accommodate the widened cross section of the road. This will modify small areas of aquatic habitats.</p> <p>Impact on ecological continuity of aquatic habitat from culvert rehabilitation: culvert rehabilitation may impact ecological continuity if work require temporary diversion or blockage of streams.</p> <p>Disturbance of aquatic habitats and fish from water abstraction: water will be needed during construction work for concrete. Natural watercourses may be used for this purpose. Abstraction will disturb aquatic habitats and fish and may lead to encroachment from the passage of trucks.</p>	<p>Degradation of aquatic habitats from increase in road traffic and surface runoffs: impact on surface water quality from road traffic and surface runoffs will in turn affect aquatic habitats and fish.</p>

	Project preparation phase	Construction phase (rehabilitation)	Operation and maintenance
Nationally protected areas		<p>Risk of poaching and persecution of wildlife: mobilization of workforce may be associated with an increase in poaching activities and persecution of wildlife, this risk is particularly significant close to the Burigi-Chato National Park.</p> <p>Startling of wildlife of the Burigi-Chato National Park: construction work will startle wildlife close to Burigi-Chato National Park.</p> <p>Risk of encroachment into the Burigi-Chato National Park: setting up work sites and workers camp, mobilization of machinery and workforce could lead to encroachment if the boundaries of the national park are not demarcated and communicated to contractors.</p>	<p>Higher risk of wildlife collision and casualties : induced increase of speed thanks to new road conditions will be associated with higher risk of wildlife collision and wildlife casualties. This risk is particularly important at Burigi-Chato National Park.</p>

	Project preparation phase	Construction phase (rehabilitation)	Operation and maintenance
Internationally recognized areas of high biodiversity value		Risk of disturbance of fish in the Akagera KBA: threatened fish are present in the Akagera KBA which is made of the Kagera river and its drainage basin and floodplain. Work activities could lead to encroachment or accidental spillage if the boundaries of this KBA are not communicated to the contractor.	Risk of degradation of Akagera KBA floodplains: impact on surface water quality and surface runoffs may in turn affect Akagera KBA.
Threatened plant species		Risk of destruction of threatened plant species: natural habitats around the road have the potential to shelter some threatened plant species. Setting up work sites and workers camp, the rest area, mobilization of machinery and workforce could lead to their destruction.	

	Project preparation phase	Construction phase (rehabilitation)	Operation and maintenance
Threatened wildlife		Risk of disturbance and direct mortality of threatened wildlife species: natural habitats around the road have the potential to shelter some threatened wildlife species. Construction activities may lead to their disturbance or lead to mortality of some species.	Higher risk of wildlife collision and casualties: induced increase of speed thanks to new road conditions will be associated with higher risk of wildlife collision and wildlife casualties, many vultures are threatened and are particularly at risk because they scavenge on roadkills.
Critical habitats			
Alien and invasive plant species		Risk of spread of alien and invasive plant species: land clearing and earth work to increase the road width may facilitate the spread of invasive species.	
Socio-economic and cultural environment			
	Many socio-economic components may be affected if tendering process for contractors do not include specific requirements for their safeguard.		
Social and political organization			

	Project preparation phase	Construction phase (rehabilitation)	Operation and maintenance
Population distribution and settlement pattern along the road	Resettlement of persons and displacement of assets: road widening and geometry changes will require to resettle people that have settled in the road RoW and displacement of their assets.	<p>Possible additional temporary and permanent restrictions on land use during construction: The setting up of work sites and workers' camps, the rest area, mobilization of machinery and workers, arrester beds, and derivation roads will require additional land that was not identified at project preparation.</p> <p>Socioeconomic impacts on displaced persons: Resettlement may lead to socioeconomic and psycho-social impacts on displaced persons.</p>	

	Project preparation phase	Construction phase (rehabilitation)	Operation and maintenance
Social indicators		<p>Worker's influx, workers camp and associated social impacts on communities: The setting up of workers camps and mobilization of workers are associated with multiple risks for host communities.</p> <p>Strain on local services such as health services, water supply, waste management and electricity from the presence of work and workers: The setting up of workers camps and mobilization of workers may strain local services and public utilities.</p>	

	Project preparation phase	Construction phase (rehabilitation)	Operation and maintenance
Livelihood and economic activities		<p>Disturbances to livelihood and economic activities: street vendors and businesses along the road and tourism at the NP may be impacted by changing road conditions during construction activities and restrictions of access to businesses.</p> <p>Disturbance of local traffic, mobility and congestion impacting economic activities: road users and commuters going to work may be impacted by changing road conditions during construction activities.</p> <p>Reduction of available water for irrigation in Benaco pond: water abstraction from this pond for concrete production would lead to impact on small scale irrigation downstream.</p> <p>Job opportunities: construction activities represent an opportunity for temporary employment for members of local communities.</p>	<p>Improved transport sector allowing for economic development: the rehabilitated road will reduce time of travelling and ensure safer travel for vehicles and trucks. These will have positive influence of economic development.</p> <p>Livestock roadkill: induced increase of speed thanks to new road conditions will be associated with higher risk of livestock roadkill.</p>

	Project preparation phase	Construction phase (rehabilitation)	Operation and maintenance
Community use of the road and safety aspects		<p>Impact on connectivity across the road and disruption of access: construction activities will affect connectivity across villages as most have developed on both sides of the road.</p> <p>Health and safety risks for communities during construction: nuisances (noise, dust, odors, presence of spoil materials) and risk of collision during construction activities may affect health and safety of people. Community members using the road, and particularly vulnerable road users such as pedestrians and bicyclists, are particularly at risk. Safety risks from induced traffic on smaller village roads (when trucks and vehicles avoid congestion from construction work) is also a typical issue to foresee.</p> <p>Risk of improper behavior of security personnel: security personnel at work sites and workers camp are sometimes associated with undue use of force and other forms of abuses.</p>	<p>Impact on connectivity across the road and disruption of access: the new road may cut-off access of small side roads (local roads) that cross the trunk road. Connectivity for non-motorized transportation will also be affected.</p> <p>Improved safety for motorized and non-motorized road users: Increase in road traffic and speed will increase the risk of collision and accidents. However, at the same time the project design has foreseen to improve several aspects of the road to improve road safety, notably by installing walkways in villages, by installing arrester beds and climbing lanes.</p> <p>Health issues for population living along the road: on-going noise level and air pollution represent health hazards for community members living along the road.</p>

	Project preparation phase	Construction phase (rehabilitation)	Operation and maintenance
Land tenure			
Ecosystem services		<i>Assessed under Hydrology</i>	
Gender aspects		Risk of additional workload burden on women when men are hired for construction work: construction work may attract men to work leaving women with additional burdens.	
Vulnerable groups/persons		Disturbance of persons living with disabilities due to loss of access during construction work: persons living with disabilities may find it difficult to use the road and access services during construction activities.	Universal access to the road and walkways: walkways will be developed in villages; this will improve universal access to persons living with disabilities.
HIV and AIDS situation		Spread of HIV: the arrival of workers is often associated with an increase in HIV prevalence.	

	Project preparation phase	Construction phase (rehabilitation)	Operation and maintenance
Child labor and forced labor		Risk of child and forced labor: construction activities, the presence of workers' camps, involvement of primary suppliers in the chain of goods and services, and workers engaged through third parties (such as subcontractors, brokers, agents, and intermediaries) present a risk of forced and child labor.	

	Project preparation phase	Construction phase (rehabilitation)	Operation and maintenance
Labor conditions		<p>Risk of poor labor conditions due to high level of informality: construction activities, involvement of primary suppliers in the chain of goods and services and workers engaged through third parties (such as subcontractors, brokers, agents, or intermediaries) represent risk of poor labor conditions.</p> <p>OHS risks to workers: workers will be at risks of accidents and injuries, and they may be exposed to health hazards due to stack dust and fugitive dust and exposure to fumes during road paving. Workers are also at risk of collision with vehicles and trucks circulating on the road during work.</p>	

	Project preparation phase	Construction phase (rehabilitation)	Operation and maintenance
Gender-based violence	Risk of GBV related to the compensation process: compensation payment of Project-Affected Persons is sometimes associated with GBV as women are often bypassed when compensation is negotiated or subject to threats when it is distributed.	Risk of an increase in Gender-Based Violence: workers' influx is often associated with risk of GBV and sexual harassment in the workplace. Women and girls from neighboring communities are particularly at risk.	
Cultural heritage		Risk of disturbances and destruction to unknown cultural heritage sites: risk of discoveries of artefacts is inherent to all construction involving excavation.	

7.4 Impacts and risks during project preparation

Many ES impacts that materialize during project implementation originate at project preparation due to inadequate stakeholder engagement activities and absence of coordination with procurement specialists to integrate ES mitigations in bidding documents for contractors. This can apply to all ES impacts and risks.

7.4.1 Impacts on biophysical and socioeconomic components

Many biophysical and socioeconomic components may be affected if tendering process for contractors do not include specific requirements for their safeguard.

Many contractors and subcontractors are not aware of their E&S and H&S responsibilities during construction work. During construction, contractors have the greatest day-to-day presence on the ground and sustained interactions with affected communities. Unfortunately, many are genuinely not aware of their responsibilities because the procurement documents have not included the E&S and H&S requirements and their contract is silent on these subjects or because the project owner has limited leverage over them. Experience has shown that many bidding documents do not consider measures developed in the E&S instruments and that many subsequent E&S problems, especially those that affect neighboring communities, arise from lack of proper planning and absence of leverage for non-compliance. Several important issues are often neglected during construction work such as enforcing a Code of Conduct for all workers, implementing an effective and culturally appropriate Grievance Redress Mechanism and Gender-Based Violence (GBV) prevention measures. Often the responsibility of implementing E&S and H&S measures does not cascade down to the contractors.

7.4.1.1 Impact significance

Since this type of risk can have implication for all E&S components, assessment of its significance is specifically assessed in the next section for each component (Construction phase impacts and risks).

7.4.1.2 Mitigation measures

The selection of the construction contractor will require a conscious decision by TANROADS prior to tendering.

It is also key that call for tenders and contracts for construction contractors include measures developed in the ESMP. In addition, some measures proposed in this ESMP involve a cost for the construction contractor, call for tender shall be clear on the requirement to quantify health and safety measures and other measures in the Bills of Quantities (PPE, oil spill kit, etc.).

TANROADS shall integrate appropriate wording in the tender documents for contractors. It is important to highlight in tender documents that there are sensitive habitats (national park, KBA and IBA, wetlands and watercourses) that would need to be protected from encroachment, deposition of demolition waste and rubbles and poaching from workers. It is also important to include requirement to ensure proper labor condition and protection against GBV/SEA. The framework ES instruments developed as part of TanTIP (such as

the GBV action plan and the Labor Management Procedures) shall be included in tender and in contractual documents.

TANROADS shall integrate detailed requirements in contractual documents for contractors and use of covenants in contracts. Covenants are formal obligations and prohibitions that the company must respect, they are not subject to interpretation.

It is key that ESMP actions be translated into contractual terms so that ES requirements cascade down to contractors and that they know their responsibility upfront. Tender and contractual documents shall highlight that contractors are required to abide by the ESMP.

TANROADS shall ensure that appropriate wording on the chain of responsibilities is included in contractual document to ensure E&S and H&S measures cascade down to the contractors.

TANROADS shall establish the management structure at TANROADS to supervise E&S and H&S aspects of the project as required in the Environmental and Social Commitment Plan (ESCP).

The Supervising engineer shall use environmental and social screening to ensure that selected quarries and sand pits do not cause any environmental damages to natural and sensitive habitats and do not present any risks for neighboring communities (a model is included in the ESMP).

7.4.1.3 Residual impact

The assessment of the significance of the residual impact, which would take place during construction, is done in the next section (Construction phase impacts and risks).

7.4.2 Resettlement of persons and displacement of assets

Road widening and geometry changes will require to resettle people that have settled in the road RoW and displacement of their assets.

The standalone RAP developed for the project has provided detail on the extent of the impacts and established the framework for compensation, assistance and livelihood restoration measures. The RAP has identified several Project Affected Persons (PAPs) in the road RoW. The number of PAPs concerned by the widening of the road is presented in the next table.

Table 7-2 Number of PAPs according to the RAP

Type of Impacted Property	Category of Impact	Number of PAPs/properties
Residential structures	House owners	35
	Residential tenants	0
Vendors	Petty business with temporary structures in the	124

	road reserve	
Impacts on trees/crops	Individual owners	202
Total		237

7.4.2.1 Impact significance

According to the RAP report, the extent of displacement of persons is relatively limited, with a total of 237 PAPs/properties impacted over a length of 92 km. The intensity of the impact is low, the impact has a local extent and a permanent duration. The significance of the impact is therefore minor.

	Resettlement of persons and displacement of assets
Intensity	Low
Extent	Local
Duration	Permanent
Significance	Minor
Occurrence probability	High probability

7.4.2.2 Avoidance and mitigation measures

The Detailed design as tried as much as possible to remain within the existing road RoW of 45m to minimize displacement of households, livelihood and assets.

A stand-alone Resettlement Action Plan (RAP) has been prepared to address all impacts and compensation related to the work.

As required by the RAP, promptly and timely compensations shall be paid to all PAPs based on Tanzania laws and the World Bank ESS 5 on Land Acquisition, Restrictions on Land Use and Involuntary Resettlement before commencement of the construction activities.

As developed in the RAP, a Grievance Redress Mechanism (GRM) is in place to resolve all resettlement and compensation related grievances. As highlighted in the GRM, there will be open communication channels to register any complaints resulted from the project through established phone numbers and emails address as well as suggestion boxes at contractors, consultants, TANROADS regional Offices as well as Wards and Villages offices.

7.4.2.3 Residual impact

With appropriate compensation as described in the RAP report, the duration of the impact would be reduced to temporary. Impact significance would however remain minor, given that displacement represents a source of impact on people's life.

7.4.3 Risk of GBV related to the compensation process

compensation payment of Project-Affected Persons is sometimes associated with GBV as women are often bypassed when compensation is negotiated or subject to threats when it is distributed. This concern was raised during public consultations.

There is a risk of men running away with the compensation money or misusing it instead of investing the money in the household. This situation is common for Projects involving cash compensation. Cash compensation poses a risk to women when the money is paid into men's bank accounts as men are the heads of households and are often the sole holders of bank accounts. Often, women are not consulted when compensation is negotiated and distributed.

Women head of households are also at risk from extended family members who may claim their share of compensation. Whether the compensation is pecuniary or in kind, widowed heads of household sometimes face pressure, sometimes violent, from family members of the deceased spouse or their own families, who claim shares in compensation for services rendered in the past or who claim customary ownership of compensated land. This type of situation is common when the lack of tenure security for widows (and women in general) is a reality.

7.4.3.1 Impact significance

Given the current prevailing situation regarding women in Tanzania, as highlighted in the baseline section, there is a risk that some forms of GBV take place during the resettlement process. If these situations were to take place, intensity of the impact would be medium to high, the extent would be limited but the impact would most likely permanent. Impact significance would be moderate to major.

	Risk of GBV related to the compensation process
Intensity	Medium to high
Extent	Local
Duration	Permanent
Significance	Vary from moderate to major
Occurrence probability	Potential occurrence

7.4.3.2 Mitigation measures

It is recommended that compensation payment for physical displacement be preceded by the following activities:

- Sensitization of men on the use of compensation: when paying compensation, it is important to sensitize male heads of household on the use of compensation in order to prevent cases of dilapidation.

- Require both spouse signatures on compensation agreements: signing of offset agreements and upstream negotiation processes should include women.
- Offer assistance in opening joint bank accounts during compensation: in rural areas, a significant number of people do not have a bank account. It is recommended, when paying compensation for household losses, to assist eligible persons to open a joint account that will be shared between men and women.
- Prioritize compensation in kind for female heads of household: when monetary compensation (in cash) is chosen for the loss of the house, it implies that the beneficiary rebuilds his house on his own. Women heads of household are often single or widowed people who do not have the capacity to rebuild houses or to hire a contractor to do it. In this context, when the only compensation proposed is pecuniary compensation, exceptional measures shall still allow heads of household to obtain compensation in kind (house against house).

7.4.3.3 Residual impact

With the implementation of the recommended mitigation measures, the intensity of the impact would be reduced to low. The significance of the impact would be reduced to minor.

7.5 Impact and risks on biophysical components during construction phase (road rehabilitation)

7.5.1 Impact on soil quality

This section focuses on impacts and risk on soil. The following impacts and risks were identified in the impact identification matrix:

- **Impact on soil quality from accidental spillage of oil and poor management of waste and sanitation.** All construction activities represent risk of accidental spillage of oil and will generate waste that could affect soil quality if poorly managed.
- **Impact on soil from sealing of additional permeable surface and compaction by machinery.** Many construction activities will require to seal additional permeable surface and will lead to soil compaction.

7.5.1.1 Impact significance

Road rehabilitation work is a material intensive industry. Residual material will be produced in large amount during rehabilitation, some of which such as oil are hazardous. Earthwork, removal of pavement layers, demolition waste, waste collected at workers camp, and green waste from vegetation removal are important aspects of construction activities. The intensity of the impact is medium, the extent will be punctual and the duration temporary. The significance of the impact would be minor.

Regarding the impact from sealing of additional permeable surface, the intensity of the impact is low, given that most road reserves are already compacted to accommodate the

additional width. The intensity of the impact would be low, local and of permanent duration. The impact significance would be minor.

	Impact on soil quality from accidental spillage of oil and poor management of waste and sanitation	Impact on soil from sealing of additional permeable surface and compaction by machinery
Intensity	Medium	Low
Extent	Punctual	Local
Duration	Temporary	Permanent
Significance	Minor	Minor
Occurrence probability	Potential occurrence	Potential occurrence

7.5.1.2 Mitigation measures

Good housekeeping shall be practiced within material storage compounds or vehicle maintenance yards where the possibility of spillage is great. This shall be done by installing spill tanks and secondary containment at vehicle maintenance yards.

Given the absence of landfills in the vicinity of the road, waste management will be a challenge not only in terms of pollution but also in terms of nuisance and health risk (if local dumpsites are poorly managed).

Collect, separate and send waste to the appropriate service providers:

The contractor shall provide sufficient waste bins at work site and workers camps and all off-site facilities. These shall allow for the separation of domestic nonhazardous waste and hazardous waste. Hazardous waste collection shall also be separated between medical waste and other hazardous wastes.

At the workers’ camp, rubbish containers shall be installed in a shelter on a wooden, metal, or concrete stand. Such containers must be emptied at regular intervals to avoid unpleasant odors associated with decaying organic materials.

Hazardous wastes (liquid) shall be handled in designated area with concrete surrounding or containers around the workshop to avoid spillage. Collected liquid waste shall be managed by designated service providers for disposal.

Hazardous waste (solid) such as used batteries, filters, metal scrapers, used tiles, bitumen drums shall be collected and stored in the designated area. Collected solid waste shall be managed by designated service providers for disposal.

Hazardous waste (medical) at the workers nursery shall be stored in biohazard containers and shall be managed in close collaboration with the nearest hospital.

Burning of any type of waste shall be forbidden, this includes but is not limited to oil, plastic, tires, and domestic waste. Burying waste in the workers camp shall also not be authorized.

Since there are no formal landfill in the vicinity of the road, non-dangerous waste that are generated at the workers camp (domestic waste) could be buried at a local dumpsite (in the absence of other alternatives). The selection of the dumpsite shall be done in close collaboration with district authorities. In addition, the Supervising engineer shall validate the choice of dumpsite based on several ES criteria:

- Distance of the dumpsite to residential areas.
- Distance of the dumpsite to the nearest watercourse. Absence of impact on watercourse.
- Absence of impact on groundwater.
- Type of soil, it is preferable to select a site with impermeable soil and to avoid sandy areas.
- Overall management of the dumpsite (cleanliness, etc.).

In both cases, the contractor shall provide proofs of signature of an agreement with a waste collection company and the local municipality to the Supervising engineer.

Collect, separate, reuse and dispose of demolition waste:

- Bituminous waste shall be stockpiled for reuse at locations designated by the Supervising engineer.
- Disposal of demolition waste shall be done in accordance with clause 1713 of the Standard Specifications for Road Works 2000.

Collect and manage wastewater:

- The camp sites shall have adequate toilets with septic tank. A contract with a service provider shall be established for regular maintenance and regular emptying.
- Septic tanks shall be installed in areas of stable soils that are nearly level, well drained, and permeable, with enough separation between the drain field and the groundwater table or other receiving waters.
- Mobile toilets shall be available to workers when working on the road sections. A contract with a service provider shall be established for regular maintenance and regular emptying.

Refueling:

Refueling shall be done in designated areas with minimal risk of collision with other vehicles.

Small refueling stations and oil barrels must be on impermeable surfaces with controlled drainage (drip trays to collect small spillages).

All fuel bowser (trucks) shall have a certified spill response kit with granular absorbent, bags and containers to remove polluted earth in case of spills. All workers handling fuel shall have proper training on the correct transfer and handling of fuels and chemicals and the response to spills.

In case of small oil spills, granular absorbent shall be put on the spill. The contaminate earth shall be excavated and sealed in bag to be sent to appropriate treatment plants. Contaminated soil shall not be sent to municipal dumpsites. In case of large oil spills, the spill shall be contained and the site isolated with fences. The appropriate agency shall be contacted for guidance, and contaminated soil shall be excavated and transported to the designated treatment facility.

Oil Tanks

It is required to install secondary containment for fuel storage tanks and for the temporary storage of other fluids such as lubricating oils and hydraulic fluids.

A **Waste and hazardous material management plan** is included in the ESMP. It shall be adapted by the contractor in its Construction-ESMP.

To mitigate the impact of soil compaction, the main measure is to ensure to confine work within the RoW and avoid unnecessary encroachment.

7.5.1.3 Residual impact

With the implementation of the recommended mitigation measures, the intensity of the impacts would be reduced to low and the duration to temporary. The significance of the impacts would be minor.

7.5.2 Impact on hydrology, water quality and aquatic habitats and fish

This section focuses on impacts and risk on three components that are interlinked : hydrology, water quality and aquatic habitats and fish. The following impacts and risks were identified in the impact identification matrix:

- Impact on hydraulic transparency from construction
- Impact on surface water quality during construction with expected increase of turbidity
- Impact of accidental spillage of oil and concrete wash water on surface water quality
- Modification of aquatic habitats from widening of culverts
- Impact on ecological continuity of aquatic habitat from culvert rehabilitation
- Disturbance of aquatic habitats and fish from water abstraction.

Impact on hydraulic transparency from construction, modification of aquatic habitats from widening of culverts and impact on ecological continuity of aquatic habitat from culvert rehabilitation

131 Culverts will be upgraded and widened, and new roadside ditches will be created. If not properly sized, these could reduce hydraulic transparency and impact aquatic habitats but also traditional irrigation (recession agriculture and paddy fields). Twenty existing box culverts will be widened and their wingwalls removed in order to accommodate the widened cross section of the road. The 111 metal culverts will be fully replaced by new concrete culverts and on few occasions, the corrugated metal pipes will be fully replaced by concrete box culverts (chainage 25+597; 50+535; 53+941; 54+279 ; 57+023; 57+651; 76+657; 63+852; 68+455).

These activities will modify small areas of aquatic habitats in order to accommodate the widened cross section of the road. Removal of wingwall will leave part of the stream bank with bare soil and intervention on stream banks could lead to erosion, deposition of demolition rubbles and in turn affect water quality and the aquatic habitat. Lastly culvert rehabilitation may impact ecological continuity if work require temporary diversion or blockage of streams (this is particularly true at locations at permanent stream location, where box culverts will be installed or widened).

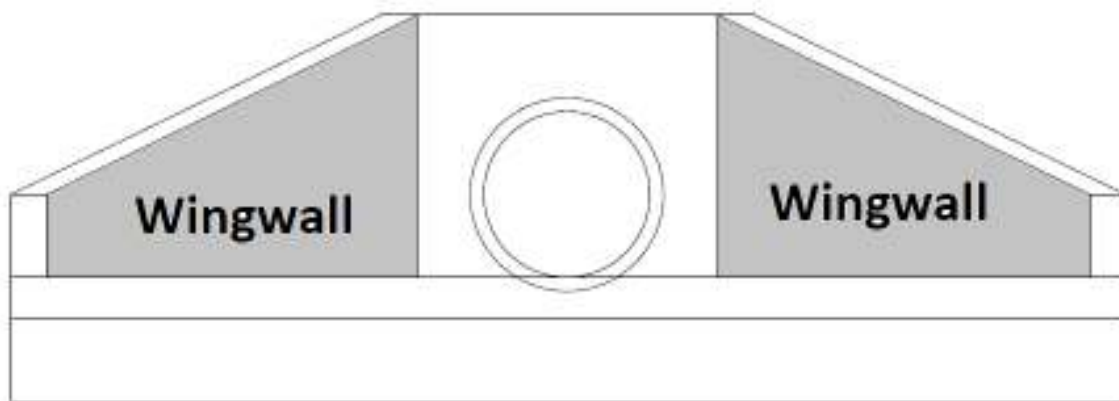


Figure 7-1 Culvert wingwall

Impact on surface water quality during construction with expected increase of turbidity

Erosion and leaching of stocked material and spoils, runoffs and removal of vegetation on roadsides, lack of proper sanitation and poor drainage on workers camp could affect water quality. Removal of culvert wingwalls as presented in the previous section could also affect water quality through erosion and sedimentation.

Impact of accidental spillage of oil and concrete wash water on surface water quality

All machinery that will be used for construction activities represent a risk of accidental spillage of oil. In addition, concrete wash water can seriously pollute surface water by

increasing its pH. Discharge of concrete wash water in watercourse is a typical and recurring impact on construction sites.

Disturbance of aquatic habitats and fish from water abstraction

Water will be needed for concrete during construction work. Natural permanent watercourses may be used for this purpose. Abstraction will disturb aquatic habitats and fish and may lead to encroachment from the passage of trucks. Given the fact that most streams are seasonal with little baseflow, it is unlikely that these will be used as source of water.

7.5.2.1 Impact significance

Regarding impact on hydraulic transparency, the intensity of the impact would be medium, the extent would be local as all culverts will be rehabilitated and the duration temporary. The significance of the impact would be minor.

Regarding impact on surface water quality, the intensity of the impact would be medium as construction works are often associated with an increase in turbidity in nearby watercourses, the extent would be local and the duration temporary. The significance of the impact would be minor.

Regarding risk of accidental spillage of oil and concrete wash water, the intensity of the impact would be high, the extent punctual and the duration temporary. Impact significance would be moderate. It is however a risk with a low probability to take place.

Regarding impact on aquatic habitats, the intensity will be high, since there are no major waterbodies in the project area and any abstraction will lead to disturbances of fish habitats, the extent will be punctual and the duration temporary.

	Impact on hydraulic transparency from construction, modification of aquatic habitats from widening of culverts and impact on ecological continuity of aquatic habitat from culvert rehabilitation	Impact on surface water quality during construction with expected increase of turbidity	Impact of accidental spillage of oil and concrete wash water on surface water quality	Disturbance of aquatic habitats and fish from water abstraction
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Intensity	Medium	Medium	High	High
Extent	Local	Local	Punctual	Punctual
Duration	Temporary	Temporary	Temporary	Temporary
Significance	Minor	Minor	Moderate	Moderate
Occurrence probability	High probability	High probability	Risk (low probability)	Potential occurrence

7.5.2.2 Mitigation measures

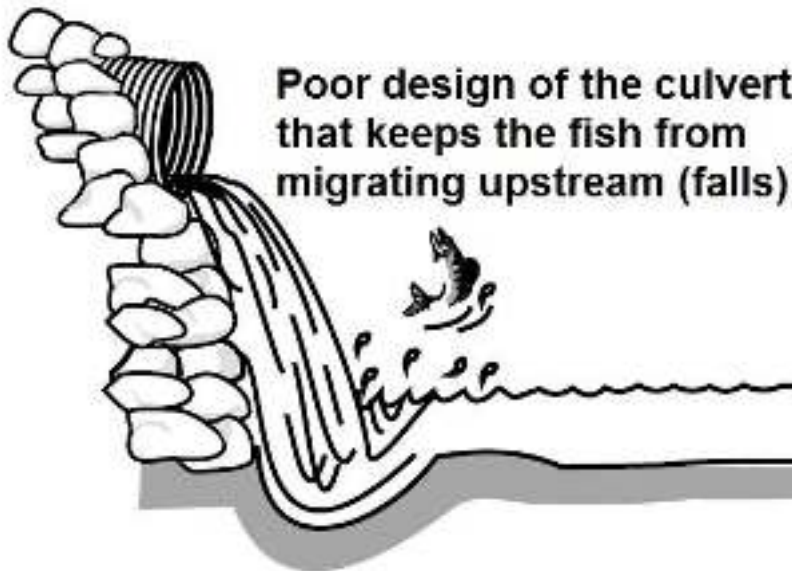
When replacing or widening culverts, the contractor shall:

- Work preferably during the dry season. If it is not possible, installation of pumps or temporary diversions shall allow water to flow downstream of work. This is also key to avoid all impacts on downstream and upstream croplands that are dependent on water. Given the permanent presence of water in the 29 box culverts, all work at these locations shall use diversion pumps and temporary enclosures to work in a dewatered environment. This measure is particularly important at locations where arched metal pipes will be fully replaced by larger box culverts and will therefore require interventions in the stream (see chainage at section 2.3.1.1).
- For all works on arched metal culverts and box culverts (see chainage at section 2.3.1.1), the contractor shall develop in its Construction-ESMP, a method for water work to ensure that free flow of water is not impacted, that material is not deposited in the streams and wetlands, and that turbidity of water does not increase.



Figure 7-2 Example of a highly sensitive area where pumps and temporary enclosure shall be used to ensure free flow of water

- During work on permanent streams (especially at box culverts), silt fences shall be installed downstream of work to avoid increasing turbidity of streams.
- Remove all obstacles to free flow (rock, plant debris, waste) before upgrading the culvert.
- All new culverts shall be installed partially under the riverbed level to avoid creating perched culverts (that would block free movement of fish) and shall not have a steep slope to avoid increasing flow to a point where some fishes can no longer swim.



Source : Bibliothèque nationale du Québec, 1997

Taking into account drainage and runoff flow patterns on the construction site is important to avoid local flooding or drought that could affect crops. Excavated material storage sites must never be done close to a watercourse to avoid impede the free flow of water or create bottlenecks. In order to minimize the impact of stocked material and spoils on water quality, the contractor will have to select storage sites that are far from any watercourses and wetlands

During replacement or upgrading of culverts, the need for derivation roads shall be determined since replacement of corrugated metal pipe culvert will need to entirely open the road and this will require to remove asphalt and granular base course layer. If derivation road is necessary, they shall not ford cross the watercourses (even during the dry season) and the crossing shall use temporary culverts that are size to ensure free flow of water. Abutments at these temporary crossing shall be stabilized with geotextile membrane and riprap rocks.

These measures shall be adopted and adapted in the Contractor's **Erosion and Sediment Control Plan** which is presented in the ESMP.

Unnecessary clearance of land shall be avoided.

Refueling of engines or transfer of materials should not be carried out near water bodies, and any local spillage shall immediately be remedied.

When working close to watercourses, the contractor shall:

- Install silt fences upstream and downstream of work site to retain suspended solids.
- Install temporary slope stabilization measures during construction such as sediment diverting or catchment basins.

Regarding the risk of oil spills, all machinery working close to a waterbody shall have certified emergency spills containment which include silt floating and oil spill containment booms. A skimmer to suck up the contained spill shall also be foreseen on site. In case of minor spills, the contained waterborne spills shall be sucked with a skimmer up to remove the oil from water. The collected oil shall be sent to a treatment facility and shall not be discharged on soil.

An Emergency Preparedness and Response Plan (EPRP) shall be developed to prevent and address minor and major spills, which would require to mobilize necessary resource to maintain and clean the spill.

The contractor is required to avoid all discharge of concrete wash water in waterbodies or on the ground. Temporary washout containers shall be installed to allow wash water to evaporate. The hardened cementitious solids could then be recycled.

When removing wingwalls, machinery shall not work from the stream and shall avoid all encroachment. The culvert embankment shall be rapidly stabilized upstream and downstream with riprap or gabion in addition to the new wingwall to avoid leaving bare soil and erosion of the banks.

At the workers' camp, grey water or wastewater shall never be discharged in a natural waterbody but be collected in septic tanks to avoid discharge in natural ditches and in watercourses.

The contractor shall obtain a water right before any abstraction of construction water in the project area. The road is crossing two water basins, the Victoria Lake basin on the norther part of the road and the Lake Tanganyika water basin in the south.

Regardless of their suitability for water, small streams shall be avoided due to little baseflow. Abstraction would have severe impact on aquatic habitats because of their size and the size of their watershed. Benaco dam which is a small reservoir destined at irrigation for paddy field has permanent water. Abstraction in this waterbody shall be done after consultation with concerned farmers that are dependent on water for their irrigated crops. Groundwater from boreholes shall be favored as a source of water for construction. Borehole's location shall be selected to avoid impact on private wells.

Because of the transboundary nature of the Kagera River (Akagera River), it shall not be used as a source of water by the contractor during construction activities.

7.5.2.3 Residual impact

With the implementation of preventive, mitigation and remedial measures all impact intensity and significance would be downgraded. Impact significance would be negligible to minor.

7.5.3 Impact on noise level

The following impact was identified in the impact identification matrix:

- **Increase in noise level and vibration.** All construction activities will generate noise, some activities will be particularly noisy such as removal of existing bituminous seal and truck transport. Blasting at quarries will also locally and significantly increase noise level.

7.5.3.1 Impact significance

Typically, equipment and construction machines are emitting average noise levels between 80 and 110 dBA which is quite an important increase of noise. The intensity would be high, the impact punctual and temporary. Increased noise level would impact communities along the road and also wildlife.

	Increase in noise level and vibration
Intensity	High
Extent	Punctual
Duration	Temporary
Significance	Moderate
Occurrence probability	High probability

7.5.3.2 Mitigation measures

When working close to residential areas and in villages, work shall be undertaken during daytime only.

The use of machinery shall be done in a manner to avoid unnecessary noise. The contractors and operator of machinery and trucks shall avoid idling the engines. Machinery shall also be serviced regularly to avoid unnecessary noise and air pollution.

The use of certified absorbent noise barrier to limit nuisances for nearby communities is recommended whenever possible. Such noise barriers could be used around generators and stationary engines.

Through the Stakeholder Engagement Plan, TANROADS and the contractor shall communicate the schedule and duration of work to affected communities and at location where there are sensitive receptors (such as schools, hospitals and places of worship). If needed, schedule of work could be adapted based on collected feedback and close to these sensitive receptors.

A list of criteria for the selection of quarries and borrow areas is developed and included in the ESMP, as several factors must be weighed such as the distance to transport material, the length of the access road to create, the presence of sensitive habitat and wildlife and the safety risk to persons (see the Environmental and Social Check List for all additional land requirement (quarry/borrow areas, workers camps, work sites).

7.5.3.3 Residual impact

With the implementation of mitigation measures, intensity of the impact would be reduced to medium and the significance to minor.

7.5.4 Impact on air quality

The following impact was identified in the impact identification matrix:

- **Emission of air pollutants from machinery and trucks.** Machinery and trucks will emit air pollutants such as CO₂, CO, nitrogen oxide (NO_x), PM₁₀, PM_{2.5} (dust in the form of particulate matter), SO₂. Trucks and construction machines are high NO_x emitters. Asphalt manufacturing also emits gaseous emissions and borrow areas and quarries will generate particulate matter (dust).

7.5.4.1 Impact significance

With the presence of machinery, air pollution from engines and from the generation of dust will increase quite significantly the concentration of pollutants. The intensity will be medium, of punctual extend and temporary duration.

	Emission of air pollutants from machinery and trucks
Intensity	Medium
Extent	Punctual
Duration	Temporary
Significance	Minor
Occurrence probability	High probability

7.5.4.2 Mitigation measures

Dust from work sites in village and town centers shall be reduced. This includes spraying the access to the construction site and other off-site facilities (quarries). The frequency of sprinkling shall be increased during the dry season. The use of water to suppress dust shall not be done at the expense of sensitive aquatic habitats and sources of domestic water. Location for water abstraction shall be validated by the Supervising engineer. The use of oil and oil by-products is prohibited to control road dust. Dust emissions from processing equipment at quarries (e.g. crushers, grinders, screens) shall also be adequately controlled through dust collectors, wet processing, or water spraying.

Vehicles maintenance: vehicles and trucks will be verified and serviced on a regular basis, especially oil changes in vehicles, truck and machinery to avoid unnecessary air pollution from exhausts.

All trucks transporting material shall be covered (including trucks travelling to and from quarries and borrow areas).

The selection of the asphalt batch plant location shall be done in consultation among TANROADS, local government authorities, customary authorities, and the contractor to ensure that it does not lead to local nuisances. It shall be located at a suitable distance from households.

7.5.4.3 Residual impact

The implementation of mitigation measures will reduce the intensity to low, impact significance will remain minor.

7.5.5 Impact on terrestrial habitats and wetlands and associated flora and wildlife

The following impacts were identified in the impact identification matrix:

- **Loss of roadside terrestrial and wetland habitats.** Road widening, storage of spoil material and work sites will require land and may impact terrestrial habitats and wetlands. Roadside verges are often valuable habitats for small wildlife. Other project activities such as the creation of arrester beds, geometry changes will also require land clearing and may impact roadside terrestrial habitats.
- **Destruction or disturbance of habitats at raw material extraction sites and off-site facilities** (workers camps, stone crushing sites, etc.). Borrow areas, hard stone quarries sand pits may affect natural habitats or lead to their destruction. All additional land requirement such as land for the workers' camp and land for the stone crushing site may lead to destruction or disturbance of habitats. The Detailed design has pre-selected several borrow areas and hard stone quarries. Sand pits, workers' camp and stone crushing sites were not localized.

7.5.5.1 Impact significance

Loss of roadside terrestrial and wetland habitats

Currently, the road reserve is most of the time already set aside and artificialized with laterite cover. Road widening will take place in this road reserve as shown in the two following figures. Loss of roadside terrestrial habitats from road widening will therefore be minimal. Loss will occur whenever additional land will be required for work sites and storage of spoils, arrester beds and minor changes in geometry. This may affect small wetlands that are located close to waterbodies. At this stage, the surface of losses is not possible to assess, as most road reserve are already artificialized, but the total surface is expected to be very small. For example, the 7 arrester beds will require about a total of 2.5 ha of land. The intensity of the impact would be low, extent punctual and duration permanent. The significance of the impact would be minor.



Figure 7-3 Example of road reserve (1)



Figure 7-4 Example of road reserve (2)

Destruction or disturbance of habitats at raw material extraction sites and off-site facilities

Using existing quarries is less impacting than opening new quarries. However, both situations will lead to destruction of habitats and disturbances. At this stage it is not possible to determine the surface of impacted habitat.

At quarry and sand pit sites, in addition to altering the landscape and creating hazardous condition for people (which are assessed at section 7.6.5), impacts on habitat and wildlife range from startling of wildlife from dust, blasting noise and truck movement, contamination of groundwater, impact on watercourses, removal of vegetation cover,

mortality of less mobile species. Under some conditions, quarries can create suitable habitats for reptiles and bird of prey, once the quarry is no longer in operation.

The pre-selected existing hardstone site HA4 is located in the Akagera KBA. It is located along the road, whether this site has the potential to disturb fish habitat is unknown and shall be determined through site surveys prior to construction activities.

The impact intensity would be medium, the extent would be local (as many sites will be impacted) and the duration permanent. Impact significance would moderate.

	Loss of roadside terrestrial and wetland habitats	Destruction or disturbance of habitats at raw material extraction sites and off-site facilities
Intensity	Low	Medium
Extent	Punctual	Local
Duration	Permanent	Permanent
Significance	Minor	Moderate
Occurrence probability	High probability	High probability

7.5.5.2 Mitigation measures

Work and storage of spoils and machinery shall remain within the existing road reserve.

Return of experience has shown that it is key for contractors to commit to maintaining all works within set boundaries to avoid unnecessary impact on habitats.

As work progresses, the Supervising engineer shall clearly delineate on the field the worksite and communicate the limits to the contractor.

In order to limit all work within set boundaries, and to manage off-site impacts, the contractor shall request the Supervising engineer whenever additional land is temporarily required along the road.

Once exact locations of quarries and borrow areas are known, prior ecological survey shall be undertaken to delineate sensitive habitats, to determine potential impacts on habitats and wildlife and possibly to recommend avoidance measures. This ecological survey shall be done by experienced wildlife and plant specialists. The HA4 quarry shall be avoided because it is located in a KBA.

The outcome of this survey shall be communicated to the Supervising engineer, the contractor and TANROADS to assist in the decision making.

A list of criteria is developed and included in the ESMP, as several factors must be weighed such as the distance to transport material, the length of the access road to create, the presence of sensitive habitat and wildlife and the risk to persons (see the

Environmental and Social Check List for all additional land requirement (quarry/borrow areas, worker's camps, work sites).

Regarding off-site facilities such as workers' camp and stone crushing site, it is highly recommended to use existing wasteland to avoid all conversion of natural habitats.

At the end of quarry and borrow areas operation, the contractor shall commit to reinstate them to minimize any ongoing impacts on habitats. This includes removing all unnecessary rubble and removing all machinery and oil barrels and softening the slopes of quarry or borrow areas. Consultation with local authorities, shall be done to determine the fate of disused borrow areas. For example, borrow areas can be filled with unusable soil to reduce their depth or could be transformed into wetlands or livestock drinking ponds where appropriate (as requested during public consultations). Planting trees around the borrow area is also recommended to stabilize the slopes and avoid further erosion. Native trees shall be purchased from local nurseries.

Suitable borrow areas to be transformed into wetlands are those that are impermeable and filled with water even during the dry season. Ideally, the wetland creates different habitats with different depth of water and limits the access to cattle.

Mitigation measures for wetland protection are presented in the section 7.5.2.

7.5.5.3 Residual impact

Loss of roadside terrestrial and wetland habitats will remain minor and impact from the destruction or disturbance of habitats at raw material extraction sites and off-site facilities will be downgraded to minor significance.

7.5.6 Impact on nationally protected areas

The following impacts and risks were identified in the impact identification matrix:

- **Risk of poaching and persecution of wildlife.** Mobilization of workforce may be associated with an increase in poaching activities and persecution of wildlife, this risk is particularly significant close to the Burigi-Chato National Park. Persecution of slow moving animal (snakes) from workers is also often reported on construction sites.
- **Startling of wildlife of the Burigi-Chato National Park.** Construction work will startle wildlife close to Burigi-Chato National Park. The national park is not fenced, and wildlife occasionally come close to nearby village of Nyabugombe.
- **Risk of encroachment into the Burigi-Chato National Park.** Setting up work sites and workers camp, mobilization of machinery and workforce could lead to encroachment if the boundaries of the national park are not demarcated and communicated to contractors.

7.5.6.1 Impact significance

Regarding the risk of poaching and persecution of wildlife, the intensity will vary depending on the location of the workers' camp. In the worst case, poaching can take important proportion and impact significance on certain animal population could be high,

of punctual extent since there is only one wildlife sanctuary (Burigi-Chato National Park). Effects of poaching could be permanent. Significance of the impact would be major. This is however a risk with a low probability to take place.

Regarding startling of wildlife of the Burigi-Chato National Park, intensity of the impact would be low, as the park closest boundary is 1.4 km from the road, extent would be punctual and duration temporary. Impact significance would be negligible.

Regarding the risk of encroachment into the park, if encroachment were to take place by mistake, the intensity would be medium, the impact punctual but permanent. This risk has a low probability to take place.

	Risk of poaching and persecution of wildlife	Startling of wildlife of the Burigi-Chato National Park	Risk of encroachment into the Burigi-Chato National Park
Intensity	High	Low	Medium
Extent	Punctual	Punctual	Punctual
Duration	Permanent	Temporary	Permanent
Significance	Major	Negligible	Moderate
Occurrence probability	Risk (low probability)	Risk (low probability)	Risk (low probability)

7.5.6.2 Mitigation measures

Burigi-Chato management shall keep provision of extra law enforcement personnel to increase patrol and law enforcement effort during construction activities close to the national park and shall provide induction sensitization for all workers when work reaches the national park.

A Code of conduct shall be enforced for all workers for respectful interactions with surrounding communities, tourists and wildlife (see **Workers' Code of Conduct** in the ESMP).

Workers shall be forbidden to hunt, to fish and to purchase any bush-meat or wild animals from communities. As part of the Code of Conduct, all workers regardless of their status, shall be prosecuted and laid off if caught with bush-meat or wild animals.

During the entire course of construction activities, the Supervising Engineer shall be required to verify fridges and refrigerators in construction contractors' kitchen on a regular basis to ensure that contractors do not purchase any bush meat or wild waterfowl. Burigi-Chato park rangers should provide technical support whenever necessary (to identify and confiscate suspected bush-meat). It is also recommended to concentrate effort on protection against hunting of waterbirds and waterfowls in swamps and Lake Burigi.

Slow moving animal (snakes) shall be protected from persecution from workers by providing sensitization induction training to workers.

Speed limits shall be set at 50 km/hour for all vehicles and trucks working close to the national park between chainage 43+000 and 53+500 which corresponds to an area where the road is relatively close to the park. 53+500 is the end of Nyabugombe Village where wild animals are reported to wander.

Night lights around the work site shall be turned off close to the national park to limit the effect of light pollution on wildlife (between chainage 43+000 and 53+500).

The workers camp, quarries, borrow areas, sand pits or water abstraction or any temporary work sites shall not be authorized between chainage 38+000 and 53+500.

Temporary deposition of earth spoil, bituminous seal and granular base course layer for reuse or disposal shall not be authorized on the eastern side of the road between chainage 38+000 and 53+500.

Because of the presence of the Akagera KBA on the eastern side of the road, none of these facilities or temporary deposition shall be authorized on the eastern side of the road between chainage 80+000 and the end of the road.

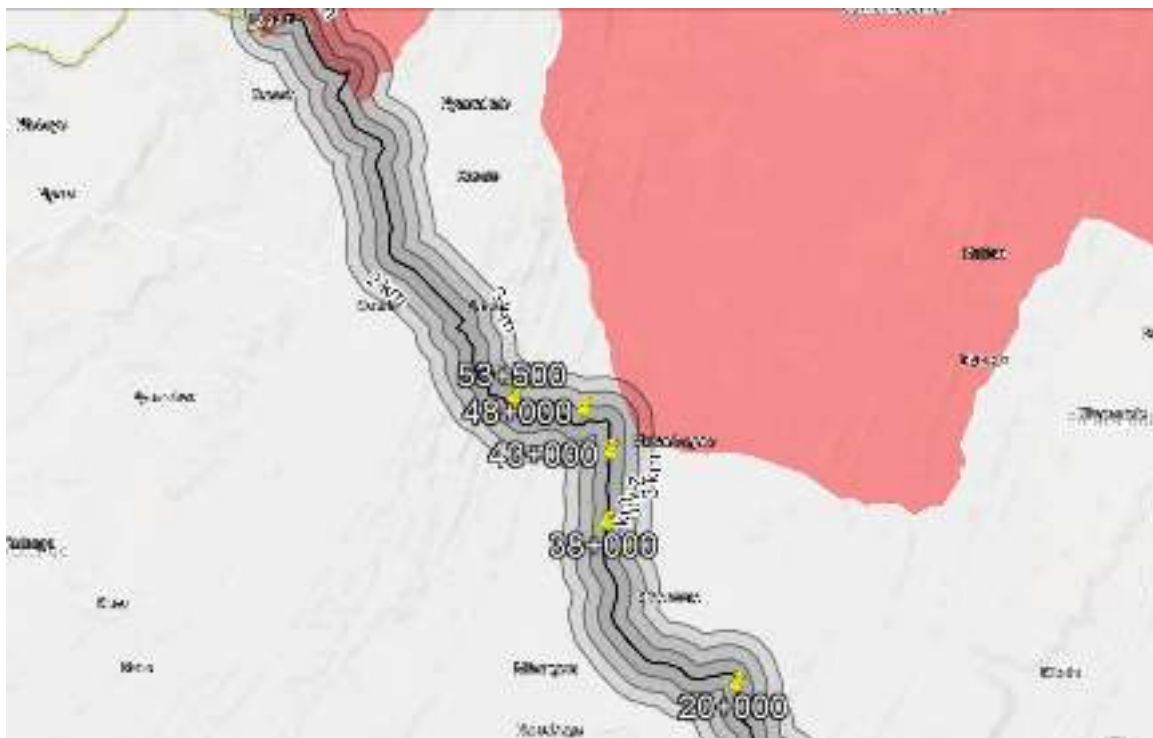


Figure 7-5 Road chainage and sensitive habitats

It is key that contractor be aware of the presence of the National Park and its limits to ensure that special attention be paid during work close to the park.

In addition, clear signage shall be added during construction work along the road between chainage 43+000 and 48+000 to mention the presence of the national park.

7.5.6.3 Residual impact

With appropriate risk preventive measures and mitigation, all impact significance could be reduced to negligible.

7.5.7 Impact on internationally recognized areas of high biodiversity value

The following impact was identified in the impact identification matrix:

- **Risk of disturbance of fish in the Akagera KBA.** Threatened fish are present in the Akagera KBA which is made of the Kagera river and its drainage basin and floodplain. Work activities could lead to encroachment or accidental spillage if the boundaries of this KBA are not communicated to the contractor.

7.5.7.1 Impact significance

As presented in section 7.5.2, replacement of culverts could represent a risk on threatened fishes of the KBA. As highlighted in the baseline, 11 small metal pipe culverts are found within the limit of the KBA. These drain small seasonal streams that do not seem to be directly connected to the floodplain of the Akagera River or any tributaries. The risk of impact on threatened fish from culvert replacement is therefore very small. Intensity is low, extent punctual and duration temporary.

	Risk of disturbance of fish in the Akagera KBA
Intensity	Low
Extent	Punctual
Duration	Temporary
Significance	Negligible
Occurrence probability	Risk (low probability)

7.5.7.2 Mitigation measures

The road passes along the KBA site between chainage 81+500 and 91+440 (end of the road). However, the value of the site lies with the Akagera River and its floodplain and possibly with small tributary streams which are not in contact with the road at these locations. Replacement of the 11 culverts between 81+500 and 91+400 shall be done outside of the rainy season as a precautionary measure. This is particularly important given the fact that the 11 culverts are currently corrugated metal pipes that need to be fully replace by concrete pipe culverts. Given their size, these culverts concern very small seasonal natural drainage and not permanent streams connected to the Akagera River. Their localizations, according to the design is presented is as follow:

- 81+513
- 82+111
- 82+758

- 83+585
- 84+138
- 86+383
- 87+076
- 87+499
- 90+421
- 91+075
- 91+236

It is key that contractor be aware of the presence of the KBA and its limits to ensure that special attention be paid during work close to the KBA.

The mitigation measures presented in section 7.5.2 and 7.5.5 and 7.5.9 would mitigate the impact.

7.5.7.3 Residual impact

With appropriate preventive measures and mitigation, the significance of the impact would be nil.

7.5.8 Impact on threatened plant species

The following impact was identified in the impact identification matrix:

- **Risk of destruction of threatened plant species.** Natural habitats around the road have the potential to shelter some threatened plant species. Setting up work sites and workers camp, the rest area, mobilization of machinery and workforce could lead to their destruction.

7.5.8.1 Impact significance

If threatened plant species were impacted, the intensity of the impact would be high, the extent punctual and the duration permanent. The impact significance would be major. However, this is a risk with a low probability to take place.

	Risk of destruction of threatened plant species
Intensity	High
Extent	Punctual
Duration	Permanent
Significance	Major
Occurrence probability	Risk (low probability)

7.5.8.2 Mitigation measures

It is recommended that all work sites and camps be located in brownfields, in areas already disturbed by past activities.

It is recommended that, for all additional land requirement (outside of the existing road reserve), that the selection of site be preceded by an ecological survey to delineate sensitive habitats, to determine potential impacts on habitats and wildlife and possibly to recommend avoidance measures. This ecological survey shall be done by experienced wildlife and plant specialists (see the *Environmental and Social Check List for all additional land requirement (quarry/borrow areas, workers camps, work sites)*). This check list provides with the name of potentially present threatened plant species in the Study area.

The outcome of this survey shall be communicated to the Supervising engineer, the contractor and TANROADS to assist in the decision making.

7.5.8.3 Residual impact

With mitigation measures, impact significance would be nil.

7.5.9 Impact on threatened wildlife

The following impact was identified in the impact identification matrix:

- **Risk of disturbance and direct mortality of threatened wildlife species.**
Natural habitats around the road have the potential to shelter some threatened wildlife species. Construction activities may lead to their disturbance or lead to mortality of some species.

7.5.9.1 Impact significance

If threatened wildlife species were impacted, the intensity of the impact would be high, the extent punctual and the duration permanent. The impact significance would be major. However, this is a risk with a low probability to take place.

	Risk of disturbance and direct mortality of threatened wildlife species
Intensity	High
Extent	Punctual
Duration	Permanent
Significance	Major
Occurrence probability	Risk (low probability)

7.5.9.2 Mitigation measures

The same procedure as for threatened plant species shall apply for the risks on threatened wild animals.

As for threatened plants, an ecological survey shall be done by experienced wildlife and plant specialists (see the Environmental and Social Check List for all additional land

requirement (quarry/borrow areas, workers camps, work sites). This check list provides with the name of potentially present threatened wildlife species in the Study area.

Mitigation against poaching and wildlife persecution presented at section 7.5.6 will help mitigating the impact.

7.5.9.3 Residual impact

With preventive measures, impact significance would be nil.

7.5.10 Impact on alien and invasive plant species

The following impact was identified in the impact identification matrix:

- **Risk of spread of alien and invasive plant species.** Land clearing and earth work to increase the road width may facilitate the spread of invasive species. As presented in the baseline, about 15 invasive and alien species.

7.5.10.1 Impact significance

Since work will mainly take place along an existing infrastructure, the intensity of the impact is low, the extent would be punctual and the duration permanent (if alien species would settle in an area, the effect would be permanent or at least long lasting).

	Risk of spread of alien and invasive plant species
Intensity	Low
Extent	Punctual
Duration	Permanent
Significance	Minor
Occurrence probability	Risk (low probability)

7.5.10.2 Mitigation measures

While identification of all invasive plants will not be feasible during land clearing to accommodate work sites, other mitigations can be proposed. It is for example, recommended to ensure that machinery be cleaned and verified before commencement of work to ensure that no mud is transported to the site. Cleaning machinery shall also be performed when working close to watercourses. Lastly, all earth spoils shall be rapidly reused or covered to avoid colonization by invasive plants.

7.5.10.3 Residual impact

With appropriate preventive measures, the risk would not be completely annihilated and would remain of minor significance.

7.6 Impact on the human environment during construction phase (road rehabilitation)

7.6.1 Impact on population distribution and settlement pattern along the road

The following impacts and risks were identified in the impact identification matrix:

- **Possible additional temporary and permanent restrictions on land use during construction.** The setting up of work sites and workers’ camps, the rest area, mobilization of machinery and workers, arrester beds, and derivation roads will require additional land that was not identified at project preparation since the RAP only covered the impact associated with the widening of the road within the RoW. Culvert replacement may also require additional land to accommodate a derivation road (since the road will be open in its entire width during replacement). Temporary and permanent restrictions on land use is therefore expected during construction.
- **Socioeconomic impacts on displaced persons.** Resettlement may lead to socioeconomic and psycho-social impacts on displaced persons.

7.6.1.1 Impact significance

Given that some additional land may be required during construction and that the willing buyer, willing seller principle would prevail, impact intensity would be low, the extent would be punctual, and the duration would be temporary (for temporary land requirements) or permanent. Impact significance would either be minor or negligible.

Regarding socioeconomic impacts on displaced persons, after compensation measures payment and livelihood restoration measures, the intensity of the impact would be low, the extent local (as land may be required all along the road) and the impact would be temporary.

	Possible additional temporary and permanent restrictions on land use during construction	Socioeconomic impacts on displaced persons
Intensity	Low	Low
Extent	Punctual	Local
Duration	Temporary/permanent	Temporary
Significance	Minor or negligible	Minor
Occurrence probability	High probability	Potential occurrence

7.6.1.2 Avoidance and mitigation measures

According to the RAP, the purchase of campsite facilities will normally be done through a willing-buyer willing-seller (wb/ws) approach and not compulsory acquisition (for permanent land acquisition). To be considered wb/ws, the buyer does not have any power to force the sellers to sell (for example no eminent domain). If the seller refuses, the buyer does not have any legal resorts.

In order to meet the requirements of the wb/ws approach, the following conditions have to be verified by the Supervising engineer:

- Written minutes to confirm existence of the negotiation and consultation with landowners and documentation on the land acquisition process.
- Confirmation that the land that was sold was not under any form of rental.
- Compensation is done in accordance with the RPF (and Project RAP).

If the conditions for the wb/ws are not met, any additional land acquisition and impact on property resulting from mobilization activities, will be conducted in line with the TanTIP Resettlement Policy Framework (RPF) and the Project RAP (including eligibility and entitlement criteria) and monitored by the Supervising engineer.

Since additional land may be temporarily required for work site, workers camps and other unforeseen needs, TANROADS shall develop land pre-entry and exit procedures and agreements with landowners and affected communities before the commencement of construction activities (and integrate these procedures and compensations in the RAP and its entitlement matrix). These procedures shall include restoring cultivated land to allow livelihood activities to resume after work. Land pre-entry and exit procedures and agreements shall be reach with the owners of land by TANROADS using the same entitlement matrix and compensation thresholds as in the RAP, negotiation with land and asset owners are under the responsibility of TANROADS and shall not be done by the contractor. This will require the mobilization of a project land acquisition team on the ground to reach agreement for temporary access during construction.

All crops and properties that will be accidently damaged by operating vehicles, equipment and machinery and vibration during construction activities shall be compensated by the Contractor using the RPF/ RAP entitlement matrix and compensation thresholds in consultation with TANROADS.

Temporary access to businesses during construction work shall be maintained by the contractor.

Regarding socioeconomic impacts on displaced persons, mitigation measures are developed in the stand-alone Project RAP.

7.6.1.3 Residual impact

With the implementation of mitigation measures, the residual impact would be negligible. Some persons may even benefit from the wb/ws process. Regarding socioeconomic impacts on displaced persons, the significance of residual impact would be minor.

7.6.2 Impact on social indicators

The following impacts and risks were identified in the impact identification matrix:

- **Worker’s influx, workers camp and associated social impacts on communities.** The setting up of workers camps and mobilization of workers are associated with multiple risks for host communities including risk associated with the influx of workers. Currently, Benaco village (chainage 72+400 to 73+700) seem to be the preferred option for the main worker’s camp according to the Design review report and therefore the main area at risk of typical impacts from

the arrival of workers. Impacts and risks for community members are numerous and can range from:

- Social conflicts.
- Increase in crime and feelings of insecurity.
- Changing social dynamics.
- Pressure on local public services (see this section).
- Increase in communicable diseases amongst workers (including COVID and HIV) and outbreaks in host communities (see section 7.6.8).
- Increase in gender-based violence (GBV) and prostitution (see section 7.6.11).
- Child labor and impacts on their education (in canteens and house cleaning).
- Price inflation of local goods and services and rents having a more severe impact on people not employed by the project.
- Increase in road traffic and collisions and accidents with pedestrians.
- Construction-related nuisances: noise, poorly managed waste, dust, wastewater discharge in natural watercourses without any treatment.
- Risk of improper behavior from security forces (see section 7.6.5).

According to the Design review report, Benako area is a suitable area for the camp sites due to the following reasons:

- At the end of the project, the buildings can be used for social services (such as schools) since there is a good population.
- Availability of manpower.
- It is neither within nor near environmental sensitive area.
- Already disturbed area due to human activities.
- Availability of power, water and dispensary within the area.

- **Strain on local services such as health services, water supply, waste management and electricity from the presence of work and workers.** The setting up of workers camps and mobilization of workers may strain local services and public utilities.. This includes water and electricity from TANESCO National power grid.

7.6.2.1 Impact significance

Overall, the social impact associated with workers’ influx would be of medium intensity, the extent would be local and of temporary duration. However, regarding some indirect impacts such as GBV and SEA, the intensity would be high. As presented above, some of these risks are separately assessed.

Regarding potential strain on local services, the intensity will be medium, the extent will be local as it may impact several services and the duration will be temporary.

	Worker’s influx, workers	Strain on local services
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	camp and associated social impacts on communities	such as health services, water supply, waste management and electricity from the presence of work and workers
Intensity	Medium	Medium
Extent	Local	Local
Duration	Temporary	Temporary
Significance	Minor	Minor
Occurrence probability	Potential occurrence	Potential occurrence

7.6.2.2 Mitigation measures

The project will select campsite's locations through collaboration and consultation between TANROADS, local government authority, customary authorities and contractor to minimize any possible environmental and social risks to communities and biodiversity along the road. Workers lodging planning must be done in a way that reduces interaction with local communities. As a good practice, it is recommended to install the workers' camp(s) as far as possible from villages centers.

The workers camp shall be designed to prevent contamination of any water body, to ensure hygiene and to avoid the proliferation of mosquitoes, flies and rodent. Other measures regarding workers' camp are presented at section 7.6.9.

TANROADS will need to ensure that effective consultations and information disclosure are held on a regular basis with local communities concerned by the proposed campsite. The framework LMP, SEP and its GRMs and the GBV action plan will help in mitigating and preventing environmental and social risks associated with the location of the workers' camp.

A workers' Code of Conduct shall be enforced to ensure that all workers behave in a respectful manner and to avoid all conflicts with local communities and GBV. The CoC is presented in the ESMP and in the GBV action plan. The GBV action plan shall be put in place and enforced, with induction training and sensitization for all workers (including unskilled workers). The **GBV plan** is presented in a standalone document.

The workers camp shall include wastes collection points for both solid and liquid wastes. The collection and waste disposal will be undertaken by the authorized waste service provide (other mitigations regarding waste management are presented at section 7.5.1). A **Waste and hazardous material management plan** is presented in the ESMP.

The contractor shall prepare a **Workers' camp management plan** based on the guidance presented in the ESMP and the requirements of section 2.1 General Facility Design and Operation of the General EHS Guidelines from the WBG.

Other mitigations are presented in section 7.5.10 regarding safe distance with sensitive natural habitats.

The establishment of a workers' camp should not lead to pressure on public services such as drinking water, electricity and health care, as these pressures are often to the detriment of local communities. Regarding the need to limit the strain on local services, it is recommended to disclose to local public services the needs generated by the workers' camp and the construction site and coordinate the implementation of measures to prevent pressures on public infrastructure from having negative consequences on local communities (hospitals, roads, electricity consumption, water intake). The construction contractor will have to study these risks and will have to set up its own services such as a first aid center and source of water. TANROADS will have to liaise with TANESCO National power grid to ensure that electricity demands for the workers camp do not lead to power outages. If needed, the contractor will have to produce its own electricity using generators.

During construction, water pipes, electricity poles, gas pipes and TTCL cables located in/crossing the right of way (road reserve) may be moved slightly away from the road with provision of service duct to avoid interruption of services. TANROADS in collaboration with utility companies (TANESCO and TTCL) will be responsible for relocation of utilities and this will be done before commencement of construction works. District Water Engineers for Biharamulo and Ngora district shall be involved from the early stages. Utility Authorities should be notified in a timely manner and commit to restore the service after construction works. If temporary closure of water utilities is unavoidable, early notice shall be given to the community before removal and relocation of water utilities and alternative temporary domestic water supply shall be established.

Benaco reservoir shall be avoided as a source of water for construction (more analysis is provided at section 7.6.3). By looking at satellite imagery, this reservoir is used by farmers for irrigation in paddy field. Use of this water could lead to impact on livelihood.

7.6.2.3 Residual impact

With the implementation of preventive and mitigation measures, impact intensity would be reduced from medium to low. Impact significance would be minor for both impacts.

7.6.3 Impact on livelihood and economic activities

The following impacts and risks were identified in the impact identification matrix:

- **Disturbances to livelihood and economic activities.** Street vendors and businesses along the road and tourism at the NP may be impacted by changing road conditions during construction activities and restrictions of access to businesses. Impacts on vendors livelihood is addressed in the stand-alone RAP where compensation is foreseen for all petty business with temporary structures in the road reserve.

- **Disturbance of local traffic, mobility and congestion impacting economic activities.** Road users and commuters going to work may be impacted by changing road conditions during construction activities.
- **Reduction of available water for irrigation in Benaco pond.** Water abstraction from this pond for concrete production would lead to impact on small scale irrigation downstream. Benaco reservoir is the main surface waterbody along the road.
- **Job opportunities.** Construction activities represent an opportunity for temporary employment for members of local communities. Semi-skilled and unskilled labor will be sourced locally to provide communities with employment and the opportunity to earn an income during the construction phase of the proposed project. The contractor will engage nearby local communities and those offsite where possible in performing various construction activities that do not require specialized skills.

Potential impacts on hydraulic transparency and their consequences on small scale irrigation during culvert rehabilitation are presented in section 7.5.2. Maintaining flow during and after work on culverts is key to avoid impact on livelihood as shown in the following figure.



Figure 7-6 Small scale irrigation



Figure 7-7 Benaco reservoir and irrigation

7.6.3.1 Impact significance

Regarding disturbances to livelihood and economic activities and disturbance of local traffic, the intensity of the impacts would be medium, the extent will be local as these impacts may be felt at several locations along the road, the duration would be temporary. The impact significance would be minor.

Regarding the reduction of available water for irrigation in Benaco pond, the intensity could be high, jeopardizing the use of water for downstream irrigation. The impact would be local and temporary. The significance would be moderate. Given the uncertainties regarding the ecosystem services that people draw from the pond, the probability of occurrence is potential, and the impact will only be confirmed through additional engagement activities.

Regarding job opportunities, local employments are expected during construction. The intensity of the positive impact will be medium, of punctual extent and temporary duration (since local employment will only be provided during rehabilitation work).

	Disturbances to livelihood and economic activities	Disturbance of local traffic, mobility and congestion impacting economic activities	Reduction of available water for irrigation in Benaco pond	Job opportunities
Intensity	Medium	Medium	High	Medium
Extent	Local	Local	Local	Local
Duration	Temporary	Temporary	Temporary	Temporary

Significance	Minor	Minor	Moderate	Minor
Occurrence probability	High probability	High probability	Potential occurrence	High probability

7.6.3.2 Mitigation and enhancement measures

Compensation package for street vendors is foreseen in the RAP. This compensation is design to offset the losses of income during construction work. The Design report has foreseen to improve existing truck stops, however little information is provided on possible development of marketplaces along the road or around truck stops. It is however expected that once work will be over, this type of business will continue along the road and at road junctions.

The standalone RAP report provides more details on measures to assist affected persons to restore their livelihood.

Access to businesses (service and retail businesses) from the road shall be maintained during work to avoid reducing their source of income. This will require to design temporary accesses.

Regarding potential impact on Benaco pond, it is recommended to hold a public consultation with concerned farmers that use the reservoir to irrigate paddy fields. This consultation, which shall be undertaken as part of the SEP activities, shall aim at determining the volume that could be abstracted without impacting downstream agriculture. Collected information shall assist in the decision making. Depending on the severity of the impact, alternative sources shall be found or compensation shall be paid to affected farmers, in line with the RAP and its entitlement.

The Design report does not provide any information on how local traffic will be maintained. A **Traffic management plan** shall be developed by the contractor to minimize impact on local traffic.

Enhancement measures for job opportunities include:

Hiring members of local communities is one of the most common expectations when large infrastructure projects are developed.

Job offers shall prioritize permanent residents of neighboring communities. The local residency must be certified by the customary and local authorities before any hiring process and to avoid influxes from outsiders. Quotas for hiring local people must be negotiated with these authorities based on the number of habitants per neighboring community. This would require that the contractor identifies the needs and determine which jobs can be captured by local residents.

An off-site recruitment center should be set up. It will have to register all types of job applications from unskilled jobs to skilled jobs.

The contractor shall strive to source materials, equipment and services that can be provided by local suppliers. This will enhance internal money circulation and growth of business in the trading centers along the road, both districts and the region at large. TANROADS is also encouraged to procure experienced local contractor and sub-contractors.

A special clause that requires local residents to be employed as workers during construction shall be included in the contract. Furthermore, the contractor shall permit small businesses that support the construction such as cafes, food vendors, kiosk etc. to provide services to the construction staff in consultation with the local government authority.

7.6.3.3 Residual impact

The intensity of the disturbances to livelihood and economic activities and disturbance of local traffic, mobility and congestion will reduce from medium to low. Residual impact would remain of minor significance.

With adequate engagement activities, reduction of available water for irrigation in Benaco pond would be mitigated. The impact significance would be reduced to minor.

The proposed enhancement measures would ensure that job opportunities are given to local members of the communities, but the intensity would likely remain medium. The significance of the positive impact would remain minor.

7.6.4 Impact on community use of the road and safety aspects

The following impacts and risks were identified in the impact identification matrix:

- **Impact on connectivity across the road and disruption of access.** Construction activities will affect connectivity across villages as most have developed on both sides of the road. Works will disrupt regular pathways and walking routes pedestrians walk every day. This may cause frustrations due to restrictions of access to homes, services, schools or locations of work during construction.
- **Health and safety risks for communities during construction.** Nuisances (noise, dust, odors, presence of spoil materials) and risk of collision during construction activities may affect health and safety of people. Community members using the road, and particularly vulnerable road users such as pedestrians and bicyclists, are particularly at risk. Safety risks from induced traffic on smaller village roads (when trucks and vehicles avoid congestion from construction work) is also a typical issue to foresee. Lastly, all borrow areas and quarries represent important safety risk for workers and community members.
- **Risk of improper behavior of security personnel.** Security personnel at work sites and workers camp are sometimes associated with undue use of force and other forms of abuses. In the case of the project, security arrangements will consist of common measures, such as fencing or signs and security guards at night.

7.6.4.1 Impact significance

Regarding impact on connectivity across the road and disruption of access, the intensity will be medium, impact extent would be punctual and duration temporary. The significance of the impact would be minor.

Globally, the direct impact on health due to nuisances during construction would concern about 43,500 persons that live in Limited study area (based on an estimate, see baseline). However, as work rehabilitation will progress in phases, at a given time, this number will be significantly lower. Regarding safety risks for communities during construction, in case of a collision with a pedestrian or a bicyclist, the intensity of the impact would vary from low to high depending on the severity of the accident, the extent would be punctual, and the consequences could be permanent. The significance of the impact would vary from minor to major. The risk of an accident is, however, the worst case and has a low probability to take place.

Regarding the risk of improper behavior of security personnel, since security arrangements will consist of common measures, such as fencing or signs and security guards at night, the intensity of the impact would be medium, the extent punctual and the duration temporary. The risk has a low probability to take place.

	Impact on connectivity across the road and disruption of access	Health and safety risks for communities during construction	Risk of improper behavior of security personnel
Intensity	Medium	Low to High	Medium
Extent	Punctual	Punctual	Punctual
Duration	Temporary	Permanent	Temporary
Significance	Minor	Vary from minor to major	Minor
Occurrence probability	High probability	Risk (low probability)	Risk (low probability)

7.6.4.2 Mitigation measures

Drastically reducing of speed close or in the work sites, is the most important mitigation to implement to ensure safety of community and workers.

The construction contractors shall ensure safe passage at identified crossing sites for pedestrians with appropriate signage using pictograms and adequate protection from work engines and trucks and motorized traffic indicating diversion and entrance.

Pedestrian crossings shall be separated from motorized vehicles crossings and shall be installed away from hazards. These shall be physically separated with barricades and construction fences to inhibit pedestrian movement into the work site. The construction

contractor shall perform routine inspection of construction fences to ensure that they have not fallen or been stolen.

All passages shall be universally accessible to allow people with physical disabilities to safely cross (using a wheelchair for example)

Work site shall be clearly delineated and create exclusion zones. Work shall be confined to avoid that dangers spill out onto the sidewalks and streets around. Signage indicating danger using pictograms shall be installed along the work sites.

Construction fences and work exclusion zones shall be visible at night, it is therefore required to use orange, fluorescent color for barricades and fences.

The mobilization of a traffic controller is key, this traffic controller shall ensure to allow pedestrians to cross at designated locations.

Appropriate traffic control signs shall be installed along the main road, along detours. The contractor shall collaborate with Police force in monitoring vehicles and drivers' behaviors.

Mitigation for spoil materials include the need to confine land clearance within the proposed new road reserve boundaries and the need to avoid stockpiling materials close to pedestrian paths or close to residential areas and sensitive receptors schools.

Sensitization at schools along the road is also necessary, to show typical dangers associated with construction work and typical work signage to children (including the danger associated with arrester beds, quarry and borrow area operation). This activity shall be done in the framework of the SEP.

Mitigation and preventive measures for safe pedestrian passage shall be included in the Traffic Management Plan which shall be developed prior to construction by the contractor as part of the Construction-ESMP.

Road safety awareness campaign shall be conducted by contractor and destined at all workers during construction activities. In addition to regular OHS training for workers, awareness shall focus on ensuring community safety from work.

Regarding the risks associated with security personnel, a stand-alone Security Management Plan is not necessary since the need for security personnel will be limited to common measures.

In the case of the use of private security firms, the terms of the contracts for security personnel must be clearly established and the penalties for misuse of force must be stipulated in the contract. Contract shall include behavior commitments and clear and accessible disciplinary process. As highlighted in the World Bank Good Practice Note *Assessing and Managing the Risks and Impacts of the Use of Security Personnel* “*Although security is often sub-contracted, ultimately, the Borrower is responsible for the commitments made on the project. Contracts should include clear commitments*

regarding a Code of Conduct; training of proposed private security personnel and vetting of their record, as well as security procedures in case of alleged contract or Code of Conduct violations, including for cases where security personnel use excessive force, intimidation, or retaliation; and a summary of sanctions applicable”.

Security personnel shall be required to sign the Workers Code of Conduct and shall take part of induction training and sensitization on the Code of Conduct, the GBV action plan and the GRM. In addition, security personnel shall receive procedural training on procedures, proper conduct and ethics and human rights.

It is recommended to use guards from recognized private security companies and with a good reputation.

The TanTIP SEP includes an overarching GRM which shall be adapted for each project by TANROADS to ensure rapid resolution of grievances. The GRM shall be accessible to community members who wish to file a complaint regarding security personnel and workers behavior. Clear and transparent process for allegations of abuse are developed in the overarching GRM. As a good practice, it is recommended that the Supervising engineer, in close collaboration with TANROADS and the construction contractor adapt the overarching GRM based on project context.

Security-related allegations or incidents can include issues such as theft, abuse of power and retaliation, sexual harassment and exploitation, gender-based violence, and bribery and corruption shall be investigated by the Supervising engineer and TANROADS, for criminal cases, the police shall be involved. For cases of gender-based violence, the World Bank must be alerted immediately.

Additional measures are presented in the **TanTIP GBV action plan**.

Lastly, the Environmental and Social Check List for all additional land requirement (quarry/borrow areas, workers camps, work sites) presented in the ESMP includes requirements to assess the proximity of borrow areas and quarries with settlements to ensure that these sites do not lead to safety hazards.

7.6.4.3 Residual impact

With the implementation of preventive measures, the probability of occurrence will be further reduced for all risks. Regarding the impact on connectivity across the road and disruption of access, the intensity will be reduced to low. Impact significance would remain minor.

7.6.5 Impacts on women

The following risk was identified in the impact identification matrix:

- **Risk of additional workload burden on women when men are hired for construction work.** Construction work may attract men to work leaving women with additional burdens.

7.6.5.1 Impact significance

Intensity of the impact would be medium, the extent would be local and duration temporary. Impact significance would be minor.

	Risk of additional workload burden on women when men are hired for construction work
Intensity	Medium
Extent	Local
Duration	Temporary
Significance	Minor
Occurrence probability	Potential occurrence

7.6.5.2 Mitigation measures

This impact is hardly mitigable as recruitment of workers will not be able to detect this risk and select workers based on their family status.

7.6.5.3 Residual impact

Residual impact would remain minor.

7.6.6 Impact on vulnerable groups/persons

The following risk was identified in the impact identification matrix:

- **Disturbance of persons living with disabilities due to loss of access during construction work.** Persons living with disabilities may find it difficult to use the road and access services during construction activities.

Risk on other vulnerable persons, such as street vendors is presented in section 7.6.3.

7.6.6.1 Impact significance

Impact intensity will be low, the extent local and the duration temporary. Impact intensity will be minor.

	Disturbance of persons living with disabilities due to loss of access during construction work
Intensity	Low
Extent	Local
Duration	Temporary
Significance	Minor
Occurrence probability	Potential occurrence

7.6.6.2 Mitigation measures

All temporary passages across work sites shall be universally accessible to persons living with disabilities as presented in section 7.6.4.

7.6.6.3 Residual impact

With the implementation of mitigation measures, impact significance will be nil.

7.6.7 Impact on HIV and AIDS situation

The following risk was identified in the impact identification matrix:

- **Spread of HIV.** The arrival of workers is often associated with an increase in HIV prevalence.

The spread of HIV/AIDS is a serious concern whenever large infrastructure is built. This could be aggravated by influx of job seekers and workers and sexual relationships between incomers and local people. GBV and SEA are also associated with an increase in HIV and STI.

During engagement activities, community members at the project area raised their concerns about the influx of people into the area including construction workers. According to District and villages' reports, HIV infections and AIDS epidemic are a threat to the population in terms of social, well-being and economic development in the district. Public consultative meetings confirmed this fact, whereby it was asserted that the road project could contribute to accelerate the spread of new HIV infections.

This impact can also be associated with the establishment of workers' camp along the project as the campsites attract numbers of people and facilitate mingling with the communities.

7.6.7.1 Impact significance

The spread of HIV is a significant risk on construction sites. In case of infection of a person, the intensity of the impact would be high and of permanent duration. The extent of the impact would be regional as it could affect all persons living along the road or in contact with a person that has worked along the road.

	Spread of HIV
Intensity	High
Extent	Regional
Duration	Permanent
Significance	Major
Occurrence probability	Risk (low probability)

7.6.7.2 Mitigation measures

Raising awareness of the risks of sexually transmitted diseases shall be part of mandatory recruitment training for workers. For this purpose, the contractor shall prepare and implement an HIV/AIDS awareness campaign to reduce risks of spreading of HIV/AIDS

and other STDs. All workers shall receive an induction training on this issue. The contractor shall also identify a registered service provider to test workers.

TANROADS shall require the assistance of a NGO to implement HIV/AIDS awareness campaigns.

Access to Contractor’s Workforce Camps by outsiders shall be controlled. The nursery at the workers camp shall also be used to promote safe sex, sensitize workers on regular testing and shall provide information on the nearest health center to get tested.

Contractor shall provide standard quality condoms to personnel on site.

7.6.7.3 Residual impact

With the implementation of preventive measures, the probability of occurrence of the risk will be further reduced.

7.6.8 Impact on child labor and forced labor

The following risk was identified in the impact identification matrix:

- **Risk of child and forced labor.** Construction activities, the presence of workers’ camps, involvement of primary suppliers in the chain of goods and services, and workers engaged through third parties (such as subcontractors, brokers, agents, and intermediaries) present a risk of forced and child labor.

Minors may be tempted or pushed by their families to work in construction activities or may accompanied their parents on construction sites. This risk also concerns workers camp where children may work in the kitchen and in cleaning chores. On construction site, worst forms of child labor can take various forms including working with dangerous machinery, working under difficult conditions.

Forced labor may take different forms such as modern slavery. Exploitative recruitment practices on work sites may constitute modern slavery. Recruitment linked to debt, threat of physical violence towards the worker are also examples of modern slavery. Often, modern slavery concerns women.

7.6.8.1 Impact significance

Child and forced labor have severe impacts on the victim. As for all risks that may affect the physical or emotional integrity of persons, such cases are of high intensity. The extent would be local as several locations along the work site may be at risks (quarry sites, work sites, workers camps) and could be of long-term duration.

	Risk of child and forced labor
Intensity	High
Extent	Local
Duration	Long term or irreversible (permanent)

Significance	Major
Occurrence probability	Risk (low probability)

7.6.8.2 Preventive measures

Children under the age of 18 years shall not be hired on site as provided by Employment and Labour Relations Act, 2004 Part II Sub-part A Child Labour. This includes hiring children to do chores at the workers camp such as cleaning rooms and working in the workers kitchen.

The contractor shall verify all identification papers of all workers upon recruitment. In the absence of papers, customary authorities shall attest the age of the worker.

The Supervising engineer shall understand local realities in terms of informal employment and understand the dynamics of informal employment in order to better identify the risks and abuses (forced labor, child labor, human trafficking). This includes the use of “brokers” or “intermediaries” that hire local workers. For this purpose, audits of workers conditions based on the **Project Labor Management Procedures (LMP)** shall be undertaken to verify workers’ status.

Understanding local dynamics of informal employment is also necessary to fight against GBV and against any activity contrary to the laws of the country and the principles set out in the conventions of the International Labour Organization (ILO). The workers GRM shall be accessible to all workers. Labor Management Procedures (LMP) have developed a framework approach for the workers’ GRM. The contractor shall adapt the Labor Management Procedures and its workers’ GRM and implement them through its C-ESMP.

In case of suspicion or proven cases of abuse, the Supervising engineer must ensure that TANROADS and the World Bank be formally informed. Return of experience on construction sites has shown that often cases are only suspected. Because of that, there is a lack of communication between the Supervising engineer and project implementing agencies which is often responsible for the inaction and the aggravation of these situations.

The Supervising engineer shall conduct audits at quarry sites to ensure that no children and no forced labor are working in quarries. Auditing of primary suppliers is also required by ESS2.

In case of suspected cases of forced labor or child labor and human trafficking on construction sites or in supply chains, the Supervising engineer shall take remedial measures. In the event of discovery of child labor or forced labor or deplorable working conditions (unsafe working conditions, ill-treatment), the Supervising engineer must, in conjunction with the construction contractor, impose changes or change subcontractors or suppliers according to possible levers.

7.6.8.3 Residual impact

With the implementation of preventive measures, the probability of occurrence of the risk will be further reduced or annihilated.

7.6.9 Impacts on labor conditions

The following risks were identified in the impact identification matrix:

- **Risk of poor labor conditions due to high level of informality.** Construction activities, involvement of primary suppliers in the chain of goods and services and workers engaged through third parties (such as subcontractors, brokers, agents, or intermediaries) represent risk of poor labor conditions.
- **OHS risks to workers.** Workers will be at risks of accidents and injuries, and they may be exposed to health hazards due to stack dust and fugitive dust and exposure to fumes during road paving. Workers are also at risk of collision with vehicles and trucks circulating on the road during work.

Informal work includes jobs that are not properly registered, such as hiring a worker without a required employment contract or failing to make social payments. Casual labor is the hiring of workers without any job security, for example the use of day laborers who are chosen each morning or are intermittently employed.

7.6.9.1 Impact significance

Risks of poor labor condition would be of medium intensity, local extent as it could affect all workers along the road and of temporary duration.

Regarding OHS risk, on the worst case, a severe accident could be of high intensity, permanent in duration and of punctual extent. However, this is a risk with a low probability to take place. In other cases, such as a minor accident, the intensity would be low, and the significance would be minor.

	Risk of poor labor conditions due to high level of informality	OHS risks to workers
Intensity	Medium	Low to High
Extent	Local	Punctual
Duration	Temporary	Permanent
Significance	Minor	Vary from minor to major
Occurrence probability	Potential occurrence	Risk (low probability)

7.6.9.2 Mitigation measures

Workers hired to carry out works in infrastructure projects should not be classified as community workers (as defined in ESS2 and in the Labor Management Procedures, LMP, which was developed specifically for TanTIP) but as contracted workers, even if targeted efforts are made to promote local hiring.

The construction contractor shall maintain a data log of all workers and implement the procedures as set in the LMP. It is therefore required that the construction-ESMP to be developed by the construction contractor acknowledges and implement the procedures from the LMP when hiring workers, including workers from communities. The workers' GRM shall also be implemented by the contractor. The construction-ESMP shall develop procedures to ban any form of disguised employment, misclassification, informality or casual labor.

The Supervising engineer shall audit payroll of the construction contractor(s) to ensure that no workers are hired informally.

In order to prevent OHS risks, the following measures shall be implemented by the contractor:

- Ensuring work zone safety for construction workers at all times (use of protective barriers to shield workers from traffic vehicles in towns and village centers, use of traffic cones and barrels in rural areas, use of warning lights to avoid using flaggers).
- OHS induction training for all workers, topics to cover during training shall cover the requirements from the section 2.2 Communication and Training from the WBG Environmental, Health, and Safety General Guidelines, 2.0 Occupational Health and Safety.
- Mandatory PPE equipment for all workers (adapted to the type of work) this include fluorescent vest for all workers.
- Presence on site of a full time dedicated qualified Environmental, Social, Health and Safety (ESHS) Officer of the Contractor (under the contractor payroll).
- Development and implementation by the contractor of a hazard identification and risk assessment that addresses all activities, routine and non-routine. This shall be done by contractor prior to beginning of work and shall cover all inherent risks associated with the construction site.
- Development of protocols and procedures by the contractor to detect COVID outbreaks through regular testing and isolation measures to reduce workers and community exposure to COVID and other communicable diseases. Protocols shall be compliant with the recommendations of the section 3.6 Disease Prevention from the WBG Environmental, Health, and Safety General Guidelines, 3.0 Community Health and Safety.
- Development of protocols and procedures by the contractor to respond to work related accidents.
- Presence of first aid kits on site and a dedicated vehicle to drive injured workers to the nearest hospital.
- Availability of drinking water on work sites for all workers.
- Any injury, accident or near miss shall be described in a medical report by the contractor and Supervising engineer within one week of the injury.

- Use of millers and pavers with exhaust ventilation systems and proper maintenance of such systems to limit workers exposure to crystalline silica (millers and grinders) and asphalt fumes (pavers).
- Monitoring and record-keeping activities, including audit procedures designed to verify and record the effectiveness of prevention and control of exposure to occupational hazards. Monitoring shall be compliant with the method provided in the section 2.9 Monitoring from the WBG Environmental, Health, and Safety General Guidelines, 2.0 Occupational Health and Safety.

These measures shall be adopted and adapted in the Contractor’s OHS risk management Plan which is presented in the ESMP.

Any subcontractor involved shall also comply with the OHS risk management Plan.

All workers’ camps shall comply with the recommendations from the section 2.1 General Facility Design and Operation from the WBG Environmental, Health, and Safety General Guidelines, 2.0 Occupational Health and Safety.

7.6.9.3 Residual impact

With the implementation of preventive measures, the probability of occurrence of the risks will be further reduced or annihilated.

7.6.10 Impact on Gender-Based Violence prevalence

The following risk was identified in the impact identification matrix:

- **Risk of an increase in Gender-Based Violence.** Worker’s influx is often associated with risk of GBV and sexual harassment in the workplace. Women and girls from neighboring communities are particularly at risk.

Some of the contributing factors to GBV are likely to be aggravated due to the construction phase such as alcohol consumption amongst workers. Some of the pre-existing types of GBV are also likely to be exacerbated by the construction phase. For example, local return of experience shows that the presence of many male workers puts local women and girls at risk of sexual abuse and early marriage.

7.6.10.1 Impact significance

As for all risks that may affect the physical or emotional integrity of persons, such cases are of high intensity. In addition, the GBV risk for TanTIP has been rated “Substantial”. Impact could be long-lasting and local (since the risk covers the entire road area).

	Risk of an increase in Gender-Based Violence
Intensity	High
Extent	Local
Duration	Permanent (long-lasting)
Significance	Major
Occurrence probability	Risk (low probability)

7.6.10.2 Preventive and mitigation measures

A GBV action plan is in place for the TanTIP (the GBV action plan is a standalone document that applies to all TanTIP projects). It contains a GBV-SEA GRM and a workers' Code of Conduct. It will be implemented for the Project and includes actions to be developed by TANROADS Project Implementation Team (PIT). Implementation of the GBV action plans will help prevent the risk and address cases of GBV.

It is key that the Supervising engineer and all contractors (including sub-contractors) involved during construction be trained on this plan. They shall also be aware of their responsibility regarding this plan. These include:

- Induction training to all workers on the GBV action plan, its requirements and the Code of Conduct and the use of the GBV grievance redress mechanism. PIT will be responsible for oversight of grievance handling across all subproject sites, and will carefully monitor the status and effective referral of GBV/SEA/SH complaints. However, for grievances registered with grievance committees, contractors and subcontractors will be responsible for keeping records and reporting cases to PIT.
- Training of Supervising engineer and contractors by PIT to present the GBV action plan requirements for managers.
- PIT will Conduct a GBV risk assessment and GBV mapping in the project area to inform risk mitigation strategies and update a GBV referral pathway. The Supervising engineer and the contractor (and subcontractors) shall acknowledge the outcome of this risk assessment and integrate GBV/SEA risk management in their management system. For example, both the Supervising engineer and the contractor shall provide separate facilities for men and women and display signs, posters and pamphlets around/along the project site that signal to workers and the community that the project site is an area where GBV/SEA is prohibited and enforce the Code of Conduct for all workers. The code of conduct to be signed by all workers is provided in the ESMP.
- The contractor shall also adapt its Construction ESMP to address the risks and participate in the prevention of GBV and SEA.

7.6.10.3 Residual impact

With the implementation of preventive measures, the probability of occurrence will be further reduced.

7.6.11 Impact on cultural heritage

The following risk was identified in the impact identification matrix:

- **Risk of disturbances and destruction to unknown cultural heritage sites.** Risk of discoveries of artefacts is inherent to all construction involving excavation.

The Project will not lead to any impact on known cultural heritage sites. However, as for all projects involving some excavation, there is a risk of discoveries of unknown cultural heritage sites such as archeological artefacts. Borrow areas and quarries are particularly at risk.

7.6.11.1 Impact significance

Depending on the situation, the intensity can vary from low to high, the extent would be punctual and the duration may vary from temporary to permanent. The impact significance would vary from minor to major depending on the intensity of the impact and the duration. This risk is mainly concentrated in quarries and borrow areas and off-site facilities as the work along the road would take place within the road reserve.

	Risk of disturbances and destruction to unknown cultural heritage sites
Intensity	Low to high
Extent	Punctual
Duration	Temporary or permanent
Significance	Vary from minor to major
Occurrence probability	Risk (low probability)

7.6.11.2 Mitigation measures

If Chance Finds Objects (CFO) are encountered, the following steps and reporting structure shall be followed by the contractor:

The person or group who identified or exposed the artefact must cease all activity in the immediate vicinity of the site.

The identifier must immediately inform his/her supervisor of the discovery.

The supervisor must ensure that the site is secured and control access.

The supervisor must then inform the Supervising engineer and the Environmental, Health and Safety (EHS) Officer of the Contractor.

TANROADS management and the authorities shall be informed and deploy a suitably qualified specialist to inspect and verify the exposed artefact in consultation with the Ministry of Tourism and Cultural Heritage. If the inspector from the Ministry of Tourism and Cultural Heritage concludes that the find is a heritage resource protected in terms of the Antiquities Act, 1964, TANROADS will notify the Commissioner for National Culture.

The Commissioner may require that an identification of interested parties, consultation and /or artefact relocation take place. Consultation must take place in terms of the Antiquities Act.

The **chance find procedure** is in appendix IV of the report.

7.6.11.3 Residual impact

With the implementation of the chance find procedure, the intensity of the impact would be reduced as well as the probability of occurrence. Impact significance would be reduced to minor.

7.7 Impacts and risks on biophysical components during road operation and maintenance

Some impacts, both negative and positive, will take place during road operation. However, these can be characterized as follow:

- Most impacts during operation are rather induced impacts since they will be associated with the induced increase of speed thanks to new road conditions rather than being directly associated with the road rehabilitation. There is no direct cause-effect relationship between the road rehabilitation and increase in traffic.
- Most negative impacts are related to potential slight aggravation of existing impacts rather than being new impacts.
- Most negative impacts are largely offset by the positive outcomes of the rehabilitation project.

7.7.1 Impact on soils, surface water and groundwater, aquatic habitats and fish

The following impacts were identified in the impact identification matrix:

- **Accumulation of pollutants in roadsides.** Drainage from the road will collect silt, oil and waste which will impact soil quality.
- **Infiltration of pollutants from roadsides in groundwater.** Collected pollutants may reach local groundwater and affect its quality.
- **Impact on surface water quality from road traffic and surface runoffs.** Increase of the width of the road will increase surface runoff from the road and therefore silt, oil and dirt transport to watercourses.
- **Degradation of aquatic habitats from increase in road traffic and surface runoffs.** Impact on surface water quality from road traffic and surface runoffs will in turn affect aquatic habitats and fish.
- **Risk of degradation of Akagera KBA floodplains.** impact on surface water quality and surface runoffs may in turn affect Akagera KBA.

7.7.1.1 Impact significance

The four first impacts have the same significance, the intensity would be low given that the road is an existing infrastructure and that most effect would be caused by increase in traffic (which cannot be attributed to the road rehabilitation), the extent would be local and the impact permanent.

Regarding the degradation of Akagera KBA floodplains from increase in road traffic and surface runoffs, as highlighted in the section on construction impacts, there is little risk

on the Akagera KBA due to the road, since existing drainage culverts are not directly connected to the flood plain of the Akagera river.

	Accumulation of pollutants in roadsides	Infiltration of pollutants from roadsides in groundwater	Impact on surface water quality from road traffic and surface runoffs	Degradation of aquatic habitats from increase in road traffic and surface runoffs	Risk of degradation of Akagera KBA floodplains
Intensity	Low	Low	Low	Low	Low
Extent	Local	Local	Local	Local	Punctual
Duration	Permanent	Permanent	Permanent	Permanent	Permanent
Significance	Minor	Minor	Minor	Minor	Minor
Occurrence probability	High probability	High probability	High probability	High probability	Risk (low probability)

7.7.1.2 Mitigation measures

Accumulation of pollutants such as silt, oil and waste in roadsides is a typical impact which can be mitigated with the following measures:

- Appropriate signage to truck drivers to avoid littering.
- The design has foreseen to install drains with erosion checks which will reduce the silt load in streams.
- TANROADS shall include as part of its maintenance plan, the removal of accumulated waste and silts in these drains and in culverts.
- Truck lay bays shall be equipped with garbage bins to collect domestic waste and waste collection at these bays shall be contracted to a service provider.

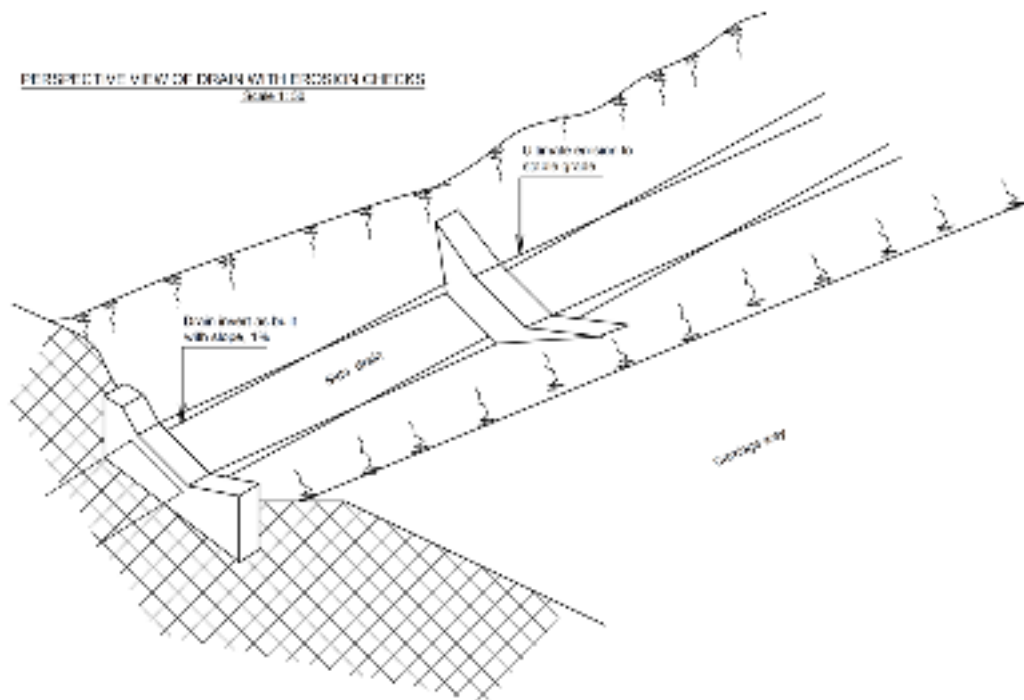


Figure 7-8 Erosion checks

7.7.1.3 Residual impact

Mitigation measures will help to reduce the intensity of impacts. However, the significance of impacts will remain minor.

7.7.2 Impact on noise level

The following impact was identified in the impact identification matrix:

- **Noise from traffic and reduction of noise thanks to road improvement.** Road traffic will continue to generate noise. However, improved road surface will reduce noise level.

7.7.2.1 Impact significance

It is difficult to quantify the changes of noise level along the road given the fact that several factors will influence the impact (increase in speed and fluidity of traffic). In village centers, it is however expected that with the widening of the road, noise will slightly be closer to sensitive receptors since the road will be slightly closer to houses. Currently, the road is generally not used by trucks at night even though there are no restriction on night use of the road.

It is expected that the intensity of impact that can be attributed to the road rehabilitation will be negligible (because the increase of traffic cannot be directly attributed to the road

rehabilitation), of permanent duration and local. Dust reduction will also most likely be negligible. The impact is both positive and negative.

	Noise from traffic and reduction of noise thanks to road improvement
Intensity	Negligible +/-
Extent	Local
Duration	Permanent
Significance	Negligible
Occurrence probability	High probability +/-

7.7.2.2 Mitigation/enhancement measures

Typical mitigations against high noise level such as noise barriers, insulation of houses, use of road surface that generates less pavement will not be realistic in the Project context, especially in village centers.

Given the fact that the road is an existing infrastructure, the cause-effect relationship between a possible increase in noise level and the road rehabilitation would be difficult to demonstrate and therefore noise monitoring would have limited relevance. However, if needed a specialized consultant shall undertake a baseline assessment of the road noise level prior to construction work to determine the current noise level. This baseline assessment shall be done at several distances from the road and at several sampling points along the road to establish a noise propagation map. After one year of operation, it is recommended to monitor the changes to noise level at the same locations to determine with precision the impact.

The recommended standard to use is the World Bank Group noise level. Noise impacts should not exceed the levels presented in Table 1.7.1 or result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site. Given that the road is an existing infrastructure the threshold to use would be the maximum increase in background levels of 3 dB.

Table 1.7.1- Noise Level Guidelines ⁵⁴		
Receptor	One Hour L _{eq} (dBA)	
	Daytime 07:00 - 22:00	Nighttime 22:00 - 07:00
Residential; institutional; educational ⁵⁵	55	45
Industrial, commercial	70	70

Figure 7-9 Noise level standards

Should the road cause noise level to unacceptable levels at sensitive sites such as health centers and schools, earthen mounds or vegetation plantation to reduce nuisances could be envisaged at project implementation.

7.7.2.3 Residual impact

Given that this type of impact is difficult to mitigate, residual impact would remain negligible in most cases.

7.7.3 Impact on air quality

The following impact was identified in the impact identification matrix:

- **Impact on air quality from road traffic and reduction of dust thanks to road improvement.** Road traffic will continue to generate air pollution. However, improved road surface will reduce dust emission.

7.7.3.1 Impact significance

An inevitable increase of air pollution is expected due to increase in traffic, but this cannot be attributed to the road rehabilitation. Improved road surface will reduce dust emission. The intensity of this impact would therefore be negligible, the extent would be local and the duration permanent. The impact is both positive and negative

	Impact on air quality from road traffic and reduction of dust thanks to road improvement
Intensity	Negligible +/-
Extent	Local
Duration	Permanent
Significance	Negligible +
Occurrence probability	High probability +/-

7.7.3.2 Mitigation/enhancement measures

One mitigation/enhancement measure would be to reduce the speed of vehicles in village centers to 50 km/hour as required in the Road Safety Screening and Appraisal Tool (RSSAT).

7.7.3.3 Residual impact

Speed reduction will have limited effect on overall increase in air pollution from truck traffic. Residual impact would remain negligible.

7.7.4 Impact on terrestrial habitats and wetlands and associated flora and wildlife, impact on nationally protected areas and threatened wildlife

The following impact and risk were identified in the impact identification matrix:

- **Higher risk of wildlife collision and casualties.** induced increase of speed thanks to new road conditions will be associated with higher risk of wildlife collision and wildlife casualties. This risk is particularly important at Burigi-Chato National Park. In addition, many vultures are threatened and are particularly at risk because they scavenge on roadkills.
- **Exacerbation of the barrier effect:** road widening and induced increase of speed will exacerbate the barrier effect of the road.

7.7.4.1 Impact significance

For both impacts, the intensity of the impact would be medium since the road is an existing infrastructure, the extent local as all areas along the road could be impacted, and the duration permanent.

	Higher risk of wildlife collision and casualties	Exacerbation of the barrier effect
Intensity	Medium	Medium
Extent	Local	Local
Duration	Permanent	Permanent
Significance	Moderate	Moderate
Occurrence probability	Potential occurrence	Potential occurrence

7.7.4.2 Mitigation measures

Currently, the Detailed design foreseen one type of road sign for wildlife protection as shown in the following figure. However, the book of drawing (the schedule of road signs) does not mention where this sign shall be installed.

It is recommended to install this sign at several locations and on both sides of the road between chainage 38 and 56. In addition, close to the entrance of the national park, between chainage 44 and 56, the speed shall be reduced and rumble strip shall be installed at chainage 44 on the western lane of the road (left hand side) and at chainage 56 on the eastern lane (right hand side) to warn vehicles on the presence of wildlife. At

chainage 44 and chainage 56, signs shall be lighted. In this section, speed shall also be reduced.

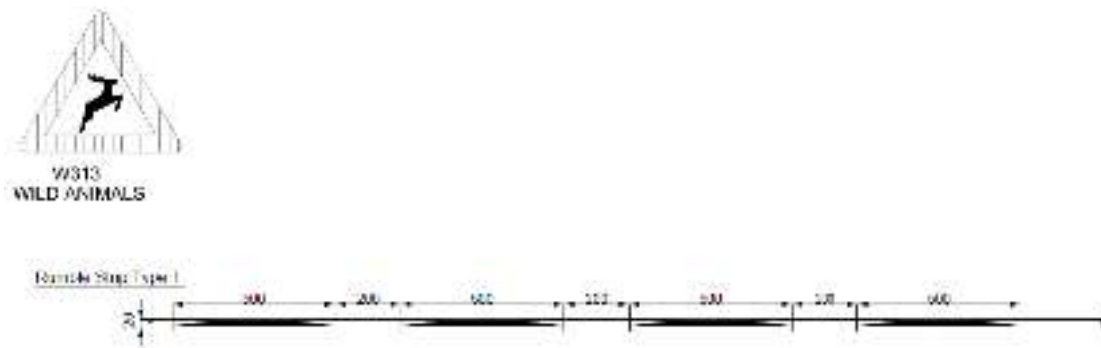


Figure 7-10 Rumble strips and road sign

Regarding the impact on possible vultures scavenging along the road, no realistic preventive measure can be proposed to limit the hypothetical risks.

Regarding the barrier effect, at this stage no mitigation is proposed. As shown in the baseline section, since there are no reported corridors of large mammals along the road, it is not necessary to install underground wildlife passage. Because of the absence of large mammal corridors, and with current knowledge, a specific Biodiversity Management Plan is not needed (other justifications include the fact that there is no significant risk on biodiversity, that impacts on protected areas and internationally recognized areas of high biodiversity value are mainly avoidable and that no critical habitat will be impacted, these justifications are presented in this ESIA). Regular monitoring of road kills shall be done along the road with a focus between chainage 38 and 56 in order to assess the extent of road kills and implement adapted mitigations (if needed), these could include fencing the park at selected locations (since the park is currently not fenced). A consultant specialized in wildlife conservation shall be granted with this task. Depending on the outcome of this monitoring program, a Biodiversity Management Plan could be proposed.

7.7.4.3 Residual impact

With the implementation of preventive and mitigation measures, the intensity of the impact and significance would be reduced to minor. The probability of occurrence would also be reduced. The significance of the barrier effect would remain the same.

7.8 Impact on the human environment during road operation

7.8.1 Impact on livelihood and economic activities

The following impact and risk were identified in the impact identification matrix:

- **Improved transport sector allowing for economic development.** The rehabilitated road will reduce time of travelling and ensure safer travel for vehicles and trucks. These will have positive influence of economic development.

- **Livestock roadkill.** induced increase of speed thanks to new road conditions will be associated with higher risk of livestock roadkill.

7.8.1.1 Impact significance

Improving the transport sector is one of the key objectives of the project. The significance of the positive impact will be medium, the extent regional and the duration permanent.

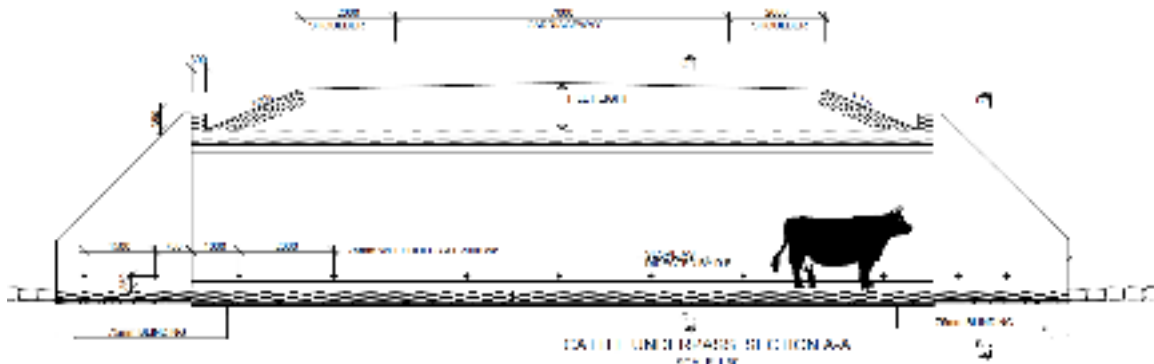
With increase in traffic, livestock crossing will be more difficult and hazardous. The intensity of the impact would be moderate, the extent local and the duration permanent.

	Improved transport sector allowing for economic development	Livestock roadkill
Intensity	Medium	Medium
Extent	Regional	Local
Duration	Permanent	Permanent
Significance	Major	Moderate
Occurrence probability	High probability	Potential occurrence

7.8.1.2 Mitigation measures

The main enhancement measure is to properly and timely maintained the road to ensure that it is passable throughout the year and is not easily prone to damage that may lead to closure or suspension of its use.

The risk of livestock roadkill is acknowledged in the Design report where provisions for livestock underpass were made. Locations of cattle underpasses were not provided. This aspect was not covered during social surveys and engagement activities and the ESIA does not make any recommendations on their locations. However, according to the Design report, the Supervising engineer will decide on their locations based on exchanges with stakeholders. Signage mentioning livestock crossing shall also be installed whenever necessary.





7.8.1.3 Residual impact

With the implementation of mitigation measures, the number of accidents with livestock should decrease, and the significance of the impact be minor. The probability of occurrence will also decrease. The residual positive impact from the improved transport sector allowing for economic development would remain major.

7.8.2 Impact on community use of the road and safety aspects

The following impacts and risks were identified in the impact identification matrix:

- **Impact on connectivity across the road and disruption of access.** The new road may cut-off access of small side roads (local roads) that cross the trunk road. Connectivity for non-motorized transportation will also be affected.
- **Improved safety for motorized and non-motorized road users.** Increase in road traffic and speed will increase the risk of collision and accidents. However, at the same time the project design has foreseen to improve several aspects of the road to improve road safety, notably by installing walkways in villages, by installing arrester beds and climbing lanes.
- **Health issues for population living along the road.** on-going noise level and air pollution represent health hazards for community members living along the road.

7.8.2.1 Impact significance

Regarding the impact on connectivity across the road and disruption of access, this impact is difficult to assess at this stage. It is expected to be of moderate intensity given that traffic will continue to increase, the extent would be local and the impact permanent.

Regarding the increase safety risks for motorized and non-motorized road users. The installation of walkways to improve safety of non-motorized means of transportation is a positive impact. Other initiatives are foreseen to improve safety such as the reduction of speed in village centers, climbing lane where the maximum grade is higher than 7%. The intensity of the positive impact will be medium, the extent local and the duration permanent. The significance of the positive impact would be moderate.

Regarding impact on health, as highlighted in the WBG Toll Roads Environmental, Health, and Safety Guidelines, traffic noise can be a significant nuisance and may be loud enough to interfere with normal conversation and can cause stress in children and raise blood pressure, heart rates, and levels of stress hormones. However, this increase in road traffic cannot be attributed to the road rehabilitation, the intensity of the impact would

therefore be negligible, as the road is an existing facility, the extent would be local and the duration permanent.

	Impact on connectivity across the road and disruption of access	Improved safety for motorized and non-motorized road users	Health issues for population living along the road
Intensity	Moderate	Medium	Negligible
Extent	Local	Local	Local
Duration	Permanent	permanent	Permanent
Significance	Moderate	Moderate	Negligible
Occurrence probability	Potential occurrence	High probability	High probability

7.8.2.2 Mitigation and enhancement measures

Regarding the impact of the rehabilitated road on small existing side roads, the design does not provide any specific measures. It is recommended to avoid installing guardrails along these side roads as much as possible to maintain access for vehicles and non-motorized transportation. If these side roads are deemed to be unsafe, the closure of their access from the trunk road shall be replaced by another access.



Figure 7-11 Example of a side road

Regarding security of non-motorized means of transportation, the design has foreseen the installation of 15 raised pedestrian crossings and appropriate signage for pedestrian safety. Pedestrian crossings will be preceded and followed by rumble strips warning drivers to slow down.

In addition, as shown in the following table, walkways will be upgraded at 4 locations where existing walkways are present.

Table 7-3 Recommended walkways

Village name	Chainage	Length of the village/town (km) according to the Design	Additional justifications and recommendations from the ESIA	Length of the village/town (km) according to the ESIA
Lusahunga	0+000 to 0+800	0.8		0.8
Nyakahura	31+400 to 32+100	0.7	The village starts at 30+000 and ends at 32+500. Two primary schools are located at 30+400	2.5
Benaco	72+400 to 73+700	1.3	The village ends at 74+000 One primary school is located at 74+000	0.3
Rusumo	90+000 to 91+400	1.44		1.44
Total length of walkways		4.24 km		5.04 km

The Report on Road Safety Screening and Appraisal Tool (RSSAT) developed for the TanTIP, recommends installing segregated walkways in village that do not currently have any, this is an important enhancement measure. There are 8 other villages without any walkways. This ESIA has provided additional justification for these walkways and revised the needed walkways.

Village name	Chainage	Length of the village/town (km) according to the RSSAT	Additional justification and recommendations from the ESIA	Length of the village/town (km) according to the ESIA
Ihigi (or Higi)	2+400 to 2+900	0.5	Nyamalagala Primary School is located at chainage 2+500	0.5
Nyamalagala	5+100 to 6+100	1.0	The village is expending to 6+500 and additional 400 meters of walkways are needed.	1.4
Midalo centre	10+300 to 10+800	0.5	The village is starting at chainage 10+000 and additional 300 meters of walkways are needed.	0.8

Busili Village	13+800 to 15+100	1.3	The village is not starting until chainage 14+300. Walkways could be reduced by 500 meters.	0.8
Ngalambe	27+000 to 27+600	0.6	This village is indeed Nyamakaza (not Ngalambe)	0.6
Nyamakaza	50+700 to 50+900	0.2	Between these two chainages there is no village. The walkway does not seem to be necessary.	0
Nyabusumo	52+200 to 53+900	1.7	This village is indeed Nyabugombe (not Nyabusumo). The village is much smaller and located between 52+800 and 53+500. Walkways could be reduced by 1 km	0.7
Unknown village			A small village is not identified by the RSSAT. Walkways could be installed in this village between 59+000 and 59+500	0.5
Kasulo	64+000 to 65+000	1.0	The name of the village is Kapfua (not Kasulo)	1.0
Unknown village			A small village is not identified by the RSSAT. Walkways could be installed between 74+300 and 74+600	0.3
Total length of village without any walkways		6.8		6.6

This ESIA recommends increasing the length of existing walkways from 4.24 km to 5.04 km and reducing the length of walkways recommended by the RSSAT from 6.8 to 6.6 but covering more villages.

In all villages, the RSSAT recommends reducing the speed from 70 km/hours to 50.

15 raised crossings are foreseen in the design.

- One in Lusahunga
- One in Nyamalagala
- One in Midaho

- One in Busii
- Two in Nyakahura
- Two in Nyamugombe
- One in Kapfua
- Four in Benaco
- Two in Rusumo

This ESIA recommends that additional engagement activities be undertaken at all villages that are crossed by the road to determine whether additional pedestrian crossings are necessary.

Regarding impact on health, in the context of the project, little realistic mitigation could be recommended

7.8.2.3 Residual impact

Regarding impact on connectivity across the road and disruption of access, with proper mitigation measures and crossings, the impact significance would be reduced to minor.

Regarding improvement of safety for non-motorized road users from the community, with enhancement measures, the enhanced positive impact would be of major significance.

Regarding increase in health issues for population living along the road, the significance of the impact is unlikely to be lowered.

7.8.3 Impact on vulnerable groups/persons

The following impact was identified in the impact identification matrix:

- **Universal access to the road and walkways:** walkways will be developed in villages; this will improve universal access to persons living with disabilities.

7.8.3.1 Impact significance

It is difficult to assess the impact since no specific grievances on this topic were collected during engagement activities. However, it is expected to be of low intensity, local extent and permanent

	Universal access to the road and walkways
Intensity	Low
Extent	Local
Duration	Permanent
Significance	Minor+
Occurrence probability	High probability+

7.8.3.2 Enhancement measures

The main enhancement measure is the development of additional walkways in selected villages as recommended in this ESIA. In case any issue is raised during engagement activities at project implementation, additional and dedicated enhancement could be developed.

7.8.3.3 Residual impact

With the development of walkways, the significance of the impact would be improved to moderate.

7.9 Cumulative and transboundary impacts

This section assesses potential cumulative impacts. It identifies and describes planned or existing projects or programs that overlap in space and time with the Project and that may affect common environmental and social components (the “Project” refers to the Lusahunga-Rusumo Project).

As presented in this ESIA, the Project will not lead to any transboundary impacts given that no water abstraction will take place in the Kagera River.

In order to determine the cumulative impacts, the following steps have been undertaken:

- Determination of the spatial and temporal boundaries of the cumulative impact assessment.
- Screening of the projects that could overlap in time and space with the rehabilitation.
- Identification and description of the environmental and social components that may be cumulatively impacted by these projects.
- Determination of cumulative impacts.
- Identification and description of the current or planned actions, programs, policies or strategies that aim at mitigating impacts on these components, including existing ESIA reports for these projects.
- Identification and description of possible leverage to develop shared mitigation measures.
- Limitations and uncertainties of the cumulative impact assessment.

7.9.1 Determination of the spatial and temporal boundaries of the cumulative impact assessment

The Limited study area is probably too small to allow for cumulative impact assessment, because some of the cumulative effects will travel in a wider area, and the Extended study area is most likely too wide. For the purpose of the impact assessment, the spatial boundary would entirely cover all villages that are crossed by the Lusahunga-Rusumo road. This would allow to capture all potential social impacts.

In terms of temporal boundaries, given that the road should be rehabilitated in a near future and take up to 3 years and 4 months would be needed, the temporal boundary would have to cover this period that could reach up to 2026-2027.

7.9.2 Screening of the projects that could overlap in time and space with the road rehabilitation

The following are current or planned projects that are close to the Project:

- Regional Rusumo Falls Hydropower Project in Kagera river which is at the end of the project.
- Rusumo falls - Nyakanazi (220kV) power transmission line (98km) running parallel to the Project. The power transmission line is still under construction.

TANROADS is also implementing the following road upgrading projects. Their design has just been completed. However, their construction is yet to start, and no timeline has been set yet:

- Nyakahura - Kumumbuga - Murusagamba - Gahumo (34km), Kumumbuga - Rulenge - Murugarama (75km); Rulenge - Kabanga Nickel (32km) road projects. These form a single project. The Environmental Impact Assessment (EIA) registration number at the NEMC is EC/EIA/2022/0022 and the EIA was validated.
- Bugene - Kasulo - Kumunazi road. The EIA was submitted.

These are Regional roads in gravel standard which will be upgraded to bitumen standard.

The following table presents these projects and determines whether there is an overlap in time and space with the road rehabilitation Project.

Table 7-4 Projects that may overlap in time and space with the Project

Ongoing or planned projects	Overlap in time with the road rehabilitation	Overlap in space with the road rehabilitation	Conclusion
Regional Rusumo Falls Hydropower Project in Kagera river	No, since this project is almost completed. At time when the Project will be implemented, the hydropower project would be operational	The Hydropower project is out of the project area, as it is located along the Kagera river which is not concerned by the Project. There is no overlap in space.	This project will not lead to cumulative impacts with the Project.
Rusumo falls - Nyakanazi (220kV) power transmission line (98km)	This project is still under construction but is almost finalized. It is therefore unlikely to overlap in time with the Project.	This project runs parallel with the Project at some locations and overlaps in space with the Project.	This project is unlikely to lead to cumulative impacts with the Project.

Ongoing or planned projects	Overlap in time with the road rehabilitation	Overlap in space with the road rehabilitation	Conclusion
Nyakahura - Kumumbuga - Murusagamba - Gahumo (34km), Kumumbuga - Rulenge - Murugarama (75km); Rulenge - Kabanga Nickel (32km) road upgrade projects	This project is not as advanced as the Project, but construction may start while the Project is still under construction. It may therefore overlap in time with the Project.	Nyakahura village is located along the Project, work in this area will overlap in space with the Project.	This project may lead to cumulative impacts with the Project at Nyakuhura.
Bugene - Kasulo - Kumunazi road upgrade projects The Kumunazi – Kasulo section has a length of 9 km Kasulo – Bugene section has a length of 124km	This project is not as advanced as the Project, but construction may start while the Project is still under construction. It may therefore overlap in time with the Project.	Kasulo village is located along the Project, work in this area will overlap in space with the Project.	This project may lead to cumulative impacts with the Project at Kasulo.

Based on this table, two areas are at risk of cumulative impacts: Kasulo and Nyakuhura villages. Both these projects are implemented by TANROADS.

Both undertook environmental impact assessment reports. These were however not publicly disclosed and were not available.

Nyakuhura village is located at chainage 31+500. The road concerned by this project is an important junction with the Lusahunga-Rusumo road as shown in the following figure.



Figure 7-12 Junction between the Nyakahura - Kumumbuga - Murusagamba - Gahumo road and the Lusahunga Rusumo road.

Kasulo village is located at chainage 73+000. The road concerned by this project is an important junction with the Lusahunga-Rusumo road as shown in the following figure.



Figure 7-13 Junction between the Bugene - Kasulo - Kumunazi road and the Lusahunga Rusumo road.

The following map shows the two roads with regards to the Lusahunga Rusumo road.

KAGERA REGION ROADS NETWORK



Figure 7-14 Regional and trunk roads in Kagera region

7.9.3 Identification and description of the environmental and social components that may be cumulatively impacted by these projects

The main ES components that may be cumulatively impacted are presented in the following table, they are almost all identical to the Lusahunga-Rusumo project, due to the fact that they are similar undertakings. The focus of attention is at the Nyakahura and Kasulo junctions. More explanations are provided at the next section.

Table 7-5 Common components that may be affected

Lusahunga-Rusumo Road	Nyakahura - Kumumbuga - Murusagamba - Gahumo road	Bugene - Kasulo - Kumunazi road
Biophysical environment		
Topography, land use and cover	x	x
Geology and soils	x	x
Climate		
Hydrology	x	x
Groundwater resources	x	x
Water quality	x	x
Noise and vibration	x	x
Air quality	x	x
Natural hazards		
Terrestrial habitats and wetlands and associated flora and wildlife	x	x
Aquatic habitats and fish	x	x
Nationally protected areas		X The road crosses the Burigi-Chato National Park with nearly half of its length in the park
Internationally recognized areas of high biodiversity value	There are no common KBA or IBA sites	
Threatened plant species	The two project spatially overlap with the Project in urban/rural areas with little risk of impact on threatened plant or animal.	
Threatened wildlife		
Critical habitats	Lusahunga-Rusumo road does not impact any critical habitat	
Alien and invasive plant species	Little risk of cumulative impact since work will be done	

	by separate contractors	
Socio-economic and cultural environment		
Population distribution and settlement pattern along the road	x	x
Social indicators	x	x
Livelihood and economic activities	x	x
Community use of the road and safety aspects	x	x
Land tenure		
Ecosystem services		
Gender aspects	x	x
Vulnerable groups/persons	x	x
HIV and AIDS situation	x	x
Child labor and forced labor	x	x
Poor labor conditions	x	x
Gender-based violence	x	x
Cultural heritage	x	x

7.9.4 Identification of ES instruments that aim at mitigating impacts on these components

Both road upgrading projects have produced an EIA that was consulted for this assessment of cumulative impacts.

- Nyakahura - Kumumbuga - Murusagamba - Gahumo (34km). The Registration number at the NEMC is EC/EIA/2022/0022 and the EIA was validated in 2022.
- Bugene - Kasulo - Kumunazi road upgrade projects. This project is funded by the African Development Bank. The status of the EIA report is unknown regarding national procedures, it was finalized in 2020.

These two EIAs were not funded by the World Bank, and therefore did not use the World Bank ESF as standards for management of impacts.

7.9.5 Determination of cumulative impacts

Since all three projects are similar in nature, their cumulative impacts are likely to be additive (equal to the sum of individual effects) and mainly localized at the Nyakahura and Kasulo junctions.

The following table summarizes the potential cumulative effects based on each component and proposes common approaches for their management to ensure that coordinated strategies are implemented.

Components	Nyakahura - Kumumbuga - Murusagamba - Gahumo road	Bugene - Kasulo - Kumunazi road	How to address cumulative impacts/coordinated strategies Recommendation for the two road projects
Biophysical components			
Topography, land use and cover	This impact is presented for other components		
Geology and soils	Increased impact in case of accidental spillage of oil and poor management of waste during construction close to Nyakahura and Kasulo junctions		It is recommended that the foreseen management approach for these risks regarding oil spill be augmented and in line with this ESIA to meet with WB standards and the ESH Guidelines of the WBG.
Hydrology	There are no common streams that crosses the two projects. However, during project construction, water may be sourced in common waterbodies.	One stream crosses both projects (the stream is located at 68+500). There is a risk that hydraulic transparency of this stream be affected during work near Kasulo, which will in turn affect wetlands, aquatic habitats and agricultural activities taking place in the wetland if culverts are undersized and if works lead to high level of turbidity.	It is recommended that the foreseen management approach for culvert replacement be augmented and in line with this ESIA to meet with WB standards and the ESH Guidelines of the WBG. It is recommended to undertake works at the two junctions at different time to avoid additive impacts from potential water abstraction on local streams.
Groundwater resources	Increased risk of infiltration of pollutants during operation of the roads close to Nyakahura and Kasulo junctions		It is recommended that all three projects implement common management practices for the removal of accumulated waste and silts in drains and in culverts

Components	Nyakahura - Kumumbuga - Murusagamba - Gahumo road	Bugene - Kasulo - Kumunazi road	How to address cumulative impacts/coordinated strategies Recommendation for the two road projects
Water quality	Same additive impact as for the hydrology component		Same approach as for the hydrology component
Noise and vibration	Additive increase of noise during work close to Nyakahura and Kasulo junctions		It is recommended to undertake works at the two junctions at different time to avoid additive increase in noise nuisances
Air quality	Additive increase of air pollution during work close to Nyakahura and Kasulo junctions		It is recommended to undertake works at the two junctions at different time to avoid additive increase in noise nuisances
	Improvement of air quality during operation with the upgrade of gravel road to bitumen standard (reduction of particulate matter (dust))		
Terrestrial habitats and wetlands and associated flora and wildlife	Additional losses of terrestrial and wetland habitats close to Nyakahura and Kasulo junctions. Additive risk of wildlife collision and casualties and increase of the barrier effect.		It is recommended to use common borrow and quarries areas for the three projects to reduce habitat loss. It is recommended that the foreseen management approach for habitat protection be augmented and in line with this ESIA to meet with WB standards.
Aquatic habitats and fish	Same additive impact as for the hydrology component		Same approach as for the hydrology component
Nationally protected areas		According to the EIA of this project, this road will lead to losses of 172.2ha of habitats in the Burigi-Chato National Park and will increase the risk of poaching and trespassing and	It is recommended to undertake works at the two junctions at different time to avoid additive impact on wildlife from poaching. It is recommended that the foreseen management approach and dedicated means (including all mitigation and avoidance

Components	Nyakahura - Kumumbuga - Murusagamba - Gahumo road	Bugene - Kasulo - Kumunazi road	How to address cumulative impacts/coordinated strategies Recommendation for the two road projects
		the number of road kills (because this road is along a wildlife corridor). Even if the area concerned is far from the section of the park located close to Lusahunga-Rusumo road, there is an important risk of cumulative impact on wildlife from poaching during construction work as well as road kills.	measures) for impact on the national park be augmented and in line with this ESIA to meet with WB ESS 6. This includes the mobilization of additional rangers during the construction of the Bugene - Kasulo - Kumunazi road. It is also recommended that roadkill monitoring as proposed in this ESIA covers both road projects.
Socioeconomic and cultural components			
Population distribution and settlement pattern along the road	The risk of cumulative resettlement-related impacts is important given that the two road upgrade projects have produced their own stand-alone RAPs and ESIA's using different standards than those from the World Bank. Because of that, PAPs from the two-road upgrade at Nyakahura and Kasulo junctions may be compensated according to national standards while other PAPs at these junctions may be compensated according to World Bank standards. This situation could lead to jealousy and conflicts between persons. In addition, some PAPs may have access to the TanTIP GRM while other may not be aware of this GRM and may not have access to it.	It is recommended that the management approach for resettlement, eligibility for compensation and valuation of assets be augmented and in line with this ESIA (and the Project RAP and TanTIP RPF) to meet with WB NES 5. Eligibility for compensation and method for valuation of compensation shall be expanded for all PAPs at these two road junctions regardless of the project.	
Social indicators	The risk of cumulative social impacts is important given that Kasulo and Nyakahura may experience additive influx of workers and associated social impacts and strain on local services during construction work.	It is recommended to undertake works at the two junctions at different time to avoid additive social impacts from worker influx. It is recommended to avoid installing more than one workers' camp at Kasulo and	

Components	Nyakahura - Kumumbuga - Murusagamba - Gahumo road	Bugene - Kasulo - Kumunazi road	How to address cumulative impacts/coordinated strategies Recommendation for the two road projects
			<p>Nyakahura.</p> <p>It is recommended that the foreseen management approach for this impact be augmented and in line with this ESIA to meet with WB standards and the ESH Guidelines of the WBG.</p>
Livelihood and economic activities	The risk of cumulative social impacts is important given that Kasulo and Nyakahura may experience additive impact on livelihood and disturbance of local traffic during construction work.		<p>It is recommended to undertake works at the two junctions at different time to avoid additive impacts on livelihood and disturbance of local traffic.</p> <p>It is recommended that the management approach for this impact be common for all three projects and be augmented and in line with this ESIA to meet with WB standards and the ESH Guidelines of the WBG.</p>
Community use of the road and safety aspects	The risk of cumulative impacts on community use of the road and safety is important given that Kasulo and Nyakahura may experience additive impact in terms of disruption of access, health and safety risk, improper behavior of security personnel during construction work.		<p>It is recommended to undertake works at the two junctions at different time to avoid additive impacts on community use of the road and safety aspects.</p> <p>It is recommended that the foreseen management approach for this impact be common for all three projects and be augmented and in line with this ESIA to meet with WB standards (including NES 4) and the ESH Guidelines of the WBG.</p>
Gender aspects	The risk of cumulative impacts on women workload is noticeable if men are hired to work on several road projects during construction		It is recommended to undertake works at the two junctions at different time to avoid

Components	Nyakahura - Kumumbuga - Murusagamba - Gahumo road	Bugene - Kasulo - Kumunazi road	How to address cumulative impacts/coordinated strategies Recommendation for the two road projects
			additive impacts on women
Vulnerable groups/persons	Same additive impact as for the component “Community use of the road and safety aspects “		Same approach as for the component “Community use of the road and safety aspects”
HIV and AIDS situation	The risk of cumulative spread of HIV is important during construction work		It is recommended that the foreseen management approach for this impact be common to all three projects and be augmented and in line with this ESIA to meet with WB standards and the ESH Guidelines of the WBG.
Child labor and forced labor	The risk of cumulative impact is important given that Kasulo and Nyakahura may lead to additive impact on child labor during construction work.		It is recommended to undertake works at the two junctions at different time to avoid additive impacts on child labor. It is recommended that the foreseen management approach for this impact be common for all three projects and be augmented and in line with this ESIA to meet with WB ESS 2.
Poor labor conditions	The risk of cumulative impacts is important given that Kasulo and Nyakahura may lead to additive impact on labor conditions during construction work.		Undertake works at the two junctions at different time to avoid additive impacts on labor conditions. It is recommended that the foreseen management approach for this impact be common for all three projects and be augmented and in line with this ESIA and TanTIP LMP and to meet with WB ESS 2.
Gender-based	The risk of cumulative impact is important given that Kasulo and		It is recommended to undertake works at the

Components	Nyakahura - Kumumbuga - Murusagamba - Gahumo road	Bugene - Kasulo - Kumunazi road	How to address cumulative impacts/coordinated strategies Recommendation for the two road projects
violence	Nyakahura may lead to gender-based violence during construction work.		two junctions at different time to avoid additive gender-based violence. It is recommended that the foreseen management approach for this impact be common for all three projects and be augmented and in line with this ESIA and the TanTIP GBV action plan and to meet with WB standards.
Cultural heritage	There is a risk of cumulative impacts on unknown cultural heritage site if common borrow areas or quarries are used for the three projects		It is recommended that the chance-find procedure for this impact be common to all three projects and be augmented and in line with this ESIA to meet with WB ESS 8.

Based on this table, biophysical cumulative impacts are unlikely to result in effects that are beyond the vulnerability or sustainability of the affected components because of the nature of the three projects which are upgrading or rehabilitation of existing infrastructures. However, the Bugene - Kasulo - Kumunazi road project will lead to significant risks and impacts on the Burigi-Chato National Park. Even if this road concerns another part of the park, there is an important risk of cumulative impacts on wildlife, especially in terms of poaching from workers, if both constructions are undertaken at the same time.

As shown in the previous table, if the two road upgrade projects are constructed at the same time as the Project in Kasulo and Nyakahura villages, social cumulative impacts may result in effects or changes beyond acceptable limits because of the small size of these villages and the associated risks on communities (risk associated with worker influx, increase in GBV, nuisances).

In summary, this assessment of cumulative impacts recommends that:

- Work be delayed ensuring that the Lusahunga-Rusumo road is not rehabilitated at the same time as the two other road upgrade in Kasulo and Nyakahura.
- That common approach be implemented to address social impacts in Kasulo and Nyakahura regardless of the project.
- That the Bugene - Kasulo – Kumunazi EIA mitigation measures to safeguard the national park be augmented to avoid cumulative impacts, especially regarding the risk of wildlife poaching from workers during construction.

7.9.6 Identification and description of possible leverage to develop shared mitigation measures

Given that all three projects are implemented by the same implementing agency, TANROADS, the proposed mitigations and their common management will be easier than in projects with shared responsibilities. TANROADS will be able to implement common management approaches for several actions (engagement activities, grievance redress mechanism, compensation for PAPS, GBV prevention and management, Labor Management Procedures). Whether procurements have already been sent to tendering firms is unknown for the Nyakahura - Kumumba - Murusagamba - Gahumo project. Invitation to tender were already sent for the Bugene - Kasulo - Kumunazi road. It is therefore not possible to assess whether TANROADS will have sufficient contractual leverage for contractors to change their work approach and implement best practices in line with this ESIA.

7.9.7 Limitations and uncertainties of the cumulative impact assessment

The main limitation of the cumulative impact assessment is that TANROADS cannot ascertain when will the upgrade work of the two projects take place.

8 CONCLUSION

This ESIA has described the current human and biophysical environment in which the rehabilitation project will take place.

The impact assessment has screened all project activities and their potential impacts and risks on components of the human and biophysical environment. The ESIA has also developed feasible and realistic mitigation measures and proposed management plans in the ESMP.

With current knowledge, there is no “red flag” or “fatal flaw” that would jeopardize the rehabilitation project as most impacts are minor or moderate and are concentrated during rehabilitation works. The most significant impacts are in fact risks that have low probability to take place and that are inherent to all construction sites, these are risks of GBV, OHS risks for workers and the risk of child labor during works. These risks are avoidable with the proposed preventive measures. The rehabilitation project will represent various risks to on the Burigi-Chato National Park because a small part is located on the eastern side of the road at 1.4 km from the road. Poaching of wildlife from project workers and the risks of disturbances of wildlife are the main ones. These can however be prevented with the appropriate management measures. There are no wildlife corridors for large mammals across the road according to discussions with park management, mainly because there are no suitable habitats on the western side of the road. Consulted secondary data confirm the absence of known large mammal corridors across the road. Since the Limited study area does not have any critical habitat, and because most risks on biodiversity are avoidable, there is no need to develop a Biodiversity Management Plan for the Project.

Some impacts, both negative and positive, will take place during road operation. However, these can be characterized as follow:

- Most impacts during operation are rather induced impacts since they will be associated with the induced increase of speed thanks to new road conditions rather than being directly associated with the road rehabilitation. There is no direct cause-effect relationship between the road rehabilitation and increase in traffic.
- Most negative impacts are related to potential slight aggravation of existing impacts rather than being new impacts.
- Most negative impacts are largely offset by the positive outcomes of the rehabilitation project.

In terms of positive impact, the road will bring important socio-economic benefits to the Kagera Region and will greatly improve security of pedestrians and bicyclists with the installation of segregated walkways in villages.

It is, therefore, concluded that, implementation of the proposed Lusahunga - Rusumo Road rehabilitation will entail no detrimental impacts provided that the recommended mitigation measures are adequately and timely put in place. The identified adverse

impacts shall be managed through the proposed mitigation measures and implementation regime laid down in this ESIA and its ESMP. TANROADS is committed in implementing all mitigations and delegating some to the construction contractors and further carrying out the environmental auditing and monitoring schedules as presented in the ESMP.

This ESIA concludes that, with appropriate mitigations, the Project will enable to achieve objectives materially consistent with the requirements of the World Bank ESF.

The following table summarizes all E&S impacts and risks and present the main mitigations and the assessment of residual impacts.

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
Impacts and risks at Project preparation					
1	Impacts on biophysical and socioeconomic components		Assessment done for the construction phase for each component	<p>Inclusion of measures developed in the ESMP in tender and contracts.</p> <p>Clear requirement to quantify health and safety measures and other measures in the Bills of Quantities.</p> <p>Inclusion of the framework ES instrument developed as part of TanTIP (such as the GBV action plan, the LMP and ESMF) in tender and in contractual documents.</p> <p>Establishment of the management structure at TANROADS to supervise E&S and H&S aspects of the project as required in the Environmental and Social Commitment Plan (ESCP).</p> <p>Environmental and social screening at selected quarries and sand pits.</p>	Assessment done for the construction phase for each component

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
2	Resettlement of persons and displacement of assets	High probability	Minor	Stand-alone Resettlement Action Plan (RAP) has been prepared to address all impacts and compensation related to the work	Minor
3	Risk of GBV related to the compensation process	Potential occurrence	Vary from moderate to major	<p>Sensitization of men on the use of compensation.</p> <p>Requirement that both spouse signatures be included on compensation agreements.</p> <p>Assistance to open joint bank accounts during compensation.</p> <p>Compensation in kind for female heads of household.</p>	Minor
Impacts and risks at construction phase					
Biophysical environment					

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
4	Impact on soil quality from accidental spillage of oil and poor management of waste and sanitation	Potential occurrence	Minor	<p>Good management practices such as spill tanks and secondary containment at vehicle maintenance yards.</p> <p>Collection, separation and sending waste, including hazardous waste to the appropriate service providers.</p> <p>Selection of the dumpsite for non-dangerous waste shall be done in close collaboration with district authorities and with the approval of the Supervising engineer based on several ES criteria.</p> <p>Septic tanks for wastewater.</p> <p>Certified spill response kit in all fuel bowsers with granular absorbent, bags and containers to remove polluted earth in case of spills.</p> <p>Stockpiling of bituminous waste for reuse at locations designated by the Supervising engineer.</p> <p>Waste and hazardous material management plan</p>	Minor

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
5	Impact on soil from sealing of additional permeable surface and compaction by machinery	Potential occurrence	Minor	Confinement of work within the RoW to avoid unnecessary encroachment.	Minor
6	Impact on hydraulic transparency from construction, modification of aquatic habitats from widening of culverts and impact on ecological continuity of aquatic habitat from culvert rehabilitation	High probability	Minor	<p>Replacing culverts to be done preferably during the dry season. If it is not possible, installation of pumps or temporary diversions shall allow water to flow downstream of work.</p> <p>Installation of culverts partially under the riverbed level to avoid creating perched culverts.</p> <p>During culvert replacement, derivation roads shall not ford cross the watercourses (even during the dry season) and the crossing shall use temporary culverts.</p>	Negligible

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
7	Impact on surface water quality during construction with expected increase of turbidity	High probability	Minor	<p>When working close or in watercourses, installation of silt fences upstream and downstream of work site to retain suspended solids.</p> <p>Installation of temporary slope stabilization measures during construction such as sediment diverting or catchment basins.</p>	Negligible
8	Impact of accidental spillage of oil and concrete wash water on surface water quality	Risk (low probability)	Moderate	<p>Avoidance of all discharge of concrete wash water in waterbodies or on the ground.</p> <p>An Emergency Preparedness and Response Plan (EPRP) shall be developed to prevent and address minor and major spills.</p>	Minor

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
9	Disturbance of aquatic habitats and fish from water abstraction	Potential occurrence	Moderate	<p>Water right before any abstraction of construction water.</p> <p>Small streams shall be avoided due to little baseflow.</p> <p>Groundwater from boreholes shall be favored as a source of water for construction.</p> <p>Because of the transboundary nature of the Kagera River (Akagera River), it shall not be used as a source of water by the contractor during construction activities</p>	Minor
10	Increase in noise level and vibration	High probability	Moderate	<p>Avoid idling the engines.</p> <p>Certified absorbent noise barrier to limit nuisances for nearby communities is recommended whenever possible.</p> <p>Through engagement activities, schedule of work could be adapted at sensitive receptors based on feedback.</p>	Minor

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
11	Emission of air pollutants from machinery and trucks	High probability	Minor	<p>Regular water sprinkling on work sites.</p> <p>Proper maintenance of trucks and engines.</p> <p>All trucks transporting material shall be covered (including trucks travelling to and from quarries and borrow areas).</p> <p>The selection of the asphalt batch plant location shall be done in consultation among TANROADS, local government authorities, customary authorities, and the contractor to ensure that it does not lead to local nuisances. It shall be located at a suitable distance from households</p>	Minor
12	Loss of roadside terrestrial and wetland habitats	High probability	Minor	Contractors to commit to maintaining all works within set boundaries to avoid unnecessary impact on habitats.	Minor

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
13	Destruction or disturbance of habitats at raw material extraction sites and off-site facilities	High probability	Moderate	<p>Use existing wasteland for work sites and camps to avoid all conversion of natural habitats.</p> <p>Once exact locations of quarries are known, prior ecological survey shall be undertaken to delineate sensitive habitats, to determine potential impacts on habitats and wildlife and possibly to recommend avoidance measures and influence decision-making.</p>	Minor
14	Risk of poaching and persecution of wildlife	Risk (low probability)	Major	<p>Provision of extra law enforcement personnel at Burigi-Chato national Park to increase patrol and law enforcement effort during construction activities.</p> <p>Induction sensitization for all workers when work reaches the national park.</p> <p>Code of Conduct to prohibit hunting, fishing and purchasing of any bush-meat or wild animals from communities.</p>	Negligible

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
15	Startling of wildlife of the Burigi-Chato National Park	Risk (low probability)	Negligible	Speed limits shall be set at 50 km/hour for all vehicles and trucks working close to the national park between chainage 43+000 and 53+500.	Negligible
16	Risk of encroachment into the Burigi-Chato National Park	Risk (low probability)	Moderate	<p>No workers camp, quarry, borrow areas, sand pits or water abstraction or any temporary work sites shall be authorized between chainage 38+000 and 53+500 and after chainage 80+000 on the eastern side of the road due to the presence of the Akagera KBA.</p> <p>Clear signage during construction work along the road between chainage 43+000 and 48+000 to mention the presence of the national park.</p>	Negligible

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
17	Risk of disturbance of fish in the Akagera KBA	Risk (low probability)	Negligible	Replacement of the 11 culverts between 81+500 and 91+400 shall be done outside of the rainy season as a precautionary measure. It is key that contractor be aware of the presence of the KBA and its limits to ensure that special attention be paid during work close to the KBA.	Nil
18	Risk of destruction of threatened plant species	Risk (low probability)	Major	For all additional land requirement (outside of the existing road reserve) selection of sites shall be preceded by an ecological survey to delineate sensitive habitats, to determine potential impacts on habitats and wildlife and possibly to recommend avoidance measures.	Nil
19	Risk of disturbance and direct mortality of threatened wildlife species	Risk (low probability)	Major		Nil
20	Risk of spread of alien and invasive plant species	Risk (low probability)	Minor	Cleaning and verification of machinery before commencement of work to ensure that no mud or soil is transported to the site.	Minor

Human environment

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
21	Possible additional temporary and permanent restrictions on land use during construction	High probability	Minor or negligible	<p>According to the RAP, the purchase of campsite facilities will normally be done through a willing-buyer willing-seller (wb/ws) approach.</p> <p>Development of land pre-entry and exit procedures and agreements with landowners and affected communities before the commencement of construction activities (and integrate these procedures and compensations in the RAP and its entitlement matrix).</p> <p>Temporary access to businesses during construction work shall be maintained by the contractor.</p>	Negligible
22	Socioeconomic impacts on displaced persons	Potential occurrence	Minor	Mitigation measures are developed in the stand-alone Project RAP.	Minor

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
23	Worker's influx, workers camp and associated social impacts on communities	Potential occurrence	Minor	<p>The project will construct the campsites at the areas which will be selected through collaboration and consultation between TANROADS, local government authority, customary authorities and contractor to minimizing any possible environmental and social risks to communities and biodiversity along the road.</p> <p>Induction training and sensitization for all workers (including unskilled workers) on GBV.</p> <p>GBV action plan with the Code of Conduct.</p>	Minor

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
24	Strain on local services such as health services, water supply, waste management and electricity from the presence of work and workers	Potential occurrence	Minor	<p>Disclosure to local public services the needs generated by the workers' camp and the construction site and coordinate the implementation of measures to prevent pressures on public infrastructure from having negative consequences on local communities.</p> <p>Workers' camp management plan.</p> <p>Waste management plan.</p>	Minor
25	Disturbances to livelihood and economic activities	High probability	Minor	<p>Compensation package for street vendors is foreseen in the RAP.</p> <p>Access to businesses (service and retail businesses) from the road shall be maintained during work to avoid reducing their source of income.</p>	Minor
26	Disturbance of local traffic, mobility and congestion impacting economic activities	High probability	Minor	Traffic management plan	Minor

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
27	Reduction of available water for irrigation in Benaco pond	Potential occurrence	Moderate	Public consultations with concerned farmers that use the Benaco reservoir to irrigate paddy fields to determine the volume that could be abstracted without impacting downstream agriculture.	Minor
28	Job opportunities	High probability	Minor+	Job offers shall prioritize permanent residents of neighboring communities. The local residence must be certified by the customary and local authorities.	Minor+
29	Impact on connectivity across the road and disruption of access	High probability	Minor	<p>Safe passage at identified crossing sites for pedestrians with appropriate signage using pictograms and adequate protection from work engines and trucks and motorized traffic indicating diversion and entrance.</p> <p>All passage shall be universally accessible to allow people with physical disabilities to safely cross.</p> <p>Traffic Management Plan</p>	Minor

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
30	Health and safety risks for communities during construction	Risk (low probability)	Vary from minor to major	<p>Pedestrian passage and vehicles passage shall be physically separated with barricades and construction fences to inhibit pedestrian movement into the work site.</p> <p>Work site shall be clearly delineated and create exclusion zones.</p> <p>Construction fences and work exclusion zones shall be visible at night.</p> <p>In addition to regular OHS training for workers, awareness shall focus on ensuring community safety from work.</p>	Vary from minor to major

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
31	Risk of improper behavior of security personnel	Risk (low probability)	Minor	<p>The terms of the contracts of security personnel must be clearly established and the penalties for misuse of force must be stipulated in the contract. Contract shall include behavior commitments and clear and accessible disciplinary process.</p> <p>Security personnel shall receive procedural training (procedures, proper conduct and ethics and human rights).</p> <p>GBV action plan with the Code of Conduct.</p> <p>SEP and its GRM. The GRM shall be accessible to community members who wish to file a complaint regarding security personnel behavior.</p>	Minor
32	Risk of additional workload burden on women when men are hired for construction work	Potential occurrence	Minor	Impact hardly mitigable as recruitment of workers will not be able to detect this risk.	Minor

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
33	Disturbance of persons living with disabilities due to loss of access during construction work	Potential occurrence	Minor	All temporary passage shall be universally accessible to allow people with physical disabilities to safely cross work sites.	Nil
34	Spread of HIV	Risk (low probability)	Major	<p>Raising awareness of the risks of sexually transmitted diseases shall be part of mandatory recruitment training for workers.</p> <p>Registered service provider to test workers.</p> <p>Assistance of an NGO to implement HIV/AIDS awareness campaigns.</p>	Major (but reduction of the probability of occurrence of the risk)

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
35	Risk of child and forced labor	Risk (low probability)	Major	<p>Children under the age of 18 years shall not be hired on site.</p> <p>Audits to ensure that no children and no forced labor are working on construction sites and in quarries.</p> <p>In case of suspicion or proven cases of abuse, the Supervising engineer must ensure that Tanroads and the World Bank be formally informed.</p> <p>Labor Management Procedures (LMP)</p>	Major (but reduction of the probability of occurrence of the risk)
36	Risk of poor labor conditions due to high level of informality	Potential occurrence	Minor	<p>Data log of all workers and implementation of the procedures as set in the Labor Management Procedures (LMP).</p> <p>Construction-ESMP shall develop procedures to ban any form of disguised employment, misclassification, informality or casual labor.</p>	Minor (but reduction of the probability of occurrence of the risk)

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
37	OHS risks to workers	Risk (low probability)	Vary from minor to major	<p>Implementation of the procedures as set in the Labor Management Procedures (LMP) regarding OHS.</p> <p>Work zone safety for construction workers at all time (use of protective barriers to shield workers from traffic vehicles in towns and village centers, use of traffic cones and barrels in rural areas, use of warning lights to avoid using flaggers).</p> <p>OHS preventive measures (training, PPE, hazard and risk identification, procedure for COVID, first aid).</p> <p>Any injury, accident or near miss shall be described in a medical report by the contractor and Supervising engineer.</p>	Vary from minor to major (but reduction of the probability of occurrence of the risk)

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
38	Risk of an increase in Gender-Based Violence	Risk (low probability)	Major	<p>GBV action plan. GBV-SEA GRM and workers' Code of Conduct</p> <p>Training of Supervising engineer and contractors by PIT to present the GBV action plan requirements for managers.</p> <p>Induction training to all workers on the GBV action plan.</p> <p>PIT will Conduct a GBV risk assessment and GBV mapping in the project area to inform risk mitigation strategies and update a GBV referral pathway.</p> <p>Contractor shall also adapt its Construction ESMP to address the risks and participate in the prevention of GBV and SEA.</p>	Major (but reduction of the probability of occurrence of the risk)
39	Risk of disturbances and destruction to unknown cultural heritage sites	Risk (low probability)	Vary from minor to major	Chance-find procedure	Minor (but reduction of the probability of occurrence of the risk)
Impacts and risks at Operation and maintenance phase					

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
Biophysical environment					
40	Accumulation of pollutants in roadsides	High probability	Minor	Appropriate signage to truck drivers to avoid littering. The design has foreseen to install drains with erosion checks which will reduce the silt load in streams. Removal of accumulated waste and silts in drains and culverts as part of road maintenance. Truck lay bays shall be equipped with garbage bins to collect domestic waste and waste collection at truck lay bays shall be contracted to a service provider.	Minor
41	Infiltration of pollutants from roadsides in groundwater	High probability	Minor		Minor
42	Impact on surface water quality from road traffic and surface runoffs	High probability	Minor		Minor
43	Degradation of aquatic habitats from increase in road traffic and surface runoffs	High probability	Minor		Minor
44	Risk of degradation of Akagera KBA floodplains	Risk (low probability)	Minor		Minor
45	Noise from traffic and reduction of noise thanks to road improvement	High probability +/-	Negligible +/-	Should the road cause noise level to unacceptable levels at sensitive sites such as health centers and schools, earthen mounds or vegetation plantation could be envisaged at project implementation.	Negligible +/-

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
46	Impact on air quality from road traffic and reduction of dust thanks to road improvement	High probability +/-	Negligible +/-	Reduction of the speed of vehicles in village centers to 50 km/hour as required in the Road Safety Screening and Appraisal Tool (RSSAT).	Negligible +/-

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
47	Higher risk of wildlife collision and casualties	Potential occurrence	Moderate	<p>Road sign for wildlife protection at several locations and on both side of the traffic between chainage 38 and 56 (close to the Burigi-Chato National Park).</p> <p>Rumble strip shall be installed at chainage 44 on the western lane of the road (right hand side) and at chainage 56 on the eastern lane (left hand side) to warn vehicles on the presence of the presence of wildlife.</p> <p>At chainage 44 and chainage 56 signs shall be lighted to warn drivers of the presence of the Burigi-Chato National Park. In this section, speed shall also be reduced.</p> <p>Regular monitoring of road kills shall be done along the road with a focus between chainage 38 and 56 in order to assess the extent of road kills and propose additional management measures.</p>	Minor
48	Exacerbation of the barrier effect	Potential occurrence	Moderate	At this stage no mitigation is proposed.	Moderate

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
Human environment					
49	Improved transport sector allowing for economic development	High probability+	Major+	No specific enhancement measures.	Major+
50	Livestock roadkill	Potential occurrence	Moderate	Provisions for livestock underpass are foreseen in the design report.	Minor
51	Impact on connectivity across the road and disruption of access	Potential occurrence	Moderate	Maintaining access for vehicles and non-motorized transportation between the trunk road and small side roads (local roads).	Minor

N°	Impacts/risks	Probability of occurrence	Impact significance before mitigation	Recommended main mitigations (and management plans)	Residual impact significance
52	Improved safety for motorized and non-motorized road users	High probability+	Moderate+	<p>The design has foreseen the installation of 15 raised pedestrian crossing. Pedestrian crossings will be preceded and followed by rumble strips. Additional engagement activities shall be undertaken at all villages that are crossed by the road to determine whether additional pedestrian crossings are necessary.</p> <p>Increasing the length of existing walkways from 4.24 km to 5.04 km and upgrading them.</p> <p>6.6 km of new walkways are recommended in 10 small villages.</p> <p>Speed reduction from 70 to 50 km/hour in villages.</p>	Major+
53	Health issues for population living along the road	High probability	Negligible	Little realistic mitigation could be recommended.	Negligible
54	Universal access to the road and walkways	High probability	Minor+	Development of walkways in selected villages.	Moderate+

9 ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN

This chapter is the Environmental and Social Management Plan (ESMP) for the Lusahunga-Rusumo road rehabilitation project. It describes the chain of responsibilities for the implementation of mitigation measures as well as the monitoring measures. It also describes the role of the construction contractors in terms of management of ESHS risks during works.

9.1 Environmental and Social Management Plan

The Environmental and Social Management Plan (ESMP) presents the implementation schedule of the proposed mitigation measures for environmental and social impacts, planning for long-term monitoring activities, and the estimated budget for implementing the recommended measures. The engineering designs have already incorporated some of the mitigation measures recommended in this Report. Additional recommendations are provided in the ESMP to enable the road facility to be more environmentally friendly.

The implementation steps will involve the Contractor, Supervising Engineer, District Councils, Road Agency (TANROADS), road users, and local communities. The roles of these respective actors are as follows:

- The Contractor is responsible for engaging competent Environmental, Social, Health and Safety (ESHS) Officer who will be responsible for preparation of C-ESMP including sub-plans, implementation the ESMP and reporting ESMP implementation on monthly basis.
- The TANROADS/ Supervising Engineer will be responsible with the approval of the C-ESMP, monitoring of ESMP implementation during construction works and reporting on progress of works.
- District Council through the District Environmental Management Officers (DEMOs) in collaboration with TANROADS (Department of Environment and Safety) are responsible for overseeing implementation of the Monitoring Plan from time to time.
- TANROADS has the responsibility to oversee implementation of the Monitoring Plan in collaboration with Local Government Environmental Management Officers (DEMOs).
- TANROADS PIT will be responsible for day to day activities of supervision and monitoring of the Contractor implementation of the project management plans such as the ESMP, GRM, SEP, LMP, GBV/SEA, as per WB-ESF requirements and prepare the monthly and Quarterly reports to be shared with TANROADS and WB.
- TANROADS is also responsible to ensure the Contractor E&S requirements are included into tender documents and into clauses of the BOQ and Contracts for smooth implementation of the road project.
- Road users and the local communities at large, their main role is to comply with road safety requirements.

9.2 Implementation of the ESMP

The Contractor (guided by his Environmental, Social, Health and Safety (ESHS) Officer of the Contractor) shall be the implementers of the ESMP during construction period under the supervision of the Engineer (guided by the Supervising Engineer's ESHS Specialists). The ESHS Specialists under the Engineer and the Contractor shall be procured on full time basis to implement the ESMP in order to make sure that the ES measures recommended in the report are effectively complied with and timely adjusted whenever necessary. They will liaise with the relevant public agencies and carry out the training scheme associated to their assignment.

These specialists will liaise with the relevant public agencies and carry out the necessary training schemes associated to their assignments. The Contractor will be responsible in preparing the site specific C-ESMP based on the ESMP presented in this report as well as all mandatory ESMP-sub plans and submit them to TANROADS PIT and the Supervising engineer for approval before implementation.

TANROADS as the Client, shall be the overseer of the ESMP through the Supervising engineer, and the Contractor. The environmental measures incorporated in the detailed engineering design will be attached to the contract documents of the Contractor.

9.2.1 ESMP consolidated table of mitigation and responsibilities

The following table list all mitigation measures and assign responsibilities for their implementation, monitoring and for corrective measures. It also presents performance indicators to monitor.

The following actors will be involved:

TANROADS/PIT (T/P):	T/P can delegate in part or fully some activities to local NGO or service providers. Whenever T/P does so, it will remain in charge of compliance with the measure. The composition of the PIT is presented in the ESMF.
Supervising Engineer (SE):	A dedicated ESHS specialist will be hire by the SE
Main Construction Contractor (CC):	A full time dedicated ESHS officer on site will hire by the CC. This officer will oversee all ESHS aspects, including the implementation and monitoring of the C-ESMP and contractual ESHS obligations. He/she cannot perform other tasks. He/she shall have the required expertise to carry out these tasks.

The table presents performance indicators that will have to be monitored on an ongoing basis. These performance indicators shall be evaluated in period reports (see section 9.3).

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
Mitigations to be implemented at Project preparation						
Affected component: all components						
Impact to mitigate						
1	Impacts on biophysical and socioeconomic components					
2	Resettlement of persons and displacement of assets					
3	Risk of GBV related to the compensation process					
	Call for tenders and contracts for construction contractors shall include measures developed in the ESMP. In addition, some measures proposed in this ESMP involve a cost for the construction contractor, call for tender shall be clear on the requirement to quantify health and safety measures and other measures in the Bills of Quantities (PPE,	T/P	T/P	NA	Integration of applicable ESMP measures in tender and contracts	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	oil spill kit, etc.)					
	Integration of appropriate wording in the tender documents for contractors. It is important to highlight in tender documents that there are sensitive habitats (national park, KBA and IBA, wetlands and watercourses) that would need to be protected from encroachment, deposition of demolition waste and rubbles and poaching from workers. It is also important to include requirement to ensure proper labor condition and protection against GBV/SEA. The framework ES instruments developed as part of TanTIP (such as the GBV action plan and the Labor Management Procedures) shall be included in tender and in contractual documents	T/P	T/P	NA	Integration of applicable ESMP measures in tender and contracts	No cost
	Integration of detailed requirements in contractual documents for contractors and use of covenants in contracts. Covenants are formal obligations and	T/P	T/P	NA	Integration of applicable ESMP measures in tender and contracts	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	prohibitions that the company must respect, they are not subject to interpretation					
	Translation of ESMP actions into contractual terms so that ES requirements cascade down to contractors and that they know their responsibility upfront. Tender and contractual documents shall highlight that contractors are required to abide by the ESMP	T/P	T/P	NA	Integration of applicable ESMP measures in tender and contracts	No cost
	Integration of appropriate wording on the chain of responsibilities included in contractual document to ensure E&S and H&S measures cascade down to the contractors. This includes integrating in the contract the followings : <ul style="list-style-type: none"> • Commitments for the contractor to comply with the EIA license, the WB ESF and its ESSs, national laws, ratified conventions on 	T/P	T/P	NA	Integration of applicable ESMP measures in tender and contracts	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	<p>E&S topics including labor conditions, child labor, and sexual harassment.</p> <ul style="list-style-type: none"> • Important definitions as presented in the ESIA (GBV, Sexual Harassment, KBA, IBA, National Park, etc.). • Clear chains of responsibilities (between TANROADS PIT, the contractor and the Supervising engineer) • Explicit statement that the Contractor is responsible for the E&S performance of its Subcontractors (including primary suppliers) including compliance with labor laws • The requirements for the ESHS Officer from the contractor (and under the payroll of the contractor). • The requirements to participate in conflict 					

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	<p>resolution as part of the GRM and GBV allegations.</p> <ul style="list-style-type: none"> • Clear requirements regarding training and induction trainings. • Requirements for reporting on ES performances • Penalties in cases of outstanding E&S items and repeated violations of E&S requirements, full or partial payment under specific line items of the bill of quantities could be withheld, either temporarily or permanently based on the cost of compliance. • Clear statement on the fact that contractor shall ensure that its subcontractors also comply with the ES requirements and the WB ESF. 					

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	Establishment of the management structure at TANROADS to supervise E&S and H&S aspects of the project as required in the Environmental and Social Commitment Plan (ESCP)	T/P	T/P	NA	PIT is operational	Integrated in project cost
	Environmental and social screening to ensure that selected quarries and sand pits do not cause any environmental damages to natural and sensitive habitats and do not present any risks for neighboring communities (a model is included in the ESMP)	T/P and SE	T/P and SE	NA	The check list presented in this ESMP is used to select quarries and borrow areas Absence of impact on ES components	See cost below
	A stand-alone Resettlement Action Plan (RAP) has been prepared to address all impacts and compensation related to the work.	T/P	T/P	T/P	See Resettlement Action Plan	See RAP
	As required by the RAP, promptly and timely compensations shall be paid to all PAPs based on Tanzania laws and the World Bank ESS 5 on Land Acquisition, Restrictions on Land Use and	T/P	T/P	T/P	See Resettlement Action Plan Compensation is paid before displacing persons and their assets and before	See RAP

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	Involuntary Resettlement before commencement of the construction activities.				the beginning of construction	
	As developed in the RAP, a Grievance Redress Mechanism (GRM) is in place to resolve all resettlement and compensation related grievances. As highlighted in the GRM, there will be open communication channels to register any complaints resulted from the project through established phone numbers and emails address as well as suggestion boxes at contractors, consultants, TANROADS regional Offices as well as Wards and Villages offices	T/P	T/P	T/P	<p>See Resettlement Action Plan</p> <p>The Grievance Redress Mechanism (GRM) is in place, communicated to all PAPs and operational</p>	See RAP
	Sensitization of men on the use of compensation: when paying compensation, it is important to sensitize male heads of household on the use of compensation in order to prevent cases of dilapidation	T/P	T/P	T/P	<p>Measures integrated in the Resettlement Action Plan implementation</p> <p>Number of sensitization campaign to male PAPs</p>	See RAP

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	Requirement that both spouse sign compensation agreements: signing of offset agreements and upstream negotiation processes should include women	T/P	T/P	T/P	Measures integrated in the Resettlement Action Plan implementation Number of compensation sign-off with both spouse signatures	See RAP
	Assistance to open joint bank accounts during compensation. It is recommended, when paying compensation for household losses, to assist eligible persons to open a joint account that will be shared between men and women	T/P	T/P	T/P	Measures integrated in the Resettlement Action Plan implementation Number of joint bank account opened for compensation payment	See RAP
	Prioritize compensation in kind for female heads of household	T/P	T/P	T/P	Measures integrated in the Resettlement Action Plan implementation Number of female heads of	See RAP

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
					households that opted for in-kind compensation	
Mitigations to be implemented at Construction phase						
Affected component: Soil quality						
Impacts to mitigate:						
4	Impact on soil quality from accidental spillage of oil and poor management of waste and sanitation					
5	Impact on soil from sealing of additional permeable surface and compaction by machinery					
	Good housekeeping shall be practiced within material storage compounds or vehicle maintenance yards where the possibility of spillage is great. This shall be done by installing spill tanks and secondary containment at vehicle maintenance yards	CC	SE	CC	Presence of spill tanks and secondary containment at vehicle maintenance yards Measure adopted in the contractor's Waste and hazardous material	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
					management plan	
	Collection, separation and use of appropriate service providers for waste management	CC	SE	CC	Presence of contract with waste service providers for all domestic and hazardous wastes including medical waste. Measure adopted in the contractor's Waste and hazardous material management plan	Integrated in the BoQ
	Provision of sufficient waste bins at work site and workers camps and all off-site facilities. These shall allow for the separation of domestic nonhazardous waste and hazardous waste. Hazardous waste collection shall also be separated between medical waste and other hazardous wastes.	CC	SE	CC	Number of waste bins per type of waste Measure adopted in the contractor's Waste and hazardous material management plan	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	At the workers' camp, rubbish containers shall be installed in a shelter on a wooden, metal, or concrete stand. Such containers must be emptied at regular intervals to avoid unpleasant odors associated with decaying organic materials	CC	SE	CC	<p>Presence of shelter and wooden, metal or concrete stands.</p> <p>Intervals of waste collection (every two days)</p> <p>Measure adopted in the contractor's Waste and hazardous material management plan</p>	Integrated in the BoQ
	Hazardous wastes (liquid) shall be handled in designated area with concrete surrounding or containers around the workshop to avoid spillage. Collected liquid waste shall be managed by designated service providers for disposal	CC	SE	CC	<p>Liquid hazardous waste collection in designated areas on concrete</p> <p>Presence of a service provider for liquid hazardous waste collection</p> <p>Measure adopted in the contractor's Waste and</p>	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
					hazardous material management plan	
	Hazardous waste (solid) such as used batteries, filters, metal scrapers, used tiles, bitumen drums shall be collected and stored in the designated area. Collected solid waste shall be managed by designated service providers for disposal	CC	SE	CC	Solid hazardous waste collection in designated areas Presence of a service provider for solid hazardous waste collection Measure adopted in the contractor's Waste and hazardous material management plan	Integrated in the BoQ
	Hazardous waste (medical) at the workers nursery shall be stored in biohazard containers and shall be managed in close collaboration with the nearest hospital	CC	SE	CC	Solid hazardous waste collection in biohazard containers Presence of a contract for waste transport and	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
					disposal with the nearest hospital Measure adopted in the contractor's Waste and hazardous material management plan	
	Prohibition to burn any type of waste, this includes but is not limited to oil, plastic, tires, and domestic waste. Burying waste in the workers camp shall also not be authorized	CC	SE	CC	Number of non-compliance with this measure Covenant in the contractor's Waste and hazardous material management plan	No cost
	Since there are no formal landfill in the vicinity of the road, non-dangerous waste that are generated at the workers camp (domestic waste) could be buried at a local dumpsite (in the absence of other alternatives). The selection of the dumpsite shall be	CC and SE	SE	CC	Written justification for the selection of the local dumpsite included in the construction work report based on the set criteria	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	<p>done in close collaboration with district authorities.</p> <p>In addition, the Supervising engineer shall validate the choice of dumpsite based on several ES criteria:</p> <ul style="list-style-type: none"> • Distance of the dumpsite to residential areas. • Distance of the dumpsite to the nearest watercourse. Absence of impact on watercourse. • Absence of impact on groundwater. • Type of soil, it is preferable to select a site with impermeable soil and to avoid sandy areas. • Overall management of the dumpsite (cleanliness, etc.). 				<p>Proofs of signature of an agreement with a waste collection company and the concern municipality</p> <p>Measure adopted in the contractor's Waste and hazardous material management plan</p>	

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	<p>Collection, separation, reuse and disposal of demolition waste:</p> <ul style="list-style-type: none"> • Bituminous waste shall be stockpiled for reuse at locations designated by the Supervising engineer. • Disposal of demolition waste shall be done in accordance with clause 1713 of the Standard Specifications for Road Works 2000 	CC	SE	CC	<p>Location of bituminous waste stockpile</p> <p>Compliance with clause 1713 of the Standard Specifications for Road Works 2000</p> <p>Measures adopted in the Contractor's C-ESMP and implemented</p> <p>Measure adopted in the contractor's Waste and hazardous material management plan and implemented</p>	Integrated in the BoQ
	<p>Collection and management of wastewater:</p> <ul style="list-style-type: none"> • The camp sites shall have adequate toilets with septic tank. A contract with a service 	CC	SE	CC	Contract with service provider for regular maintenance and emptying	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	<p>provider shall be established for regular maintenance and regular emptying.</p> <ul style="list-style-type: none"> Septic tanks shall be installed in areas of stable soils that are nearly level, well drained, and permeable, with enough separation between the drain field and the groundwater table or other receiving waters. Mobile toilets shall be available to workers when working on the road sections. A contract with a service provider shall be established for regular maintenance and regular emptying 				<p>of the septic tank</p> <p>Location of the septic tank validated by the SE</p> <p>Mobile toilets and contract with service provider for regular maintenance and regular emptying</p> <p>Measure adopted in the contractor's Waste and hazardous material management plan and Workers' camp management plan and implemented</p>	
	<p>Refueling shall be done in designated areas with minimal risk of collision with other vehicles.</p> <p>Small refueling stations and oil barrels must be on</p>	CC	SE	CC	<p>Selection of refueling areas validated by the SE</p> <p>Refueling station on</p>	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	<p>impermeable surfaces with controlled drainage (drip trays to collect small spillages).</p> <p>All fuel bowser (trucks) shall have a certified spill response kit with granular absorbent, bags and containers to remove polluted earth in case of spills. All workers handling fuel shall have proper training on the correct transfer and handling of fuels and chemicals and the response to spills.</p> <p>In case of small oil spills, granular absorbent shall be put on the spill. The contaminate earth shall be excavated and sealed in bag to be sent to appropriate treatment plants. Contaminated soil shall not be sent to municipal dumpsites. In case of large oil spills, the spill shall be contained and the site isolated with fences. The appropriate agency shall be contacted for guidance, and contaminated soil shall be excavated and transported to the designated treatment facility.</p>				<p>impermeable surfaces with control drainage</p> <p>Fuel bowser with certified spill response kit</p> <p>Number of small oil spills that were treated with spill response kit</p> <p>Number of large oil spills and report and the corrective measure implemented</p> <p>Measures adopted in the contractor's Emergency Preparedness and Response Plan (EPRP) and implemented</p>	

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	Installation of secondary containment for fuel storage tanks and for the temporary storage of other fluids such as lubricating oils and hydraulic fluids.	CC	SE	CC	Presence of secondary containment for fuel for all storage tanks Measure adopted in the contractor's Waste and hazardous material management plan and implemented	Integrated in the BoQ
	Confinement of work within the RoW and avoidance of unnecessary encroachment	CC	SE	CC	Number of noncompliance with this measure by the CC Measure adopted in the Contractor's C-ESMP and implemented	No cost
Affected component: hydrology, water quality and aquatic habitats and fish						

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
Impacts to mitigate:						
6	Impact on hydraulic transparency from construction, modification of aquatic habitats from widening of culverts and impact on ecological continuity of aquatic habitat from culvert rehabilitation					
7	Impact on surface water quality during construction with expected increase of turbidity					
8	Impact of accidental spillage of oil and concrete wash water on surface water quality					
9	Disturbance of aquatic habitats and fish from water abstraction					
	When replacing or widening culverts: <ul style="list-style-type: none"> Work shall be done preferably during the dry season. If it is not possible, installation of pumps or temporary diversions shall allow water to flow downstream of work. This is also key to avoid all impacts on downstream and upstream croplands that are dependent on water. Given the 	CC	SE	CC	Percentage of culvert replaced during the dry season Number of culverts that were cleaned prior to rehabilitation Percentage of new culverts that are installed partially	Integrated in the BoQ (including pumps and silt fences)

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	<p>permanent presence of water in the 29 box culverts, all work at these locations shall use diversion pumps and temporary enclosures to work in a dewatered environment. This measure is particularly important at locations where arched metal pipes will be fully replaced by larger box culverts and will therefore require interventions in the stream (at chainage 25+597; 50+535; 53+941; 54+279; 57+023; 57+651; 76+657; 63+852; 68+455).</p> <ul style="list-style-type: none"> • During work on permanent streams, (especially at box culverts location), silt fences shall be installed downstream of work to avoid increasing turbidity of stream. • Removal of all obstacles to free flow (rock, plant debris, waste) before upgrading the 				<p>under the riverbed.</p> <p>Measures adopted in the Contractor's C-ESMP and implemented</p> <p>The C-EMSP includes a detailed method for culvert replacement work</p>	

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	<p>culvert</p> <ul style="list-style-type: none"> • Installation of new culverts partially under the riverbed level to avoid creating perched culverts (that would block free movement of fish) and shall not have a steep slope to avoid increasing flow to a point where some fishes can no longer swim • For all works on arched metal culverts and box culverts, the contractor shall develop in its Construction-ESMP, a method for water work to ensure that free flow of water is not impacted, that material is not deposited in the streams and wetlands, and that turbidity of water does not increase 					
	Local drainage and runoff flow patterns shall be maintained on the construction site to avoid creating local flooding or drought that could affect	CC	SE	CC	Number of complaints from nearby farmers doing small scale irrigation and	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	crops				<p>recession agriculture.</p> <p>Verification by the SE of work at all culvert site to ensure that hydraulic transparency is maintained and that there is no impact on nearby agriculture.</p> <p>Measure adopted in the Contractor's C-ESMP</p>	
	<p>Excavated material storage sites must never be done close to a watercourse to avoid impede the free flow of water or create bottlenecks</p> <p>Selection of storage sites far from any watercourses and wetlands</p>	CC	SE	CC	<p>Verification by the SE of work at all culvert site to ensure that no excavated material is stored close to a waterbody.</p> <p>Measure adopted in the Contractor's C-ESMP and implemented</p>	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	<p>During replacement or upgrading of culverts, the need for derivation roads shall be determined. If necessary, derivation roads shall not ford cross the watercourses (even during the dry season) and the crossing shall use temporary culverts that are size to ensure free flow of water. Abutments at these temporary crossing shall be stabilized with geotextile membrane and riprap rocks.</p>	CC/SE	SE	CC	<p>Method for full culvert replacement avoiding the need for derivation road and to ford cross the waterbody</p> <p>Measure adopted in the Contractor's C-ESMP and implemented</p> <p>Presence of temporary culverts sized to guarantee free flow of water</p> <p>Abutment are stabilized with geotextile and rocks</p> <p>Measure adopted in the Contractor's C-ESMP and implemented</p>	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	<p>Refueling of engines or transfer of materials should not be carried out near water bodies, and any local spillage shall immediately be remedied.</p> <p>When working close to watercourses:</p> <ul style="list-style-type: none"> • Installation of silt fences upstream and downstream of work site to retain suspended solids. • Installation of temporary slope stabilization measures during construction such as sediment diverting or catchment basins. • All machinery working close to a waterbody shall have certified emergency spills containment which include silt floating and oil spill containment booms. A skimmer to suck up the contained spill shall also be foreseen on site. In case of minor spills, the contained waterborne spills shall be sucked 	CC	SE	CC	<p>Presence of silt fences upstream and downstream of work</p> <p>Presence of temporary slope stabilization measures during construction such as sediment diverting or catchment basins</p> <p>Certified emergency spills containment in all machinery</p> <p>Measures adopted in the contractor's Emergency Preparedness and Response Plan (EPRP) and implemented</p> <p>Measure adopted in the</p>	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	<p>with a skimmer up to remove the oil from water. The collected oil shall be sent to a treatment facility and shall not be discharged on soil.</p> <p>An Emergency Preparedness and Response Plan (EPRP) shall be developed to prevent and address minor and major spills, which would require to mobilize necessary resource to maintain and clean the spill.</p>				Contractor's Erosion and Sediment Control Plan and implemented	
	Avoidance of all discharge of concrete wash water in waterbodies or on the ground. Temporary washout containers shall be installed to allow wash water to evaporate. The hardened cementitious solids could then be recycled	CC	SE	CC	<p>Number of cases of discharge of concrete wash water in a waterbody</p> <p>Presence of temporary washout containers to allow water to evaporate</p> <p>Recycling of the hardened cementitious solids</p>	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
					Measure adopted in the Contractor's C-ESMP and implemented	
	When removing culvert wingwalls, machinery shall not work from the stream and shall avoid all encroachment. The culvert embankment shall be rapidly stabilized upstream and downstream with riprap or gabion in addition to the new wingwall to avoid leaving bare soil and erosion of the banks.	CC	SE	CC	Avoidance of work from the stream Stabilization directly after work with riprap or gabions Measure adopted in the Contractor's C-ESMP and implemented Measure adopted in the Contractor's Erosion and Sediment Control Plan and implemented	Integrated in the BoQ
	At the workers' camp, grey water or wastewater shall never be discharged in a natural waterbody	CC	SE	CC	Measure adopted in the contractor's Workers'	Integrated in

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	but be collected in skeptic tanks to avoid discharge in natural ditches and in watercourses.				camp management plan and implemented	the BoQ
	Obtainment of a water right before any abstraction of construction water in the project area. The road is crossing two water basins, the Victoria Lake basin on the norther part of the road and the Lake Tanganyika water basin in the south	CC	SE/TP	CC	The water right is obtained Measure adopted in the Contractor's C-ESMP and implemented	Integrated in the BoQ
	Regardless of their suitability for water, small streams shall be avoided due to little baseflow. Because of the transboundary nature of the Kagera River (Akagera River), it shall not be used as a source of water by the contractor during construction activities	CC	SE	CC	Selection of the water sources for construction that complies with this condition Measure adopted in the Contractor's C-ESMP and implemented	No cost
	Groundwater from boreholes shall be favored as a source of water for construction. Borehole's location shall be selected to avoid impact on private	CC	SE	CC	Percentage of groundwater used for concrete	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	wells				production Measure adopted in the Contractor's C-ESMP and implemented	
Affected component: noise level and vibration						
Impact to mitigate:						
10	Increase in noise level and vibration					
	When working close to residential areas and in villages, work shall be undertaken during daytime only	CC	SE	CC	Compliance with this measure Measure adopted in the Contractor's C-ESMP and implemented	No cost
	Avoidance of idling the engines. Machinery shall also be serviced regularly to avoid unnecessary	CC	SE	CC	Certificate or proof of maintenance	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	noise and air pollution				Compliance with the avoidance of engine idling Measures adopted in the Contractor's C-ESMP and implemented	
	Use of certified absorbent noise barrier to limit nuisances for nearby communities whenever possible. Such noise barriers could be used around generators and stationary engines	CC	SE	CC	Presence of absorbent noise barriers around stationary engines and the generators Measures adopted in the Contractor's C-ESMP and implemented	Integrated in the BoQ
	Communication of the schedule and duration of work to affected communities and at location where there are sensitive receptors (such as schools, hospitals and places of worship). If needed, schedule of work could be adapted based on	T/P	T/P	NA	Number of engagement activities as part of the TanTIP Stakeholder Engagement Plan held to present the calendar of	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	collected feedback and close to these sensitive receptors				work.	
Affected component: Air Quality						
Impact to mitigate:						
11	Emission of air pollutants from machinery and trucks					
	Dust from work sites in village and town centers shall be reduced. This includes spraying the access to the construction site and other off-site facilities (quarries). The frequency of sprinkling shall be increased during the dry season. The use of oil and oil by-products is prohibited to control road dust	CC	SE	CC	Number of time water is sprayed in residential areas and at quarries per day Measures adopted in the Contractor's C-ESMP and implemented	Integrated in the BoQ
	The use of water to suppress dust shall not be done at the expense of sensitive aquatic habitats and sources of domestic water. Location for water abstraction shall be validated by the Supervising	SE	SE	SE	Validation of all water abstraction sites by the Supervising engineer	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	engineer.					
	<p>Vehicles maintenance: vehicles and trucks will be verified and serviced on a regular basis, especially oil changes in vehicles, trucks and machinery to avoid unnecessary air pollution from exhausts.</p> <p>All trucks transporting material shall be covered (including trucks travelling to and from quarries and borrow areas)</p>	CC	SE	CC	<p>Frequency of truck and vehicle maintenance</p> <p>Proof of maintenance of all vehicles and trucks</p> <p>Number of trucks with cover</p> <p>Measures adopted in the Contractor's C-ESMP and implemented</p>	No cost
	The selection of the asphalt batch plant location shall be done in consultation among TANROADS, local government authorities, customary authorities, and the contractor to ensure that it does not lead to local nuisances. It shall be located at a suitable distance from households	CC & T/P	SE & T/P	CC	<p>Distance between the asphalt batch plant and the nearest house.</p> <p>Number of complaints collected through the GRM</p>	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
Affected component: terrestrial habitats and wetlands and associated flora and wildlife						
Impacts to mitigate:						
12	Loss of roadside terrestrial and wetland habitats					
13	Destruction or disturbance of habitats at raw material extraction sites and off-site facilities					
	Work and storage of spoils and machinery shall remain within the existing road reserve. Contractors to commit to maintaining all works within set boundaries to avoid unnecessary impact on habitats	CC	SE	CC	Compliance with this measure Measures adopted in the Contractor's C-ESMP and implemented	No cost
	Delineation on the field of the worksite	SE	CC	CC	Compliance with this measure Measure adopted in the Contractor's C-ESMP and	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
					implemented	
	In order to limit all work within set boundaries, and to manage off-site impacts, the contractor shall request the Supervising engineer whenever additional land is temporarily required along the road.	CC	SE	CC	Compliance with this measure Measure adopted in the Contractor's C-ESMP and implemented	No cost
	Once exact locations of quarries are known, prior ecological survey shall be undertaken to delineate sensitive habitats, to determine potential impacts on habitats and wildlife and possibly to recommend avoidance measures. This ecological survey shall be done by experienced wildlife and plant specialists. The outcome of this survey shall be communicated to the Supervising engineer, the contractor and TANROADS to assist in the decision making. HA4 quarry site shall be avoided as a precautionary	T/P	T/P	NA	Ecological survey is done for all quarries and borrow areas to assist in the decision-making Decision adopted in the Contractor's C-ESMP and implemented Contractor to develop and implement a Borrow Pits and Quarry Sites Operation and	20,000,000

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	measure to avoid all impact on the South Akagera KBA Refer to the Environmental and Social Check List for all additional land requirement (quarry/borrow areas, workers camps, work sites.				Reinstatement Plan	
	Use of existing wasteland to avoid all conversion of natural habitats for workers camp and off-site facilities	CC	SE	CC	All sites are implemented in wasteland No natural habitat has been converted Measure adopted in the Contractor's C-ESMP and implemented	No cost
	Reinstatement of quarries and borrow areas to minimize any ongoing impacts on habitats. This includes removing all unnecessary rubble and removing all machinery and oil barrels and softening the slopes of quarry of borrow areas.	CC	SE and T/P	CC	All quarries at their end of life are reinstated and the restoration is validated by the SE and T/P	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	Consultation with local authorities, shall be done to determine the fate of disused borrow areas				Measure adopted and implemented in the Contractor's Borrow Pits and Quarry Sites Operation and Reinstatement Plan	
Affected component: nationally protected areas (Burigi-Chato National Park)						
Impacts to mitigate:						
14	Risk of poaching and persecution of wildlife					
15	Startling of wildlife of the Burigi-Chato National Park					
16	Risk of encroachment into the Burigi-Chato National Park					
	Burigi-Chato management shall keep provision of extra law enforcement personnel to increase patrol and law enforcement effort during construction	T/P	T/P	NA	Number of additional park rangers during work close to the national park	100,000,000

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	activities close to the national park and shall provide induction sensitization for all workers when work reaches the national park					
	<p>Code of conduct shall be enforced for all workers for respectful interactions with surrounding communities, tourists and wildlife</p> <p>Workers shall be forbidden to hunt, to fish and to purchase any bush-meat or wild animals from communities</p> <p>All workers regardless of their status, shall be prosecuted and laid off if caught with bush-meat or wild animals</p>	CC	SE	CC	<p>Number of workers caught with bushmeat or involved in animal trafficking</p> <p>TanTIP Workers Code of Conduct and these measures are adopted by the construction contractor in its C-ESMP and implemented</p>	No cost
	During the entire course of construction activities, the Supervising Engineer shall be required to verify fridges and refrigerators in construction contractors' kitchen on a regular basis to ensure that contractors do not purchase any bush meat or	SE and T/P	SE and T/P	CC	<p>Number of cases of animal trafficking</p> <p>Number of joint inspections with park</p>	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	wild waterfowl. Burigi-Chato park rangers should provide technical support whenever necessary (to identify and confiscate suspected bush-meat). It is also recommended to concentrate effort on protection against hunting of waterbirds and waterfowls in swamps and Lake Burigi				rangers at workers camp	
	Sensitization induction training to workers to avoid slow moving animal persecution (mainly snakes)	CC	SE	CC	Number of induction trainings on wildlife protection to workers	No cost
	Speed limits shall be set at 50 km/hour for all vehicles and trucks working close to the national park between chainage 43+000 and 53+500 which corresponds to an area where the road is relatively close to the park	CC	SE	CC	Compliance with this measure Measure adopted in the Contractor's C-ESMP and implemented	No cost
	Night lights around the work site shall be turned off close to the national park to limit the effect of light pollution on wildlife (between chainage 43+000	CC	SE	CC	Compliance with this measure	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	and 53+500)				Measure adopted in the Contractor's C-ESMP and implemented	
	The workers camp, quarries, borrow areas, sand pits or water abstraction or any temporary work sites shall not be authorized between chainage 38+000 and 53+500	CC	SE	CC	Compliance with this measure Measure adopted in the Contractor's C-ESMP and implemented	No cost
	Temporary deposition of earth spoil, bituminous seal and granular base course layer for reuse or disposal shall not be authorized on the eastern side of the road between chainage 38+000 and 53+500	CC	SE	CC	Compliance with this measure Measure adopted in the Contractor's C-ESMP and implemented	No cost
	Because of the presence of the Akagera KBA on the eastern side of the road, none of the work facilities or temporary deposition shall be	CC	SE	CC	Compliance with this measure Measure adopted in the	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	authorized on the eastern side of the road between chainage 80+000 and the end of the road				Contractor's C-ESMP and implemented	
	Clear signage shall be added during construction work along the road between chainage 43+000 and 48+000 to mention the presence of the national park	CC	SE	CC	Number of road signs mentioning the presence of the national park between chainage 43+000 and 48+000 Measure adopted in the Contractor's C-ESMP and implemented	No cost
	Contractor shall be aware of the presence of the National Park and its limits to ensure that special attention be paid during work close to the park	T/P	SE	CC	Map of the national park to be communicated to the contractor	No cost
Affected component: internationally recognized areas of high biodiversity value						
Impact to mitigate						

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
17	Risk of disturbance of fish in the Akagera KBA					
	Replacement of the 11 culverts between 81+500 and 91+400 shall be done outside of the rainy season as a precautionary measure	CC	SE	CC	Compliance with this measure Measure adopted in the Contractor's C-ESMP and implemented	No cost
	Contractor shall be aware of the presence of the KBA and its limits to ensure that special attention be paid during work close to the KBA	T/P	SE	CC	Map of the Akagera KBA to be communicated to the contractor	No cost
Affected component: threatened plant species						
Impact to mitigate:						
18	Risk of destruction of threatened plant species					
	All work sites and camps shall be located in	CC	SE	CC	Compliance with this	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	brownfields, in areas already disturbed by past activities				measure Measure adopted in the Contractor's C-ESMP and implemented	
	<p>For all additional land requirement (outside of the existing road reserve), the selection of site be preceded by an ecological survey to delineate sensitive habitats, to determine potential impacts on habitats and wildlife and possibly to recommend avoidance measures. This ecological survey shall be done by experienced wildlife and plant specialists.</p> <p>The outcome of this survey shall be communicated to the Supervising engineer, the contractor and TANROADS to assist in the decision making</p> <p>Refer to the Environmental and Social Check List for all additional land requirement (quarry/borrow</p>	T/P	T/P	NA	<p>Ecological survey is done for all additional land requirement to assist in the decision-making</p> <p>Decision adopted in the Contractor's C-ESMP and implemented</p>	See above

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	areas, workers camps, work sites).					
Affected component: threatened wildlife						
Impact to mitigate:						
19	Risk of disturbance and direct mortality of threatened wildlife species					
	<p>For all additional land requirement (outside of the existing road reserve), the selection of site be preceded by an ecological survey to delineate sensitive habitats, to determine potential impacts on habitats and wildlife and possibly to recommend avoidance measures. This ecological survey shall be done by experienced wildlife and plant specialists.</p> <p>The outcome of this survey shall be communicated to the Supervising engineer, the contractor and TANROADS to assist in the decision making</p>	T/P	T/P	NA	<p>Ecological survey is done for all additional land requirement to assist in the decision-making</p> <p>Decision adopted in the Contractor's C-ESMP and implemented</p>	See above

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	Refer to the Environmental and Social Check List for all additional land requirement (quarry/borrow areas, workers camps, work sites).					
Affected component: alien and invasive plant species						
Impact to mitigate						
20	Risk of spread of alien and invasive plant species					
	Cleaning of machinery before commencement of work to ensure that no mud is transported to the site. Cleaning machinery shall also be performed when working close to watercourses. Lastly, all earth spoils shall be rapidly reused or covered to avoid colonization by invasive plants	CC	SE	CC	Machinery is clean before commencement of work Spoils are covered rapidly Measures adopted in the Contractor's C-ESMP and implemented	Integrated in the BoQ
Affected component: population distribution and settlement pattern along the road						

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
Impacts to mitigate:						
21	Possible additional temporary and permanent restrictions on land use during construction					
22	Socioeconomic impacts on displaced persons					
	For all additional land, the willing-buyer willing-seller approach shall be verified	SE	SE	CC	<p>Written minutes to confirm existence of the negotiation and consultation with landowners and documentation on the land acquisition process.</p> <p>Confirmation that the land that was sold was not under any form of rental.</p> <p>Compensation is done in accordance with the RPF (and Project RAP).</p>	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	Development of land pre-entry and exit procedures and agreements with landowners and affected communities before the commencement of construction activities (and integrate these procedures and compensations in the RAP and its entitlement matrix). These procedures shall include restoring cultivated land to allow livelihood activities to resume after work. Land pre-entry and exit procedures and agreements shall be reach with the owners of land by TANROADS using the same entitlement matrix and compensation thresholds as in the RAP, negotiation with land and asset owners are under the responsibility of TANROADS and shall not be done by the contractor. This will require the mobilization of a project land acquisition team on the ground to reach agreement for temporary access during construction.	T/P	T/P	CC	Integration of the land pre-entry and exit procedures before work Mobilization of a project land acquisition team on the ground to reach agreement for temporary access during construction	No cost
	All crops and properties that will be accidently	CC	T/P	CC	Number of accidental	Cost to be

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	damaged by operating vehicles, equipment and machinery and vibration during construction activities shall be compensated by the Contractor using the RPF/ RAP entitlement matrix and compensation thresholds in consultation with TANROADS		and SE		damages Number of compensations paid Number of collected grievances Measure adopted in the Contractor's C-ESMP	beard by the CC
	Temporary access to businesses during construction work shall be maintained by the contractor	CC	SE	CC	Compliance with this measure Measure adopted in the Contractor's C-ESMP and implemented	Integrated in the BoQ
Affected component: social indicators						
Impacts to mitigate:						

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
23	Worker's influx, workers camp and associated social impacts on communities					
24	Strain on local services such as health services, water supply, waste management and electricity from the presence of work and workers					
	<p>Selection of campsite's locations through collaboration and consultation between TANROADS, local government authority, customary authorities and contractor to minimize any possible environmental and social risks to communities and biodiversity along the road</p> <p>Consultations and information disclosure are held on a regular basis with local communities concerned by the proposed campsite</p>	T/P	T/P	NA	<p>Consultation with stakeholders as part of the Stakeholder Engagement Plan (SEP)</p> <p>Minutes of meeting included in the SEP</p> <p>Number of complaints collected through the grievance redress mechanism (GRM)</p>	Integrated in the project cost
	Worker's camp shall be designed to prevent contamination of any water body, to ensure hygiene and to avoid the proliferation of mosquitoes, flies	CC	SE	CC	Collection of all grey or wastewater from the camps	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	and rodent				<p>Measure adopted in the Contractor's C-ESMP and implemented</p> <p>Measures adopted in the contractor's Workers' camp management plan and implemented</p>	
	Workers' Code of Conduct shall be enforced to ensure that all workers behave in a respectful manner and to avoid all conflicts with local communities and GBV	CC	SE	CC	<p>TanTIP Workers Code of Conduct and these measures are adopted by the construction contractor in its C-ESMP</p> <p>Number of complaints collected through the grievance redress mechanism (GRM)</p> <p>The TanTIP GBV action plan is adopted in the</p>	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
					Contractor's C-ESMP and implemented	
	<p>The establishment of a workers' camp should not lead to pressure on public services such as drinking water, electricity and health care.</p> <p>Disclosure to local public services the needs generated by the workers' camp and the construction site and coordinate the implementation of measures to prevent pressures on public infrastructure from having negative consequences on local communities (hospitals, roads, electricity consumption, water intake). The construction contractor will have to study these risks and will have to set up its own services such as a first aid center and source of water.</p>	T/P and CC	T/P and SE	CC	<p>Consultation with stakeholders as part of the Stakeholder Engagement Plan (SEP)</p> <p>Minutes of meeting included in the SEP</p> <p>Measures adopted in the contractor's Workers' camp management plan and implemented</p>	No cost
	TANROADS in collaboration with utility companies (TANESCO and TTCL) will be responsible for relocation of utilities and this will	T/P	T/P	CC	Consultation with utility companies as part of the Stakeholder Engagement	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	be done before commencement of construction works. If temporary closure of water utilities is unavoidable, early notice shall be given to the community before removal and relocation of water utilities and alternative temporary domestic water supply shall be established				Plan (SEP) Minutes of meeting included in the SEP Decision adopted in the Contractor's C-ESMP and implemented	
Affected component: livelihood and economic activities						
Impacts to mitigate:						
25	Disturbances to livelihood and economic activities					
26	Disturbance of local traffic, mobility and congestion impacting economic activities					
27	Reduction of available water for irrigation in Benaco pond					
28	Job opportunities					

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	Compensations as part of the RAP implementation				See standalone RAP report	
	Public consultation with farmers that use the Benaco reservoir to irrigate paddy fields. This consultation shall aim at determining the volume that could be abstracted without impacting downstream agriculture. Collected information shall assist in the decision making. Depending on the severity of the impact, alternative sources shall be found or compensation shall be paid to affected farmers, in line with the RAP and its entitlement	T/P	T/P	CC	Consultation with affected farmers as part of the Stakeholder Engagement Plan (SEP) Minutes of meeting included in the SEP Decision adopted in the Contractor's C-ESMP and implemented	Integrated in the project cost
	Traffic management plan	CC	SE	CC	Contractor to develop and implement a Traffic management plan	Integrated in the BoQ
	Quotas for hiring local people must be negotiated with these authorities based on the number of habitants per neighboring community. This would	CC	SE	CC	Number of workers hire from neighboring communities during the	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	require that the contractor identifies the needs and determine which jobs can be captured by local residents				construction phase. Decision adopted in the Contractor's Labor Management Procedures and implemented	
	Off-site recruitment center to jobs to be capture by local residents, prioritizing permanent residents of neighboring communities.				Decision adopted in the Contractor's Labor Management Procedures and implemented	Integrated in the BoQ
	The contractor shall strive to source materials, equipment and services that can be provided by local suppliers	CC	SS	CC	Measure adopted in the Contractor's C-ESMP and implemented	Integrated in the BoQ
Affected component: community use of the road and safety aspects						
Impacts to mitigate:						

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
29	Impact on connectivity across the road and disruption of access					
30	Health and safety risks for communities during construction					
31	Risk of improper behavior of security personnel					
	Drastic reduction of speed close or in the work sites	CC	SE	CC	Number of signs to warn drivers to reduce their speed Measure adopted in the Contractor's Traffic management plan and implemented	Integrated in the BoQ
	Safe passage at identified crossing sites for pedestrians with appropriate signage using pictograms and adequate protection from work engines and trucks and motorized traffic indicating diversion and entrance.	CC	SE	CC	Presence of safe passages for pedestrians across work site in villages and towns Presence of barricades and construction fences to	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	<p>Pedestrian crossings shall be separated from motorized vehicles crossings and shall be installed away from hazards. These shall be physically separated with barricades and construction fences to inhibit pedestrian movement into the work site. The construction contractor shall perform routine inspection of construction fences to ensure that they have not fallen or been stolen.</p> <p>Work site shall be clearly delineated and create exclusion zones. Work shall be confined to avoid that dangers spill out onto the sidewalks and streets around. Signage indicating danger using pictograms shall be installed along the work sites.</p> <p>Construction fences and work exclusion zones shall be visible at night, it is therefore required to use orange, fluorescent color for barricades and fences</p>				<p>inhibit pedestrian movement into the work site</p> <p>Number of signs indicating danger</p> <p>Construction fences and work exclusion zones shall be visible at night</p> <p>Number of complaints collected through the GRM</p> <p>Number of incidents and accidents involving community members.</p> <p>Measures adopted in the Contractor's Traffic management plan and implemented</p>	

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	All passages for pedestrians shall be universally accessible to allow people with physical disabilities to safely cross (using a wheelchair for example)	CC	SE	CC	Accessibility to persons living with disabilities Number of complaints collected through the GRM Measure adopted in the Contractor's Traffic management plan and implemented	Integrated in the BoQ
	Mobilization of a traffic controller to ensure to allow pedestrians to cross at designated locations	CC	SE	CC	Presence of a traffic control at all times along the work site Measure adopted in the Contractor's Traffic management plan and implemented	Integrated in the BoQ
	Appropriate traffic control signs shall be installed	CC	SE	CC	Number of road signs	Integrated in

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	along the main road, along detours				along the construction site Measure adopted in the Contractor's Traffic management plan and implemented	the BoQ
	Prohibition of stockpiling materials close to pedestrian paths or close to residential areas and sensitive receptors schools	CC	SE	CC	Compliance with this measure Number of complaints collected through the GRM Measure adopted in the Contractor's Traffic management plan and implemented	No cost
	Sensitization at schools along the road to show typical dangers associated with construction work and typical work signage to children (including the				Consultation with schools' management and pupils as part of the Stakeholder	Integrated in the project cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	risk associated with arrester beds)				Engagement Plan (SEP) Minutes of meeting included in the SEP Decision (on safety aspects) adopted in the Contractor's C-ESMP and implemented	
	Road safety awareness campaign for all workers focusing on community safety from work	CC	SE	CC	Compliance with this measure Measure adopted in the Contractor's Traffic management plan and implemented	Integrated in the project cost
	Terms the contracts for security personnel must be clearly established and the penalties for misuse of force must be stipulated in the contract. Contract shall include behavior commitments and clear and	CC	SE and T/P	CC	Compliance with this measure Measure adopted in the	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	accessible disciplinary process				Contractor's C-ESMP and implemented	
	Security personnel shall be required to sign the Workers Code of Conduct and shall take part of induction training and sensitization on the Code of Conduct, the GBV action plan and the GRM. In addition, security personnel shall receive procedural training on procedures, proper conduct and ethics and human rights.	CC and T/P	T/P and SE	CC	<p>Number of signed Workers Code of Conduct by security personnel.</p> <p>Percentage of security personnel that assisted in induction training on the Code of Conduct, the GBV action plan and the GRM</p> <p>Percentage of security personnel that assisted on training of procedures</p> <p>Number of complaints collected through the GRM</p> <p>Measures adopted in the Contractor's C-ESMP and</p>	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
					implemented	
	Guards shall be hired from recognized private security companies and with a good reputation	CC	SE	CC	Proofs of experience of the company in charge of security and good reputation Number of complaints collected through the GRM	Integrated in the BoQ
	TanTIP GRM to be adapted to the local context	T/P	T/P	CC and SE	Operational GRM based on project context	Integrated in the project cost
	Investigation for security-related allegations or incidents can include issues such as theft, abuse of power and retaliation, sexual harassment and exploitation, gender-based violence, and bribery and corruption	T/P, SE and CC	T/P, SE and CC	CC	Number of complaints collected through the GRM Number of investigations for security-related allegations Report on the allegations disclosed to TANROADS	Integrated in the project cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
					and the World Bank within 3 days after the investigation and immediately for GBV Measures adopted in the Contractor's GBV action plan and implemented	
Affected component: women						
Impact to mitigate:						
32	Risk of additional workload burden on women when men are hired for construction work					
	Measures are mainstream in other sections					
Affected component: vulnerable groups/persons						
Impact to mitigate:						

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
33	Disturbance of persons living with disabilities due to loss of access during construction work					
	Measures are mainstream in other sections					
Affected component: HIV and AIDS situation						
Impact to mitigate						
34	Spread of HIV					
	Mandatory recruitment training for workers on HIV and other STDs. All workers shall receive an induction training on this issue Assistance of a NGO to implement HIV/AIDS awareness campaigns	CC and T/P	SE and T/P	CC	Number of trainings upon recruitment Number of awareness campaigns by a NGO Measures adopted in the Contractor's C-ESMP and implemented	20,000,000
	Identification of a registered service provider to test	CC and	SE and	NA	Presence of a service	Include in the

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	workers.	T/P	T/P		provider to test workers Percentage of workers tested Measures adopted in the Contractor's C-ESMP and implemented	cost above
	Access to Contractor's Workforce Camps by outsiders shall be controlled	CC	SE	CC	Implementation of control at the workers camp entrance Measures adopted in the Contractor's Workers' camp management plan and implemented	No cost
	The nursery at the workers camp shall also be used to promote safe sex, sensitize workers on regular testing and shall provide information on the nearest health center to get tested. The nursery shall	CC	SE	CC	Compliance with these measure Number of poster and	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	provide standard quality condoms to personnel on site				brochures distributed to workers Measures adopted in the Contractor's OHS risk management Plan and implemented	
Affected component: child labor and forced labor						
Impact to mitigate:						
35	Risk of child and forced labor					
	Children under the age of 18 years shall not be hired on site as provided by Employment and Labour Relations Act, 2004 Part II Sub-part A Child Labour. This includes hiring children to do chores at the workers camp such as cleaning rooms and working in the workers kitchen	CC	SE	CC	Compliance with this measure Measures adopted in the Contractor's Labor Management Procedures and implemented	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	Verification of all identification papers of all workers upon recruitment. In the absence of papers, customary authorities shall attest the age of the worker	CC	SE	CC	Compliance with this measure Measures adopted in the Contractor's Labor Management Procedures and implemented	No cost
	Regular audits of workers conditions based on the TanTIP Labor Management Procedures (LMP) shall be undertaken to verify workers' status	SE	SE	CC	Number of audits Number of noncompliance with TanTIP LMP Report on corrective measures implemented	Integrated in the cost for the SE
	In case of suspicion or proven cases of child labor and forced labor, the Supervising engineer must ensure that TANROADS and the World Bank be formally informed	SE	SE and T/P	CC	Number of cases of child labor and forced labor Number of reports on cases of child and forced labor disclosed to the World	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
					Bank and TANROADS	
	Audits at quarry sites to ensure that no children and no forced labor are working in quarries	SE	SE	CC	Number of audits Number of noncompliance with TanTIP LMP Report on remedial measures implemented	Integrated in the cost for the SE
Affected component: labor conditions						
Impacts to mitigate:						
36	Risk of poor labor conditions due to high level of informality					
37	OHS risks to workers					
	Workers hired to carry out works in infrastructure projects should not be classified as community workers	T/P	T/P	T/P	Compliance with this measure	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	Data log of all workers and implementation of the procedures as set in the TanTIP LMP	CC	SE	CC	Presence of the data log Percentage of workers hired locally during work Measures adopted in the Contractor's Labor Management Procedures and implemented	Integrated in the BoQ
	Procedures to ban any form of disguised employment, misclassification, informality or casual labor	CC and SE	SE	CC and SE	Procedures adopted in the Contractor's Labor Management Procedures and implemented	No cost
	Audit of the construction contractor's payroll to ensure that no workers are hired informally	SE	SE	CC	Number of noncompliance with this measure Measure acknowledged in the Contractor's Labor Management Procedures	No cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
					and implemented	
	The workers GRM shall be disclosed and accessible to all workers	CC	SE	CC	Compliance with this measure Measures adopted in the Contractor's Labor Management Procedures and implemented	No cost
	Work zone safety for construction workers at all times (use of protective barriers to shield workers from traffic vehicles in towns and village centers, use of traffic cones and barrels in rural areas, use of warning lights to avoid using flaggers). OHS induction training for all workers, topics to cover during training shall cover the requirements from the section 2.2 Communication and Training from the WBG Environmental, Health, and Safety General Guidelines, 2.0 Occupational Health and	CC	SE	CC	Work safety zones are physically delineated at all time (cones, barrier, barrels). Number of induction training on OHS provided to workers Presence of PPE for all workers	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	<p>Safety.</p> <p>Mandatory PPE equipment for all workers (adapted to the type of work), including fluorescent vest for all workers.</p> <p>Presence on site of a full time dedicated qualified Environmental, Social, Health and Safety (ESHS) Officer of the Contractor (under the contractor payroll).</p> <p>Development and implementation by the contractor of a hazard identification and risk assessment that addresses all activities, routine and non-routine. This shall be done by contractor prior to beginning of work and shall cover all inherent risks associated with the construction site.</p> <p>Development of protocols and procedures by the contractor to detect COVID outbreaks through regular testing and isolation measures to reduce workers and community exposure to COVID and</p>				<p>Presence of a full time Environmental, Social, Health and Safety (ESHS) Officer of the Contractor</p> <p>The hazard identification and risk assessment method are included in the Contractor's OHS risk management plan and implemented</p> <p>Protocols and procedures by the contractor to detect COVID outbreaks are included in the Contractor's OHS risk management plan and implemented</p> <p>Protocols and procedures</p>	

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	<p>other communicable diseases. Protocols shall be compliant with the recommendations of the section 3.6 Disease Prevention from the WBG Environmental, Health, and Safety General Guidelines, 3.0 Community Health and Safety.</p> <p>Development of protocols and procedures by the contractor to respond to work related accidents.</p> <p>Presence of first aid kits on site and a dedicated vehicle to drive injured workers to the nearest hospital.</p> <p>Availability of drinking water on work sites for all workers.</p> <p>Any injury, accident or near miss shall be described in a medical report by the contractor and Supervising engineer within one week of the injury.</p> <p>Use of millers and pavers with exhaust ventilation systems and proper maintenance of such systems to limit workers exposure to crystalline silica (millers</p>				<p>to respond to work related accidents are included in the Contractor's OHS risk management plan and implemented</p> <p>Presence of first aid kits on site and a dedicated vehicle to drive</p> <p>Number of medical reports</p> <p>Presence of exhaust ventilation systems in millers and pavers</p> <p>Number of internal monitoring to be performed by the CC</p> <p>Number of injuries, accidents and near misses</p>	

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	and grinders) and asphalt fumes (pavers). Monitoring and record-keeping activities, including audit procedures designed to verify and record the effectiveness of prevention and control of exposure to occupational hazards. Monitoring shall be compliant with the method provided in the section 2.9 Monitoring from the WBG Environmental, Health, and Safety General Guidelines, 2.0 Occupational Health and Safety.				All measures adopted in the Contractor's Labor Management Procedures and implemented	
	Workers' camps shall comply with the recommendations from the section 2.1 General Facility Design and Operation from the WBG Environmental, Health, and Safety General Guidelines, 2.0 Occupational Health and Safety	CC and SE	SE	CC and SE	Compliance of all workers' camps including the SE camp with the requirements of the section 2.1 of the EHS general guidelines Measure adopted in the Contractor's Workers' camp management plan	Integrated in the BoQ

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
					and implemented	
Affected component: Gender (Gender-Based Violence)						
Impact to mitigate:						
38	Risk of an increase in Gender-Based Violence					
	A GBV action plan is in place for the TanTIP (the GBV action plan is a standalone document that applies to all TanTIP projects). It contains a GBV-SEA GRM and a workers' Code of Conduct	T/P	T/P	NA	Developed in the TanTIP GBV action plan Measures of this TanTIP GBV action plan to be adapted and adopted in the Contractor's GBV action plan and implemented	Integrated in the project cost (GBV action plan)
	GBV risk assessment and GBV mapping in the project area to inform risk mitigation strategies and update a GBV referral pathway	T/P	T/P	NA	Measures shall be acknowledged by the SE and the CC	Integrated in the project cost (GBV action

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
					Outcome of this risk assessment to be acknowledged in the Contractor's GBV action plan	plan)
	Training on the TanTIP GBV action plan. Supervising engineer and all contractors (including sub-contractors) involved during construction shall be trained on this plan. They shall also be aware of their responsibility regarding this plan	T/P	T/P	NA	Number of trainings to the Supervising engineer and contractors	Integrated in the project cost (GBV action plan)
	Induction training to all workers on the TanTIP GBV action plan, its requirements and the Code of Conduct and the use of the GBV grievance redress mechanism	CC/SE	T/P	CC/SE	Number of induction training provided to workers	Integrated in the project cost (GBV action plan)
	Oversight of grievance handling and monitoring of the status and effective referral of GBV/SEA/SH complaints	T/P	T/P/	CC/SE	Number of complaints regarding GBV Performance indicators are	Integrated in the project cost (GBV action

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
					developed in the GBV action plan	plan)
	Separate facilities for men and women and display signs, posters and pamphlets around/along the project site that signal to workers and the community that the project site is an area where GBV/SEA is prohibited and enforce the Code of Conduct for all workers. The code of conduct to be signed by all workers	CC/SE	T/P	CC/SE	<p>Compliance with these measures</p> <p>Percentage of workers that have signed the Code of Conduct</p> <p>Measures of this TanTIP GBV action plan to be adapted and adopted in the Contractor's GBV action plan and implemented</p>	Integrated in the BoQ
Affected component: cultural heritage						
Impact to mitigate:						
39	Risk of disturbances and destruction to unknown cultural heritage sites					

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	Chance finds procedure during construction	CC	SE	CC	<p>Number of discoveries of Chance Finds Objects (CFO)</p> <p>Report on the procedure that was followed and clearance to resume work by the inspector from the Ministry of Tourism and Cultural Heritage</p> <p>Measure adopted in the Contractor's Chance find procedure and implemented</p>	Integrated in the BoQ
Mitigations to be implemented at Operation and maintenance phase						
Affected components: soils, surface water and groundwater, aquatic habitats and fish						

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
Impacts to mitigate:						
40	Accumulation of pollutants in roadsides					
41	Infiltration of pollutants from roadsides in groundwater					
42	Impact on surface water quality from road traffic and surface runoffs					
43	Degradation of aquatic habitats from increase in road traffic and surface runoffs					
44	Risk of degradation of Akagera KBA floodplains					
	<p>Appropriate signage to truck drivers to avoid littering.</p> <p>The design has foreseen to install drains with erosion checks which will reduce the silt load in streams, this mitigation is already integrated in the Project.</p> <p>TANROADS shall include as part of its</p>	T/P	T/P	NA	<p>Number of road signs to avoid littering</p> <p>Development of a maintenance plan that includes the need to remove accumulated waste and silts in drains and in</p>	Integrated in the project cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	<p>maintenance plan, the removal of accumulated waste and silts in these drains and in culverts.</p> <p>Truck lay bays shall be equipped with garbage bins to collect domestic waste and waste collection at these bays shall be contracted to a service provider.</p>				<p>culverts</p> <p>Number of garbage bins at truck bays and contract with a service provider for the removal of waste</p>	
Affected components: noise level						
Impact to mitigate:						
45	Noise from traffic and reduction of noise thanks to road improvement					
	Noise monitoring at baseline (prior to work) and after one year of operation	T/P	T/P	NA	<p>Implementation of a noise monitoring campaign by a specialized consultant</p> <p>Results for the noise monitoring</p>	See table section 9.3
	Should the road cause noise level to unacceptable	T/P	T/P	NA	Number of complaints	Integrated in

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	levels at sensitive sites such as health centers and schools, earthen mounds, or vegetation plantation to reduce nuisances could be envisaged at project implementation				collected through the GRM Number of implemented measures to mitigate the effect of noise	the project cost
Affected components: air quality						
Impact to mitigate:						
46	Impact on air quality from road traffic and reduction of dust thanks to road improvement					
	Reduction of the speed of vehicles in village centers to 50 km/hour as required in the Road Safety Screening and Appraisal Tool (RSSAT)	T/P	T/P	NA	Implementation of the speed limit in all villages crossed by the road	No cost
Affected components: terrestrial habitats and wetlands and associated flora and wildlife, impact on nationally protected areas and threatened wildlife						
Impacts to mitigate:						

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
47	Higher risk of wildlife collision and casualties					
48	Exacerbation of the barrier effect					
	<p>Installation of road sign for wildlife protection at several locations and on both sides of the road between chainage 38 and 56.</p> <p>Speed reduction between chainage 44 and 56 and rumble strip shall be installed at chainage 44 on the western lane of the road (left hand side) and at chainage 56 on the eastern lane (right hand side) to warn vehicles on the presence of wildlife.</p> <p>At chainage 44 and chainage 56, signs shall be lighted. In this section, speed shall also be reduced.</p>	T/P	T/P	NA	Number of road signs and rumbles installed along the road	Integrated in the project cost
	Regular monitoring of road kills shall be done along the road with a focus between chainage 38 and 56 in order to assess the extent of road kills and	T/P	T/P	NA	Contract with a consultant specialized in wildlife conservation to monitor	70,000,000

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	implement adapted mitigations				roadkills Number of wildlife casualties along the road	
Affected components: livelihood and economic activities						
Impact to mitigate or enhance:						
49	Improved transport sector allowing for economic development					
50	Livestock roadkill					
	The risk of livestock roadkill is acknowledged in the Design report where provisions for livestock underpass were made. Selection of their locations shall be based on exchanges with stakeholders	T/P	T/P	NA	Number of livestock underpasses implemented Number of road signs mentioning livestock crossing Outcome of engagement activities with concerned	Integrated in the project cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
					livestock owners to be done as part of the SEP engagement activities	
Affected components: community use of the road and safety aspects						
Impacts to mitigate or enhance:						
51	Impact on connectivity across the road and disruption of access					
52	Improved safety for motorized and non-motorized road users					
53	Health issues for population living along the road					
54	Universal access to the road and walkways					
	Avoiding installing guardrails alongside side roads (that are used by community members) to maintain access for vehicles and non-motorized transportation. If these side roads are deemed to be	T/P	T/P	NA	Number of side roads maintained	Integrated in the project cost

N°	Comprehensive list of all mitigations	Chain of responsibilities			Performance indicators for monitoring	Estimated cost (TSH)
		Implementation	Monitoring and auditing	Corrective measures in case of non-compliance		
	unsafe, the closure of their access from the trunk road shall be replaced by another access					
	A total of 6.6 km of new walkways will be built as recommended in the Report on Road Safety Screening and Appraisal Tool (RSSAT) A total of 5.04 km of existing walkways will be improved	T/P	T/P	NA	Length of additional walkways developed in villages	Cost to be determined during design review
	Additional engagement activities be undertaken at all villages that are crossed by the road to determine whether additional pedestrian crossings are necessary	T/P	T/P	NA	Number of consultations with affected communities as part of SEP engagement activities Minutes of meetings recorded Number of additional pedestrian crossings installed along the road	TBD after consultation

9.2.2 Mandatory Safeguards Tools

Based on the measures presented under the responsibility of the contractor in this ESMP (see table at the previous section 9.2.1), the Contractor shall be required to develop and implement the C-ESMP to guide implementation and supervision of environmental and social issues. These tools shall comply to national requirements and World Bank Safeguards policies. **The management plans, presented below (and in the table section 9.2.1), shall be reviewed and approved both by TANROADS and the Supervising engineer before mobilization in the field.**

The C-ESMP will draw the basis for the Contractors, sub-contractors, sub-consultants and services providers to abide with the requirements of the implementation of the environmental, social, health and safety mitigation measures as well as the WB ESF. The C-ESMP will be updated from time to time by the Contractor on emerging issues and challenging during project implementation or upon request from TANROADS and Supervising engineer. The works Contract shall include the obligation to the Contractor to follow the WB ESF and EHS guideline during the project implementation. For effective implementation of the ESF requirements and WB EHS guideline, the ESIA and the C-ESMP will contain the detailed set of indicators to allow effective monitoring of the performance. TANROADS and PIT safeguards staff will every month undertake supervision visit to site to follow on Contractor implementation of ESF requirements and compliance together with other EHS safeguards requirements.

The ESMP shall also form part of the requirement of the tender and bid documents of the contract to be prepared and to be implemented by the Contractor. The C-ESMP shall include several management plans, which are presented here below.

Also, the contractor shall adapt its C-ESMP to reflect the requirements of the following TanTIP framework management plans:

- TanTIP GBV action plan. The contractor shall adapt this plan and develop procedures in the C-ESMP to prevent GBV and address GBV risk in the workplace as well
- TanTIP Labour Management Procedures (LMP). The contractor shall adapt this plan including the need to develop a Workers' Grievance Redress Mechanism.

A brief description and essence of the C-ESMP and mandatory management plans is given in the following subsections.

A. Contractor's ESMP

The Contractor will prepare his own ESMP i.e., C-ESMP whose main objective will be to ensure that the mitigation and enhancement measures proposed in this ESIA report are appropriately and effectively implemented. The costs for preparation and implementation of the proposed mitigation measures is analyzed in this ESMP report and also be included

into the Bill of Quantities (BoQ). The main focus of the C-ESMP will be on the impacts/risks from the following activities:

- Workers conditions and prevention of OHS risks
- Establishment of contractor's camp.
- Relocation of utilities from the RoW to receive permanent works.
- Sourcing of construction materials.
- Transportation of equipment and construction materials.
- Earthwork up to base, widening and construction of structures.
- Waste management, collection and disposal of spoil materials, demolition materials from buildings/ structures and excavated debris.
- Operation of construction equipment/machinery.
- Water abstraction.
- Quarry and borrow pits restoration.
- Spread of communicable diseases including COVID 19.
- Sexual harassment, gender-based violence, criminal behavior, crime, child labor, and safety.
- Water work and culvert replacement work
- erosion and sedimentation

The contractor shall develop a method for the removal, widening and replacement of culverts to ensure that free flow of water is not impacted, that material is not deposited in the streams and wetlands, and that turbidity of water does not increase. This includes using diversion pumps for permanent streams and silt fences and method to work in dewatered section (temporary enclosure).

The method shall be adapted for all three types of activities:

- Full replacement of Corrugated Piped Culverts (CMP) by Concrete Pipe Culvert (CPC). These are usually across seasonal streams or small drainage areas, with little environmental risks.
- Widening of existing Concrete Box Culvert (CBC) to maintain. These are usually across permanent streams that need to be protected from machinery encroachment, water pollution and spillage.
- Replacement of arched CMP to be fully replaced by CBC. These are usually across permanent streams and highly at risk of machinery encroachment, pollution and spillage due to the fact that they will be fully replaced.

Also, the ESMP shall analyze the possibility of Chance Finds Procedure During construction works, whereby archaeological findings may be encountered and potentially damaged or disturbed. Appendix VI contains “Chance Finds Procedures” to be followed by the Contractor.

The C-ESMP shall also include Workers Code of Conduct (the model is presented in the TanTIP LMP) which requires the project staff to sign and comply with ‘Code of Ethical

Conduct (CEC) attuned to Part III (Employment Standards), Section 14 (Contracts with employees) of the Tanzanian Employment and Labour Relations Act No. 6 of 2004. The CEC will set out guidelines i.e., “dos” and “don’ts” intended to support ethical behavior and decision making for all employees of the Contractor.

B. OHS risk management Plan

This management plan shall be part of the C-ESMP and shall be informed by requirements of the TanTIP LMP and the requirements as presented at the table section 9.2.1.

The main objective of the site-specific OHS risk management plan will be to ensure that appropriate mitigation measures for addressing health and safety issues are effectively implemented by the Contractor in line with the applicable requirements mainly of the Occupational Health and Safety Act No. 5 (URT, 2003). The OHS risk management plan will outline Contractor’s health and safety management system, safety in various construction activities and emergency preparedness and response.

Before starting the construction, the Contractor will prepare and submit for the approval of the site-specific Occupational Health and Safety Management Plan (OHSMP) that shall describe the measures that will be taken to achieve safe working environment, good housekeeping and occupational health and safety standards as well as security at the work place. The Contractor shall frequently provide training of occupational safety and health to the workers and information relevant to the health risk (including toolbox meeting, proper use of First Aid Kit, Personal Protective Equipment (PPE) and designated location for assembly point. During the construction period, the Contractor shall provide, equip and maintain adequate first-aid stations and stand by ambulance and first aiders to be used in case of emergency. The Contractor shall outsource qualified and registered nurses and doctors from nearby dispensaries, health centers and/or hospitals.

Further, the civil works contract shall include the requirement of the Contractor to conduct environmental, Social, Health and Safety awareness programmes around project site using audio-visual presentation, questions and answers session and provide handouts (pamphlets and reflective stickers).

The Contractor will also ensure that work camp infirmaries are equipped with relevant medical supplies such as anti-venom, anti-tetanus treatment, and anti-malaria drugs (to mention a few) to treat diseases due to unforeseeable injuries and disease outbreaks for workers and the local population in general. The Contractor has to ensure availability of PPEs and the Health and Safety inspection arrangements are in place as well as the Environmental, Social, Health and Safety (ESHS) Officer of the Contractor is deployed and comply with Law requirement.

C. Borrow Pits and Quarry Sites Operation and Reinstatement Plan

This management plan shall be part of the C-ESMP. It shall include the requirements presented at the table section 9.2.1.

The Contractor will prepare and implement Borrow Pits and Quarry Sites Operation and Reinstatement Plan (BPQSORP) to manage all impacts associated with borrow pits and quarries. The Plan will closely observe the requirements of the Environmental Code of Practice for Road Works (URT, 2009) which requires that exploitation surface of a new borrow pit or quarry must be located at least 500 meters from the following elements:

- Public or private buildings;
- Trunk or regional roads;
- Railroads;
- Water pipelines;
- Cemeteries;
- Cultural sites; and
- Classified forests.

The following aspects will be considered during selection of borrow pits and quarry areas to minimize residual environmental and social impacts as appropriate:

- Selected sites shall avoid areas close to rivers and areas such as flood plains, marshes, sites characterized by unstable ground and protected sites. However, existing borrow pits and quarries may preferably be used (instead of opening new quarries).
- Selected borrow pit sites will be based on the characteristics of the fill required to minimize disturbance to vegetation and nearby areas and also located away from significant fauna habitats.
- Selection will be done based on the strip and stockpile vegetation and topsoil for use during restoration. Likewise, selection will base on the limits of volumes or tonnages of material able to be removed, the depth of borrow pits, limits on the area that is able to be disturbed to construct and operate a borrow pit.
- The borrow pits will be suitably located away from the areas where surface water drainage patterns will not be adversely affected.
- Selection for borrow pits will avoid sensitive areas such as heritage or cultural sites, etc.
- Implementation of warning system prior to blasting (alarm) to ensure that no person is present on-site during blasting.
- Implementation of the relevant measures from the World Bank Group Environmental, Health, and Safety Guidelines for Construction Materials Extraction.

However, as presented in this ESMP, once quarry and borrow areas are pre-selected by the contractor or the Supervising engineer, a screening for impacts shall be undertaken as shown in this ESMP.

In line with the Environmental Code of Practice for Road Works (URT, 2009), the Contractor shall take all necessary measures to ensure that the borrow pit and quarry sites are restored to the state that is safe to human and animal and to the state that will allow

regeneration of vegetation. Borrow pit and quarry sites must be rehabilitated by selecting one of the following options:

- Level the ground and restore the vegetation cover (i.e., tree, grasses and shrubs).
- Filling of holes (i.e., with sand, earth or stones) and restore the vegetation cover.
- Adjust the water level for local communities or livestock.
- Convert or rehabilitate the area as a leisure zone.
- Restore the site to another project.

Levelling of the sites must be done to the extent that it fits well with the surrounding landscape and is sufficient draining. In order to ensure vegetation is well restored at the site, manure must be applied or cover the entire ground surface with top soil there after the site must be cared and maintained for 1 year after the end of the exploitation.

After the rehabilitation works is complete, he will ensure that the surface of the extraction surface must be free of all scraps, waste, stumps, unstable material, machinery parts, or other similar obstructions.

D. Waste and hazardous material management plan

This management plan shall be part of the C-ESMP. It shall include the requirements presented at the table section 9.2.1.

The Contractor shall prepare this management that will clearly outline appropriate management measures for all types of wastes (solid, liquid and hazardous ones) based on the set of mitigation presented in this ESMP. The management plan will need to identify the service providers as well as the disposal sites and provide measures that will ensure all collected waste are handled in reasonable standard and disposed at the identified disposal sites. The measures will include proper handling, collection, transportation and final disposal at formal disposal sites. The selection of the disposal sites shall be validated by the Supervising engineer.

E. Community Communication and Engagement Plan (CCEP)

This management plan shall be part of the C-ESMP and shall be informed by the requirement of the TanTIP Stakeholder Engagement Plan and the requirements presented at the table section 9.2.1.

The aim of this CCEP will be to improve the Contractor's social performance by strengthening external communications.

Specific objectives of the plan will include:

- To integrate the requirements of the TanTIP SEP into the management system of the contractor,
- To develop a coordinated approach to communication with external stakeholders, the Supervising engineer and TANROADS which include addressing grievances

from communities regarding the work sites, workers and security personnel behavior.

- To improve two-way communication with stakeholders regarding activities and decisions that affect them (or that could potentially affect them).
- To minimize social impacts to stakeholders and social risks to the Contractor.

The CCEP will also outline the following aspects:

- Target audience.
- Strategies and tools.
- Key messages and themes.
- Employment opportunities.
- Grievance management procedures.
- HIV/AIDs awareness and prevention program.
- Gender issues and fight against GBV.

F. Gender Based Violence management plan

This management plan shall be part of the C-ESMP and shall be informed by the requirement of the TanTIP GBV action plan and the requirements presented at the table section 9.2.1.

GBV is a serious, life-threatening protection issue primarily affecting women and children. It is well documented in this ESIA that GBV is a social issue of concern. The Contractor will abide to the TanTIP GBV action plan and utilize the baseline information included in this ESIA to prepare and implement appropriate measures to prevent GBV and sexual harassment. Also, the plan shall include Child Abuse Protection Plan which shall be prepared in line with Tanzanian Labor Act of 2004, the Contractor will formulate and implement a child labor policy as the basis of commitment to find practical, meaningful and culturally appropriate measures to support the elimination of child labor in workplaces.

The Gender Based Violence management plan shall be clearly communicated to all employees and workers and subcontractors in a manner which it can be understood through induction programs and policy manuals.

G. Worker's grievance redress mechanism (W-GRM)

This management plan shall be part of the C-ESMP and shall be informed by the requirement of the TanTIP Labor Management Procedures and the requirements as presented at the table section 9.2.1.

The workers' grievance mechanism (W-GRM) for project workers engaged through contractors/subcontractors to raise workplace concerns will be part of the contractual obligations of contractors. Under the W-GRM, project workers will be able to raise all workplace-related concerns, including regarding unfair treatment, problems with payment of wages or benefits, as well as unsafe or unhealthy work situations including workplace

sexual harassment. Contractors must report the status of issues raised through regular reporting.

The W-GRM will provide clarity and predictability on how workers grievances/complaints will be received, assessed, sorted, and resolved, and monitored.

H. Traffic Management Plan (TMP)

This management plan shall be part of the C-ESMP. It shall integrate the requirements presented at the table section 9.2.1.

A Traffic Management Plan (TMP) outlines traffic control measures to provide for the safe and efficient movement of vehicles, bicyclists, and pedestrians through or around temporary traffic control zones while reasonably protecting workers and equipment. Road safety awareness program shall be part of the TMP.

To ensure the objectives of TMP are met, the following activities will be undertaken by the contractor:

- Limit the interaction between project construction traffic and public traffic (with the implementation of the measures as described in this ESMP).
- Keep traffic flowing safely with the minimum of delay.
- Provide a safe working space for all equipment, personnel and materials.
- Give clear instructions to the traffic.
- Installation of traffic control equipment in prominent positions and clearly visible to the public, even in poor weather conditions or during night.
- Provision of diversion roads (within the road reserve) and installation of traffic control signs along the project road. According to the design, road diversions outside the road reserve are not anticipated. All diversions shall be confined in the road reserve. In case of additional need for road diversion (outside of the road reserve), these shall be validated by the Supervising engineer and TANROADS.
- Drivers' behaviour monitoring and traffic rules enforcement.
- Appointment of qualified Traffic Management Officer (TMO) to lead implementation of the TMP.

I. Emergency Preparedness and Response Plan (EPRP)

This management plan shall be part of the C-ESMP. It shall integrate the requirements presented at the table section 9.2.1.

The main goal of this EPRP is to prevent and address minor and major spills.

It will also enable the Contractor to review operations and identify all environmental hazards that are likely to occur and identify methods for control and mitigating the hazards. The Contractor must recognize that accidents and unexpected conditions do occur that would require immediate response to mitigate any detrimental effects from these accidents or conditions and planning the actions to be taken. The emergency

preparedness plan outlines the mitigation measures, responsibilities, reporting mechanisms and communication procedures.

The main mitigations are presented in this ESMP.

J. Workers' camp management plan

This management plan shall be part of the C-ESMP. It shall integrate the requirements presented at the table section 9.2.1.

This management plan shall address all environmental and social risks, source of pollution and nuisances from the worker's camp and other work sites such as stone crushing sites, quarries and borrow areas.

This management plan shall ensure that all mitigation and preventive measures as presented in this ESMP are implemented to ensure workers and nearby community wellbeing. It shall also cover all requirements from the presented in the ESMP and the requirements of section 2.1 General Facility Design and Operation of the General EHS Guidelines from the WBG.

K. Contractor Labor Management Procedures

This management plan shall be part of the C-ESM and shall be informed by requirements of the TanTIP LMP and the requirements presented at the table section 9.2.1.

The project contractors shall adhere to the requirements of the LMP under regular audits to be conducted by TANROADS, Supervising Engineer, and other government agencies like the Occupational Safety and Health Authority (OSHA) to ensure that the project workers are treated fairly and provided with safe and healthy working conditions. The Contractor LMP shall adopt and adapt the TanTIP LMP to detail the manpower needs for the entire construction period, the local recruitment process and the approach planned to maximize local employment and to comply with national regulations.

Project workers will be provided with information and documentation that is clear and understandable regarding their terms and conditions of employment. The information and documentation will set out their rights under national labor and employment law (which will include any applicable collective agreements), including their rights related to hours of work, wages, overtime, compensation and benefits, as well as those arising from the requirements of TanTIP LMP. This information and documentation will be provided at the beginning of the working relationship and when any material changes to the terms or conditions of employment occur.

L. Erosion and Sediment Control Plan

Contractor should develop and implement Erosion and Sediment Control Plan, which shall acknowledge all risk to local waterbodies during construction of drainage network, replacement or upgrading of culverts and take all reasonable and practicable measures to minimize short and long-term soil erosion and the adverse effects of

sediment transport to waterbodies. The plan should include, among others, the following tasks (1). Minimize disturbance; (2). Control site drainage; (3). Control soil erosion and increase of turbidity in waterbodies; (4). Promptly revegetate; (5). Control sediment runoff; and (6). Implement ESC Plans and monitor the site.

9.2.3 Environmental and Social Check List for all additional land requirement

This checklist needs to be filled by both experienced wildlife and plant specialists and the Supervision engineer’s ESHS Specialist. It shall be used to assist in the decision making for the selection of quarry sites and borrow areas. It shall also be used to select the most suitable workers camp and work sites (including the asphalt batch plants) if these are not located in brownfields.

At the end of the screening, the required mitigation measures shall be listed along with the responsible party to implement them and the timeline.

If additional engagement activities are necessary, the minutes and outcome of consultation shall be appended to this form.

9.2.3.1 Permits

Questions	Answer	Action
Have the required permits been obtained for the development of the area	Yes	Please attach proofs with this document
	No	Undertake all legal steps to obtain the required permit

9.2.3.2 Assessment of baseline situation

Questions	Answer	Actions
Biophysical environment		
Is the area located in a greenfield (new area) or in brown field (an area that has previously been exploited)	Greenfield	Continue with the next question
	Brownfield	Continue with the next question, favor this site over any greenfield sites
Are there any watercourse or wetland located <u>inside</u> the area	Yes	Avoid this location
	No	Continue with the next question
Is the area located <u>close</u> to a watercourse or a wetland (less than 500 m)	Yes	List the mitigation and avoidance measures in this form that will be implemented to prevent any impacts such as contamination, encroachment of falling material or dust in the wetland or watercourse or any effluent from reaching the wetland or watercourse
	No	Continue with the next question
Is the area located <u>in</u>	Yes	Avoid this location

Questions	Answer	Actions
or close to a protected area or an internationally recognized areas of high biodiversity value (IBA, KBA or RAMSAR Site) (less than 500 m)	No	Continue with the next question
Has a biodiversity survey in the area been undertaken by a wildlife specialist and a botanist to describe habitats, wildlife, and flora	Yes	Please attach the baseline assessment report from the wildlife specialist and botanist
	No	On all greenfield, a wildlife specialist and botanist shall undertake a wildlife and flora survey
Will the area cause significant conversion or degradation of ecologically important habitats (such as critical habitats or pristine habitats) or removal of forest <i>To be answered by the wildlife and flora specialists</i>	Yes	Avoid this location
	No	Continue with the next question
Will the area lead to disturbance or destruction of Red List plant or wildlife species (see list below) <i>To be answered by the wildlife and flora specialists</i>	Yes	Avoid this location
	No	Continue with the next question
Human environment		
For existing quarry/borrow areas, has an audit of child labor in the quarry/borrow areas been undertaken to detect any cases of	Yes, and child labor is suspected	Avoid this location and this service provider
	No	The Supervising engineer shall undertake an audit on site
	Non	Continue with the next question

Questions	Answer	Actions
child labor	applicable	
Is there any settlement <u>in</u> the area	Yes	Avoid this location
	No	Continue with the next question
Is there any settlement <u>close to</u> the area (less than 500 m)	Yes	Avoid this location for quarries and stone crushing sites and worker's camp.
	No	Continue with next question
Is there a risk of nuisances for neighbouring communities (noise, dust, water pollution, light, safety risk)	Yes	Avoid this location
	No	Continue with next question
Are there any land claims <u>in</u> the area	Yes	Avoid this location
	No	Continue with next question
Are there any livelihood activities taking place <u>in</u> the area (agriculture, rangeland, others)	Yes	Avoid this location or purchase the land through the willing buyer willing seller approach (no land expropriation).
	No	Continue with next question
Are there any livelihood activities taking place <u>in the vicinity</u> of the area (agriculture, rangeland, others)	Yes	List mitigation measures that will be implemented to avoid any adverse impacts on livelihood
	No	Continue with next question
Is the area located <u>in</u> a cultural heritage site	Yes	Avoid this location
	No	Continue with next question
Is the area located <u>close to</u> a cultural heritage site (less than 500 m)	Yes	Avoid this location
	No	

9.2.3.3 Additional E&S considerations

Stakeholder engagement	Answer	Confirmation of E&S considerations
Has meaningful stakeholder engagement been undertaken specifically with local stakeholders and residents of the area	Yes	What was the outcome of consultations? Please add to the SEP the records of public consultations and list the concerns raised by stakeholders and associated special mitigation measures to implement
	No	Undertake public consultation prior to selecting the site

with disclosure of project information, disclosure of foreseen impacts and risks		
Is there an existing access road to the quarry/ borrow area	Yes	Favor the site
	No	Please screen for impacts and propose mitigation measures

9.2.3.4 Potential threatened plant species in the project area

Scientific name	IUCN Red List status	Potentially present along the road
Englerina schubotziana	Vulnerable	Yes, this is a shrub found in forest edges and along rivers. However punctual observations were done far from the Study area.
Tridactyle virgula	Vulnerable	Yes, was observed at Rusumo falls in 2016. However, it is found in montane rainforest epiphyte.
Clutia stuhlmannii	Vulnerable	Yes, was observed in 2018 400 meters from the road at chainage 2+500 (to the East) This species is a perennial herb or subshrub which grows in burned grassland, secondary scrub and deciduous woodland.
Mimusops bagshawei	Vulnerable	Yes, it was observed close to Rusumo falls. This species is a large tree which grows in forest and riverine forest.
Thunbergia laborans	Endangered	Yes, this perennial herb is native to Rwanda and Tanzania. It was observed at Rusumo falls in 2018.
Ipomoea lepidophora	Endangered	Yes, this species was observed in 2018 15 km away from the road. It is a perennial herb which grows in grassland and park savanna which is sometimes burned.
Aeschynomene bullockii	Endangered	Yes, it was observed in 2017 several km away from the road. It is a subshrubby herb from a woody rootstock. Its habitat is grassland on stony soil, Brachystegia woodland
Albertisia exelliana	Endangered	Yes, this species is a liana which grows in riverine forest along small stream and closed forest. However, punctual observations were done far from the Study area.

Scientific name	IUCN Red List status	Potentially present along the road
Oldenlandia duemmeri	Endangered	Yes, this perennial herb grows on grassland. However, punctual observations were done far from the Study area.

9.2.3.5 Potentially threatened wildlife species in the project area

Scientific name	English name	Status	Habitat requirements (IUCN Red List)	Threats and possible interaction with the Project (IUCN Red List)
Birds				
Gyps africanus	White-backed Vulture	Critically endangered	Lowland species of open wooded savanna, particularly areas of Acacia	Minor threat from road traffic, with individuals occasionally killed by vehicles
Balearica Regulorum	Grey Crowned Crane	Endangered	Inhabits wetlands such as marshes, pans and dams with tall emergent vegetation, riverbanks, open riverine woodland, shallowly flooded plains and temporary pools with adjacent grasslands, open savannas, croplands.	Loss and degradation of wetland breeding areas through drought-related changes in land-use. live-trapping (for trade), egg-collecting and hunting
Neophron percnopterus	Egyptian Vulture	Endangered	Nests on ledges or in caves on cliffs	Poisoning and loss of wild ungulate populations
Polemaetus bellicosus	Martial Eagle	Endangered	Inhabits open woodland, wooded savanna, bushy grassland, thornbush	Direct persecution (shooting and trapping) by farmers, indirect poisoning

Scientific name	English name	Status	Habitat requirements (IUCN Red List)	Threats and possible interaction with the Project (IUCN Red List)
<i>Ardeola idae</i>	Madagascar Pond-heron	Endangered	Freshwater wetlands, particularly shallow waterbodies fringed with vegetation and adjacent trees	Human disturbance and harvesting of eggs and chicks
<i>Necrosyrtes monachus</i>	Hooded Vulture	Critically endangered	Associated with human settlements. Open grassland, forest edge, wooded savanna	Non-targeted poisoning, capture for traditional medicine and bushmeat
<i>Gyps rueppelli</i>	Rüppell's Vulture	Critically endangered	Open areas of Acacia woodland, grassland and montane regions. Colonies on cliff faces and escarpments at a broad range of elevations	Habitat conversion to agro-pastoral systems, loss of wild ungulates leading to a reduced availability of carrion, hunting for trade, persecution and poisoning
<i>Trigonoceps occipitalis</i>	White-headed Vulture	Critically endangered	Mixed, dry woodland at low altitudes. Nests and roosts in trees, most nests being in Acacia spp.	Reductions in populations of medium-sized mammals and wild ungulates, as well as habitat conversion through agricultural intensification and development. Deliberate poisoning
<i>Torgos tracheliotos</i>	Lappet-faced Vulture	Endangered	Dry savanna, arid plains.	Accidental poisoning. Nest predation by humans, reduced food availability

Scientific name	English name	Status	Habitat requirements (IUCN Red List)	Threats and possible interaction with the Project (IUCN Red List)
<i>Terathopius ecaudatus</i>	Bateleur	Endangered	Open country, including grasslands, savanna	Poisoned baits, pesticides, trapping for international trade, nest disturbance from spreading human settlements, and increased intensification and degradation of agricultural land
<i>Aquila nipalensis</i>	Steppe Eagle	Endangered	The species is migratory, with birds wintering in south-east Africa	Reduction in the area of suitable habitat and availability of food
<i>Sagittarius serpentarius</i>	Secretarybird	Endangered	Open landscapes, ranging from open plains and grasslands to lightly wooded savanna, but is also found in agricultural areas. Nests in a flat-topped Acacia or other thorny tree	Excessive burning of grasslands may suppress populations of prey species
Fish				
<i>Labeobarbus claudinae</i>		Vulnerable	Inshore waters in lakes and rivers, even in torrential waters	Regression of swamps and other wetlands around lakes and rivers due to farming extension. Sedimentation due to excessive soil erosion (mining activities, road and building construction, cultivation on steep slopes, etc.).

Scientific name	English name	Status	Habitat requirements (IUCN Red List)	Threats and possible interaction with the Project (IUCN Red List)
Labeobarbus acuticeps		Near Threatened	Inhabits inshore waters and the main channels of rivers. Papyrus swamps and ditches	Regression of swamps and other wetlands around lakes and rivers due to farming extension. Sedimentation due to excessive soil erosion (mining activities, road and building construction, cultivation on steep slopes, etc.).
Labeobarbus Ruandae		Near Threatened	Fast flowing major rivers where it feeds on varied benthic food	Water turbidity due to erosion on watershed and agriculture extension is a threat.
Decapoda				
Deckenia mitis	Deckenia	Near Threatened	This species exhibits a preference for areas with stagnant surface water in habitats that include wetlands, streams, and slow-flowing rivers.	Water pollution from runoffs.
Insect				
Agriocnemis palaeforma	Papyrus Wisp	Vulnerable	Papyrus swamps with clean and flowing water	Water pollution from runoffs. Destruction of wetlands during culvert replacement.
Reptiles				
Python sebae	Central African Rock Python	Near Threatened	Swampy areas and the banks of permanent watercourses	Persecution from workers. Water pollution from runoffs. Destruction of wetlands during culvert replacement.

Scientific name	English name	Status	Habitat requirements (IUCN Red List)	Threats and possible interaction with the Project (IUCN Red List)
Bitis gabonica	Gaboon Viper	Vulnerable	Moist and dry forests	Persecution from workers. Encroachment.

9.2.3.6 List of mitigations measures to implement on site

Mitigations	Responsibilities	Timeline
for example, safety perimeter around old trees		

9.2.3.7 Results of the wildlife and flora survey to attach to this form

Insert here the results

9.2.3.8 Minutes of stakeholder engagement activities

Insert here the minutes

9.3 Environmental and social monitoring

Monitoring of the anticipated environmental and social impacts in the receiving environments is important. It helps in determining the effects of the project activities on the environments enhancing understanding of cause effect relationships between human activities and environmental changes and verifies the accuracy of prediction about the environmental impacts. It ensures compliance with regulatory measures and understanding the degree of implementation of ESMP and its effectiveness. The monitoring results are also used extensively during the environmental auditing.

The EIA and Audit regulations require the developer (TANROADS) to prepare and undertake monitoring plan and regular auditing. Monitoring is needed to check if and to what extent the impacts are mitigated, benefits enhanced and new problems addressed. Recommendations for monitoring have been included in the ESMP. The ESMP also assigns responsibilities for monitoring to mandated stakeholders, who among others, are the divisional/ward/village environmental committees and district environmental committees that participate in the long-term daily monitoring of the project road.

Among others, the monitoring issues to undertake during project implementation will include water and air quality as well as noises in regarding to the collected sample parameters undertaken prior construction phase in order to check if there any variation in term of exceeding impacts that can harm the community and the environment in general and therefore to avoid this the mitigation measures should be taken at early stage. The monitoring has set standards and parameters (for air/dust, noise, vibration) to be monitored as per national law compliance limits, international standards/WBG EHS Guidelines (including WHO parameters).

Monitoring can take various forms as presented in the next sections.

9.3.1 Role of TANROADS and PIT

The overall implementation of the enhancement and mitigation measures is the primary responsibility of the TANROADS as per national requirements and WB ESSs. The supervision of the construction works and implementation of the ESMP for this road project will be carried out primarily by TANROADS's Environment and Social Department in collaboration with PIT safeguards staff. Specifically, TANROADS Environmental and Social Experts and the PIT are responsible to make sure that the aspects of the ESMF, RPF, SEP, GRM, LMP, GBV/SEA, Project-ESMP that are to be implemented during construction are included in the Contractor's tender documents and also are responsible for the overall monitoring of the Contractor's performance to ensure that the enhancement and mitigation measures are implemented. Also, environmental and social protection clauses for the contract and specifications will be provided to support implementation of mitigation measures.

To minimize potential environmental and social negative impacts, the project will require the support of various institutions in the implementation of this ESMP. The organization framework for the ESMP is designed to evolve as the project progresses through pre-

construction, construction and operation phases. The key institutions which TANROADS will liaise with and facilitate the capacity building for monitoring aspects will include Supervising engineer, Districts authorities, traffic police, wildlife authority and district councils' officers, Sub-village/village leaders traversed by the project road, local communities and NGOs/CBOs along the road. The ESHS Officer of the contractor shall also participate to capacity building trainings. The responsible authorities for compliance audits, principally NEMC and OSHA, may wish to visit, inspect and monitor the site or specific activities at their convenient time.

TANROADS will forward its internal monitoring reports to the World Bank and NEMC during project implementation as part of their monthly, quarterly, semi-annual and annual progress reports. The WB and NEMC may conduct a compliance audit to ensure that the approved mitigation measures are implemented and that the project implementation has not led to the emergence of new impacts. TANROADS and PIT safeguards staff shall supervise the Contractor with respect to the implementation of the provisions of the ESMP.

9.3.2 Environmental audits

According to Environmental Management Act (2004), there are three types of Environmental Audits; i.e., Initial Environmental Audit, and Control Audit (for projects which were operational before enactment of the Act), self-audit for projects that were subjected to EIA.

It is agreed that environmental audits determine the long-term effects of adopted mitigation measures. They are carried out on the project as part of the on-going maintenance programme. The audits will unveil the actual performance of mitigation measures and will allow effective measures to be included in future projects based on the legislation in force. As per operative ESIA documents in Tanzania, environmental audits would be a responsibility of the developer (TANROADS) and the National Environment Management Council (NEMC).

Based on this, TANROADS and PIT safeguards staff will, every 3 months' period from commencement of the work, undertake an environmental audit of the project to determine the long-term effects of adopted mitigation measures. This audit shall be followed by subsequent environmental annual self-audits and prepare an Audit Report for submission to NEMC. The works Contract shall include the obligation to the Contractor to follow the WB-ESF and EHS guideline during the project implementation.

9.3.3 Site supervision by the Supervising engineer

The Supervising engineer will supervise the implementation of the C-ESMP, the performance indicators developed in section 9.2.1 and ES clauses from the contractor's contract on an on-going basis. This will require to mobilize a full time qualified ESHS specialist as part of the Supervising engineer staff to monitor compliance and noncompliance and develop corrective measures. All corrective measures shall be implemented by the construction contractor at its own cost.

9.3.4 Reporting of monitoring results

Monitoring results of the C-ESMP and performance indicators shall be recorded in monthly E&S Performance Monitoring Report by the Supervising engineer. The Supervising engineer, shall use the followings for monitoring:

- All performance indicators as presented in the table section 9.2.1.
- All ESHS clauses in the construction contractor's contract.

There is no set frequency for monitoring of noncompliance with the performance indicators as these shall be monitored on an ongoing basis during construction activities.

During TANROADS PIT audits (to be done every three months), the Supervising engineer ESHS specialist will join the audits and the results and conclusions will be included in the Performance Monitoring Report.

Senior management of the Supervising engineer should review and appraise these reports. They should be produced and disseminated by the Supervising engineer monthly during the construction as part of work progress reports. These reports will include monitoring results of the implementation of E&S measures and the details of corrective actions that were implemented by the construction contractor in the event of non-conformities.

Other monitoring reports will have to be produced by PIT for all management plans that are under its management: the LMP, the SEP and its GRM, the GBV action plan, and the Resettlement Action Plans. These framework plans have developed their own sets of performance indicators.

9.3.5 Reporting from the Construction contractor

The contractor shall be responsible for daily implementation and internal monitoring of all activities which fall under his care. NEMC will be responsible for overseeing that all Environmental construction activities are conducted in a manner that adheres to regulations outlined in Environmental Impact Assessment and Audit Regulations (2005).

The contractor ESHS Officer will be the focal point for all ESHS related topics including developing the C-ESMP and updating it on a regular basis.

The Construction contractor shall also be required to produced ES reports which shall cover the following topics:

- Implementation of the C-ESMP and ESHS contractual obligations.
- Environmental incidents and near misses: environmental incidents and high potential near misses and how they have been addressed.
- Major work: those undertaken and completed, progress against project schedule and E&S measures.
- Labor staffing (labor data log): number of workers, new hires, titles, number of workers from local communities and evaluation of the targets to hire members of the communities, number of expat workers.

- E&S inspections and audits: including those of authorities, labor condition inspectors and the Supervising engineer audits.
- Training on E&S issues.
- External stakeholder engagement and grievances related to the Contractor and Subcontractor Work, participation to meetings with the Supervising engineer and stakeholders.
- Details on any security risks.
- Worker’s grievances: type of grievance, actions taken, dates and resolutions.
- Major E&S changes to the C-ESMP or action management plans.
- Self-assessment of performance indicators and deficiency such as E&S noncompliance and corrective actions implemented.

9.3.6 Monitoring parameters

Performance indicators will be monitored on a continuous basis during the project lifespan. In addition to the performance indicators that are presented in the table at section 9.2.1, TANROADS has identified several parameters that will be supervised on a set basis during TANROADS site visits. The following table presents these parameters to monitor and the set frequencies.

The basic monitoring parameters/benchmarks is based on national law compliance limits and international standards/WBG EHS Guidelines

Table 1.1.1: WHO Ambient Air Quality Guidelines ^{7, 8}		
	Averaging Period	Guideline value in $\mu\text{g}/\text{m}^3$
Sulfur dioxide (SO ₂)	24-hour	125 (Interim target-1) 50 (Interim target-2) 20 (guideline)
	10 minute	500 (guideline)
Nitrogen dioxide (NO ₂)	1-year	40 (guideline)
	1-hour	200 (guideline)
Particulate Matter PM ₁₀	1-year	70 (Interim target-1) 50 (Interim target-2) 30 (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)

Figure 9-1 WBG Ambient Air Quality Guidelines

Table 1.7.1- Noise Level Guidelines ⁵⁴		
Receptor	One Hour L ₄₀ (dBA)	
	Daytime 07:00 - 22:00	Nighttime 22:00 - 07:00
Residential; institutional; educational ⁵⁵	55	45
Industrial; commercial	70	70

Figure 9-2 WBG Noise level guidelines

Table 9-1 Environmental and Social Monitoring Plan for the Lusuhunga - Rusumo Road

N°	Impact Items	Parameter	Monitoring/period frequency	Sampling Area	Measurement Units	Method	Target level/Standard (Indicator)	Responsibility for monitoring	Annual forecasts Estimates (TSH)
1	Relocation and resettlement Compensation	Rate of Compensation for land and properties	Before and during construction	Project area	Compensations effected	Resettlement Action Plan (RAP).	All PAPs are compensated fairly according to the RAP	TANROADS, PIT, GRM-GRC	N/A
2	Relocation of public utilities	Number of utilities relocated	Once before the construction starts	Project area	Number of utilities relocated	Physical	All affected utilities are relocated	Utility Authorities Contractor TANROADS, PIT	N/A
3	Soil erosion	Soil erosion along the road	Baseline before construction starts Rainy days during construction	Project road Detour routes, Quarry site and borrow pits.	Level of erosions	Site inspection	No soil erosion is observed on site and at culvert location	Contractor TANROADS, PIT	10,000,000

N°	Impact Items	Parameter	Monitoring/period frequency	Sampling Area	Measurement Units	Method	Target level/Standard (Indicator)	Responsibility for monitoring	Annual costs Estimates (TSH)
4	Noise pollution from machinery, plants and equipment's	Ambient noise level	Once at baseline to determine the current noise level (before beginning of work) Once quarterly during project construction	Near settlements (villages), Around the campsite	dB(A)	Noise Level Meter	See standards in the separate table. Noise level during day time (below 50dB(A) at sensitive receptors Noise level	Contractor TANROA DS, PIT	4,000,000
5	Air pollution from machinery, plants and equipment's (including asphalt concrete batching plants)	Various parameters, see table above	Once at baseline to determine the current air pollution level (before beginning of work) Once quarterly during project construction	Near settlements (villages). At quarries and borrow areas and stone crushing sites (including asphalt concrete batching	Various unit	Micro Dust Pro and other air quality sampling device	See standards in the separate table	Contractor TANROA DS, PIT	5,000,000

N°	Impact Items	Parameter	Monitoring/period frequency	Sampling Area	Measurement Units	Method	Target level/Standard (Indicator)	Responsibility for monitoring	Annual costs Estimates (TSH)
6	Dust Suppression from machinery, plants and equipment's	Water sprinkling	Three time daily during dry season and windy days in villages and town centers	Project site at village centers and Quarry sites and stone crushing	Frequency of water sprinkling	Inquiries and observation	Minimum dust emission	Contractor TANROA DS, PIT	6,000,000
7	Vibration	Vibration PEAK acceleration of 0.015ms ²	Vibration baseline levels before construction and monthly during construction	Project site at village centers and towns, Quarry sites	No per time	Records	Reduced cases of complaints Less than PEAK acceleration of 0.015ms ²	Contractor TANROA DS, PIT	4,000,000
8	Spread of HIV/AIDS	Number of people attending awareness straining	Quarterly	Project area	Number of voluntary counseling and testing	HIV test	Reduced cases of new infections	Contractor TANROA DS, PIT	N/A
9	Safety and health risks	Number and type of safety equipment such as mask,	Daily inspection to ensure use of PPE when on site.	Project site	Number of safety measure provided	Actual injuries and illness statistics	All safety gears are provided	Contractor TANROA DS, PIT OSHA	5,000,000

N°	Impact Items	Parameter	Monitoring/period frequency	Sampling Area	Measurement Units	Method	Target level/Standard (Indicator)	Responsibility for monitoring	Annual forcasts Estimates (TSH)
		helmet gloves and ear plugs. Health and sanitation facilities in camps.							
10	Accidents to road users	Injuries	Daily	Project area	Number of cases	Physical observation	No accidents	Contractor TANROADS, PIT OSHA Traffic police	N/A
11	Water Quality in affected streams during culvert replacement and in wells close to the	Turbidity Total suspended Solids Oil and grease	Baseline before construction starts Once per month during rainy season Twice a week during dry	All rivers/streams along the project road. Also, at a sample of local wells, especially near camps.	To be determined	In site measurements And laboratory tests	No significant increase from baseline	Contractor TANROADS, PIT	8,000,000

N°	Impact Items	Parameter	Monitoring/period frequency	Sampling Area	Measurement Units	Method	Target level/Standard (Indicator)	Responsibility for monitoring	Annual forecasts Estimates (TSH)
	workers' camp		season						
12	Waste management	Generated amount	Once a week	Project area	Weight (Kg)	Inspection	Cleared surrounding environment	Contractor TANROADS, PIT Supervising engineer	N/A
13	Loss of definite materials and land degradation from earth works	Area degraded	Twice a month	Project area	Area of land degraded;	Physical Inspection	degraded land sites restored	Contractor TANROADS, PIT Supervising engineer	N/A
14	Loss of vegetation cover	Surface of vegetation clearance	Quarterly during construction	All forests along the road and greenfield	Type and number of living organisms	Counting and Observation	N/A	Contractor TANROADS, PIT	3,000,000

N°	Impact Items	Parameter	Monitoring/period frequency	Sampling Area	Measurement Units	Method	Target level/Standard (Indicator)	Responsibility for monitoring	Annual costs Estimates (TSH)
15	Loss of Biodiversity	Number of road kills	Monthly during construction	All road and off site facilities	Number of road kills	Inspection	Number of animals killed	Contractor TANROADS, PIT Forests Officer	4,000,000
16	Increased illegal natural resources exploitations	Condition of the forest (CFP)	Once in three Months	All forests along the road	Volume of woods illegally extracted	Measurement of volume of trees illegally cut	Number of trees illegally cut	Contractor District councils (Forest Department) TANROADS, PIT	5,000,000
17	Impacts on Cultural/Religion Values	Awareness about and efforts to follow Chance Finds Procedure	On daily basis during earthworks	Along the construction corridor and the borrow areas				Contractor; TANROADS/ PIT/ District council (Antiquities Department)	3,000,000

N°	Impact Items	Parameter	Monitoring/period frequency	Sampling Area	Measurement Units	Method	Target level/Standard (Indicator)	Responsibility for monitoring	Annual forecasts Estimates (TSH)
)	
18	Community Complaints and Grievances	Raised complaints	Monthly	Project area	Number of registered complaints	GRM	Prompt resolution of complaints	Contractor; PIT, TANROA DS/ District council	N/A
19	Sexual exploitation and abuse	See GBV action plan	Monthly	Project area	Number of registered complaints	GRM	See GBV action plan	Contractor TANROA DS, PIT GBV service providers	See GBV action plan
20	Violation of children rights	Raised complaints	Monthly	Project area	Number of registered complaints	GRM	Prompt resolution of complaints	Contractor TANROA DS, PIT District council	N/A

N°	Impact Items	Parameter	Monitoring/period frequency	Sampling Area	Measurement Units	Method	Target level/Standard (Indicator)	Responsibility for monitoring	Annual costs Estimates (TSH)
21	Local content	Employment opportunity	Percentage of local Construction workers	Project site	Number of local people employed in the project	Records, inquiries and observation	To be determined with ward and village authorities	Contractor District council TANROADS, PIT	5,000,000
22	Increased Wildlife and livestock kills from Road Accidents during construction	Frequencies of animal crossing	Daily inspection to ensure no road kills.	Environment noal sensitive areas	Number of animal kills	Physical observation and count of accident records	Zero accident occurrence	Contractor TANROADS, PIT LGAs and Wildlife Authority	N/A
23	Risks associated with security personnel to local community	Events of complaints	Monthly	Construction site	Number of workers/community complaint	Registered records of complaint	Zero workers/community complaints	Contractor; PIT TANROADS/ LGAs and Police forces	N/A

N°	Impact Items	Parameter	Monitoring/period frequency	Sampling Area	Measurement Units	Method	Target level/Standard (Indicator)	Responsibility for monitoring	Annual costs Estimates (TSH)
24	Loss of definite materials and land degradation at borrow pit and quarry rehabilitation	Area degraded around borrow pits and quarry site	Twice a month	Project area	Area of land degraded	Physical Inspection	degraded land sites restored	TANROADS, PIT Supervision Consultant	N/A
25	Impacts associated with construction of campsites and facilities (equipment's, plants and materials storage yards)	Area degraded around campsite establishment	Twice a month	Campsite areas	Area of land degraded	Physical Inspection	degraded land sites restored	TANROADS, PIT Supervision Consultant TANROADS	N/A

N°	Impact Items	Parameter	Monitoring/period frequency	Sampling Area	Measurement Units	Method	Target level/Standard (Indicator)	Responsibility for monitoring	Annual costs Estimates (TSH)
26	Impacts on disposal of spoils materials along the road.	Area degraded around the road, borrow pits	Twice a month	All construction sites	Area of land degraded;	Physical Inspection	Spoiled materials reinstated or reused for vegetation	TANROADS, PIT Supervision Consultant TANROADS	N/A
	Total								62,000,000

9.4 Cost for the ESMP

The following table estimates the cost of the implementation of the ESMP. They related to actions that need to be undertaken by specialists or local NGOs. Most measures are best management practices to be implemented by the construction contractor. These figures, that were estimated by TANROADS also include the cost for additional measures that will be determined at design review. Some costs to be beard by the construction contractor shall be identified in the Bills of Quantities (BoQ).

Table 9-2 Cost for the ESMP

	TSHS
Mitigation measures	210,000,000
Monitoring measures	124,000,000
Total	334,000,000

10 RESOURCES EVALUATION

10.1 Introduction

Since the project is just rehabilitation of the existing road, conventional cost benefit analysis was used to assess costs and benefits of the project. The use of scarce resources for one activity denies the use of the same resources to other activities. The use of available resources should therefore be linked to the benefits realized from undertaking such a project as opposed to the cost of foregoing the other activities competing for the same resources. It is therefore inevitable to undertake economic analysis before embarking into a project in order to determine the economic justification.

10.1.1 Purpose

The purpose for resources evaluation is to optimize the overall performance of the road network over time in accordance with policy objectives and within budgetary constraints.

10.1.2 Objectives resources evaluation

The objectives of resources evaluation include among others: to minimize transport costs; to preserve asset value; to provide and maintain accessibility; and to provide safe and environmentally friendly transport.

10.2 Transport Costs

Transport cost consists of both the cost of providing the road infrastructure and the cost of operating the vehicles. The cost of providing the infrastructure includes the initial cost of constructing the road and maintenance costs throughout the design life of the infrastructure facility. The cost of operating vehicles includes among other, operating costs due to roughness of the road, travel time cost, cargo delay cost, pollution cost and accident costs. While the cost of providing the infrastructure is borne by the responsible agency, the cost of operating the vehicles is borne by the operators and the society.

10.3 Methodology

The approach used in the economic analysis of the proposed rehabilitation of Lusahunga – Rusumo road (92Km) consists of evaluation of the transport costs involved in “Without” and “With” project cases. The “Without” project case defines a situation in which the existing minimum maintenance practice of the paved road prevails throughout the analysis period (i.e., 20 years’ design period). The “With” project case defines the rehabilitation of the road followed by setting up an appropriate maintenance regime for the road throughout the 20-year analysis period.

The road capital and maintenance costs, passenger time costs and vehicle operating costs involved during each year of analysis, have been compared between the two project cases and discounted back to the base year, using an appropriate discount rate and summed to obtain the Net Present Value. The discounted Costs and Benefits were further used to calculate the Benefit/Cost ratio, the Internal Rate of Return (IRR %) and the First Year Benefits (FYB %).

10.4 Evaluation Model

The Highway Design and Management Model (HDM-4 version 2.04) has been used to perform the economic analysis of the road rehabilitation project. HDM-4 was developed by the International Study of Highway Development and Management (ISOHDM) and it is the successor of the widely used HDM-III model which was developed by the World Bank during the period 1980-1986.

10.5 Definitions

10.5.1 Opportunity Cost of Capital (OCC)

For investment by commercial enterprises, the time cost of money is assumed to be an average of the short term and long-term rates of interest. When the effect of public investment in highways is considered, the interest rate must reflect the return on investment in the national economy. An OCC of 12% has been used in this study.

10.5.2 Net Present Value (NPV)

The NPV of a given investment is obtained by subtracting the present value of the costs from the present value of the future benefits. The benefits as well as the costs were discounted at the OCC discount rate. The investment is viable if the NPV is positive.

10.5.3 Internal Rate of Return (IRR)

The IRR of a given project is defined as the discount rate at which the present value of benefits and the present value of costs are equal. It is a measure of the marginal efficiency of capital. For a project to be viable, the IRR has to be greater than the OCC rate.

10.5.4 First Year Benefits

The First Year Benefits (FYB %) is defined as the ratio, in percent, of the net benefit realized in the first year after construction (or rehabilitation) completion to the increase in total capital cost. FYB gives a rough guide to project timing, if it is greater than the discount rate, then the project should go ahead, otherwise it should be delayed until it satisfies the criterion.

10.6 Shadow Pricing

10.6.1 Financial and Economic Costs

It is required to use the economic costs as opposed to financial costs in the economic analysis. Prices of goods in the market include taxes and duties which are merely transfer payments and do not constitute the resource cost. To convert financial Costs to economic costs therefore taxes and duties need be eliminated and the Cost Insurance and Freight (CIF) and free-on-board (FOB) prices used in case of imported and exported goods respectively. Shadow pricing is also applied in order to eliminate distortions in the market prices of foreign exchange and labor.

Foreign Exchange

Foreign exchange needs to be evaluated using a Shadow Exchange Rate which eliminates in the Official Exchange Rate the market distortions due to imposition of trade barriers

such as import quotas, tax barriers and tax on imports. In Tanzania, Foreign Exchange has been liberalized and the Tanzanian Shilling is, for practical purposes, a currency fully convertible at current market rates, the conversion factor applied to all expenditures in foreign currency amounts to unity.

Labor

Distortion in the labor market results if the market wage payable for labor by the government ministries and large projects are higher than the marginal value product of labor elsewhere. A shadow wage rate needs to be calculated for unskilled as well as skilled labor to be used for the project. Taking into consideration the widespread unemployment and under-employment in Tanzania the market wages for skilled and unskilled labor can be considered as shadow wages.

10.6.2 Conversion from Financial to Economic Costs

Standard Conversion Factor

An alternative method for shadow pricing is to establish a factor for conversion from financial to economic costs including construction and maintenance costs by calculating a Standard Conversion Factor (SCF) using the following formula:

$$\frac{[\text{Imports} + \text{Exports}]}{[\text{Imports} + \text{Exports} + \text{Import Duties} / \text{Taxes} + \text{Export Subsidies}]}$$
The conversion factors applied on similar recent studies ranged between 0.8 - 0.9.

The Consultant has applied a standard cost factor of 0.9 for vehicle operating costs and 0.82 for construction costs which excludes 18% VAT.

10.7 Rehabilitation of Lusahunga - Rusumo road

The existing road with total length of (92Km) has been considered as a homogeneous section for the purpose of this economic analysis. Normal traffic and condition survey data have been obtained from the site during 2012 and 2013 during the economic report on 25, 26, and 28 August 2017.

10.7.1 Project Implementation

Detailed engineering design, tendering, award and mobilization have been assumed to be completed in 2019, while rehabilitation works are assumed to be completed after three years in 2021. The first year at which the road sections will be fully open for traffic has been assumed to be 2022.

10.7.2 Calculation Base Year

The calculation base year for the economic indicators, defined as the year at which all costs and benefits are discounted is 2018. This is also the statistical base year, which is the latest year from which important statistical data are available for evaluation of costs and benefits of each rehabilitation option.

10.7.3 Evaluation Period

The Evaluation period has been specified at 25 years commencing on the Calculation base year. The project costs and benefits have been discounted at 12% discount rate which is considered to be as close as possible to the opportunity cost of capital.

10.8 HDM-4 Project Road Network

The project road network has been pre-defined under the name Lusahunga - Rusumo road network in the Road Network folder in HDM4. The road has been considered as one homogenous section based on traffic, geometrical and pavement considerations. Table below contains a summary of the key physical attributes for each section.

Table 10-1 Existing Homogenous Road Section Attributes

Item	Lusahunga - Rusumo
Length (Km)	91.97
Carriageway width (m)	6.5
Shoulder width (m)	1
Number of lanes	2
Flow direction	Two ways
Rise and fall (m/km)	27.7
Rise and fall (no/km)	3.3
Average horizontal curves (deg/km)	123.93
Altitude (m)	1,687
Paved surface type	Surface dressing
Number of surface layers	1
Surface layer thickness (mm)	30
Base type	Crushed stone base (CRS)
Number of base layers	1
Thickness of base layers (mm)	150
Relative compaction (%)	98
Subgrade CBR (%)	15
Structural number	2.61
Area of all cracks (%)	85.72

Item	Lusahunga - Rusumo
Area of wide cracks (%)	58.8
Raveled area (%)	0.56
Number of potholes	5.6
Mean rut depth (mm)	8.5
Edge break (m ² /km)	1.29
Roughness (m/km)	3.8
Skid resistance (SCRIM) 50km/hr	0.4
Average texture depth (mm)	1.57
Drainage condition	Good

Traffic input consisted of normal traffic as shown in Tables below.

Section	M/Cycle	PV	UV	Mini Bus	Bus	LT	M/HT	HT	VHT	AADT
Lusahunga - Nyakasanza	17	51	47	37	8	24	48	11	248	491
Nyakasanza - Benako	98	138	68	20	5	5	42	7	183	562
Benako - Rusumo	100	59	21	8	1	4	20	3	180	378
Nyakasanza - Koboko	110	111	58	13	5	27	9	1	83	415

Source: Consultant's evaluation

Figure 10-1 Year 2017 normal traffic

10.9 Vehicle Fleet Adopted

The vehicle fleet has been pre-defined in the vehicle fleet folder in HDM-4 as Lusahunga-Rusumo road vehicle fleet, consisting of NMT (Bicycles), Motorcycles, Cars, Pickups, 4WD's, Light goods Vehicles (Trucks < 3.5 Ton), Medium Goods Vehicles (Trucks > 3.5 Ton, 2 axles), Heavy Goods Vehicles (Trucks >3.5Ton, 3 or 4 axles), Very Heavy Goods Vehicles (Semi trailers-ST and Full trailers-FT), Mini buses < 25passengers and Large buses > 25 passengers.

10.10 Project Alternative Cases

Two project alternative cases have been considered, "Without" project case and "With" project case. The "Without" project case represents a continuation of current minimum maintenance practice, consisting of pothole patching when potholing exceeds 1 No/km, and heavy patching when wide structural cracking exceeds 5%.

The "With" project case represents the implementation of the project by reconstructing it to asphalt concrete (AC) surface standard. After re-construction, the road will receive a

more intensive maintenance, apart from patching, crack sealing and edge repair consisting of resealing at every 8 years and overlay at 6 IRI (m/km).

10.11 Rehabilitation options

The specifications for rehabilitation standards include details of geometric characteristics of the road sections after rehabilitation and type of undertaken rehabilitation. The following rehabilitation option was recommended in the M/s Nicholas O’Dwyer Consulting Engineers in association with M/s Apex Engineering Co Ltd Tanzania 2013 study consisting of reconstruction to asphalt concrete (AC) surfacing and double surface dressing of shoulders, new CRR base layer, C2 upper sub-base layer by cement stabilization of existing crushed stone base layer; and C1 lower sub-base layer by stabilization of existing natural gravel sub-base layer.

A summary of the maintenance operations and the intervention limits are given in table below.

Road Section	Reconstruction option description	Pavement Structural Number	Financial Unit Cost (US\$/km ^a)
Option 1			
Lusahunga-Rusumo	50mm AC, 150mm CRR (Crushed Rock) base, 150mm (C1) & 150mm C2 sub base from existing sub base and base course material respectively.	3.74	943,926
Option 2			
Lusahunga-Rusumo	50mm AC, 150mm C2 new material base course, 150mm (C1) & 150mm C1 sub base from existing base and sub base course material respectively.	3.74	1,017,458

Source: Consultants' Evaluations

Note^a: includes environmental and social impacts mitigation costs.

Figure 10-2 Recommended rehabilitation options

10.12 Road User Costs (Vehicle operating and time costs)

Vehicle operating and time cost data that have been used in the analysis are based on the 2004 TANROADS study done in collaboration with DHV Consultants which has been updated in 2012 prices (for which official published data were available) see Table 10.7 below. New vehicle and tires prices were updated to 2013 prices.

Vehicle Classification	Bicycle	Motor Cycle	Saloon Car	4X4 Station wagon	Pick ups	Bus ≤ 25 seats	Bus >25 (Seats)	Light Trucks ≤ 3.5 Tons	Medium Truck Two - Axles > 3.5 Ton	Heavy truck (3-4 Axles) Truck > 10 Tons	Semi-Trailers (ST) Full trailer (FT)
Representative Vehicle	-	-	Toyota Corolla	Toyota Land Cruiser	Toyota Hilux	Toyota Hi-Ace	Scania	Isuzu NKR	Isuzu FVR	Isuzu FVZ	Scania G420
Number of Axles	2	2	2	2	2	2	2	2	2	3	4-5
Number of Tyres	2	2	4	4	4	4	6	6	6	10	10
Number of Passengers	1	1	4	5	5	15	40	2	2	2	2
Average Annual Km	2,500	10,000	25,000	40,000	50,000	94,000	120,000	60,000	100,000	120,000	120,000
Working Hours/ Year	150	200	590	1,250	1,600	1,050	2,720	1,050	3,280	3,680	3,660
Average Vehicle Life	10	10	15	15	15	15	15	15	15	15	15
Economic price (USD)	120	795	19,986	75,574	28,668	44,788	32,685	38,969	68,666	81,434	174,730
Financial price (USD)	146	968	31,223	123,446	42,544	66,557	397,618	55,577	97,821	116,459	186,060

Figure 10-3 Vehicle operating characteristics and cost data

Source: TANROADS -2004 Vehicle Operating Cost Study and Consultant’s 2013 price update

10.13 Evaluation Alternatives

The alternatives that have been adopted in the analysis are ALT0, ALT1 and ALT2 as described below:

- ALT0 is the Base Alternative;
- ALT1 is Rehabilitation Option1; and
- ALT2 is Rehabilitation Option 2.

10.14 Endogenous Quantified Benefits

The potential benefits described in this section may accrue to the economy of the country if the project is implemented. These will be calculated and analyzed internally by HDM4.

10.14.1 Saving in Vehicle Operating Costs due to Normal Traffic

This is the largest single benefit arising from rehabilitating the project road sections. As mentioned earlier, the calculation of VOC savings has been done by comparing the vehicle operating cost between the “Without” and “With” project cases. With other parameters kept constant, VOCs are very sensitive to road roughness. Under the “Without” and “With” project cases the roughness values for Lusahunga - Rusumo road section have been evaluated between 2-16 IRI (m/km) during the 20-year analysis period.

10.14.2 Savings in Maintenance Costs

Saving / not saving in maintenance costs will arise from a shift of maintenance policies of existing paved road consisting of patching, crack sealing, edge break repair (in the “Without” project case) to patching, crack sealing, resealing and an overlay in the “With” project cases. If the ‘With’ and “Without” project road maintenance costs are compared, the maintenance cost saving can be established.

10.14.3 Savings from generated traffic

Generated traffic benefits follow the consumer surplus theory in which travellers are induced to travel as long as the transport cost they incur equals their willingness to pay. Generated traffic benefits are assumed to be half the reduction in normal traffic vehicle operating and time costs.

10.14.4 Accident Savings in Cost-Benefit Analysis

Until now, the TRL-ODA, Overseas Road Note 10 provides different approaches for costing road accidents in developing countries. These include:

- Gross output approach involving loss of future output;
- Net output approach where by discounted value of victims future consumption is subtracted from the gross output above;
- Life insurance approach whereby the cost of road accident or value of road accident prevention is directly related to the sums for which individuals are willing (or are able to insure) their limbs etc.; and
- The court award approach whereby sums awarded by the courts to the surviving dependents of those killed or injured as a result of crime or negligence are regarded as indication of the society associations with accidents.

Road accident costs (and values of prevention) are difficult to determine and with no data bank it is difficult to predict changes in road accidents following a specific rehabilitation. Further, even if accident benefits were to be included their effect on the economic appraisal would be minimal. In view of the above, the Consultant has not included accidents in the economic analysis.

10.14.5 Salvage Value

It has been assumed that there will be residual value of the pavement, drainage structures and bridges/culverts at the end of analysis period. To that effect, Salvage Value at 20% of initial construction cost has been applied in the analysis.

10.15 Results of the Analysis

The results relate to the project alternatives ALT1 and ALT2 as compared to Base Alternative ALT0. The economic indices are the Internal Rate of Return (IRR %), Net Present Value (NPV) and NPV/Cost ratio at 12% discount rate.

The Lusahunga - Rusumo road section yielded positive IRR's, NPV's and NPV/Cost ratios at 12% discount rate for both ALT1 and ALT2.

Both the project alternatives ALT1 and ALT2 yielded IRR's greater than the cut-off point of 12%. Option 1 involving reconstruction to asphalt concrete (AC) surface, CRR base material, C2 upper subbase from existing base course material and C1 lower subbase from existing natural gravel subbase material has yielded the most positive IRR at 15.5% and a positive NPV at 12% discount rate of US\$33 million and NPV/Cost ratio of 0.4.

Table 10-2 Results of the Economic Evaluation

Alternative	Net Present Value (US\$ millions)	Internal rate of return (IRR %)	Net present value/cost ratio
Base Alternative (ALT0)	0.000	0.000	0.000
ALT1	91.68	21.9	0.971
ALT 2	85.75	20.7	0.843

Source: Economic review report 2017

10.16 Conclusion

As a result of the economic analysis, the Sensitivity Test, Construction Cost and Normal Traffic AADT Switching Value analysis above, ALT1 (Reconstruction to AC surface, CRR base material) is the most economically feasible option for implementation.

10.17 Recommendations

In view of the above, it is recommended to reconstruct to asphalt concrete (AC) surfacing and double surface dressing of shoulders, new CRR base layer, C2 upper sub-base layer by cement stabilization of existing crushed stone base layer; and C1 lower sub-base layer by stabilization of existing natural gravel sub-base layer the Lusahunga - Rusumo road section (92 km).

11 DECOMMISSIONING

Decommissioning is not anticipated in the foreseeable future. However, if this will happen, may entail change of use (functional changes) or demolition triggered by change of land use. In view of this, specific mitigation measures pertaining to environmental impacts of decommissioning works cannot be proposed at the moment with a reasonable degree of certainty.

A decommissioning plan that takes environmental issues into consideration shall be prepared by the developer prior to the decommissioning works. Should it be done, decommissioning may entail change of use (functional changes) or demolition triggered by change of land use.

12 SUMMARY AND CONCLUSION

The ESIA study results show although some limited negative environmental implications of the project, the road will have high socio-economic benefits to the people of Biharamulo and Ngara Districts, Kagera Region and adjoining regions as well. The associated negative impacts, to a large extent have been minimized through good engineering design and envisaged construction practices. Specific mitigation measures have been suggested in this report to offset some of the inherent adverse impacts. Implementing these mitigation measures would increase environmental soundness of the project road.

It is, therefore, concluded that, implementation of the proposed Lusahunga - Rusumo Road will entail no detrimental impacts provided that the recommended mitigation measures are adequately and timely put in place. The identified adverse impacts shall be managed through the proposed mitigation measures and implementation regime laid down in this EIS. TANROADS is committed in implementing all the recommendations given in the EIS and further carrying out the environmental auditing and monitoring schedules.

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14 APPENDICES

14.1 Appendix I: ESIA Certificate

GN. No. 349


THE UNITED REPUBLIC OF TANZANIA

ENVIRONMENTAL IMPACT ASSESSMENT

Certificate

[Section 92(1) of the Environmental Management Act No. 20 of 2004]

Application Reference No. 2433
Registration No. EC/EIA/2690

This is to Certify that

M/S. TANZANIA NATIONAL ROADS AGENCY (TANROADS)
of P. O. BOX 11364, DAR ES SALAAM

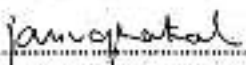
has this day been granted an Environmental Impact Assessment Certificate for the proposed
project/activity titled REHABILITATION OF LUSAHUNGA-RUSUMU (92KM) AND NYAKASANZA-
KOBERO (59.149KM)

to be implemented/carried out at BIHARANULO AND NGARA DISTRICTS, KIGERA REGION

This certificate shall remain in force during the whole lifecycle of this specific project unless
henceforth revoked or suspended.

General conditions and terms attached to this certificate are set out herein behind and
specific conditions are annexed.

Dated this 25th day of October 2016


January Y. Makamba (MP)
Minister of State, Vice President's Office - Union and Environment

CONDITIONS OF CERTIFICATE

1. This Certificate is valid during the whole life cycle of this specific project unless heretofore revoked or suspended.
2. The Minister shall be notified of any transfer/variation/surrender of this certificate.
3. Observe all relevant national policies and legislation that guide this specific project throughout its life cycle.
4. Ensure safe disposal of all types of wastes (solid or liquid) in specified sites.
5. Ensure environmental sustainability by avoiding any form of pollution by using most viable management techniques.
6. Adhere to the Environmental Management Plan (EMP) and Monitoring plan (MP) and constantly improve and update them by taking into account any new development.
7. Constantly liaise with relevant authorities and consult stakeholders including local communities in case of any new development or changes as regards to implementation of your project/own activities.
8. Adhere to all proposed mitigation measures as specified in the Environmental Management Plan contained in the Environmental Impact Statement.
9. Abide to all national social and environmental safeguard policies and standards and strive to maintain and constantly improve standards.
10. Prepare an Emergency and Contingency plan and put in place risk and safety measures.
11. Conduct periodic Environmental Audits and facilitate monitoring by relevant authorities.
12. Design and implement an internal Environmental and Safety Policy and Awareness Programme.
13. Prepare Annual Environmental Reports and any other reports requested by competent authorities and the Government.
14. Obtain all other relevant permits.

The above conditions shall be read together with the specific conditions spelt out in the Annex attached to this Certificate

14.2 Appendix II: Minutes and names of consulted stakeholders (2018 and 2022)
2018 consultations

Ameelezea kuwa, baadhi ya athari za
kimoziingira lazima zitubee pindi utenge
nezari ule barabara hiyo utakapanza

mki - Ameelezea kuwa kumovumbi kati
ambalo litatoka lakini jamoja na
vumbi hila serikali ilamlika Mbanda
si - fedha za kumwagilia mchi laa
bam ili kupunguza vumbi. Na
amela shauri wananchi kama pindi
Mbandasi atakapote kumwagilia mchi
kulalimika.

Ameelezea kuwa utengenezaji ule kamba
Utakapanza katikumbwa maditani ya kupata
leheru za kichimbo chanzalawe Divyo lazima
meshimo yataka. Amesiitiza kuwa kwa kuwa
chanzalawe Hachimbuwa katika maeneo yetu
ni lazima yaweto makubaliano maalumu bina
ya mamiliki wa eneo hila na Mbandasi p
Utajungwa Mbataba na lazima Mbataba au
Ukaini na afisa mtendaji ule kijiipamoji
na Mbuu ule wtera Dusika. Na eneo - Bii
Katikumbwa mali ya mamiliki tena litakumbwa
Mali ya Serikali sibu zote.

athari
Ndoa

kuwa ku
senzi

ni mny mnyingi
Utakapanza
fuetaza

WAZ. MASHAURI YA KIJAMII
 WAZIWA NTAZUWINE
 BIHARANUO

Ameelezea kuwa, baadhi ya athari za
fimoziingira lazima zitokae pindi utenge
nawazi kila barabara hiyo utokapoanza

mbi - Ameelezea kuwa kumovumbi kati
ambalo litetokea Labini pamoja na
vumbi hito Serikali itanlipa Mbandao
si fedha za kumwagilia mahi baa
kwa ili kupunguza vumbi. Na
Mbandao si atokaposi kuwa pindi
vumbi litakwaka mahi baa
kulalamika, kati mahi baa utasite

Ameelezea kuwa Utengenezaji wa barabara
Utakapoanza katika mabiti ya kupata
sehemu za kuchimba chongalawe. Divyo lazima
mashimo yotokae, amesisitiza kuwa kwa kuwa
chongalawe. Hachimbwa katika maeneo yetu
ni lazima yawepo makubaliano madumu kwa
ya mmiliki wa eneo hilo na Mbandao si pi
Utajungwa Mkatiba na lazima Mbandao - huo
Utainiwe na afisa mtendaji wa kijiwa pamoja
na Mbuu wa wilaya Rusika. Na eneo hito
Kabitabwa mahi ya mmiliki tena litakwaka
Mali ya Serikali Siku Zote.

MASHAURI YA MIBAO
MIBAO ENA NYUBUNDE
BIHARAMUNDA

athari
Ndani

kuwa ku
jenzi

ni mnyingi
Utakapoanza
futa za

kiti amemhisi wananchi kuuliza maswali.

Wananchi wanapenda kuona uvazi wa tathmini kama utabunishikishi au utakuwa wa Siu. Pia wanataka kujua kama tathmini hiyo itelewa kwa mato wa mato.


Na maswali yote yanajibiwa na wananchi wamendihiho wa majibu yaliyotolewa.

Kufunga Mbatano

Mwalimaji mtege Constantine Buhag amefunga mbatano mto wa Saasus ngatio yaliyolama kwa kuzingatia haramu za Madi na fido za Madi.


Constantine Buhag

**KALMA SHAURI YA KIJIB
KIJIBI CHA NYABUONGO
BINARAMULO**


Wilson E. Rubanyanga

**AFISA MTENDAJI-KAJIB
KIJIBI CHA NYABUONGO
KALMA SHAURI YA WILAYA
BINARAMULO**

MUKUTANO MIYANACHI KITONKOTI UTA
 NYANTAMA - NYABUBOMBE.
 MAHUTHURIO

MASINA	KAMILI	MATANGI/MUKOTI	SATU/
1	ANDRA LUREDI NABDI	M G	11/11
2	BARAKA - BAUDI	NYANTAMA	11/11
3	KANZUWA Rukoyogo	NYANTAMA	11/11
4	LUKAS AMOS	NYANTAMA	11/11
5	William	- 1 -	11/11
6	Saidi K. Kijungu	NYANTAMA	11/11
7	Zubary Khabuka	NYANTAMA	11/11
8	Theodora Petro	NYANTAMA	11/11
9	ELON	NYANTAMA	11/11
10	THEONEST E REVEST	NYANTAMA	11/11
11	YUSTO STEPHANO	NYANTAMA	11/11
12	ERIASI DONSAN	NYANTAMA	11/11
13	THOMAS LAMON	NYANTAMA	11/11
14	JOANNE ILEST	NYANTAMA	11/11
15	GERARD JOHANNSEN	NYANTAMA	11/11
16	KILISOPHA KANLIAN	NYANTAMA	11/11
17	MATHEW MECHACK	NYANTAMA	11/11
18	RAURISA ROBERTUS	NYANTAMA	11/11
19	HERENA JOHN	NYANTAMA	11/11
20	JOHNS JAFETI ENELIC	NYANTAMA	11/11
21	GEORGIANA REPUDI	NYANTAMA	11/11
22	LEONDI X MATHIZA	NYANTAMA	11/11
23	SEFI - SULIMAN	NYANTAMA	11/11
24	GOBRIAN JONAH	NYANTAMA	11/11
25	BRIMZARY TIBES	- " -	11/11
26	MARCO + ANNA	- " -	11/11
27	AMANI KAMACHUKU	NYANTAMA	11/11
28	COSTANTINI JOSEPH	NYANTAMA	11/11
29	JAFETI - HENELICO	NYANTAMA	11/11
30	SELEMAN KHASIM	NYANTAMA	11/11
31	JOSEPH M. LINDA	NYANTAMA	11/11
32	...	NYANTAMA	11/11

ALA 1
 KUBUKU NYABUBOMBE
 BINARARUGO

MUHTASARI KWA KITONTOJI CHA CHAMAKAZ
KULI CHA NYABUTOMBE WA UTENGENEZI,
WA BARABARA KUANZIA LUSAHUNGA HADI
RUSUMO. TAREHE 17/8/2018.

Kufungua Mkutano

Mulenyekiti amefungua kikao aidi wa
Sio ya Jioni kwa kuwabariki bisha kiaseni
waliokifika kutoka mkoani na taifani.

Kwitambulisha.

Kiaseni kote kionna fitambulisha
kwas barabari yao uamatoko mkoani
na barabari uamatoko taifani.

MAPDA: UTENGENEZI WA BARABARA
KUTOKA LUSAHUNGA HADI RUSUMO

Mulezeshani ametoa maelezo kwa
Serikali ya Tanzania inayopata mbopo
kwa Masharti nafuu kutoka Benchi ya
dunia kwa ajini ya kutengeneza barabari
hii kutoka Lusahunga Hadi Rusumo
na ameleza kwa Serikali haya ipo
tiyani kulipo fidia kwa wale wote
waliokathirika na utengenezaji wa
barabara hii.

Amelezaa kwa ujenzi wa barabara
unohusisha watu wengi hivyo kwa
athari ambazo zitatokoa kama
(I) Athari za mazingira kama
(II) Athari za kiamii.

1) ATHARI ZA MAZINGIRA.

Amelezeo kwa kama athari za mazingira
zitatokoa kama vumbi
kali, mashimo

Ameelezea kuwa kuna maeneo ambayo
yatachimbwa changalawe lakini
kwenye maeneo Dayo lazima
kwa maeneo makini Maeneo Maeneo Dayo
yakiishali pia yatabaki mibomoni
muu Serikali na siyo mmiliki wa
ardhi wa awali.

Hivyo utatoboa kuwa utameta
Maeneo ya kuchimba changalawe
kwa maeneo mibata ya fisheria ili
kuepuka kutapeliwa.

2. Athari za kijamii

Ameelezea kuwa baadhi ya athari
zilizozatokoa ni pangya na Magonvi
ya Ukimwi, Mizi, Uifo, Magonvi, Mifara
kama ya ndoo.

Haya yatatoka kwa kuwa ni wazi
kwenye ambao utatoka pakelewa kika
Maeneo yetu.

Baada ya kopo Mwananchi amaruhusu
Wananchi kuuliza Maswali na kwenye
kwenye Maswali na yote yanayoi
binga na wananchi wamandhika

Kufungo Mkutano

Mwananchi ndugu Constantine Boko
amefungo Mkutano mudi wa saa
10:05 hioni kwa kushuburu Serikali ya
awamu ya tano kwa kumatangeneza
baadhi hii


Constantine Boko
MWAJAZI YA KIJAMII
KIJUJUA NYABONGWE
BIRAMBA


Rubanyana
MWAJAZI YA KIJAMII
KIJUJUA NYABONGWE
BIRAMBA

MUHAFASARI WA MKUTANO WA WANANCHI WOTE KIJAZI CHA NIBAROMU
ULIOFANYIKA TARIFE 16/08/2018. KATA YA NYAKATHUDA.

Ajenda:

1. Kufungua mkutano.
2. Utambulisho wote.
3. Tawifa juu ya mkopo wa masharti nafuu kutoka banki ya Dunia ili kutengeneza barabara ya kutoka Lusubungu hadi Rusumo.
4. Kufunga mkutano.

Ufafanuzi

1. Kufungua mkutano.

Mkutano umefunguliwa onyiza ya saa 9:20 Alasiri na ndugu Aysub Bilal ingana mwenyekiti wa Kitung'ochi cha Mzani kwa vidua ya M'kiti wa kijiji ambaye hakuwazi kuhudhuria mkutano huu kutoka na utawala.

2. Utambulisho wote.

Utambulisho umefanyika kwa viongozi waliokuwepo pamoja na magari tuka TANROADS ambao wanandi kila pamoja.

3. Tawifa juu ya Mkopo wenye masharti nafuu kutoka banki ya Dunia ili kujenga barabara kutoka Lusubungu hadi Rusumo.

Ndugu Kimilio amueleza mkutano kwa sarakali inepata mkopo kutoka banki ya dunia ambao utasaidia kwenye yawa wa barabara ya kutoka Lusubungu hadi Rusumo hivyo akasema katokana na hilo banki ya dunia inahitaji uderikidhaji wa wananchi ili kutua mkopo huo. Pili huyo amueleza athari mbalimbali kama vumbi, anganyo ipa usumu, akaiji mbalimbali na zingine njoo hivyo akieleza kuamba wote marano wanokuya kando wa wanchi ili kutua ushirikiano pale mkandawisi atakopo kwa anganyo afuate madhiti angopasa na pale mkandawisi atakuka juu itoe tawifa mbali na hilo mkandawisi atatakiwa kuiba madhiti pale angopasa kutoka kifasi na atatakiwa kurabi shi na hilo pale cha kipaumili.

Kimilio amueleza kuandaa wanandi juu ya kujitenga na ajali anganyo ya kuambuka na kuamba watafan elim madhiti na kila wanchi nafuu, kama leo kutia mkutano ya wanandi wote ili kupata kufuata juu ya madhiti na fika juu ya kuamba hii.

Amwafika uliundia kula ba barabara inayotarajiwa kujungwa ni ya kintafu ambayo itakuwa na upanuzi wa mita saba, mita mbili kila upande kwa watambaa kwa miguu mita nne na ungu wa akasha akanachanvi wak watakapata fidia waithamisi zila fatha visuvi ili baadhi lisive katika kuganga barabara hi.

Baada ya udy kimali's kumaliza kwanza wanaambi uliati anaka vibinoo kwanza kama ipotezo

Udy WAZIRI KIMBOLE, kumaliza pindiyo yatafanyika katika siku 225 na na kwa upande ya kwanza unachapata hesabu kwa kutandaka mawazo yaliyo desi ili kuyitatie kipato? na uliyo Mungu ambaye unachali unachali 'kivomo lili fidia' itatolewa. ni jibu yamotokani na udy kimali's kwanza, pindiyo yafilia kuyafanyika ni kina' itika na kuhusu fidia ya mita 225 kama upande itakuwa inasidi upande wa mbote hipo fidia italiyua kwa upande uzima hipo darujia na pale fidia ikitolewa kabana atakayelima au kutadolewa kwa hiku baada ya malipo ya fidia na au uthamini ali ofanyika kupo upande uthamini na kintafu zake itakawepo hipo akavambaa wanao wachofanyika uthamini kuendelea kumaliza na wachofanyika wachotolewa jayoto. Akiondoka kijibu udy kimali's ameleza kwanza zoezi la uthamini zitajuzwa fomu tatu ambazo zitakini na na uthamini na pale utakapokua yaliilika wawazi kwa mkungu wa utakapa orodha ya uthamini ya kila kila na ataji vidhika. na alipo nikambaa: kuka analitaji fomu la kushimba kifusi kuwa uthamini na kushamisi alapo kila mita nje ina uthamini ya kutaji upi na akabani wanao kuyitatie mudi uliropwa na katika zila fatha hizi upande pake ya kupanga upande kwa mizi mita kutijana na ghosha na panga katika kwa hukika. Baada ya mzungu wa ubalimbali au wachakani uliachi na kintafu ofani yane.

4. Kifupa: M/kiti anachoiridha Mkuu huu na kintafu wanao chi sefer yane.

Sinj ya M/kiti
 An: AMBU BICAHAGA

Kifupa
 Mkuu huu

HAIMBISHAURI YA WOI NGAZA:

OFISI YA MENDAJI,
KATA YA KASULO,
S.P.30
NGAZA
15/02/2012.

YAN: MUMBASAZI WA KUMHARIZIWA TARUJIUM YA UJENZI WA
KARABARA YA RUSAHUNGA - RUSOMA UJODHANIKA JAREHE
18/03/2012

Mata hapa juu ya busika na kuhitaca wa
Mkutano utofanyika tarehe 18/03/2012 katika kata ya Kasulo kiji
cha Ruakalemere katika mazingira ya Uwadja Vya RC BELIRA.
Kwa lengo la kuhamasisha jamii na kutoa taarifa za ujuzi
wa karabara ya Rusahunga - Rusoma kwa Kiwango cha
Tami.

Wako Kazini



Shampu M. Selestini

AFISA MENDAJI
KATA YA KASULO
NGAZA

95

MUHITARI WA MKUTANO WA KUHAMASISHA WAKOMCHI JUM YA UJENZI WA BARABARA YA LUSAHUNGA - RUSUMU ULIOFANYIKA KATIKA KATA YA KASULO KISILI CHA RWAKAPENIJA TAREHE 18/08/2015.

AGENDA ZA MKUTANO:

- (1) KUPUNGA MKUTANO
- (2) UTAMBULISHO
- (3) UJENZI WA BARABARA YA LUSAHUNGA - RUSUMU
- (4) KUPUNGA MKUTANO.

MUHIT/NA. 1/2015/2015 - KUPUNGA MKUTANO

Mkutano wa dhambi umefunguliwa na Mkazi wa kijiji mwanamata wa saa 9.57 Asubuhi aliwamwambia wawazali kuwa-watuliwa na wasikivu ili wawaze kusikiliza malengo ya wataamu waliopita kutia hamasa ya ujenzi wa barabara ya Myakakuro - Rusumo.

MUHIT/NA. 2/2015/2015 - UTAMBULISHO

Utambulisho umefanyika hasa kwa viwango kupewa nafasi ya kutaja majina yao na wawazali waliokufika katika Viwango vya mkutano kuwapa ng'ao mikono wageni/wataalamu na viwango zii wao pia.

MUHIT/NA. 3/2015/2015 - UJENZI WA BARABARA YA LUSAHUNGA - RUSUMU

Mwanayekiti wa kijiji amemkallikishia mtaalamu kueleza mada hiyo ambao amejitika katika kutia taarifa za Mazingira na kijamii hasa kwa namna jamii i takavyo mufaka na ujenzi huo wa barabara lakini pia alihari zake katika jamii kwa kuhusisha Malengo Maumili ambayo ni (1) Taarifa (2) kashirikishana

(1) TAARIFA

Taarifa iliyotolewa na mtaalamu niya ujuzi wa barabara ya Rasabungu. Rasumo kwa ufadhiri wa msoko kutoka bara ya dunia ujuzi wa barabara hiyo itakuwa ya kiwango cha rami, ameleza kuwa kabla ya kuanza ujuzi wa barabara hiyo kutakuwepo na zoezi la kukamisha matazi ambayo yatakuwa adani ya kiita 22.5 na kabla ya kukamishwa au kukamisha matazi yatafanyika malipo baada ya kufanya utkamishi na kuwasiliza wanaishi kwa barabara hiyo imetengewa kiasi cha shulungi tukuoni zwa mbili ambalini (240)

Baada ya kueleza juu ya ujuzi wa barabara hiyo pia ameleza athari zitakazo patikana wakati wa ujuzi na jina ya kukabiliana nazo ambazo ni:

- (i) Vumbi - wakati wa ujuzi huo wa barabara kutakawepo na vumbi itakayo katabishwa na Ufuu (Mikombo itakayo kuwa inatengeneza barabara katihiyo inaweza kusababisha magenyu kama Mafuu na kifuu kamuuwa.
- (ii) Athari ya kuingiza wakati wa ujuzi utohitaji wa utungo/changalawe za kuwika barabara hiyo itopika kwa esse bito kubaki na Mashimo.
- (iii) Uharifu/wizi, Ulepo wa idadi kubwa ya watu kufika au mbalimbali utasababisha makikio kama wizi kwa jamii na kwenye mradi husika.
- (iv) Ukimwi, Kati / mku kwa maeneo ya mradi kuanawea kuwepo na Maambuki ya ukimwi.

Mtaalamu huyo ameleza ujuzi utakazo fumi ka kuzwa athari za kama ifuatavyo.

- (i) Vumbi wakati wa utengerezi wa barabara hiyo mkaandaa atawambiwa kumwaga maji ili kuritia vumbi na kama ilitokea vumbi wanaishi watatakiwa kutoa taarifa kwa katika ofisi ya Mtaalamu au kwa Mtaambi mshauri.

- (v) Athari ya Mazingira - Utaakuwepo mpanzo wa kuchimba bila kasababisha mashimo.
- (vi) Uharifu Wananchi kaulimwa mradi na kuimwalisha ulenzi shirikishi kwani mradi huo niwajamii na unarendeshwa kupitia kodi zao wenyewe/kaodi za wananchi.
- (vii) Ukimwi - Aterkuwepo muhuri wakati wa utekele zaji wa mradi atakaye kuwa afai kumbusha jami lakini pia wananchi wameambiwa njia tatu za kujilanga, kuacha kujomiana kuwa na mpenzi mmoja Mwaminifu na kupania kzendemu ambazo zenyewe zitakuwa zinatokewa.
- (viii) Ajali watu/wananchi watatakiwa kama makini na kuto segelea maeneo yasiyo rahisima pita kapita.

Baada ya ktaalamu kueleza athari na njia ya kuzuia wakati wa utekeleaji wa Mradi huo wa ujenzi wa barabara amelea faida ambazo jami itapatwika nazo hasa jama ya Maeneo husika kama ifuatavyo.

- (i) Upatikaji wa njia zaidi ya kwa tatu 500.
- (ii) Kukua kwa biashara
- (iii) Kiorarishwa kwa ashirikiano na miji jirani wa Rwanda na Burundi
- (iv) Karaharishwa kwa usafiri/usafirishaji pindi barabara itakapo kuwa imetamulika.

Pia ameleza wananchi wako kumepo baadhi ya Mera ambazo hawo zinajitokeza wakati wa baada ya ukupaji/ ukamitishaji wa barabara kama ifuatavyo.

- (i) Kutojika utaratibu wakati wa kupata ardhi/ eneo la kuchulia udago, na maramu Mtaalamu amewadua wananchi kukakitisha eneo litakaro pendekezwa kucha kulia udago au Maramu Serikali ikijue pia tofikimizi ya gharama harizi juikane na baada ya matuoni au wakati wa matumizi litakuwa eneo la Serikali...

(ii) Uharibifu wa alama za barabara; Mtaalamu ame-
waleza wananchi kutaji kuisha na uharibifu wa alama
za barabara ambazo zinasakia kuonyesha hali ya
oja kwa njaa kama mlima au mtetemko ili
kuepusha ajali.

(iii) Watu walo fedha pemere kutumi a fedha kinyume
na Malongo Mtaalamu ameleza jamii hasa ile
itokayo thamini shwa kutoka katika eneo la mita 22.
Kutumi fedha kwa kazi maadumu na siyo sitorehe
kwani lengo la mradi siyo kwiacho jamii ito wa
Masitani au bila malazi.

(2) MASABILIANO

Katika kipengele hiki mtaalamu amewaruhusu wanao-
rubi kuuliza Maswali na kupata ufafanuzi zaidi ya Maloz
ya yote aliyeyozunguza na kamusaba M/Kiti kuingoza
majadiliano hayo.

MESWATI

(i) JADY ABRAZI, Ameleza wakati wa kushadilika ikitaka
nyumba iliyenye oje ya mita 30 za barabara ikupata ufa/kwa
shirika itakavyo?

Jibu itutokas/kubainika athari hiyo imesababishwa na
mradi nyumba itafanywa ukarabati.

(ii) ABUS ATHOMAN, Ameleza kwanini walisidaiwa ya kito
30 nao walilipwa?

Jibu, Watalipwa wale walio ndani ya kito 22.5 na Serikani
itaandaa mpango wa kulipa walisidaiwa ya kito 30 kwa
badala.

(iii) NEELE JAMU, Ameleza jangu 2013 uthamini ulifanyika
na sasa nyumba ulisha bozuka je wataathimini miu?

Jibu Taarifa za uthamini wa Mwarazi ripo kama nyumba
ilibomoka picha upo.

QV KIDASALA MPA. Anauliza Je Miondo mbinu ya Maja
iliyoko ndani ya kuta 22.5 itakuaje?

Sibu Miondo mbinu itahamishwa kwa gharama 25. Mvuti
utakaotekeleza.

Q5 Abdour Mwandiki Anauliza Mita 22.5 inapowika
nyumba ya mkuu ina alama ya kijani na nyelundu italawa
je katika Malipo? Bando ya: Kaffurini nyumba italipwa

MUHT/NA/4/2018/2019 - KUFUNGA MUKUTANO

Mkutano umefanywa na MUKITI ndugu R. P. ATION KANJA,
Mnamo mchana wa saa 6:10 Mchana kwa kuanasukuma wakadai
kwa maetokezo yao Muzuri na kumalaka wawachai
kufuata yale yote xalizo zungumwa na kujiandaa na kuyipokea
Mvuti huo pindi utakapo anza.

SANI NA MURURI NA
MUKITI WA KIJAZI



BALANTIN ULESIA KUMUNDA


MUKITI WA
KWA KALEMERA
Box 50-NIARA.

HALMASHAURI YA WILAYA YA BIHARAMULO:

AFISA MTENDASI WA KISI, KISI CHA KIOMA,
S.L.P. 70,
BIHARAMULO

MENEJA WA TANABDI
MUDA WA KAUERA
S.L.P. 2.
BIKUBA.

TAR. 15/08/2018.

YAH: KUKUTUMIA MHITASARI WA MUGANO
WADHARUA ULIOFANYIKA TAR. 15/08/2018
KATIKA KISI CHA KIOMA:

Husius na soma tija hapa juu rapanti.
Kukutumia mhitarari wa Mugano wa dhambi ulio-
fanyika tarehe 15/08/2018. katika kiji hiki cho Kioma.
Kwa lengo la kuelimisha wamachi. juu ya
Ujemei wa barabara kuu. ya kutoka. Ukatimiza hali
Kusuma kuu kfuwaga cho Rami.

Naomba Uupokee

Ndani

BAKARI SENZIGIE
AFISA MTENDASI WA KISI
KISI CHA KIOMA
HALMASHAURI YA WILAYA
BIHARAMULO

MHITACAPI WA MUKUTANO WA DEMOKRASI KUSI CHA KUMBA ULIOFANYIKA
TARIFE 15/01/2018 KUPITIWA UTEMBELEZI WA BARABARA KUU

JEHEMU YA II: AGENDA:

- AGENDA N°(1) - KUFUNGA MUKUTANO
- 2) KUTAMBULISHANA
 - 3) UJENZI WA BARABARA KUU YA LISAHUNGA MPAKA - BUSUMU
 - 4) KUFUNGA MUKUTANO.

AGENDA N°(1)/2018. KUFUNGA MUKUTANO.

M/koti wa Spikiji Cha Kuumu Bw. -
Buyiro - Mnyenzi alifunga Mukutano
huo Mnamo mudi wa saa 10:30 Jioni
Kwa kuwamba wananchi - wawe hure
kuchangia hoja na Utevu mzuri.

AGENDA N°(2)/2018. KUTAMBULISHANA:

Katika Agenda hii, Afisa mteadji wa-
kiji naf: Bwana - Sionze Afisa shuburu
wananchi kwa miteko na mahudhuro
ambapo alivaa kuwambuliwa Wageni
wa kutoka Mapas Makus - Darasalam
na wageni kutoka Mkoani, kuwambuliwa
wananchi wawe hure kwa sifa za
kuwamba Mkoani - Jua ya kuwambuliwa
wa kutongana barabara ya Lisahunga kutoka
kwa kuwamba Cha Kumi -

AGENDA

NE 8/2018: VIJENZI WA BARABARA KUU

KUTOKA LLUHAMUNGA HADI KUSOMA KIWANZO WA AWI

Ajisi mtandaji wa kijiji ambaye ndiye katibu wa mkutano huu. alawazi kuanzishwa- wageni kutoka TANZANIA - wawazi. Kim kuhitika na wageni wa TANZANIA- Mama Mawusi (DSS) Kuanza kuanzishwa wawazi - juu ya utengenezaji wa barabara hiyo.

Na

baada ya utengenezaji huo, wakazi wa kila hiyo walika ufafanuzi kuu wawazi- kuu. Ujenzi utoboa panyiko ni wa kwanza cha Rami, Ambapo Rami (katiba) iliyopo na irayo endelea kutumika mpaka Sasi- Imechamwa kwa muda wa miaka - zaidi ya 30. Ambapo kwa kawaida iliyopo ilikwa miaka 20 ishirini tu.

Pamoja

na hayo, wakendeleo kutoa muelokozo juu ya faida zitekozo pamoja kutoka utengenezaji wa barabara hiyo kwa ni pamoja na Jamii kufaidika na fida kwa mwanachama kutoka na barabara - mita 22½ kila upande wa barabara, Lakoni pia- kutokana na juu ya Ajira kwa vijenzi Ambapo kwa kama cha chini ilikuwa 12000- kwa siku na zaidi ya nafasi za ajira 300. zitekozo ilikuwa ni pamoja ni- kufupuzwa ajari za barabara pindi Ujenzi wa barabara hiyo ulitapoa kamilika.

Mashtu nyumba ahweleza wananchi kuwa
wanapaswa kutuza mumbambini na kutoingia
kuwa kuhizi wa maha hizi ili zimere kutuza
kama chingolengwa na sio kufanya uhasbifu
na kuleta hasara kwa serikali. Vile vile kuwa
makini na wageni wawakujia ili kupaikano
na maambukizi ya magongoro.

3. Kupiga

Mkiti alifika kutia majira ya 8-11 mchana
na kuwichelewa wote walioundwa kila
hali na kuwichelewa sifa ni njia.

Afisa

VFO - Lusaka

AFISA MTELEMU-KINJ
KIJILI CHA MIAJIRA
MAMASHAURI YA MATA
BIMBAMULO

DANAS BUKONO

[Signature]
MAMASHAURI YA KIJILI
CHA LUSAKA
BIMBAMULO

Mkiti Kijiji

UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAHUNGA – RUSUMO ROAD IN KAGERA REGION

DATE: 14/05/2014

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	KALIMOLA KASIMBAZI	Biharamuko	Ag. DED	0784189165	[Signature]
2.	Joseph MASHUKA LUNDURUKU	Biharamuko	Council Member	0755402460	[Signature]
3.	AELIA KAGAMOTO	Biharamuko	Ag. DED	0784189165	[Signature]
4.	MURAHUS KAGAMOTO	Biharamuko	A.O	0787522983	[Signature]
5.	BRUNO NGAWA SALA	Biharamuko	Ag. DAICO	0762093830	[Signature]
6.	MURAHUS KAGAMOTO	—	Ag. DED	0787522983	[Signature]
7.	Zakaria J. J. J.	—	Ag. DED	0744272415	[Signature]
8.	Blasdale J. J. J.	—	Ag. DED	0787779331	[Signature]
9.	Amos NYAMUCIJA	—	Ag. DED	0787522983	[Signature]
10.	MURAHUS KAGAMOTO	—	Ag. DED	0787522983	[Signature]
11.	Alia KAGAMOTO	—	Ag. DED	0787522983	[Signature]
12.	Joseph MASHUKA LUNDURUKU	—	Ag. DED	0755402460	[Signature]
13.	MICHAEL F. MUKI	Biharamuko	Ag. DED	0752431183	[Signature]
14.	IMMANU G. KIBONA	—	Ag. DED	0786279030	[Signature]
15.					
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Updating of Environmental and Social Impact Assessment for Rehabilitation of Cusheya - Rusumo Road

UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAHUNGA - RUSUMO ROAD IN KAGERA REGION
 DATE: 15/08/2018

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	SANDA MALLUNDE	BITARAMBO DC	DC	0787287620	
2.					
3.					
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Updating of Environmental and Social Impact Assessment for Rehabilitation of Cusheya - Rusumo Road

UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAHUNGA - RUSUMO ROAD IN KAGERA REGION
 DATE: 17/08/2018

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	WILHELM KIRALLI MUKENZU	MURAMBA DISTRICT	DC	+157476676	
2.	Anders J. Eriksson	MURAMBA DC	Def	2307219926	
3.	KEINYESHA ANZUMET	NYARUGU DC	Legal officer	0783833110	
4.	WILHELM J. MUKENZU	NYARUGU DC	NSIC	0750716111	
5.	COENENS RUKAMBWA	NYARUGU DC	Legal officer	07857742667	
6.	CHRISTIAN DE LAUNAY	NYARUGU DC	ag. DP	0787811121	
7.	ELIZABETHA W. MUKENZU	NYARUGU DC	CDP	066203008	
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UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAHUNGA - RUBUMU ROAD IN KAGERA REGION

DATE: 17/05/2018

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	Wilson E. Rukanyiraho	CHAMAKAZA	CEO	0762022501	Wilson
2.	COSENTINIA BUKAMBWE	CHAMAKAZA	NGUMBE	0757291071	COSENTINIA
3.	ERICK M. KURZA	CHAMAKAZA	NGUMBE	0762887006	ERICK
4.	AGIRO KAMWEKWE	CHAMAKAZA	NGUMBE		AGIRO
5.	DILIONOR MASCO	CHAMAKAZA	NGUMBE	0763351222	DILIONOR
6.	FOKOSI FRANK	CHAMAKAZA	NGUMBE	07452711815	FOKOSI
7.	SILASI AKAYOLO	MYAKOMURU	NGUMBE	0767318002	SILASI
8.	DAVIDE NISIA IMANISHI	CHAMAKAZA	NGUMBE		DAVIDE
9.	AGREZIA GRESIRE	CHAMAKAZA	NGUMBE		AGREZIA
10.	MACHU RAFIA NARIN	CHAMAKAZA	NGUMBE		MACHU
11.	MABARET RAMABWA	CHAMAKAZA	NGUMBE		MABARET
12.	WINIFREDA ISAKA	CHAMAKAZA	NGUMBE		WINIFREDA
13.	ENDYERETWA LAULAN	CHAMAKAZA	NGUMBE		ENDYERETWA
14.	ELIMU NETA ILIYIMU	CHAMAKAZA	NGUMBE		ELIMU
15.	BENEDICT KAPUBWA	CHAMAKAZA	NGUMBE		BENEDICT
16.	PAULINA GURUKUSU	CHAMAKAZA	NGUMBE	0756212222	PAULINA
17.	ATHANARY HADIMU	CHAMAKAZA	NGUMBE		ATHANARY
18.	DEJIBU ANASTHE	CHAMAKAZA	NGUMBE	0743662287	DEJIBU
19.	SEONKARU NIFIBU	CHAMAKAZA	NGUMBE		SEONKARU
20.	HENRINERU FESER	CHAMAKAZA	NGUMBE		HENRINERU
21.	AMOS CHARLES	CHAMAKAZA	NGUMBE	076222388	AMOS
22.	KAMULILE FRENK	CHAMAKAZA	NGUMBE	076355011	KAMULILE
23.	ARIALA ALOY	CHAMAKAZA	NGUMBE	075914625	ARIALA
24.	RUBAMBA WILIFAN	CHAMAKAZA	NGUMBE	074367804	RUBAMBA

UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAHUNGWA – RUSUMO ROAD IN KAGERA REGION

DATE: 16/01/2018

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	MATHELO I. MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
2.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
3.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
4.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
5.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
6.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
7.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
8.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
9.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
10.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
11.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
12.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
13.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
14.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
15.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
16.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
17.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
18.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
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20.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
21.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
22.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
23.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]
24.	FRANCIS MUKUNDA	KICUMBA	Mukungwa	0765757562	[Signature]

UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAMUNGA – RUSUMO ROAD IN KAGERA REGION

DATE: 11/01/2018

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	SHAMIRU B. SWEJ	MBARARAMBE	VICA	0767278231	[Signature]
2.	APLIMURU G. MUGENDU	-/-	200007	0767643730	[Signature]
3.	CHARLES J. B. TIBUNJA	-/-	MJUMBE	02627862322	[Signature]
4.	ZENON KUBUKOR	-/-	-/-	0253653080	[Signature]
5.	Solomon Sebela	-/-	-/-	0768760998	[Signature]
6.	DEBORA J. WAMUKAMU	-/-	-/-	-/-	[Signature]
7.	Walter Kambukanga	Agase	Mjumbwe	0755694721	[Signature]
8.	GEORGE MUKURUMU	KURUSE	MUKURUMU	0762615633	[Signature]
9.	KILIRIPI FUMU	KURUSE	MJUMBE	0762612720	[Signature]
10.	ZIMUNU HUSSEINI	MBARARAMBE	MUKURUMU	0768680853	[Signature]
11.	BYLWEST MATHIAS	MBARARAMBE	MUKURUMU	0736393636	[Signature]
12.	SHEWAN KASUMUKU	MBARARAMBE	MUKURUMU	-/-	[Signature]
13.	FELIZI ISA	MBARARAMBE	MUKURUMU	0753047879	[Signature]
14.	ALEX SITAS	MBARARAMBE	MUKURUMU	076664922	[Signature]
15.	LUCAS MUKURUMU	MBARARAMBE	-/-	036677991	[Signature]
16.	MARIA BULIKU	MBARARAMBE	-/-	-/-	[Signature]
17.	IMELDA TIBUNJA	MBARARAMBE	-/-	-/-	[Signature]
18.	ISA SAKUBU	MBARARAMBE	-/-	0758648700	[Signature]
19.	BARBARA KUNDU	MBARARAMBE	MUKURUMU	0767618198	[Signature]
20.	STEFANUS MUKURUMU	MBARARAMBE	MUKURUMU	076664922	[Signature]
21.	SOMITANI MUKURUMU	MBARARAMBE	MUKURUMU	076577991	[Signature]
22.	MARTIN MUKURUMU	MBARARAMBE	MUKURUMU	076577991	[Signature]
23.	SABINA IDA	MBARARAMBE	MUKURUMU	076577991	[Signature]
24.	RENEA ISA	MBARARAMBE	MUKURUMU	076463315	[Signature]

UPDATING OF ESI& AND RAP FOR REHABILITATION OF LUSAHUNGA - RUSUMO ROAD IN KAGERA REGION

DATE: 16/8/2018

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1	JOSUA MUKUNDA	ITU RUSUMU	MUKUNDA	0957446666	[Signature]
2	VEBASTIEN JOSEPH	RUGESE	MUKULIMA	0758130086	[Signature]
3	MUSABU HUGUES	MUKUNDA	MUKULIMA	0762-84368	[Signature]
4	MUSABU P. F. R.	RUGESE	MUKULIMA	0755669854	[Signature]
5	TEWA SIMON	MUKUNDA	MUKULIMA	0742378801	[Signature]
6	JOSUA MUKUNDA	MUKUNDA	MUKULIMA	0757446666	[Signature]
7	RODOLPH ATIAFAR	MUKUNDA	MUKULIMA	076745542	[Signature]
8	JANINA KIPOLILA	MUKUNDA	MUKULIMA		[Signature]
9	RODOLPH ATIAFAR	MUKUNDA	MUKULIMA		[Signature]
10	JOSUA MUKUNDA	MUKUNDA	MUKULIMA	076745542	[Signature]
11	JOSUA MUKUNDA	MUKUNDA	MUKULIMA	076745542	[Signature]
12	RODOLPH ATIAFAR	MUKUNDA	MUKULIMA	076745542	[Signature]
13	RODOLPH ATIAFAR	MUKUNDA	MUKULIMA	076745542	[Signature]
14	RODOLPH ATIAFAR	MUKUNDA	MUKULIMA	076745542	[Signature]
15	RODOLPH ATIAFAR	MUKUNDA	MUKULIMA	076745542	[Signature]
16	RODOLPH ATIAFAR	MUKUNDA	MUKULIMA	076745542	[Signature]
17	RODOLPH ATIAFAR	MUKUNDA	MUKULIMA	076745542	[Signature]
18	RODOLPH ATIAFAR	MUKUNDA	MUKULIMA	076745542	[Signature]
19	RODOLPH ATIAFAR	MUKUNDA	MUKULIMA	076745542	[Signature]
20	RODOLPH ATIAFAR	MUKUNDA	MUKULIMA	076745542	[Signature]
21	RODOLPH ATIAFAR	MUKUNDA	MUKULIMA	076745542	[Signature]
22	RODOLPH ATIAFAR	MUKUNDA	MUKULIMA	076745542	[Signature]
23	RODOLPH ATIAFAR	MUKUNDA	MUKULIMA	076745542	[Signature]
24	RODOLPH ATIAFAR	MUKUNDA	MUKULIMA	076745542	[Signature]

UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAHUNGA – RUSUMO ROAD IN KAGERA REGION

DATE: 16/11/2018

SN	NAME OF STAKEHOLDER	INSTITUTION/ENTITY	POSITION	CONTACT	SIGNATURE
1.	PHARES LUBUNGE	NGARARAMBE	MUKULUMA	0764355989	Phares
2.	LEONARD SYLVESTRE	NGARARAMBE	MUKULUMA	0759129882	Leonard
3.	SACOB MATIRO	MILONGORA	MUKULUMA	0752826588	Sacob
4.	ANTHONY DANDU	NGARARAMBE	General	0766613994	Anthony
5.	JORAN KIRINKU	Rukesi	MUKULUMA	0767760816	Joran
6.	ERIC MUYIRABA	NGARARAMBE	MUKULUMA	0752866793	Eric
7.	FICUS EMMANUEL	Rukesi	General	075432005	F.E.
8.	MHAMBER. ISH	NGARARAMBE	MUKULUMA	0766258713	M. Ish
9.	MUKURUTU. NABUNZU	NGARARAMBE	-/-	0758531992	M. Mukuru
10.	VEHASTI. KUNYAKURU	NGARARAMBE	-/-		M. Kunyakuru
11.	ARUBA. AMUS	NGARARAMBE	-/-		A. Amus
12.	ALEX. DAGO	NGARARAMBE	-/-	0758272343	A. Dago
13.	BASE. ZISABA	NGARARAMBE	-/-		B. Zisaba
14.	DAISON. MATIHO	RUKESI	-/-	0765958933	D. Matoho
15.	LEKUBA. MUYIRABA	NGARARAMBE	-/-	0753395092	L. Muiyiraba
16.	SCHEBBA. ISH	NGARARAMBE	-/-	0689791457	S. Ish
17.	ISHU. CHAND	RUKESI	-/-		I. Chand
18.	ISABE. MATIHO	NGARARAMBE	-/-		I. Matoho
19.	MALAYA. MATIHO	MUKULUMA	-/-	078281174	M. Matoho
20.	VIN. ACE. YALUNGO	NGARARAMBE	-/-		V. Yalungu
21.	SALWAN. HASSAN	NGARARAMBE	-/-		S. Hassan
22.	KAHESI. KUNYAKURU	NGARARAMBE	-/-		K. Kunyakuru
23.	IRUKUBA. LUKURU	NGARARAMBE	-/-	0912787374	I. Lukuru
24.	LEONARD. RUKESI	NGARARAMBE	-/-	0753619024	L. Rukesi

UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSUHUNGA - RUSUMO ROAD IN KAGERA REGION

DATE: 17/03/2018

SN	NAME OF STAKEHOLDER	INSTITUTION/VEHICLE	POSITION	CONTACT	SIGNATURE
1.	KYUBU BILAKIYAMA	Nyirakumbi	Militaire	078 288 7282	[Signature]
2.	SERGEANT M. MUKAMANA	Nyirakumbi	Militaire		[Signature]
3.	ELIAS KARIKURU	Nyirakumbi	Militaire	078 746 65 385	[Signature]
4.	KOLONEL Y. SIKUMANO	Nyirakumbi	Militaire	076 494 106	[Signature]
5.	ISSA WA SIVIRUGU	Nyirakumbi	Militaire	078 24 28 2 59	[Signature]
6.	SAJJI A. KAPYORO	Nyirakumbi	Militaire	076 23 18 2 08	[Signature]
7.	FRANCOIS N. UWASE	Nyirakumbi	Militaire	078 66 14 35 82	[Signature]
8.	MAGAJALWA ISSA	Nyirakumbi	Militaire	078 28 56 5 85	[Signature]
9.	FRANCOIS UWASE	Nyirakumbi	Militaire	078 28 56 7 22	[Signature]
10.					
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Updating of Environmental and Social Impact Assessment for Rehabilitation of Lubahunga - Rusumo Road
UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUBAHUNGA - RUSUMO ROAD IN KAGERA REGION

DATE:

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	LEBERANTOZI ANNE	Rukoma	Mukuruha	0752717358	
2.	COFINCO KENYESA	Kigoma	-		
3.	BIANA JANA	-	-	0743823000	
4.	HELL MARYAM	-	-		
5.	EZEKIEL ELIZER	-	-		
6.	GIYAGAL YUMA	-	-		
7.	NESTOR FALA	-	-		
8.	OSWADI EYADI	-	-		
9.	SABOOK SIMONITUMA	-	-	0746320376	
10.	SAMUNYIMU WAFULU	-	-	0744903656	
11.	MUSA M. ISHAKA	-	-	0752562208	
12.	OSLADYIMU EYADU	-	-		
13.	IKENABUYI SHUMBA	-	-	079418117	
14.	TEATR JACOB	-	-	075381724	
15.	BIDDE GILIBUBUKU	-	-		
16.	EMMAYI MAX	-	-	074059100	
17.	SIKANGIRI MAX	-	-		
18.	JABOBI GILIBUBUKU	-	-	0768804544	
19.	ADILI EMMAYI	-	-	0743566000	
20.	ELABUKA ISHAKA	-	-	076287100	
21.	TOLARI MUYAKA	-	-	075738438	
22.	MURINA APOSTOL	-	-	0747810000	
23.	NGALIBUKU YAKA	-	-		
24.	SIZWA MUYAKA	-	-	0745788200	

Updating of ESIA and RAP for Rehabilitation of Lusuhunga - Rubumo Road in Magera Region

DATE: 15/08/2018

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	BEATRICE NYOKOLA	KWANA MUKUNA	MUSUMBECHU	015 214 8772	
2.	MADACABA JEROME	Kwama	musumbechu	0763 938 266	
3.	FRANCIS K. KUPU BOP			0763 938 266	
4.	ANNE ZANZIBA	MUSUMBECHU	MUSUMBECHU		
5.	LUISIANA ALINA	MUSUMBECHU	MUSUMBECHU	0763 938 266	
6.	ROBERTO FIMS	MUSUMBECHU	MUSUMBECHU		
7.	MUSUMBECHU	MUSUMBECHU	MUSUMBECHU		
8.	JOYLA ELIAS	MUSUMBECHU	MUSUMBECHU		
9.	THOMAS JELIEN	MUSUMBECHU	MUSUMBECHU		
10.	ROBERT JOSEPH	MUSUMBECHU	MUSUMBECHU		
11.	FRANCIS BOP	MUSUMBECHU	MUSUMBECHU		
12.	ELIAS MUCHEMI	MUSUMBECHU	MUSUMBECHU		
13.	MUSUMBECHU	MUSUMBECHU	MUSUMBECHU		
14.	MUSUMBECHU	MUSUMBECHU	MUSUMBECHU		
15.	MUSUMBECHU	MUSUMBECHU	MUSUMBECHU		
16.	MUSUMBECHU	MUSUMBECHU	MUSUMBECHU		
17.	MUSUMBECHU	MUSUMBECHU	MUSUMBECHU		
18.	MUSUMBECHU	MUSUMBECHU	MUSUMBECHU		
19.	MUSUMBECHU	MUSUMBECHU	MUSUMBECHU		
20.	MUSUMBECHU	MUSUMBECHU	MUSUMBECHU		
21.	MUSUMBECHU	MUSUMBECHU	MUSUMBECHU		
22.	MUSUMBECHU	MUSUMBECHU	MUSUMBECHU		
23.	MUSUMBECHU	MUSUMBECHU	MUSUMBECHU		
24.	MUSUMBECHU	MUSUMBECHU	MUSUMBECHU		

Updating of Environmental and Social Impact Assessment for Rehabilitation of Lusuhunga - Ruisungu Road in Kagera Region

DATE: 13/12/2018

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	MUDA HUKUWA	KIKOMA	MANAGER	076342446	[Signature]
2.	MURAGA	KIKOMA	MANAGER	076961000	[Signature]
3.	MURAGI	KIKOMA	MANAGER	075444444	[Signature]
4.	MURAGI	KIKOMA	MANAGER	---	[Signature]
5.	MURAGI	KIKOMA	MANAGER	---	[Signature]
6.	MURAGI	KIKOMA	MANAGER	---	[Signature]
7.	MURAGI	KIKOMA	MANAGER	0759333	[Signature]
8.	MURAGI	KIKOMA	MANAGER	0753333	[Signature]
9.	MURAGI	KIKOMA	MANAGER	---	[Signature]
10.	MURAGI	KIKOMA	MANAGER	---	[Signature]
11.	MURAGI	KIKOMA	MANAGER	---	[Signature]
12.	MURAGI	KIKOMA	MANAGER	---	[Signature]
13.	MURAGI	KIKOMA	MANAGER	---	[Signature]
14.	MURAGI	KIKOMA	MANAGER	0764444	[Signature]
15.	MURAGI	KIKOMA	MANAGER	---	[Signature]
16.	MURAGI	KIKOMA	MANAGER	---	[Signature]
17.	MURAGI	KIKOMA	MANAGER	---	[Signature]
18.	MURAGI	KIKOMA	MANAGER	---	[Signature]
19.	MURAGI	KIKOMA	MANAGER	---	[Signature]
20.	MURAGI	KIKOMA	MANAGER	---	[Signature]
21.	MURAGI	KIKOMA	MANAGER	---	[Signature]
22.	MURAGI	KIKOMA	MANAGER	---	[Signature]
23.	MURAGI	KIKOMA	MANAGER	074453333	[Signature]
24.	MURAGI	KIKOMA	MANAGER	---	[Signature]

Updating of Environmental and Social Impact Assessment for Rehabilitation of Lusuhunga - Rusumo Road in Kagera Region

DATE: 11/07/2024

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.					
2.	BARABO SENGIRI	KIKOMA	Ven	0749-082548	[Signature]
3.	Agatha Nwaha	Kwana	Kwana/Kwama	0769319000	[Signature]
4.	SERES TUBAGISIMWE	KIKOMA	MURURUKAZI	0711391670	[Signature]
5.	AJAHU M. MURURUKAZI	KIKOMA	MURURUKAZI	0764462823	[Signature]
6.	SAMSON L. MURURUKAZI	KIKOMA	MURURUKAZI	0768318030	[Signature]
7.	SEBESTIEN MURURUKAZI	KIKOMA	MURURUKAZI	0769060972	[Signature]
8.	LEONARDINA SHALU	KIKOMA	MURURUKAZI	-	[Signature]
9.	YVONNE - GEORGE	KIKOMA	MURURUKAZI	-	[Signature]
10.	DAVIDSON FDALYE	KIKOMA	MURURUKAZI	076793224	[Signature]
11.	BAGHURU ZIPP	KIKOMA	MURURUKAZI	-	[Signature]
12.	ESTER PETERA	KIKOMA	MURURUKAZI	076910286	[Signature]
13.	MARICA FRANCIS	KIKOMA	MURURUKAZI	-	[Signature]
14.	SARLIER SONI	KIKOMA	MURURUKAZI	-	[Signature]
15.	SESTREDA DOMINGO	KIKOMA	MURURUKAZI	-	[Signature]
16.	DOMINIC BIRIBIR	KIKOMA	MURURUKAZI	075758202	[Signature]
17.	FRUZI - SHIRBY	KIKOMA	MURURUKAZI	070210297	[Signature]
18.	ZABOZI - ATERAMU	KIKOMA	MURURUKAZI	-	[Signature]
19.	EDWIN ABULIYA	KIKOMA	MURURUKAZI	075565388	[Signature]
20.	FRANCIS GILET	KIKOMA	MURURUKAZI	075282574	[Signature]
21.	PANGIRAY ZIBIRO	KIKOMA	MURURUKAZI	-	[Signature]
22.	FRANCIS MURURUKAZI	KIKOMA	MURURUKAZI	076628024	[Signature]
23.	DETHE ZILIMUNZI	KIKOMA	MURURUKAZI	0763901168	[Signature]
24.	MURURUKAZI MURURUKAZI	KIKOMA	MURURUKAZI	-	[Signature]

UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSHUNGA - RUSUMO ROAD IN KAGERA REGION

DATE: 15/03/2018

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	ANCO Kigama	Kigama	Munyizi		[Signature]
2.	Bembas Bembas	Kigama	Munyizi		[Signature]
3.	Mwamba Bembas	Kigama	Munyizi	0744181490	[Signature]
4.	Kwaga Bembas	Kigama	Munyizi		[Signature]
5.	Nyamba Bembas	Kigama	Munyizi		[Signature]
6.	K. Nyamba Bembas	Kigama	Munyizi		[Signature]
7.	Samba Bembas	Kigama	Munyizi	0769119952	[Signature]
8.	Mwamba Bembas	Kigama	Munyizi	076722969	[Signature]
9.	Mwamba Bembas	Kigama	Munyizi	0902015991	[Signature]
10.	Mwamba Bembas	Kigama	Munyizi	0902015991	[Signature]
11.	Mwamba Bembas	Kigama	Munyizi		[Signature]
12.	Mwamba Bembas	Kigama	Munyizi		[Signature]
13.	Mwamba Bembas	Kigama	Munyizi		[Signature]
14.	Mwamba Bembas	Kigama	Munyizi	075267132	[Signature]
15.	Mwamba Bembas	Kigama	Munyizi	075267132	[Signature]
16.	Mwamba Bembas	Kigama	Munyizi	075267132	[Signature]
17.	Mwamba Bembas	Kigama	Munyizi	075267132	[Signature]
18.	Mwamba Bembas	Kigama	Munyizi	075267132	[Signature]
19.	Mwamba Bembas	Kigama	Munyizi		[Signature]
20.	Mwamba Bembas	Kigama	Munyizi	0765222244	[Signature]
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UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSHUNGA - RUSUMO ROAD IN KAGERA REGION

DATE: _____

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	Mwamba Bembas	Busisi	Munyizi		[Signature]
2.	Mwamba Bembas	Busisi	Munyizi		[Signature]
3.	Mwamba Bembas	Busisi	Munyizi	075349866	[Signature]
4.	Mwamba Bembas	Busisi	Munyizi		[Signature]
5.	Mwamba Bembas	Busisi	Munyizi	0765799181	[Signature]
6.	Mwamba Bembas	Busisi	Munyizi		[Signature]
7.	Mwamba Bembas	Busisi	Munyizi	0765799181	[Signature]
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UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAHUNGA – RUSUMO ROAD IN KAGERA REGION

DATE:

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	Yusef Zuhairi	BUSILI	M/Kigoma	076607002	Yusef
2.	SALAL MURHIM	BUSILI	Muramba	076443279	Salal
3.	Dennis Sam	BUSILI	Muramba	076203672	Dennis
4.	Lucas Kibho	BUSILI	Muramba	076203672	Lucas
5.	Amir - Subandono	BUSILI	Muramba	076203672	Amir
6.	MURAHIMU MURAHIMU	BUSILI	Muramba	076203672	Murahi
7.	Edoardo Mufaro	-	-	076502232	
8.	Yusef Zuhairi	-	-		M/Kigoma
9.	MURAHIMU MURAHIMU	-	-		M/Kigoma
10.	Yusef Zuhairi	-	-		M/Kigoma
11.	MURAHIMU MURAHIMU	-	-	076502232	M/Kigoma
12.	OSCAR MURAHIMU	BUSILI	Muramba	076203672	Oscar
13.	Dennis Sam	-	-	076203672	Dennis
14.	Joseline MURAHIMU	BUSILI	Muramba	076203672	Joseline
15.	James MURAHIMU	-	-		James
16.	Joseline MURAHIMU	-	-		Charles
17.	Amir MURAHIMU	-	-		Dennis
18.	MURAHIMU MURAHIMU	-	-		Benjamin
19.	Simoni G. MURAHIMU	-	-		Guillaume
20.	Medina MURAHIMU	-	-		Murahi
21.	Yusef MURAHIMU	-	-		Murahi
22.	Salal MURAHIMU	-	-		Paulo
23.	MURAHIMU MURAHIMU	-	-		Yusef
24.	MURAHIMU MURAHIMU	-	-	076203672	Murahi

UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAHUNGA – RUSUMO ROAD IN KAGERA REGION

DATE: 16/08/2018

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	MURAHIMU MURAHIMU	BUSILI	Muramba	076203672	Murahi
2.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
3.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
4.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
5.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
6.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
7.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
8.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
9.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
10.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
11.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
12.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
13.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
14.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
15.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
16.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
17.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
18.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
19.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
20.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
21.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
22.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
23.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef
24.	Yusef Zuhairi	BUSILI	Muramba	076607002	Yusef

UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAHUNGA – RUSUMO ROAD IN KAGERA REGION

DATE: 16/08/2018

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	Juwak Kurihira	BUSILE	Chairman	0745220475	[Signature]
2.	Omar Ruzumani	BUSILE	MEM	07422301	[Signature]
3.	José Wanyu	BUSILE	Secretary	074718415	[Signature]
4.	SILAJI A KAPYOH	BUSILE	WFO	076288006	[Signature]
5.	HARAJA MUKISHI	BUSILE	Director	0765923733	[Signature]
6.	FAWISI JUMU	BUSILE	Director	075065224	[Signature]
7.	Hassan Ahmad	BUSILE	Director	076668241	[Signature]
8.	Samiya Kaye	BUSILE	Director		[Signature]
9.	Yahima Kuyungu				[Signature]
10.	Kasham Kavutika				[Signature]
11.	Mwambi Mubumba			0753976610	[Signature]
12.	Mwambi Doko			076203019	[Signature]
13.	Fabian Muzungu			0761	[Signature]
14.	Fabian Muzungu			070020888	[Signature]
15.	James Muzungu			0745199020	[Signature]
16.	Lemadi Muzungu				[Signature]
17.	Lungu Muzungu			074500760	[Signature]
18.	Lungu Muzungu			068251009	[Signature]
19.	George Muzungu				[Signature]
20.	Mwambi Muzungu				[Signature]
21.	Peter Muzungu			078560276	[Signature]
22.	Peter Muzungu				[Signature]
23.	Peter Muzungu			068045160	[Signature]
24.	Shukurwa Muzungu			0745220475	[Signature]

UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAHUNGA – RUSUMO ROAD IN KAGERA REGION

DATE: 16/08/2018

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	Mwambi Muzungu	LUSAHUNGA	MEMBER	075222204	[Signature]
2.	Vitalo B. Muzungu	LUSAHUNGA	MEMBER	076502264	[Signature]
3.	FAWISI JUMU	LUSAHUNGA	MEMBER	07499582	[Signature]
4.	Omar Ruzumani	LUSAHUNGA	MEMBER	07422301	[Signature]
5.	AARON D. KASABA	LUSAHUNGA	MEMBER	0767591610	[Signature]
6.	NEEMA M. MUKISHI			075026008	[Signature]
7.	REZAID Muzungu			068251009	[Signature]
8.	Yahima Kuyungu				[Signature]
9.	Samiya Kaye				[Signature]
10.	ABUJ ABALAYI			0754814230	[Signature]
11.	Mwambi Muzungu				[Signature]
12.	Mwambi Muzungu				[Signature]
13.	Mwambi Muzungu				[Signature]
14.	BROWN STWARD			07422301	[Signature]
15.	Mwambi Muzungu			075026008	[Signature]
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UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAHUNGA – RUSUMO ROAD IN KAGERA REGION

DATE: 15/08/2018

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	DAMAT S. BAYORWE	LUSAHUNGA	MUKIJI WISI	0785 68 27 80	[Signature]
2.	MAZELIUS W. MICHAEL	LUSAHUNGA	MJUMBE	0682086685	[Signature]
3.	COPIREX THAMISA	LUSAHUNGA	MUKIJI WISI		[Signature]
4.	ANDREW AZAROHU	LUSAHUNGA	MJUMBE	0762 280000	[Signature]
5.	AMONI ISCA	LUSAHUNGA	MJUMBE	078 800 000	[Signature]
6.	JOSEPH KUBUKUYA	LUSAHUNGA	MJUMBE		[Signature]
7.	ANDREW CLEONICE	LUSAHUNGA		078558038	[Signature]
8.	FRANZ K. BALOH	LUSAHUNGA		0758 988 00	[Signature]
9.	TRYPRONG EDUARD	LUSAHUNGA		0785 65000	[Signature]
10.	STEPHEN MUGABO	LUSAHUNGA			[Signature]
11.	EDISON K. ANTONIO	LUSAHUNGA		0782 79 70 18	[Signature]
12.	JOEL JACOB	LUSAHUNGA	11-11	0782 98008	[Signature]
13.	ELIA MURHANI	LUSAHUNGA	1-1		[Signature]
14.	ALIAS MURHANI	LUSAHUNGA	11-11	069294686	[Signature]
15.	SUKULANI KOBIRIK	LUSAHUNGA	11-11	0761 76 98	[Signature]
16.	JOAS UZATI	LUSAHUNGA	11-11	0780 903098	[Signature]
17.	JOSEPH JOSEPH	LUSAHUNGA	11-11	075310555	[Signature]
18.	DAUDI JIJINA	LUSAHUNGA	11-11	075989345	[Signature]
19.	DAVID KAMUKA	LUSAHUNGA	MJUMBE	078 800 000	[Signature]
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UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAHUNGA – RUSUMO ROAD IN KAGERA REGION

DATE: 15/08/2018

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	CLEMENCE N. NABESE	BUKURWA	LUSAHUNGA	0780 23 8000	[Signature]
2.	ANDREW KAMUKA	MUKIJI WISI	LUSAHUNGA	078 800 000	[Signature]
3.	ANDREW KAMUKA	BUKURWA	LUSAHUNGA	Box 25 Bukurwa	[Signature]
4.	HARIZI ATUMANA	MUKIJI WISI	LUSAHUNGA	Box 35 Bukurwa	[Signature]
5.	CHARLES SUTHER	MUKIJI WISI	LUSAHUNGA	Box 35 Bukurwa	[Signature]
6.	SAMAM ALI	MUKIJI WISI	LUSAHUNGA	Box 35 Bukurwa	[Signature]
7.	ALEX PASTOR	MUKIJI WISI	LUSAHUNGA	Box 35 Bukurwa	[Signature]
8.	ABELIUM KAMUKA	MUKIJI WISI	LUSAHUNGA	Box 35 Bukurwa	[Signature]
9.	ADITA MUSSA	MUKIJI WISI	LUSAHUNGA	Box 35 Bukurwa	[Signature]
10.	DAVID BUNSI	MUKIJI WISI	LUSAHUNGA	Box 35 Bukurwa	[Signature]
11.	DAVID BUNSI	MUKIJI WISI	LUSAHUNGA	Box 35 Bukurwa	[Signature]
12.	MARION KAMUKA	MUKIJI WISI	LUSAHUNGA	Box 35 Bukurwa	[Signature]
13.	PATRICK RUPUKA	MUKIJI WISI	LUSAHUNGA	07 49 98 46 80	[Signature]
14.	PASKAZIA JIJINA	MUKIJI WISI	LUSAHUNGA	Box 35 Bukurwa	[Signature]
15.	MARGRETH KAMUKA	MUKIJI WISI	LUSAHUNGA	Box 35 Bukurwa	[Signature]
16.	JOSEPH KAMUKA	MUKIJI WISI	LUSAHUNGA	Box 35 Bukurwa	[Signature]
17.	MAGAMBA WITAKA	MUKIJI WISI	LUSAHUNGA	Box 35 Bukurwa	[Signature]
18.	MARGRETH KAMUKA	MUKIJI WISI	LUSAHUNGA	Box 35 Bukurwa	[Signature]
19.	EMILI KAMUKA	MUKIJI WISI	LUSAHUNGA	Box 35 Bukurwa	[Signature]
20.					
21.					
22.					
23.					
24.					

UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAHUNGA – RUSUMO ROAD IN KAGERA REGION

DATE:

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	RUKUTUHI JOSEPH	CHAMAKAZA	MJUMBE	0746507328	Rukutuhi
2.	GEORGE TANGI	CHAMAKAZA	MJUMBE		George
3.	SOLVATARY BELVASE	CHAMAKAZA	MJUMBE	0767926204	Solvatary
4.	WILSON CHISO	CHAMAKAZA	MJUMBE		Wilson
5.	ROBERT BUTHERE	CHAMAKAZA	MJUMBE	0767926204	Robert
6.	MJUMBE WENZELIS	CHAMAKAZA	MJUMBE	0767926204	Mjumba
7.	KASANA ALPHONSE	CHAMAKAZA	MJUMBE	0767926204	Kasana
8.	AUGUSTIN KARUMBA	CHAMAKAZA	MJUMBE		Augustin
9.	MALGREA MADALAS	CHAMAKAZA	MJUMBE	0767926204	Malgrea
10.	MENRICO TUPFENCE	CHAMAKAZA	MJUMBE	0767926204	Menrico
11.	DEMS ERICK	CHAMAKAZA	MJUMBE	0767926204	Dems
12.	CYPRIAN PETER	CHAMAKAZA	MJUMBE	0767926204	Cyprian
13.	MUSA SEMAKAZA	CHAMAKAZA	MJUMBE	0767926204	Musa
14.	GEORGE SIMO	CHAMAKAZA	MJUMBE		George
15.	TIBOSIGWA ELISHA	CHAMAKAZA	MJUMBE	0767926204	Tibosigwa
16.	DAVID PAUL	CHAMAKAZA	MJUMBE		D.P
17.	GEORGE JOSEPH	CHAMAKAZA	MJUMBE	0758676703	G.J
18.	NICHOLAS PAUL	CHAMAKAZA	MJUMBE		N.PAUL
19.	INNOCENT CLEOPHE	CHAMAKAZA	MJUMBE	0767926204	Innocent
20.	CHRISTIAN BENEDICT	CHAMAKAZA	MJUMBE	0767926204	Christian
21.	GEORGE NYAMUNDA	CHAMAKAZA	MJUMBE		George
22.	MARIZO JULIUS	CHAMAKAZA	MJUMBE	074670751	Marizo
23.	EMANUEL KIRA	CHAMAKAZA	MJUMBE	075336137	Emmanuel
24.	PETRO MURUNDU	CHAMAKAZA	MJUMBE		P.M

UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAHUNGA – RUSUMO ROAD IN KAGERA REGION

DATE:

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	EKASI TURANKA	NYABUGOMBE	MWANA KITI	0753745316	EKASI
2.	DAMUNDI MARCO	NYABUGOMBE	MJUMBE	0767926204	Damundi
3.	REBECCA CHALESI	NYABUGOMBE	MWANA KITI	0744366701	Rebecca
4.	ROSI JACKSON	NYABUGOMBE	MWANA KITI		R.J
5.	CHRISTINE WILLIAM	NYABUGOMBE	MWANA KITI	076467228	Christine
6.	CLEMENINA BENEDICT	NYABUGOMBE	MWANA KITI		C.B
7.	DAVID PAUL	NYABUGOMBE	MWANA KITI		D.P
8.	TIBOSIGWA ELISHA	NYABUGOMBE	MWANA KITI		Tibosigwa
9.	GEORGE JOSEPH	NYABUGOMBE	MWANA KITI	0758676703	G.J
10.	NICOLAS PAUL	NYABUGOMBE	MWANA KITI		N.PAUL
11.	AUGUSTIN KARUMBA	NYABUGOMBE	MWANA KITI		Augustin
12.	MUSA SEMAKAZA	NYABUGOMBE	MWANA KITI	075322971	Musa
13.	GEORGE SIMO	NYABUGOMBE	MWANA KITI		George
14.	FULIBI M.GABE	NYABUGOMBE	MWANA KITI	075363275	Fulibi
15.	MARIZO JULIUS	NYABUGOMBE	MWANA KITI	074670751	Marizo
16.	VERONICA NUNUNDA	NYABUGOMBE	MWANA KITI	0767926204	Veronica
17.	PAULO MADUMU	NYABUGOMBE	MWANA KITI	075762401	P.M
18.	STEPHANI BELIAS	NYABUGOMBE	MWANA KITI		Steph
19.	EMANUEL KIRA	NYABUGOMBE	MWANA KITI	075336137	Emmanuel
20.					
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UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAHUNGA – RUSUMO ROAD IN KAGERA REGION

DATE:

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	SALVATORY GELVAJE	NYABUGOMBE	MWANA KITU	076596515	[Signature]
2.	GODIFULENI JACQUE	NYABUGOMBE	MWANA KITU		[Signature]
3.	KOBECE ESTHERSEE	NYABUGOMBE	MWANA KITU	03671007441	[Signature]
4.	JARINDO JOHN	NYABUGOMBE	MWANA KITU	07556071660	J.J.
5.	RUKWITIRI JOSEPH	NYABUGOMBE	MWANA KITU	0746507228	[Signature]
6.	RUKWANGA ANINADE	NYABUGOMBE	MWANA KITU	0742638535	R.A.
7.	KAMPOLIRE FRANK	NYABUGOMBE	MWANA KITU	075315305	K.F.
8.	ABLOUCHEMANA NORSE	NYABUGOMBE	MWANA KITU	0757158915	A.A.
9.	ELENEZI FELEX	NYABUGOMBE	MWANA KITU		E.F.
10.	AMOS CHUKI	NYABUGOMBE	MWANA KITU	076622584	A.C.
11.	RENARD NYIBIZI	NYABUGOMBE	MWANA KITU		[Signature]
12.	SARIBU ANATHORI	NYABUGOMBE	MWANA KITU	0742866268	[Signature]
13.	ATHANARI ABITUALE	NYABUGOMBE	MWANA KITU		[Signature]
14.	PATRICIA CIRIACUS	NYABUGOMBE	MWANA KITU	075627608	[Signature]
15.	JOSEPH MUMEL	NYABUGOMBE	MWANA KITU	076690943	J.M.T.
16.	BENEDICTO KATEGUA	NYABUGOMBE	MWANA KITU		[Signature]
17.	GODIBEREITHA LAURIAN	NYABUGOMBE	MWANA KITU		G.L.
18.	ELIMINATHA MIFANE	NYABUGOMBE	MWANA KITU		E.M.
19.	MAGELETH RAMAZAN	NYABUGOMBE	MWANA KITU		M.A.
20.	MAMUKARA MAMBA	NYABUGOMBE	MWANA KITU		M.M.
21.	SITELIA GEORGE	NYABUGOMBE	MWANA KITU		A.G.
22.	WIMIFILIDA ISACK	NYABUGOMBE	MWANA KITU		W.F.
23.	GAUDESIEMANUEL	NYABUGOMBE	MWANA KITU		G.E.
24.	PEIRO KABWESWE	NYABUGOMBE	MWANA KITU		P.K.

UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAHUNGA – RUSUMO ROAD IN KAGERA REGION

DATE:

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	EMMANUEL DANIEL	NYABUGOMBE	KITU	076466673	[Signature]
2.	CHRISTOPHER ESTHER	NYABUGOMBE	MWANA KITU	076909609	[Signature]
3.	GEORGE NIMAZI	NYABUGOMBE	MWANA KITU	074270057	[Signature]
4.	JUDESI CHRISTIAN	NYABUGOMBE	MWANA KITU	0762723057	J.C.
5.	ALEX EPHRAIM	NYABUGOMBE	MWANA KITU	0962132073	[Signature]
6.	ARNOLD BLASIO	NYABUGOMBE	MWANA KITU	076300986	A.B.
7.	MWELINDA JACQUE	NYABUGOMBE	MWANA KITU		[Signature]
8.	DANIFORD ALVISE	NYABUGOMBE	MWANA KITU	076641960	[Signature]
9.	SADOK JAMES	NYABUGOMBE	MWANA KITU	075831010	[Signature]
10.	KHEMA EDERICK	NYABUGOMBE	MWANA KITU		[Signature]
11.	JONATHAN KUMILWA	NYABUGOMBE	MWANA KITU	075445224	[Signature]
12.	PETRO MBAZIBWA	NYABUGOMBE	MWANA KITU		[Signature]
13.	EZEKIEL DANFORD	NYABUGOMBE	-II-	076302756	[Signature]
14.	ELIA PAULO	NYABUGOMBE	-II-		[Signature]
15.	RICHARD JAMES	NYABUGOMBE	-II-	0760540732	[Signature]
16.	RUTURU KARISI	NYABUGOMBE	-II-	0742729709	[Signature]
17.	SABU SELEMAN	NYABUGOMBE	-II-	0752119125	[Signature]
18.	EMMANUEL ISACHAL	NYABUGOMBE	-II-	0762324409	[Signature]
19.	DEUS ERICK	NYABUGOMBE	MWANA KITU	0758497307	[Signature]
20.	REPETIDU ISBERCE	NYABUGOMBE	-II-	0700805732	[Signature]
21.	ECHIA SOEMBO	NYABUGOMBE	-II-	0757090790	[Signature]
22.	MALGEE RUSSELL	NYABUGOMBE	-II-	0763175164	[Signature]
23.	JOSEPH MAMBA	NYABUGOMBE	-II-		[Signature]
24.	MIGALE E VALER	NYABUGOMBE	-II-	074749090	[Signature]

Updating of Environmental and Social Impact Assessment for Rehabilitation of Lusahunga – Rusumo Road
 UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAHUNGA – RUSUMO ROAD IN KAGERA REGION
 DATE: 17/08/2018

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	JUANES KENEST	NYABUGOMBE	MUMBE		Juanes
2.	JUANES KENEST				J. L. KENEST
3.	JONIMIL MARIKO				Jonimil
4.	JUANES KENEST				J. L. KENEST
5.	THOMAS PAULIAN				Thomas
6.	GERARD SOBANSKY				Gerard
7.	MATHIEU MURICA				Mathieu
8.	RAULONDA MURICA				Raulonda
9.	JEN PAUL				J.P
10.	AUGUSTINA MURICA				Augustina
11.	LEONARDO MARIKO				Leonardo
12.	JULIES AMOS	Nyabugombe	MUMBE	0621810934	Julies
13.	GERARD SOBANSKY				Gerard
14.	GERARD SOBANSKY				Gerard
15.	REGINA IGNAS	NYABUGOMBE	MUMBE	0682320079	Regina
16.	EDINA THANA				Edina
17.	VERONICA JOSEPH				Veronica
18.	VERONICA KUDOVICK				Veronica
19.	JOVITHA MATHAYO			0789423112	Jovitha
20.	JUKAS AMOS			0621518934	Jukas
21.	William Gushumba				William
22.	KANTZINS MATHAY				Kantzins
23.	BARAKA DANY				Baraka
24.	RAULONDA AMANAS				Raulonda

Updating of Environmental and Social Impact Assessment for Rehabilitation of Lusahunga – Rusumo Road
 UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAHUNGA – RUSUMO ROAD IN KAGERA REGION
 DATE: 17/08/2018

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	LOSTINO BUSHAGA	NYABUGOMBE	MUMBE	0757294471	Lostino
2.	WILSON RUBANAMA	NYABUGOMBE	NEO	0762022601	Wilson
3.	SESEMAN KASIMU	NYABUGOMBE	MUMBE		Seleman
4.	STEPHANO KASIGORA			0756557207	Stephano
5.	JAFETY HENRICO			0765557837	Jafety
6.	JOSEPH M. CHACHA				Joseph
7.	KILIAN SOVAS			0743787105	Kilian
8.	KOLAMEL KAROL			0743200568	Kolamel
9.	COZANIN JOSEPH				Cozanin
10.	ERIKIMANA TIBEN				Erikimana
11.	MARCO BURR				Marco
12.	AMON AMON			062380319	Amon
13.	KEROLAND JOHN			0624134916	Keroland
14.	LEONARDO K. MURICA			0763410832	Leonardo
15.	SEBASTIAN				Sebastian
16.	GEORGINA LEORLA				Georgina
17.	HENA RIVINA				Hena
18.	EMIS INDOHNT				Emis
19.	ELISON SANGS			0628540810	Elison
20.	JOSEPH KADIBARO			0742303669	Joseph
21.	DANIEL BASTAN				Daniel
22.	DANIEL STEPHANO				Daniel
23.	ELIA BELENARDO			0743631261	Elia
24.	YUSTO STEPHANO				Yusto

UPDATING OF ESIA AND RAP FOR REHABILITATION OF LUSAHUNGA – RUSUMO ROAD IN KAGERA REGION

DATE: 17/08/2017

SN	NAME OF STAKEHOLDER	INSTITUTION/VENUE	POSITION	CONTACT	SIGNATURE
1.	ELIAS PANSIYA	NYATAIGOMBE	MUNICIPAL		
2.	JACQUES KABALWA	"	"	078570167	
3.	SAB A. KEBUNGU	"	"	065712853	
4.	THABO PETRO	"	"		
5.	PROFESSOR BATHAZANT	"	"		
6.	DSUARD ZEFURU	"	"		
7.	MARINUS DESPHOR	"	"		
8.	NARIZA JAPHETH	"	"		
9.	SWANA JONATHAN	"	"		
10.	LITHICA PAUL	"	"		
11.	ELIZABET AMANDA	"	"		
12.	AGNES BELINDA	"	"		
13.	PAUL MATHIAS	"	"		
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2022 Consultations

S/N	JINA	MAHALI	NAMBA YA SIMU	SAHIHI
1.	GRUPIN. M. Kamukha	Rusumo	0765359544	
2.	BIBIANO CLARET	Rusumo	0769760167	
3.	JOSEPH D. METER	Rusumo	0785703487	
4.	JOSEPH JOSEPH	Rusumo	0767451126	
5.	ISACK ELISHA	Rusumo	0755561874	
6.	DOMINIC JOHN	Rusumo	0752608133	
7.	JENUS NIKEDENAU	Rusumo	0762583378	
8.	AGNES SHIMWA	Rusumo	0658740022	
9.	SOPH KAIZA	RUSUMO	0787304615	
10.	HEMILIB SILAS	Rusumo	0754529933	
11.	EMILIA KASIMA	Rusumo	0766720059	
12.	AMANDIA OMERY	Rusumo	0762288725	
13.	IMANI SIMON	Rusumo	0758387377	
14.	KARA SITAL	Rusumo	0769-023657	
15.	JANUARY KATIZI	Rusumo	0759279231	
16.	ESTER KATUS LORRE	Rusumo	0688105214	
17.	LORRAINE KILIA	Rusumo	0769157635	
18.	ATODJI	RUSUMO	07673922	
19.	TRINA SPANSTON	Rusumo	- - -	
20.	WALTER KIMONYI	Rusumo	076559564	

MAHALI..... Rusumo
TAREHE..... 11/07/2022

STAKEHOLDERS' CONSULTATION FOR UPDATING ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT REPORT AND RESETTLEMENT ACTION PLAN FOR THE PROPOSED REHABILITATION OF LUSAHUNGA - RUSUMO ROAD PROJECT



MTENDAJI KIJIKI
CHA RUSUMO
NGARA

S/N	JINA	MAHALI	NAMBA YA SIMU	SAHIHI
1	GRUPIN M. Kamuhwa	Rusumo	0765359544	
2	BITANO CLARET	Rusumo	0769760167	
3	JOSEPH B. KIGICHO	Rusumo	0765707487	
4	JOSEPH JOSEPH	Rusumo	0767751126	
5	ISACK ELISHA	Rusumo	0755561874	
6	DONICHA JOHN	Rusumo	0752608135	
7	JENUS NIMDEMAN	Rusumo	0762583372	
8	ALICES SAMUEL	Rusumo	0658400002	
9	JORDIS KAIZA	RUSUMO	0787304615	
10	AGNES TILIBSILAS	Rusumo	0751502993	
11	FAZLA KASIMU	Rusumo	0766730059	
12	AMMATHA OMBEY	Rusumo	0762288575	
13	IMANI SIMON	Rusumo	075833737	
14	KARIM SOFIA	Rusumo	0769-123854	
15	JANUARY KATIZI	Rusumo	0759229731	
16	ALICE KAVISI	Rusumo	0688105219	
17	LORRAINE ALINA	Rusumo	0769154635	
18	ATODU	RUSUMO	07673920	
19	TRINA SPANSTON	RUSUMO	- - -	
20	WILSON KITHANI	Rusumo	075595664	

MAHALI..... Rusumo
TAKIHE.....
11th 07.2022

STAKEHOLDERS' CONSULTATION FOR UPDATING ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT REPORT AND RESETTLEMENT ACTION PLAN FOR THE PROPOSED REHABILITATION OF LUSAHUNGA - RUSUMO ROAD PROJECT







Different pictures of public meetings










14.3 Appendix III: Description of environmental setup/Biophysical mapping


Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
1	0+750	2°54'22.31"S	31°11'37.67" E	Perennial Stream 3 cells concrete box culvert at Lusahunga village		Soil erosion and sediment transport; Instability of slopes; Water Pollution	Provision of sediment catchment basin and silt curtains; Designing reconstruction of climate resilient culvert to accommodate flooding
2	0+850	2°54'21.90"S	31°11'36.24" E	Pine Plantation 30m from the road LHS Run 300m along the road		No impact anticipated	



Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
3	1+500	2°54'21.90"S	31°11'36.24" E	Pine Plantations Both sides of the road 50m from the road RHS 30m from the road LHS Run 200m along the road		No impact anticipated	
4	3+700	2°53'44.39"S	31°10'11.61" E	Perennial Stream 2 cells concrete box culvert at Kikoma village		Soil erosion and sediment transport; Instability of slopes; Water Pollution	Provision of sediment catchment basin and silt curtains; Designing reconstruction of climate resilient culvert to accommodate flooding


Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
5	4+100	2°53'47.48"S	31° 9'57.31"E	<p>Pine Plantation</p> <p>20m from the road LHS</p> <p>Run 700m along the road</p>		Possible Loss of vegetation;	<p>Confining construction operations within the existing way and road reserve as much as possible and avoid unnecessary vegetation clearance;</p> <p>Revegetation of disturbed areas;</p>
6	5+300	2°53'24.02"S	31° 9'26.91"E	<p>Nyamalagala Village Centre</p> <p>Few houses along the road for 800m</p>		<p>Health and Safety of community (dust, noise and vibration, accidents etc.)</p>	<p>Provision of awareness programmes for public on safe on the road;</p> <p>Road design shall include measures to allow safe passage such as speed limit e.g., humps in such areas and road signs shall be put in place to guide road users to behave and</p>


Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
							instructions; Dust, noise and vibrations shall be controlled during construction phase;
7	5+600	2°53'27.17"S	31° 9'16.80"E	Nyamalagala Primary School 150m offset from the road RHS		Health and Safety of Pupils and Staff (dust, noise and vibration, accidents etc)	Provision of awareness programmes for public on safe on the road; Road design shall include measures to allow safe passage such as speed limit e.g., humps in school zones and road signs shall be put in place to guide road users to behave and follow instructions; Dust, noise and vibrations shall be controlled during construction phase;



Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
8	7+200	2°53'25.55"S	31° 8'34.40"E	<p>Perennial Stream</p> <p>3 cells & 2 cell concrete box culverts at Kirakacheusi Hamlet</p> <p>Paddy farms near</p>		<p>Soil erosion and sediment transport;</p> <p>Instability of slopes;</p> <p>Water Pollution</p>	<p>Provision of sediment catchment basin and silt curtains;</p> <p>Designing reconstruction of climate resilient culverts to accommodate flooding</p>
9	7+700	2°52'41.90"S	31° 7'41.98"E	<p>Perennial Stream (Midaho 1)</p> <p>3 cells & 2 cells concrete box culverts at Midaho village 200m apart</p> <p>Fishing of Tilapia fish locally known as "Barara";</p>		<p>Soil erosion and sediment transport;</p> <p>Instability of slopes;</p> <p>Water Pollution;</p>	<p>Provision of sediment catchment basin and silt curtains;</p> <p>Designing reconstruction of climate resilient culverts to accommodate flooding</p>



Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
10	8+650	2°52'33.48"S	31° 7'16.36"E	<p>Midaho Sub Village</p> <p>Few houses along the road for 1km</p>		<p>Health and Safety of community (dust, noise and vibration, accidents etc)</p>	<p>Provision of awareness programmes for public on safe on the road;</p> <p>Road design shall measures to allow safe passage speed limit e.g., humps in such and road signs shall be put in place road users to behave and instructions;</p> <p>Dust, noise and vibrations shall be controlled during construction phase;</p>



Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
11	9+550	2°52'10.62"S	31° 6'57.17"E	Perennial Stream (Midaho 2) 3 cells & 2 cells concrete box culverts at Midaho village 50m apart		Soil erosion and sediment transport; Instability of slopes; Water Pollution	Provision of sediment catchment basin and silt curtains; Designing reconstruction of climate resilient culvert to accommodate flooding
12	11+200	2°51'22.20"S	31° 5'55.41"E	Perennial Stream (Busiri 1) 3 cells & 2 cells concrete box culverts at Midaho village 15m apart		Soil erosion and sediment transport; Instability of slopes; Water Pollution	Provision of sediment catchment basin and silt curtains; Designing reconstruction of climate resilient culvert to accommodate flooding


Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
13	13+700	2°51'22.05"S	31° 5'57.24"E	<p>Small Wetland 40m from the road RHS Approx. 30,000m² Typha vegetation Paddy farm LHS</p>		<p>Impacts to the wetland ecosystem (however the wetland is small and far from the road)</p>	<p>Protection of flora and fauna of wetland through proper waste management; Construction water shall be obtained from approved sources; Refueling of plant and vehicles shall not be carried out near wetland, and any spillage shall immediately be remedied; Provision of sediment catchment basin and silt curtains;</p>
14	14+500	2°51'12.05"S	31° 5'34.20"E	<p>Busiri Village Many houses along the road for settlements Electricity</p>		<p>Health and Safety of community (dust, noise and vibration,</p>	<p>Provision of awareness programmes for public on safe on the road; Road design shall</p>



Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
				distribution line near the road LHS		accidents, etc.)	measures to allow safe passage speed limit e.g., humps in such and road signs shall be put in place road users to behave and instructions; Dust, noise and vibrations shall be controlled during construction phase;
15	15+500	2°50'55.82"S	31° 5'7.52"E	Perennial Stream (Busiri 2) 2 cells concrete box culvert at Busiri Village		Soil erosion and sediment transport; Instability of slopes; Water Pollution	Provision of sediment catchment basin and silt curtains; Designing reconstruction of climate resilient culvert to accommodate flooding



Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
16	16+500	2°50'22.81"S	31° 5'0.65"E	<p>Perennial Stream (Busiri 3)</p> <p>1 cell concrete box culvert at Busiri Village</p>		<p>Soil erosion and sediment transport;</p> <p>Instability of slopes;</p> <p>Water Pollution</p>	<p>Provision of sediment catchment basin and silt curtains;</p> <p>Designing reconstruction of climate resilient culvert accommodate flooding</p>
17	16+700	2°50'16.23"S	31° 5'3.74"E	<p>Flood Plain 50m wide</p> <p>45m from the road RHS</p> <p>Run along the road for about 1.2km</p> <p>Planted with Banana and Sugar cane</p>		<p>No impact anticipated</p>	



Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
18	17+200	2°49'59.37"S	31°4'59.52"E	Perennial Stream 3cell concrete box culvert		Soil erosion and sediment transport; Instability of slopes; Water Pollution	Provision of sediment catchment basin and silt curtains; Designing reconstruction of climate resilient culvert to accommodate flooding
18	18+100	2°49'40.24"S	31°4'42.51"E	Perennial Stream (Busiri 4) 3 cells concrete box culvert at Busiri Village Sugar cane farm along the stream LHS		Soil erosion and sediment transport; Instability of slopes; Water Pollution;	Provision of sediment catchment basin and silt curtains; Designing reconstruction of climate resilient culvert to accommodate flooding



Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
19	18+200	2°49'38.74"S	31° 4'40.16"E	<p>Pine Plantation 100m from the road RHS Run 120m along the road</p>		No impact anticipated	
20	18+700	2°49'27.35"S	31° 4'27.53"E	<p>Relief Culvert 2 steel pipe culverts No stream crosses the road Pine plantation 30m from the road LHS, run along the road for 100m</p>		No impact anticipated	



Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
21	20+000	2°48'42.99"S	31°4'25.12"E	<p>Mabombonya Sub-Village Centre (Busiri Village)</p> <p>Few houses along the road for 100m.</p> <p>Electricity distribution line near the road LHS</p>		<p>Health and Safety of community (dust, noise and vibration, accidents etc)</p>	<p>Provision of awareness programmes for public on safe on the road;</p> <p>Road design shall measures to allow safe passage speed limit e.g., humps in such and road signs shall be put in place road users to behave and instructions;</p> <p>Dust, noise and vibrations shall be controlled during construction phase;</p>




Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
22	20+900	2°48'17.88"S	31°4'28.09"E	<p>Perennial Stream</p> <p>2 steel pipe culverts</p> <p>Lowland with maize, sunflower, tomatoes, maize, casava seeds farm (40m from the road)</p>		<p>Soil erosion and sediment transport;</p> <p>Instability of slopes;</p> <p>Water Pollution</p>	<p>Provision of sediment catchment basin and silt curtains;</p> <p>Designing reconstruction of climate resilient culvert accommodate flooding</p>
23	24+200	2°48'1.31"S	31°2'53.33"E	<p>Seasonal Stream</p> <p>2cells steel pipe culvert & 3 cells concrete box culvert separated by 300m</p> <p>No water flowing</p>		<p>Soil erosion and sediment transport;</p> <p>Instability of slopes;</p> <p>Water Pollution (Only during rainy season)</p>	<p>Provision of sediment catchment basin and silt curtains;</p> <p>Designing reconstruction of climate resilient culvert accommodate flooding</p>



Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
24	25+500	2°47'46.33"S	31° 2'23.78"E	<p>Seasonal Stream, 2 steel pipe culverts</p> <p>Lowland RHS planted with paddy and sunflowers, 40m from road at Ngararambe <u>village</u></p>		<p>Soil erosion and sediment transport;</p> <p>Instability of slopes;</p> <p>Water Pollution (Only during rainy season)</p>	<p>Provision of sediment catchment basin and silt curtains;</p> <p>Designing reconstruction of climate resilient culverts to accommodate flooding</p>
25	26+400	2°47'29.86"S	31° 1'53.43"E	<p>2 Small pine Plantations</p> <p>50m distance apart</p> <p>25m from the road LHS</p> <p>Each run 30m along the road</p>		<p>Possible Loss of vegetation (depends on the design)</p>	<p>Confining construction operations within the existing way and road reserve as much as possible and avoid unnecessary vegetation clearance; Revegetation of disturbed areas;</p>



Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
26	27+300	2°47'27.29"S	31° 1'27.35"E	<p>Nyamizi Village (Junction)</p> <p>Few houses along the road for 150m</p> <p>Electricity distribution line near the road LHS</p> <p>Pine Plantation, 30m from the road LHS, 70m run along the road</p>		<p>Health and Safety of community (dust, noise and vibration, accidents etc.)</p>	<p>Provision of awareness programmes for public on safe on the road;</p> <p>Road design shall measures to allow safe passage speed limit e.g., humps in such and road signs shall be put in place road users to behave and instructions;</p> <p>Dust, noise and vibrations shall be controlled during construction phase;</p>
27	28+000	2°47'21.87"S	31° 1'7.53"E	<p>Relief Culvert</p> <p>No Stream crossing</p> <p>2 steel pipe culvert and 2 cell concrete culvert</p>		<p>No impact anticipated</p>	


Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
				200m apart Lowland with paddy plantations on both <u>sides</u>			
28	29+000	2°46'57.93"S	31°0'37.63"E	Mizani Primary School under Construction 100m from the road RHS		Health and Safety of pupils and staff (dust, noise and vibration, accidents etc.)	Provision of awareness programmes for public on safe on the road; Road design shall measures to allow safe passage speed limit e.g., humps in such and road signs shall be put in place road users to behave and instructions; Dust, noise and vibrations shall be controlled during construction phase;


Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
29	29+800	2°46'41.18"S	31°0'24.79"E	<p>Mizani Primary school 70m from the road RHS</p> <p>Ngararambe dispensary 130m from the road LHS</p>		Health and Safety of community (dust, noise and vibration, accidents etc.)	<p>Provision of awareness programmes for public on safe on the road;</p> <p>Road design shall measures to allow safe passage speed limit e.g., humps in such and road signs shall be put in place road users to behave and instructions;</p> <p>Dust, noise and vibrations shall be controlled during construction phase;</p>
30	29+700	2°46'1.90"S	30°59'51.52"E	<p>Mzani Sub-Village Centre (Ngararambe Village)</p> <p>Houses along the road for 900m</p>		Health and Safety of community (dust, noise and vibration, accidents etc.)	<p>Provision of awareness programmes for public on safe on the road;</p> <p>Road design shall measures to</p>


Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
				<p>Weigh bridge 30m from the road</p> <p>Mzani junction to Ngara, Rulenge, burundi</p>			<p>allow safe passage speed limit e.g., humps in such and road signs shall be put in place road users to behave and instructions; Dust, noise and vibrations shall be controlled during construction phase;</p>
31	31+600	2°45'37.61"S	30°59'42.61" E	<p>Pine Plantation 30m offset from the road RHS Length 150 along the road</p>		No impact anticipated	
32	37+300	2°43'4.52"S	30°59'25.84" E	<p>Relief Culvert</p> <p>No stream crossing the road, Lowland, paddy farms LHS</p> <p>6 cells concrete box culvert and 3</p>		No Impact Anticipated	




Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
				steel pipe culverts separated by 100m			
33	39+300	2°41'50.40"S	30°59'36.54"E	<p>Mshoroti Sub Village (Msali Village RHS, Lugese Village LHS)</p> <p>Few houses along the road for 300m</p> <p>Junction to Msali Msali village RHS</p>		Health and Safety of community (dust, noise and vibration, accidents etc.)	<p>Provision of awareness programmes for public on safe on the road;</p> <p>Road design shall include measures to allow safe passage speed limit e.g., humps in such and road signs shall be put in place road users to behave and instructions;</p> <p>Dust, noise and vibrations shall be controlled during construction phase;</p>


Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
34	42+800	2°40'6.07"S	30°59'37.47" E	<p>Perennial Stream</p> <p>4 cells concrete box culvert</p> <p>Lowland, Natural vegetation and Paddy farms on both sides</p>		<p>Soil erosion and sediment transport;</p> <p>Instability of slopes;</p> <p>Water Pollution (Only during rainy season);</p>	<p>Provision of sediment catchment basin and silt curtains;</p> <p>Designing reconstruction of climate resilient culvert accommodate flooding</p>
35	44+400	2°39'15.22"S	30°59'37.39" E	<p>Nyungwe Sub Village (Nyabugombe Village)</p> <p>Few houses along the road for 200m</p>		<p>Health and Safety of community (dust, noise and vibration, accidents etc.)</p>	<p>Provision of awareness programmes for public on safe on the road;</p> <p>Road design shall measures to allow safe passage speed limit e.g., humps in such and road signs shall be put in place road users to behave and instructions;</p> <p>Dust, noise and vibrations shall be</p>




Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
							controlled during construction phase;
36	44+800	2°39'2.65"S	30°59'37.30"E	<p>Junction to Burigi-Chato National Park RHS</p> <p>The park boundary is 1.4Km from the road</p>		Possibility of animal kills	<p>The road design should take into account the safety of wildlife to allow safe passage at a speed limit of 30km/h. Precautionary signs, humps, and gates should be installed in specific areas crossing the park boundary to inform drivers and the public to observe all instructions while operating along the road, including Burigi-Chato National Park area. All these measures should be installed in strategic locations to</p>



Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
							<p>alert road users to obey instructions.</p> <p>management plan will also be prepared both in English and Swahili to be incorporated in the design to include; for example of signs, markings, interchanges, layouts, access restrictions, bus stops, crossings, footpaths etc.</p>
		2°38'58.86"S	31° 0'22.60"E	<p>Burigi-Chato National Park Gate;</p> <p>1.4km from the Road (Shortest distance from the park)</p>		Possibility of animal kills	<p>The road design should take into account the safety measures, e.g., speed limit to 30km/h, and precautionary signs, etc.</p>



Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
37	47+700	2°38'17.16"S	30°58'46.35" E	<p>Seasonal Stream/Chamakaza Sub Village</p> <p>2 steel pipe culverts with no flowing water</p> <p>Chamakaza Sub-village, only 4 houses far from the road</p>		<p>Soil erosion and sediment transport;</p> <p>Instability of slopes;</p> <p>Water Pollution (Only during rainy season);</p> <p>Health and Safety of community (dust, noise and vibration, accidents etc.)</p>	<p>Provision of s catchment basin a curtains;</p> <p>Designing reconstruction of climate resilient culv accommodate floodi</p> <p>Provision of aw programmes for public on safe on the road;</p> <p>Road design shall measures to allow safe passage speed limit e.g., humps in suc and road signs shall be put in place road users to behave and instructions;</p> <p>Dust, noise and vi shall be controlled construction phase;</p>



Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
38	49+300	2°38'13.48"S	30°58'5.49"E	Relief Culvert 7 steel pipe culverts with no flowing water Lowland LHS, grasses, maize sunflowers Miombo woodland RHS		No impact anticipated	
39	50+600	2°38'6.28"S	30°57'30.03"E	Seasonal Stream 4 steel pipe culverts Miombo woodland both sides		Soil erosion and sediment transport; Instability of slopes; Water Pollution (Only during rainy season)	Provision of s catchment basin a curtains; Designing reconstruction of climate resilient culv accommodate floodi
40	53+200	2°38'1.90"S	30°56'5.04"E	Nyabugombe Village Houses on both side of the road for 2.2km		Health and Safety of community (dust, noise and vibration, accidents etc.)	Provision of aw programmes for public on safe on the road; Road design shall measures to allow safe passage


Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
							speed limit e.g., humps in such and road signs shall be put in place road users to behave and instructions; Dust, noise and vi shall be controlled construction phase;
41	54+300	2°37'36.14"S	30°55'48.63" E	Seasonal Stream 3 steel pipe culverts & 2 steel pipe 50m apart, water flows		Soil erosion and sediment transport; Instability of slopes; Water Pollution (Only during rainy season)	Provision of sediment catchment basin and silt curtains; Designing reconstruction of climate resilient culv accommodate floodings;



Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
42	54+350	2°37'33.74"S	30°55'48.44"E	Shallow well/ Hand Pump 30m from the road RHS		No impacts	
43		2°37'15.72"S	30°55'8.00"E	Seasonal Stream 3 steel pipe culverts Stagnant Water Natural vegetation on both sides		Soil erosion and sediment transport; Instability of slopes; Water Pollution; (Only during rainy season)	Provision of sediment catchment basin and silt curtains; Designing reconstruction of climate resilient culverts to accommodate floodings;
44	55+800	2°36'24.27"S	30°54'38.35"E	Seasonal Stream 3 steel pipe culverts Stagnant Water 20m wide flood		Soil erosion and sediment transport; Instability of slopes;	Provision of sediment catchment basin and silt curtains; Designing


Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
				plain planted with banana and sugarcane, beans both sides		Flooding;	reconstruction of climate resilient culvert to accommodate floodings;
45	57+700			Relief Culvert Not Accessible No water flow Lowland LHS, planted with Millet and Banana Hill RHS		Soil erosion and sediment transport; Instability of slopes; Water Pollution (Only during rainy season)	Provision of sediment catchment basin and silt curtains; Designing reconstruction of climate resilient culvert to accommodate floodings;
46	58+800	2°36'10.28"S	30°54'30.21" E	Seasonal Stream 6 steel pipe culverts Stagnant Water Flood plain LHS 100x400m		Soil erosion and sediment transport; Instability of slopes; Water Pollution (Only during	Provision of sediment catchment basin and silt curtains; Designing reconstruction of climate resilient culvert


Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
						rainy season)	accommodate floodings;
47	59+300	2°35'34.76"S	30°54'30.79" E	<p>Nyantama Sub Vilage (Nyabugombe village)</p> <p>Houses on both side of the road for 500m</p>		Health and Safety of community (dust, noise and vibration, accidents etc)	<p>Provision of aw programmes for public on safe on the road;</p> <p>Road design shall measures to allow safe passage speed limit e.g., humps in suc and road signs shall be put in place road users to behave and instructions;</p> <p>Dust, noise and vibrations shall be controlled during construction phase;</p>


Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
48	60+100	2°35'13.01"S	30°54'18.82" E	Relief Culvert 5 steel pipe Culvert, Stagnant Water, natural veg both sides, Hills both sides		Soil erosion and sediment transport; Instability of slopes; Water Pollution (Only during rainy season)	Provision of sediment catchment basin and silt curtains; Designing reconstruction of climate resilient culv to accommodate floodings;
	63+300	2°33'59.49"S	30°53'43.04" E	Wetland both sides 100x300 LHS, 100x 50 RHS, water lilies, 4 steel pipes Culverts, Boundary of Ngara and Biharamulo Districts		Impact to wetland Ecosystem	Protection of flora and fauna of wetland through proper waste management; Construction water shall be obtained from approved sources; Refueling of plant and vehicles shall not be carried out near wetland, and any spillage shall immediately be



Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
							remedied; Provision of sediment catchment basin and silt curtains;
49	64+300	2°33'27.97"S	30°53'11.82" E	<p>Kapfuha Sub-Village (Lwakaremera village), Houses along the road for 700m</p> <p>Kapfuha primary school, 100m from the road LHS</p> <p>Electricity distribution line near</p>		Health and Safety of community (dust, noise and vibration, accidents etc.);	Provision of awareness programmes for public on safe on the road; Road design shall include measures to allow safe passage speed limit e.g., humps in such and road signs shall be put in place road users to behave and instructions; Dust, noise and vibrations shall be controlled during construction phase;



Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
50	68+600	2°32'8.93"S	30°51'32.03" E	<p>Perennial Stream</p> <p>6 steel pipe-culverts,</p> <p>Wetland 600mx200m RHS, 300mx40m LHS,</p> <p>Rusumo high tension line cross, 40m nearest pole to the road</p>		<p>Soil erosion and sediment transport;</p> <p>Instability of slopes;</p> <p>Water Pollution (Only during rainy season)</p>	<p>Provision of sediment catchment basin and silt curtains;</p> <p>Designing reconstruction of climate resilient culv accommodate floodings;</p>
51	68+800	2°32'4.56"S	30°51'27.21" E	<p>Junction to Ngara (LHS)</p>		<p>Accidents</p>	<p>The road design shall take into account the safety concerns to allow safe passages, e.g., speed limit, precautionary posters, humps and other necessary instructions. Traffic management plan will also be</p>


Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
							presented in the designs to include; for example, details of signs, markings, intersection layouts, access restrictions, bus stops, crossings, footpaths, etc.
52	71+600	2°30'19.76"S	30°51'16.50" E	<p>Truck parking LHS 250mx 250m, unpaved, belongs to Ngara DC</p> <p>30m from the road</p> <p>Small plantation Mihumbra 100x100 RHS 30m from road</p> <p>Police station</p>		Accidents	The road design shall take into account the safety concerns to allow safe passages, e.g., speed limit, precautionary posters, humps and other necessary instructions. Traffic management plan will also be presented in the designs to include; for example, details

Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
							of signs, markings, intersection layouts, access restrictions, bus stops, crossings, footpaths, etc.
53	73+200	2°29'43.93"S	30°51'7.09"E	<p>Benaco settlement (Kasulo village)</p> <p>Houses along the road, both sides for 3.5km</p> <p>Junction- Road to Karagwe RHS</p> <p>Junction to Kumnazi LHS</p>		Health and Safety of community (dust, noise and vibration, accidents etc.)	<p>Provision of awareness programmes for public on safe on the road;</p> <p>Road design shall measures to allow safe passage speed limit e.g., humps in such and road signs shall be put in place road users to behave and instructions;</p> <p>Dust, noise and vibrations shall be controlled during construction phase;</p>



Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
54	76+900	2°27'58.49"S	30°51'5.23"E	<p>Benako water pond approximately 300mx400m</p> <p>40m from the road RHS</p> <p>Paddy farms around</p> <p>Possible source of water for project</p>		<p>Increased water abstraction</p> <p>Water Pollution</p>	<p>Avoid vegetation clearance and use of the existing right of way within the road reserve as much as possible;</p> <p>Minimize land clearance within the road reserve during earth operations;</p> <p>Accidental spills and spillages near water sources shall be adequately managed;</p> <p>Undertake periodic quality monitoring for pollution control;</p> <p>Provisions for a waste management;</p> <p>Obtain construction materials from approved sources;</p> <p>Refueling of vehicles shall be carried out away</p>


Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
							water sources and any accidental spillage shall promptly be reported. Provision of s catchment structures; Preservation of flora and fauna;
55	78+800	2°27'17.37"S	30°50'21.23" E	Pine Plantation, 30m from the road, RHS, 80m length along the road		No Impact anticipated	
56	79+000	2°26'55.65"S	30°49'52.22" E	Kamatendere Sub Village (Kasulo Village); Few houses LHS of the road for 70m, Road Contractor camp RHS		Health and Safety of community (dust, noise and vibration, accidents etc.)	Provision of awareness programmes for public on safe on the road; Road design shall include measures to allow safe passage speed limit e.g., humps in such areas and road signs shall be put in place along the road

Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
							users to behave and instructions; Dust, noise and vibrations shall be controlled during construction phase;
57	80+300	2°26'16.35"S	30°49'37.60" E	Pine Plantation, 30m from the road LHS Length along the road is 500m		No impact anticipated	
58	84+200	2°25'4.27"S	30°49'29.06" E	Mshikamano/Magereza Sub-Village Few houses along the road for 200 Electricity distribution line close to the road		Health and Safety of community (dust, noise and vibration, accidents etc.)	Provision of awareness programmes for public on safe on the road; Road design shall measures to allow safe passage speed limit e.g., humps in such and road signs shall be put in place road users to behave and

Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
							instructions; Dust, noise and vibrations shall be controlled during construction phase;
59	84+600	2°25'2.89"S	30°49'15.66" E	Magereza Primary School; Nearest building is 70m from the Road (RHS)		Health and Safety of Pupils and staff (dust, noise and vibration, accidents etc.)	Provision of awareness programmes for public on safe on the road; Road design shall include measures to allow safe passage speed limit e.g., humps in such and road signs shall be put in place road users to behave and instructions; Dust, noise and vibrations shall be controlled during construction phase;
60	85+300	2°24'28.15"S	30°48'40.46" E	Rusumo Hydropower		No Impact anticipated	

Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
				Project Contractor Campsite, 40m from the road RHS Few houses along the road for about 15m LHS			
61	87+500	2°23'29.00"S	30°48'12.89" E	Pine Plantation 30m from the road LHS 150m along the road		No impact Anticipated	
62	88+800	2°22'58.54"S	30°47'53.74" E	Nyakahanga Village, Few houses along the road for Nyakahanga primary school,		Health and Safety of community (dust, noise and vibration, accidents etc.)	Provision of awareness programmes for public on safe on the road; Road design shall measures to allow safe passage speed limit e.g., humps in suc

Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
				120m from the road RHS			and road signs shall be put in place road users to behave and instructions; Dust, noise and vibrations shall be controlled during construction phase;
63	89+500	2°22'57.42"S	30°47'46.40" E	Lorry/Trucks Parking 20m from the road RHS, Area 200x150m, unpaved.		Accidents	The road design shall take into account the safety concerns to allow safe passages, e.g., speed limit, precautionary posters, humps and other necessary instructions. Traffic management plan will also be presented in the designs to include; for example, details of signs, markings, intersection

Row No:	Location			Description	Photo	Potential Impacts	Specific mitigations
	Chainage	Latitude	Longitude				
							layouts, access restrictions, bus stops, crossings, footpaths, etc.
64	91+000	2°23'6.92"S	30°47'5.71"E	<p>Rusumo Village</p> <p>Houses and Shops close to the road on both sides of the road,</p> <p>Very hilly, Eucalyptus trees along the road</p>		<p>Health and Safety of community (dust, noise and vibration, accidents etc.)</p>	<p>Provision of awareness programmes for public on safe on the road; Road design shall measures to allow safe passage speed limit e.g., humps in such and road signs shall be put in place road users to behave and instructions; Dust, noise and vibrations shall be controlled during construction phase;</p>

14.4 Appendix IV: Chance Finds Procedure

CHANCE FINDS PROCEDURE FOR LUSAHUNGA – RUSUMO ROAD PROJECT

A **chance finds procedure** is a project specific procedure which will be followed if previously unknown cultural heritage is encountered during project activities.

A **physical cultural resources** as defined by the ESS8, are movable or immovable objects, sites, structures, groups of structures and natural features and landscapes that have archeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance.

Applicability of the Chance Finds Procedure

The following procedure shall apply to all activities of the contractor for Lusahunga – Rusumo Road that will involve physical works that have the potential to uncover or otherwise disturb tangible cultural heritage or Physical cultural resources.

Under the project implementation arrangements, a contract will be put in place with an ‘on-call’ archaeological monitor (Consultant) who will advise on chance finds and any other cultural heritage issues arising from the Implementation of activities of the project.

Legal Requirements

There are two principal pieces of Tanzanian national legislation that pertain to chance finds:

- The Antiquities Act, 1964;
- The Antiquities (Amendment) Act, 1979 and
- Physical Cultural Resources (ESS8)

The Antiquities (Amendment) Act, 1979 states that it should be read as one with the 1964 Act. The Antiquities Act, 1964 defines monuments and other protected objects, and it also sets out that in the case of a discovery (i.e. a chance find):

“...the occupier of any land who knows of any such discovery on or under such land, shall forthwith report the same to an administrative officer, the Commissioner [of National Culture], the Conservator [of Antiquities] or the Curator of the Museum. The discoverer of such a relic, monument, object or site shall take such steps as may be reasonable for the protection thereof and shall, where he makes a report concerning a portable relic or object, if so required (and on payment of the cost of delivery if any) deliver such antiquity or object to an administrative officer, the Commissioner, the Conservator or the Curator of the Museum, as the case may be.”

The Antiquities (Amendment) Act, 1979 sets out *inter alia* the Minister’s powers:

“...to declare any place or structure of historical interest to be a monument for the purposes of this Act” and sets out that:

“The Minister, after consulting the Minister for the time being responsible for lands may, by notice in the Gazette, declare to be a conservation area any area or site which: (a) in his opinion is a valuable national heritage for its aesthetic value; or (b) contains a homogeneous groups of monuments; or (c) contains buildings, structures or other forms of human settlement which in his opinion are a valuable national heritage for their historical, architectural, social or cultural value”

and:

“...no person except the Director or a person acting on his behalf, shall whether on his own land or elsewhere,

- a) excavate, dig or probe for monuments or relics; or*
- b) remove or collect any relic or any object he supposes to be a relic from the site of its discovery, except for the purposes of protecting it and reporting the discovery under the provisions of section 10 or for the purposes of delivering it to the authorities if required to do so under that section; or*
- c) search for or collect any ethnographical object, except under and in accordance with an excavation license or in the case of an ethnographical object, a collectors license issued by the Director [of Antiquities].”*

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It also states that:

“No person shall sell or exchange any relic discovered in sales Tanganyika, or any protected object, except under and in accordance with a license issued by the Commissioner.”

The World Bank’s Operational Policy (ESS8) Physical Cultural Resources provides that;

“Project activities involving earthworks must include an approved Chance Finds procedure in construction contracts, to cover the possibility of discovering physical cultural heritage in the course of excavation”.

CHANCE FIND PROCEDURE

The following procedural guidelines must be considered in the event that previously unknown heritage resources or PCRs are exposed or found during the life of the project.

Initial Identification and/or Exposure

Heritage resources or Physical cultural resources may be identified during construction or accidentally exposed. The initial procedure when such sites are found aim to avoid any further damage. The following steps and reporting structure must be observed in both instances:

1. The person or group (identifier) who identified or exposed the burial ground must cease all activity in the immediate vicinity of the site;
2. The identifier must immediately inform his/her supervisor of the discovery;

3. The supervisor must ensure that the site is secured and control access; and
 4. The supervisor must then inform the relevant personnel responsible for at least the following portfolios: Community Liaison (CL), Environmental officer and Health and Safety (HS) of the project.
 5. All construction activity in the vicinity of the find/feature/site will cease and TANROADS management and the authorities will be informed.
 6. TANROADS will deploy a suitably qualified specialist to inspect the exposed burial and determine in consultation with the Ministry of Tourism and Cultural Heritage:
 - The temporal context of the remains, i.e.:
 - forensic,
 - authentic burial grave or
 - archaeological and;
 - Graves that may encountered in the vicinity.
 7. Should the specialist conclude that the find is a heritage resource protected in terms of the Antiquities Act, 1964; TANROADS will notify the Commissioner for National Culture
 8. The Commissioner may require that an identification of interested parties, consultation and /or grave relocation take place;
 9. Consultation must take place in terms of the Antiquities Act; and
- Grave relocation must take place in terms of Grave Removal Act, 1969.

14.5 Appendix V: TanTIP Labor Management Procedures

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF WORKS AND TRANSPORT



TANZANIA NATIONAL ROADS AGENCY (TANROADS)

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**LABOUR MANAGEMENT PROCEDURES
FOR
TANZANIA TRANSPORT INTEGRATED PROJECT (TanTIP)**

MARCH 2022

EXECUTIVE SUMMARY

These Labour Management Procedures (LMP) involve the policies, rules, regulations, procedures and competencies which govern and regulate the work force (skilled, semi-skilled and unskilled) for the Tanzania Transport Integrated Project (TanTIP or the Project).

The Project will engage direct workers, including government civil servants, and workers engaged through contractors/subcontractors and primary suppliers, as these terms are identified in Environmental and Social Standard 2 (ESS2) on Labour and Working Conditions of the World Bank Environmental and Social Framework (ESF). The Project will not use community workers as that term is identified in ESS2. The Project has established a minimum age of 18 years for all workers engaged in relation to TanTIP.

To enrich the TanTIP benefits, the Government of Tanzania through the TanTIP Implementing Agency (TANROADS) recognises the necessity of provision of safe and healthy working conditions, sound worker-management relationships, fair treatment of workers, prevention of child labour, forced labour and trafficking of persons, and promotion of gender equality and protection of women from Gender-Based Violence (GBV) among Project workers and in interactions between Project workers and local communities. The Project will ensure compliance with national law requirements as well as World Health Organisation and World Bank guidance regarding restrictions and other protocols relating to the COVID-19 situation, in particular “ESF/Safeguards Interim Note: COVID-19 Considerations in Construction/Civil Works Projects”, April 7, 2020.

The TanTIP intends to improve road and airport accessibility in support of livelihoods of rural, urban and peri-urban populations, both male and female, in selected rural areas, and build capacity in the sustainable management of rural roads through the upgrading and maintenance of rural roads and providing sustained support to TANROADS.

The TanTIP has four (4) components:

Component 1: Upgrading and Rehabilitation of four Trunk and Regional Roads

Component 2: Upgrading and Rehabilitation of three Regional Airports

Component 3: Institutional Support and Capacity Building in the Transport Sector

Component 4: Contingent Emergency Response Component

In accordance with national law and ESS2 and relevant sections of ESS4 on Community Health and Safety of the ESF, TANROADS developed this LMP that will be used to identify main labour requirements and manage risks associated with the Project, and to determine the resources TANROADS will need to allocate to address TanTIP’s labour and working condition issues. This LMP is a living document, initiated during Project preparation, and is reviewed and updated throughout development and implementation of the TanTIP. TANROADS will be responsible for ensuring that the TanTIP Project Implementation Team (PIT), as well

as all contractors/subcontractors and primary suppliers implement this LMP in a manner that is fully consistent with national law and the provisions of ESS2, as well as relevant provisions of ESS4 and other sections of the ESF.

The key potential labour risks that TANROADS has identified in relation to TanTIP include: 1) occupational safety and health hazards (e.g., accidents and injuries), 2) child labour and/or forced labour/trafficking in relation to provision of goods and services through primary suppliers/supply chains, 3) employer non-compliance with national laws and the provisions of ESS2 regarding hours, wages, benefits and other terms and conditions of employment, 4) discrimination in recruitment and employment in relation to personal characteristics unrelated to inherent job requirements, and 5) issues related workforce relations, to labour influx and worker camp management, including Gender Based Violence (GBV) among members of the project workforce, and between the project workforce and members of project affected local communities, and transmission of communicable diseases, including HIV/AIDS and COVID-19.

To promote best practices and ensure compliance with Tanzanian legal and regulatory requirements, including in relation to ILO standards, and with the provisions of the ESF and related World Bank standards, section 4 of this LMP provides a review of the legal and regulatory framework applicable to labour and working conditions in this Project. In relation to the local legal framework, this LMP rely on the Tanzania Employment and Labour Relations Act (2004) and Labour Institutions Act (subsidiary legislations) and accompanying regulations for the safeguard of worker's management and rights. Furthermore, the Labour Relation Act regulates employment matters in terms of employment standards. Meanwhile, the Occupational Health and Safety Act No.5 of 2003 (Part IV Section 43 Safety Provision; Part V Section 54, 55 and 58 Health and Welfare Provisions; Part VI Section 61 (1a), 63(a), b), and 65 Special Provision of the Act, describing procedures for the protection of safety, health and welfare of persons other than workers in places of work.

The ILO Core Labour Standards to which Tanzania is a party include: Article No.29 (Forced Labour Convention); Article No. 87 (Freedom of Association and Protection and the Right to Organise Convention); Article No. 98 (Right to Organise and Collective Bargaining Convention); Article No. 100 (Equal Remuneration Convention); Article No. 105 (Abolition of Forced Labour Convention); Article No. 111 Discrimination (Employment and Occupation) Convention; Article No. 138 (Minimum age Convention); and Article No. 182 (Worst forms of Child Labour Convention).

Through this LMP TANROADS seek to: i) promote safety and health at work sites; ii) promote fair treatment, non-discrimination and equal opportunity of project workers; iii) protect project workers, including vulnerable workers such as women, persons with disabilities, children (of working age, in accordance with ESS2) and migrant workers, contracted workers and primary supply workers, as appropriate; iv)

prevent the use of all forms of forced labour, trafficking of persons, and child labour; v) support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national labour laws, regulations and ESS2; and vi) provide a Grievance Redress Mechanism (GRM) for project workers to raise their concerns, including workplace sexual harassment, in line with ESS2.

TANROADS will ensure that a specific workers grievance mechanism is provided for all direct workers and contracted workers (and, where relevant, their organisations) to raise workplace concerns, in line with the provisions of ESS2. TANROADS will ensure that workers are informed of the grievance mechanism at the time of recruitment and the measures put in place to protect them against reprisal for its use. TANROADS will ensure that measures are put in place to make the grievance mechanism easily accessible to all such project workers. The grievance mechanism will be proportionate to the nature and scale and the potential risks and impacts of the Project. It will be designed to address concerns promptly, using an understandable and transparent process that provides timely feedback to those concerned in a language they understand, without any retribution, and will operate in an independent and objective manner.

Specific provisions will be included in the worker grievance mechanism for complaints related to workplace sexual harassment, while ensuring the survivor's confidentiality. The worker grievance mechanism will not prevent workers from using the dispute procedures provided in Part VIII of the Employment and Labour Relations Act of 2004.

The worker grievance mechanism will not impede access to other judicial or administrative remedies that might be available under the law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements.

The TANROADS Project Implementing Team (PIT) will assist safe working conditions; prevent or minimise corruption, misconduct, and maladministration during the Project implementation.

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ABBREVIATIONS AND ACRONYMS

- CECS - Community Engagement and Communication Strategy
- CoC - Code of Conduct
- TanTIP - Tanzania Transport Integrated Project
- ESHS - Environmental, Social, Health and Safety
- EPRP - Emergence Preparedness and Response Plan
- ERB - Engineers Registration Board
- ESF - Environmental and Social Framework
- ESIA - Environmental and Social Impact Assessment
- ESMP - Environmental and Social Management Plan
- ESS - Environmental and Social Standard
- GBV - Gender-Based Violence
- GRM - Grievance Redress Mechanism
- HSMP- Health and Safety Management Plan
- LMP - Labour Management Procedure
- LTI - Lost Time Incidences
- M&E - Monitoring and Evaluation
- MoWT- Ministry of Works and Transport
- NGO - Non-Governmental Organisation
- OHS - Occupational Health and Safety
- PIT - Project Implementing Team
- PPE - Personal Protection Equipment
- PPRA - Public Procurement Regulatory Authority
- RFB - Road Fund Board
- SEA - Sexual Exploitation and Abuse
- SEP - Stakeholder Engagement Plan
- SH - Sexual Harassment
- TANROADS- Tanzania National Roads Agency
- TMP - Traffic Management Plan
- WB - World Bank
- WEO - Ward Executive Officer

1.0 LABOUR MANAGEMENT PROCEDURES FOR TANZANIA TRANSPORT INTEGRATED PROJECT

These Labour Management Procedures (LMP) were developed by TANROADS to manage risks and impacts under the Tanzania Transport Integrated Project (TanTIP or Project), for which the World Bank is providing financial assistance. The purpose of this LMP is to facilitate planning and implementation of the project. The LMP identifies the main labour requirements and risks associated with the Project, and is designed to enable project-related parties, such as the staff of the Project Implementation Team (PIT), contractors, subcontractors, primary suppliers, and project workers to have a clear understanding of what is required on a specific labour issue. The LMP is a living document, which is initiated early in project preparation, and is reviewed and updated throughout development and implementation of the project.

The Project will ensure compliance with national law requirements as well as World Health Organisation and World Bank guidance regarding restrictions and other protocols relating to the COVID-19 situation, in particular “ESF/Safeguards Interim Note: COVID-19 Considerations in Construction/Civil Works Projects”, April 7, 2020.

TanTIP will engage direct workers, including government civil servants, and workers engaged through contractors/subcontractors and primary suppliers, as these terms are identified in Environmental and Social Standard 2 (ESS2) of the World Bank Environmental and Social Framework (ESF). The Project will not use community workers as that term is identified in ESS2. The Project has established a minimum age of 18 years for all workers engaged in relation to the TanTIP.

Through this LMP TANROADS seeks to : i) promote safety and health at work sites; ii) promote fair treatment, non-discrimination and equal opportunity of project workers; iii) protect project workers, including vulnerable workers such as women, persons with disabilities, and migrant workers, contracted workers and primary supply workers, iv) prevent the use of all forms of forced labour/trafficking in persons, and child labour; v) support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national labour laws, regulations and ESS2; vi) ensure adequate occupational health and safety for all project workers, and vii) provide a Grievance Redress Mechanism (GRM) for project workers to raise their concerns, including workplace sexual harassment, in line with ESS2.

The key potential labour risks that TANROADS has identified in relation to TanTIP include: 1) occupational safety and health hazards (e.g., accidents and injuries), 2) child labour and/or forced labour/trafficking, in particular in relation to provision of goods and services through primary suppliers/supply chains, 3) employer non-compliance with national laws and the provisions of ESS2 regarding hours, wages, benefits and other terms and conditions of employment, 4) discrimination in recruitment and employment in relation to personal characteristics unrelated to

inherent job requirements, and 5) issues related workforce relations, to labour influx and worker camp management, including Gender Based Violence (GBV) among members of the project workforce, and between the project workforce and members of project affected local communities, and transmission of communicable diseases, including HIV/AIDS and COVID-19.

To promote best practices and ensure compliance with Tanzanian legal and regulatory requirements, including in relation to ILO standards, and with the provisions of the ESF and related World Bank standards, section 4 of this LMP provides a review of the legal and regulatory framework applicable to labour and working conditions in this Project.

1.1 Overview of the TanTIP

The TanTIP involves road and airport infrastructure interventions to improve road and air transport connectivity in Tanzania. The Project aims at addressing the priority investment needs, in selected Tanzania Transport Integrated Project by supporting the upgrading and rehabilitation of national roads and airports that are playing a key role in livelihoods and socio-economic activities in Tanzania.



The TanTIP has four (4) components:

Component 1: Upgrading and Rehabilitation of four Trunk and Regional Roads

Component 2: Upgrading and Rehabilitation of three Regional Airports

Component 3: Institutional Support and Capacity Building in the Transport Sector

Component 4: Contingent Emergency Response Component

Component 1: Upgrading and Rehabilitation of Trunk and Regional Roads (US\$ 546.3 million). This component will finance the upgrading and rehabilitation works of about 500 km of roads, consisting of the Mtwara – Mingoyo - Masasi (200.8 km), Lusahunga - Rusumo (92 km), Lwangu - Lutukila (100 km) and Iringa-Msembe (105.6 km) roads. The works will be maintained for a period of five years post completion of construction of works. This component will also support (i) the associated construction supervision consultants, (ii) Road User Satisfaction Survey consultants to carry out baseline, midterm, and end-stage user satisfaction surveys, and (iii) land acquisition, and resettlement and rehabilitation.

- A. **The Mtwara – Mingoyo – Masasi Road (US\$168 million).** The project will rehabilitate the trunk road, with an Asphalt Concrete (AC) pavement, that links the southern parts of Tanzania to Mtwara Port, as well as Dar Es Salaam to the south-west part of the country. It is located in the Mtwara DC and forms part of the transport corridor that links Tanzania with Mozambique through Unity Bridge in the South, and with Malawi through Mbamba Bay in the southwest. There are mining activities to be developed in the Mtwara DC that includes coal, iron ore, titanium and vanadium mining, hydro-electric generation, and development of gas reserves. The road will also serve the cross-border trade between the neighboring countries. There has been concerted effort by the GoT and development partners (DPs) in upgrading and rehabilitation of the road corridor from Mtwara to Mbamba Bay. The whole road network from Mtwara to Mbamba Bay has been paved with the exception of the Mbinga – Mbamba Bayroad (66 km) which is currently under upgrading to bitumen standard. This project will contribute to financing the road links that need rehabilitation to paved standard and for which the funds have not yet been mobilised.
- B. **The Lusahunga –Rusumo Road (US\$82.3 million).** This road section falls under the Central DC and extends from Lusahunga to the One Stop Border Post (OSBP) at Rusumo on Tanzania-Rwanda border. It will be rehabilitated with AC pavement. This road will facilitate inputs to mines and outputs to the market, particularly the nickel from Kabanga and Musongati as well as serve the agriculturally rich area. The upgrading of this road will also facilitate the efficient flow of transit traffic from the Dar Es Salaam Port to four countries of Burundi, DRC, Rwanda and Uganda as well as cross-border trade between Tanzania and these neighbouring countries. The road section also serves traffic from the port of Mombasa in Kenya destined to Burundi and Rwanda through Taveta (in Kenya) - Arusha – Singida and then on parts of the Central Corridor. It is currently the shortest road corridor connecting Rwanda and Burundi to the Mombasa Port through the Arusha Region.
- C. **The Lwangu-Lutukila Road (US\$89.5 million).** This road, which is part of the key trunk road Makambako-Songea, links the Tanzania-Zambia (TANZAM) Highway with the Mtwara transport corridor, will be rehabilitated with an Asphalt Concrete (AC) pavement. The road traverses the Ruvuma region, a region which is an important connection in the development of the Mtwara and Dar Es Salaam DCs. The road is a key artery route for access roads to the agriculturally rich area and will serve an area that is covered by the SAGCOT program. The total length of the

Makambako - Songea is about 295 km, but the project will finance the 100 km-long section of this road from Lwangu - Lutukila. GoT is looking for funding for the remaining section of the road. Although the complete road from Makambako - Songea has completed its design life of 20 years, the rehabilitation of the Lwangu - Lutukila road section is given priority due the severe condition as result of the: (a) increased traffic demands in the section; (b) the existing road pavement structural design capacity in the section is lower than the from Makambako to Lwangu. Thus, the benefit for savings in VOC and travel time will be higher in the section of Lwangu - Lutukila.

D. The Iringa - Msembe Road (US\$79 million). This is a regional road located in Iringa region, within the Dar Es Salaam DC, linking the Iringa town with the Ruaha National Park at Msembe. Upgrading of this road, from gravel road to Double Bituminous Surface Dressing (DBST) pavement, is expected to stimulate tourism industry in the Ruaha National Park and it will also serve an agriculturally rich area, which is located at the center of the area covered by the SAGCOT initiative. Iringa is one of the “Big Four” regions³ in Tanzania in terms of surplus food production and the influence area of the project covers about 31.4 % of the cultivated area in the region.

E. Support to Social Infrastructure and Community Based Gender Responsive Activities. Social infrastructure and community-based initiatives will be supported along the project road corridors by allocating about 1 % of the construction cost for the road works contracts. This will enhance the project to further develop its outcome and contributes toward the host community activities. This amount will be included in the provisional sum of the contracts cost. The proposed interventions and their locations will be selected in close consultation with communities and local authorities and the interventions shall be informed by needs assessments to be carried out. Based on the main source of income for local communities and giving due attention to gender gap the interventions may include but not limited to, undertaking the following with local stakeholders’ participation: (i) cashew nut processing centers for women groups along the Mtwara – Mingoyo – Masasi road in selected locations; (ii) small fruits and vegetable preservation facilities along the Makambako – Songea Makambako – Songea road in selected locations; and, (iii) enhancing the use of modern beehives and promotion of honey marketing in selected centres along the Lusahunga – Rusumo Road. These economic empowerment activities will be complemented by gender dialogue groups to prevent any increase in intimate partner violence.

Component 2: Upgrading and Rehabilitation of Regional Airports (US\$ 106.3 million). This component will finance the upgrading and rehabilitation of three priority regional airports out of the eleven airports, which have been identified for upgrading under the TSSP. The designs, ESIA, Abbreviated Resettlement Action Plan (ARAP) and feasibility study of all the eleven airports were carried out and the most feasible airports

³ together with other regions Njombe, Rukwa and Mbeya

have been chosen for upgrading. The three airports proposed for rehabilitation and upgrading are Lake Manyara, Tanga, and Iringa Airports and the objective is to meet the air traffic demands for the design life of 20 years and promote tourism and commerce. This component will also support (i) air navigation facilities, (ii) the associated construction supervision consultants, and (iii) land acquisition, and resettlement and rehabilitation. The credit would finance the construction cost of works, and construction supervision consultants. The costs of land acquisition, and resettlement and rehabilitation will be met through the government funds.

- A. **Lake Manyara (US\$35.8 million).** The airport is located on an escarpment northwest of Lake Manyara National Park, and southeast of the Ngorongoro crater. The airport mainly serves the tourism industry to these two key tourist attraction areas. The airport is now a Code 2B airport without an Air Traffic Control Tower (ATC) and is planned to be improved to a Code 2C airport. The works will include upgrading of the gravel surfaced runway, taxiway and apron, the construction of a new passenger terminal building, and safety and security facilities.
- B. **Tanga Airport (US\$34.7 million).** This airport serves the port city of Tanga and the North-Eastern part of Tanzania, which form parts of the Tanga DC. The airport which is a code 3C airport and has asphalt runway surface that is in an extreme poor condition and is a safety hazard. rehabilitation and upgrading of deteriorated tarmac surfaced runway, taxiway and apron the construction of passenger terminal building, and safety and security facilities.

Iringa Airport (US\$16.6 million). Iringa Airport is in the south-central corridor of Tanzania, east of the Ruaha National Park. The investments in this airport will complement the interventions on the Iringa - Msembe road into stimulating the tourism industry in the Ruaha National Park and serving the agriculturally rich area. The Airport conforms to Code 3C visual requirements but has only code 2C instrument standards. The Airport will be updated to a full fledged Code 3C. rehabilitation and upgrading of deteriorated tarmac surfaced runway, taxiway and apron the construction of passenger terminal building, and safety and security facilities.

Component 3: Institutional Support and Capacity Building in the transport sector (US\$21 million). This component will finance project management support for implementation and monitoring of the project and key institutional support activities. The activities for project management support include: (i) third-party audit consultants to perform semi-annual integrated performance audits covering, among others, engineering designs, management of social and environmental issues including implementation of the SEA/SH action plan, and quality assurance; (ii) safeguards management consultants for implementation of Resettlement Action Plans, (iii) Consultants/NGOs for implementation of GBV, VAC, and HIV/AIDS action plans; (iv) consultants for monitoring and evaluation of Project's outcome and intermediate indicators; and (v) Project Implementation Support Staff (specially hired for implementation of the Project for PIU). The key institutional support activities include: (i) Update of standard specifications,

design, and practice manuals for road works; (ii) Support for equipment and research activities to address pavement failures in Tanzania; (iii) Update of Contract Management System; (iv) Study on climate change adaptation approaches to the Road Sector; (v) Skill upgrading in specific technical areas of ministry's staff and staff from TANROADS, RFB, and ERB; (vi) Development of a communication strategy for citizen engagement and provide training and sensitization on road safety; (vii) support for development of a Grievance Redress Mechanism for the road sector; (viii) Support for introduction of Airports Asset Management System; (ix) Support for transition to Global Navigation Satellite System based air navigation; (x) Support for enhancement of private sector participation in transport sector; (xi) Knowledge transfer to younger engineers from local universities; and (xii) Support for establishment of an Institute of Construction Technology. TANROADS will ensure that there are adequate budgetary resources to fully implement each of the undertakings set out in this SEP and the other TanTIP environmental and social risk management documents.

Component 4: Contingent Emergency Response Component (Total: US\$0 million).

Providing preparedness and rapid response measures to address disaster, emergency and/or catastrophic events, in accordance with the applicable CERC Manual. This component will support TANROADS in accessing resources for eligible expenditures to provide immediate and effective response in case of an eligible emergency upon a formal request from the Government of Tanzania and will use IDA Immediate Response Mechanism.

2.0 OVERVIEW OF LABOUR USE ON THE PROJECT

This LMP applies to all TanTIP employers and their workers, whether full-time, part-time, temporary, seasonal or migrant workers. For the purpose of the LMP, groups of workers will be referred to in the following manner:

- Direct workers: People employed or engaged directly by TanTIP to work specifically in relation to the Project;
- Contracted workers: People employed or engaged by contractors and subcontractors to perform work related to core functions of the Project, regardless of location;
- Primary supply workers: is a worker employed or engaged by a primary supplier, providing goods and materials to the project, over whom a primary supplier exercises control for the work, working conditions, and treatment of the person. People employed or engaged by TanTIP Implementing Agencies' Primary Suppliers.

The Project will not use community workers as that term is identified in ESS2 paragraphs 34-38. All government civil servants assigned/ seconded to work on the Project will remain subject to the terms and conditions of their existing public sector employment agreements/arrangements, as understood under ESS2, paragraph 8.

2.1 Number of Project Workers

Most workers will be employed by contractors implementing the rehabilitation/upgrading of roads and regional airports and each contractor will each determine their labour needs, including through engagement of subcontractors. The TanTIP estimates that the Project will need to engage 2,150 workers of different types - direct or contracted workers who are skilled, semi-skilled and unskilled.

The contractors' requirements for skilled labour are expected to be at be 10% of all workers, making all TanTIP contractors to engage about 180 skilled employees, 540 semi-skilled, and 1,080 non-skilled workers. TanTIP expects to directly engage 100 skilled consultants and 50 service providers (contractors and primary suppliers). The Project expects to engage an estimated seven government civil servants who will be attached to the PIT. These government civil servants will be professional (skilled) and semi-skilled like drivers, office attendant and all will work collaboratively in order to insure all regulations and procedure are in place. In addition, the PIT will engage specialised staff to complement the civil servant skills, including capacity to manage environmental and social aspects. The total estimation of full time workers in the PIT is 15 with an additional 100 specialised consultants engaged to provide technical expertise during the implementation of the Project.

The anticipated Project workforce breakdown is as follows:

- Skilled Labour – technical personnel with advanced specialist training (e.g. consulting professionals, administrators). It is expected that the majority of the skilled labour will be Tanzanian nationals, with approximately 100 coming from other countries/international sources;
- Semi-skilled Labour – approximately 1550 ancillary staff with relevant vocational training (including drivers, office attendant and security). The Contractors will engage private personnel for security TANROADS will seek to ensure that, all engaged locally and all semi-skilled labour will be Tanzanian nationals and local to the relevant Project/subproject sites.
- Unskilled – approximately 500 casual labourers for incidental manual work requiring little to no specialist training (including manual labourers, field guides, vehicle breakdown, cleaners, grocery clerks, cashiers and servicemen). TANROADS will seek to ensure that all skilled workers, either direct works or those engaged through contractors/subcontractors are from project-affected local communities.

The table 2 below summarises the number of workers that will be involved in the program.

Table 2: Characteristics of TanTIP Workers

Workers' Type	Total number of worker	Skilled workers	Semi-skilled worker	Unskilled workers	Characteristics
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Workers' Type	Total number of workers	Skilled workers	Semi-skilled workers	Unskilled workers	Characteristics
Direct workers					
TANROAD S Project Implementing Team (PIT)	15	15	NA	NA	Technical staff working with the TanTIP (TANROADS). They include Project Coordinator, Project engineer, M&E, Environmental, Social and Safety staff; WEO, Legal and Labour Officers.
Consultants (engaged directly by PIT)	100	100	NA	NA	<ul style="list-style-type: none"> • National or international migrants technical staff; • Project
Contracted Workers					
Contractors' and Sub-contractors' Staff	1,800	180	540	1080	Mostly nationals 88% and few international 12% technical staff. They include Project Managers, Engineers,
Primary Supply workers					
Construction material suppliers	50	NA	NA	NA	Local and national level workers engaged

NA: Not Applicable

It is expected that the unskilled workers will be drawn from local project-affected communities in Tanzania. The contractors/subcontractors might recruit some

unskilled labour from other parts of Tanzania, but only when the contractors/subcontractors are not able to recruit adequate labour from local project-affected communities for the unskilled worker's positions. In the recruitment of unskilled labourers, the PIT will require that contractors/subcontractors give priority to national workers from local project affected communities, in particular, persons who are members of vulnerable groups, including women, and persons with disabilities.

The PIT will require that contractors/subcontractors will focus on inclusive and non-discriminatory recruitment and employment policies and procedures in relation to all Project workers. TANROADS and the PIT will ensure that there will be no discrimination in recruitment or employment relating to Project workers based on any personal characteristics unrelated to inherent work requirements. The PIT will ensure that this requirement of non-discrimination in recruitment and terms of employment will also be applied and strictly adhered to by project contractors and subcontractors, as well as primary suppliers, wherever possible. TANROADS estimates that 5% of estimated Project workers will be women. Gender inequities in the Project and Tanzania road sector will be addressed in the Gender Policy which will be completed following Project effectiveness.

TANROADS has stated that contractors/subcontractors will be required to consult with local authorities in the recruitment of candidates from the local communities for the project's unskilled labour force. In circumstances where local leaders are involved in identifying such candidates, the PIT will be responsible for ensuring that the contractors/subcontractors have measures in place (which the PIT will approve) to guide and coordinate recruitment with the local authorities to ensure that the recruitment of candidates is clear, transparent, and non-discriminatory.

To ensure absence of child labour and considering the hazardous nature of work required for a number of the Project's activities, the TanTIP will not employ or engage in connection with the Project any person under the age of 18 years. The PIT will ensure that this requirement is strictly applied to all workers which they hire directly in relation to the project and regarding all workers engaged by contractors/subcontractors and primary suppliers for the project.

2.1.1 Direct Workers

Implementation of the TanTIP will mainly use technical staff working with the TANROADS Headquarters and Regional Offices. Further, the TanTIP anticipates the utilisation of consultants who will be recruited on a contractual basis and deployed in order to strengthen efficient service delivery of PIT. These consultants will undertake institutional capacity building training, design review, monitoring of safeguard issues, project M&E etc.

The TanTIP will conduct an analysis of recruitment, retention and promotion barriers for women to become technical staff working for TanTIP and will define a Gender Policy and Gender Action Plan to define concrete actions to address those gaps.

Direct workers will be managed by TANROADS as required under national law and in compliance with the provisions of ESS 2 and ESS4. A total of 115 direct workers are expected to be engaged.

2.1.2 Contracted Workers

Contracted workers will be guided by specific contractual agreements between them and the Project Contractor. An analysis of the barriers and facilitators for women to participate in construction activities will be developed under Gender Policy to promote women's participation in the project construction activities.

Timing of Labour Requirements:

It is expected that the construction phase of the project will last approximately 5 years and that there will be at least two main crews of workers hired under the construction contracts responsible for construction at any time. Each crew will be made up of teams to complete specific jobs. The contractors and subcontractors will be responsible for contracting/employing unskilled workers as casual laborers for incidental manual work. The timing for this recruitment will be linked with the schedule for the construction. As noted above, it is expected that the unskilled workers will be drawn from local project-affected communities in Tanzania. The contractors/subcontractors might recruit some unskilled labour from other parts of Tanzania, but only when the contractors/subcontractors are not able to recruit adequate labour from local project-affected communities for the unskilled worker's positions. In the recruitment of unskilled labourers, the PIT will require that contractors/subcontractors give priority to national workers from local project affected communities, in particular, persons who are members of vulnerable groups, including women, and persons with disabilities.

Civil servants who have been assigned to coordinate the Project will be expected to work on full-time basis throughout the Project while the rest of the team will be expected to render their duties whenever need arises. Consultants working on contractual basis are expected to work full-time for the project during their tenure of office.

2.1.3 Migrant Workers

It is likely that migrant workers (local, from neighbouring villages or other parts of Tanzania) and/or international will be engaged for the TanTIP. In the event that locals seek employment TANROADS has stated that contractors/subcontractors will be required to consult with local authorities/local leaders in the recruitment of candidates from the local communities for the project's unskilled labour force. In circumstances where local leaders are involved in identifying such candidates, the PIT will be responsible for ensuring that the contractors/subcontractors have measures in place (which PIT will approve) to guide and coordinate recruitment with the local authorities/local leaders to ensure that the recruitment of candidates is clear, transparent, and non-discriminatory.

3.0 ASSESSMENT OF KEY POTENTIAL LABOR RISKS

3.1 Project Activities

Substantial use of labour is mostly anticipated to arise from the implementation of the sub-projects under the TanTIP. The types of activities to be constructed or rehabilitated include:

- Undertaking of engineering designs review studies;
- Construction/rehabilitation of drainage structures such as bridges, culverts, drifts, check dams and mitre drains;
- Excavation of side drain ditches;
- Concrete works;
- Repaving or new pavements;
- Bush clearing/ grass cutting;
- Afforestation - both tree planting and regeneration;
- Land Resources Conservation including erosion control activities;
- Restoration of borrow pits and quarries;
- Construction of campsites and workshops;
- Installation of road appurtenances.

3.1.1 Requirements for Establishment of Contractor's Labour Camps

TANROADS will ensure that all contractor labour camps conform to the applicable requirements of national law regarding health, security, hygiene and safety, as well as ESS2 para 28 on project worker facilities and Workers' Accommodation: processes and standards," a guidance note by IFC and EBRD, August 2009.

3.1.2 Summary of activities during mobilisation and construction phase

- Site clearance and construction of camp sites;
- Installation of temporary security fence at camp sites, site office and storage facilities;
- Establishment of project material sites, including the security fence;
- Occupational safety and health management;
- Transportation of materials and relevant public consultations;
- Acquisition of materials from reliable sources and storage;
- Testing of construction materials;
- Acquisition of other permits such as water use permit
- Mobilisation of labour force, equipment and plant for construction works;
Relocation of utilities.

3.2 Key Potential Project Labour Related Risks

Potential labour risks associated with the TanTIP activities include lack of employer compliance with national laws relating to wages, hours of work and other terms and conditions of employment, occupational safety and health hazards, accidents and injuries, transmission of communicable diseases, including HIV/AIDS, COVID-19), incidents of child labour and forced/trafficked labour in supply chains, labour influx, and GBV/SH/SEA among project workers and between project workers and local communities, and discrimination in recruitment and employment.

a) Labour influx

Labour influx is known to happen in road upgrade and maintenance projects in Tanzania especially for large scale infrastructure development. Even though there may be movement of people in search for employment. It is planned that most of the workforce, about 65%, will be sourced from projects neighbouring villages and the contractors must provide transport to local areas. However, it is estimated that 630 persons will be engaged who are not local.

However, some workers will need to be accommodated and associated risks, such as social dynamics, health care, personal security, hygiene, food and water security and housing will need to be adequately mitigated in site plans. Contracted firms under TanTIP will therefore be expected to have in place Hiring Procedures clearly indicating: (i) how advertisement of vacancies will be done; (ii) locations of recruitment of workers within the district where the projects are to be implemented; (iii) guidelines to ensure that most of the workers are recruited within the project host communities; (iv) codes of conduct for personnel; (v) mitigation measures to manage influx labour and related camp sites (including GBV, see section d below). This will be monitored by the supervising engineers.

b) Worker camps

Based on the anticipated 630 persons on the workforce who are not from project affected local communities, the Project will necessitate the establishment of one or more work camps to accommodate project workers coming from other parts of Tanzania and elsewhere. Project contractors and subcontractors will be responsible for establishing and maintaining the safety, hygiene, health, accommodation, access to food, and supervision of these work camps and/or other accommodations. The contractors and subcontractors responsible for these work camps and/or other accommodation will ensure quality accommodation; protect and promote the health, safety and well-being of project workers, and provide access to or provision of services at these work camps /or other accommodations that respond to the physical and cultural needs of project workers in line with national law and the provisions of ESS2 and other application provisions of the ESF.

Each contractor/subcontractor will ensure that the accommodation is appropriate for its location, and is clean, safe and at a minimum meets the basic needs of workers,

taking local cultural factors into consideration. In particular the provision of accommodation shall meet Tanzania legislative and other legal requirements and international good practice regarding, but not restricted to: the charging for accommodation, the provision of minimum amounts of space for each worker, provision of sanitary, laundry and cooking facilities and potable water; the location of accommodation in relation to the workplace; the provision of first aid and medical facilities and fire safety equipment and personnel; and heating and ventilation.

The PIT, with the support of the owner's engineer (supervision consultant), will be responsible for ensuring that the contractors and subcontractors manage these work camps and/or other accommodation in compliance with all relevant Tanzanian laws and the requirements of ESS2. If necessary, the relevant World Bank guidance in relation to COVID-19 will apply to the management of any work camps/worker accommodation

The PIT will be responsible for ensuring that the contractors and subcontractors manage these work camps in compliance with all relevant Tanzania laws and ESS2 and ESS4 of the World Bank ESF, and the contractual conditions between the contractors/subcontractors and the PIT. Depending on project circumstances during implementation, the PIT might need to develop a Labour Influx Management Plan, which will be in line with the provisions of this LMP, as well as ESS2, ESS4 and related provisions of the ESF and other World Bank standards.

The TANROADS/TanTIP PIT shall refer to, and ensure that the contractors and subcontractors refer to, the World Bank Operations Policy and Country Services "Managing the Risks of Adverse Impacts on Communities from Temporary Project Induced Labour Influx" for further guidance on understanding the circumstances for developing and implementing a Labour Influx Management Plan.

c) Accident and injuries (safety and health hazards)

The TanTIP sub-project implementation will entail working with cutting equipment; quarry sites and borrow areas where there may be blasting; areas with high level of noise such as compaction; manual handling; excavation works; working in heights (even though minimal); and heavy machinery. These works pose occupational hazards that may result in accidents and injuries. The TanTIP has therefore prepared an Environmental and Social Management Framework (ESMF) that will guide the assessment of risks and preparation of Environmental and Social Management Plans (ESMPs) for the sub-projects. These ESMPs will form part of bidding documents for contractors and will therefore guide the preparation of Site-Specific Environmental Health and Safety Management plans which will detail how these risks will be managed for each of the sub-projects and each worksite for review and clearance by the implementing agencies. Contractors will be requested to appoint competent OHS staff for site management. Contractors are required to report incident to the PIT in accordance with procedures set out in the ESMF, and PIT will follow the procedures in reporting to the World Bank.

d) Gender Based Violence/Sexual Exploitation and Abuse (GBV/SEA) and Sexual Harassment (SH)

Prevalence of Gender Based Violence (GBV) in Tanzania is estimated to be at 58% to women and 40% to men. There have been cases of sexual exploitation within construction worksites and thus this risk may present itself in the TanTIP subprojects. Women who seek employment in all employment categories (direct workers, contracted workers) may also face sexual harassment including demands for sexual favours before being employed. To address these, Tanzania has put in place laws and regulations and gender desks in various police stations. TanTIP has therefore prepared a standalone GBV Action Plan to guide Project implementation. Contractors will conform their management of Project workers under their oversight/control to the provisions of the TanTIP GBV Action Plan implement the Project's requirement which will be reviewed and cleared by TANROADS prior to implementation. In addition, sub-component 3c of the TanTIP on community protection is also focusing on GBV/SEA in the entire program and areas of its implementation and will aid in the mitigation of these risks. The PIT will insure the:

- Implementation of a Code of Conduct (CoC) for all project workers, that will include provisions related to GBV/SEA/SH, and which all contractors and subcontractors and primary suppliers will agree to abide by as a condition of contract.
- Raise awareness regarding GBV/SEA/SH and train all project workers and residents of local communities affected by the project, on GBV/SEA/SH, responsibilities related to adherence to the CoC, and consequences for noncompliance, prior to commencement of any project-related work activities.
- Ensure that all project workers, both direct hires and those hired through contractors/ subcontractors, have access to the grievance mechanism established specifically for the project workforce or the grievance redress mechanism established generally for the project, to address concerns relating to GBV/SEA/SH.

e) Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome (HIV/AIDS)

HIV/AIDS prevalence which varies across regions in Tanzania ranging from 11.4% in Njombe and 11.3% in Iringa to less than 1% in Lindi. In the regions targeted by the project, the prevalence rates are: (i) Morogoro 4.2%; (ii) Njombe 11.4%; (iii) Mbeya 9.3%; (iv) Songwe 5.8%; (v) Katavi 5.9%; (vi) Rukwa 4.4%; (vii) Iringa 11.3%; (viii) Lindi 0.3%; (ix) Pwani 5.5%; and (x) Tanga 5.0% (xi) Mtwara 2.0%; and (xii) Ruvuma 5.6%. Construction attracts workers, both national and international, and services to support the project workforce. Most of the construction workers are expected to be unaccompanied male who may therefore attract transactional sex workers in the project areas and also increase cases of sexual contact with local population creating a risk of spread of HIV/AIDS and other sexually transmitted infections. The project will include in the bidding documents and bills of quantities requirements contractors to engage a local non-governmental organisation working in the field of HIV/AIDS to: sensitise the local communities and workers on HIV/AIDS, STI, TB Mitigation Measures and Gender Issues; distribute condoms; provide

Information and Education Materials (IEC) on HIV/AIDS; offer pre- and post-counselling and voluntary free testing services to the workforce.

f) COVID-19

As of December 2021, confirmed cases of COVID-19 victims are 27,849 and death cases are 737. A total of 1,699,523 vaccine doses have been administered. The Government of Tanzania is continuing to emphasise people to be vaccinated and avoid unnecessary crowds to prevent the spread. Construction attracts workers, both national and international, and services to support the project workforce. Construction workers may be infected and spread COVID-19 through aerosols, direct contact or contact with infected objects. The Project will include in the bidding documents and bills of quantities requirements contractors to engage a local non-governmental organisation working in the field of COVID-19 to: sensitise the local communities and workers on Covid 19; provide Information and Education Materials (IEC) on COVID-19; offer voluntary free vaccine to the Workers who have not been vaccinated.

The Occupational Safety and Health Act require the Contractor/Subcontractor to comply with safety and health standards and regulations enforced by OSHA.

TANROADS/TanTIP PIT will ensure that each contractor/subcontractor provides training to the workers under his/her oversight/control on the following:

- The signs and symptoms of COVID-19 and an explanation of how the disease is potentially spread, including the fact that infected people can spread the virus even if they do not have symptoms;
- All policies and procedures that are applicable to the employee's duties as they relate to potential exposures to Covid 19;
- a written copy of those standard operating procedures;
- Information on appropriate social distancing and hygiene practices like appropriate cleaning practices, proper way to cover coughs and sneezes following Ministry of Health recommendations;
- The need to report any safety and health concerns.
- Appropriate use of face masks and other Personal Protective Equipment (PPE) to combat the transmission of COVID-19.

TANROADS/TanTIP PIT will require that each contractor establish a response plan and procedure for suspected and confirmed COVID-19 cases, which will include:

- Consultation and communication arrangements with employees and contractors, including making sure contact details are up to date;
- Maintain workplace mapping information;
- Identify site locations for cleaning and disinfection;

- Implement an appropriate cleaning and disinfection regime, which should be overseen by a competent person, for example, an occupational hygienist;
- The competent person should advise that the cleaning and disinfection regime has occurred for re-entry to the affected areas;
- Provide employees and contractors with relevant information prior to re-entering the site and resuming work.

g) Child labour:

In most areas of construction child labour has soared due to their vulnerability caused by poor livelihood conditions of their parents. Tanzania has ratified ILO Convention 138 on minimum age and Convention 182 on worst forms of child labour. In Tanzania, child labour, including practices identified as worst forms of child labour under Tanzanian law, such as gravel making and quarrying, is prevalent due to poverty. While the Project has established a minimum age of 18 years for employment, for all project workers, there is a risk that persons employed or engaged by primary suppliers for the project, including those involved in producing and providing gravel and other materials, might engage persons under 18 years to perform worst forms of child labour. Use of child labour is also anticipated to be a risk in relation to use of unskilled workers from local communities hired for project vegetation/land clearing and other activities.

Given that the project has established a minimum age of 18 years for employment for all project workers, the TANROADS/TanTIP PIT will ensure that all persons directly hired or employed/engaged by contractors, subcontractors, and primary suppliers for the project are at least 18 years old. The TANROADS/TanTIP PIT will maintain records verifying the age of employment for all direct project workers and ensure that all contractors, subcontractors, and primary suppliers maintain such documentation for their workers engaged in relation to the project. The TANROADS/TanTIP PIT and contractors, subcontractors and primary suppliers will maintain all such records confirming the age of employment of project workers for inspection by TANROADS or the World Bank.

The TANROADS/TanTIP PIT will also require all contractors, subcontractors, and primary suppliers to identify the risk of child labour in their workforce relating to the project and supply chains and to take appropriate steps to remedy the situation or to terminate the contract with the contractor or primary supplier.

h) Lack of Employer Compliance with National Labour Laws

Workers in Tanzania, especially unskilled and semi-skilled labourers, engaged in construction-related work, face risks of exploitation, abuse, discrimination and other forms of unfair and illegal treatment by employers. These risks include being forced to work overtime with no additional compensation or in excess of legally mandated

maximum hours per week, insufficient rest periods in violation of the law, wages that do not conform to minimum legal requirements, failure of the employer to pay legally required health or social security benefits for workers, failure of employers to pay workers their salary on time and in the full amount required by law, and failure of employers to provide workers with a written and signed legally enforceable contract in a language the worker understands. Another related abuse includes employers keeping copies of the work contract that differ from the version given to the worker. An additional risk is the practice of employers using short-term contracts of six months or less to avoid hiring organised workers with labour protections.

Unskilled workers may be illiterate or, even if literate, have an inadequate knowledge of employment and labour laws and policies. In light of high competition for limited job opportunities, such workers might be willing to waive their legal rights to minimum wage, health and social security benefits, or overtime in order to secure a job from unscrupulous employers. Similar risks exist for workers in supply chains that provide materials, such as gravel and other products, and services to primary suppliers.

To address the risks of employer non-compliance with national labour laws, the PIT will ensure the following for all workers that the PIT engage directly for the project and will also ensure that all contractors, subcontractors, and primary suppliers abide by the following provisions for all workers they have engaged in relation to the project:

Provide all project workers with information and documentation that is clear and understandable to the worker regarding their terms and conditions of employment. This information and documentation will set out the worker's rights under national labour and employment law, including:

Rights related to hours of work, wages, overtime, compensation, and benefits, as well as any related provisions required under ESS2.

Pay project workers on a regular basis as required under national law.

Ensure that deductions from payment of wages are made only as allowed by national law.

Provide workers with adequate periods of rest per week, annual holiday and sick, maternity and family leave, as required by national law in part VII (Employment Standards and Rights) of Employment Act. No. 11 of 2005.

Provide project workers with written notice of termination of employment and details of severance payments in a timely manner.

Ensure full implementation of the Employment Act No. 11 in relation to recruitment and employment of all project workers.

TANROADS/TanTIP PIT will be responsible for ensuring that contractors, subcontractors and primary suppliers comply with all the above requirements. TANROADS/TanTIP PIT will maintain, and will ensure that contractors,

subcontractors and primary suppliers maintain, records of all worker contracts and related documentation, and confirmation that the above provisions are being adhered to.

The health and safety risks to which the project workers may be exposed from each type of projects will be assessed, as well as the ability to prevent or eliminate such risks or, if the risk cannot be prevented or eliminated, measures to protect project workers from exposure will be undertaken.

i) Forced Labour and Labour Trafficking

Tanzania has ratified ILO Convention 29 on Forced Labour, and ILO Convention 105 on Elimination of Forced Labour. Additionally, the Employment Act No. 11, Part II prohibits forced labour and provide penalties, including fines and imprisonment, for violations. The Employment Act, however, excludes from the prohibition on forced labour work exacted by prisoners as a consequence of a court conviction, and it is a practice in Tanzania for prisoners to provide nonpaid and non-voluntary labour on road repair and other public construction projects. Also, there are risks of persons being trafficked to work for contractors, subcontractors, or primary suppliers for work activities related to the project. Other examples of forced labour that could occur in relation to construction and infrastructure activities include imposition of recruitment or employment fees payable by the worker at the commencement of employment, and loss or delay of wages that impede a workers' right to end employment within their legal rights, or other project restrictions that compel a project worker to work on a non-voluntary basis.

The PIT will ensure that no person is employed or engaged in relation to the project under circumstances that would constitute forced labour, prison labour, or the result of labour trafficking. To this end, the PIT will maintain records of the recruitment circumstances as well as the written employment contracts of all project workers, including direct hires, as well as persons engaged through contractors, subcontractors and primary suppliers. The PIT will also conduct periodic inspections, at least once every six months, of contractor, subcontractor and primary supplier employment records to verify consistency and compliance with the law in relation to recruitment of workers and provision to all workers of a written signed employment contract in English or Kiswahili, depending on the worker's preference.

If forced labour or persons who are engaged in the project as a result of trafficking are identified, the PIT will act promptly to address the issue, including referring the matter without delay to the relevant Tanzania government authorities, as well as relevant government or NGO trafficking victims'/forced labour victims' support services, as appropriate, to be addressed in accordance with Tanzania law. Also, to address the risk of forced labour or persons trafficked to work for primary suppliers, TANROADS/TanTIP PIT will undertake due diligence to identify possible suppliers and the extent to which these risks might be present in their activities for the project.

Where forced labour or labour resulting from trafficking in persons is identified, TANROADS/TanTIP PIT will require the primary supplier to report the situation to the police and other relevant government authorities. Depending on the circumstances, TANROADS/TanTIP will discontinue use of that primary supplier and instead use primary suppliers that can demonstrate they are meeting the relevant requirements of Tanzania relating to forced labour and the trafficking of persons, and the applicable provisions of ESS2.

j) Discrimination against Women and Persons with Disabilities in Recruitment and Employment

Tanzania law prohibits workplace discrimination, directly or indirectly, against a worker based on disability, HIV/AIDS status, gender, pregnancy, marital status or family responsibility, colour, nationality, tribe, or place of origin, race, national extraction, social origin, political opinion or religion. However, due to deeply rooted patriarchal systems, women in Tanzania continue to face gender-based employment discrimination, including in relation to recruitment, wages and other benefits, promotions, and other terms of employment. This discrimination includes bullying and sexual harassment, at times involving demands for sexual favours in return for job placement or advancement. There is also substantial work-related discrimination against persons with disabilities, in particular regarding persons with albinism and persons based on actual or perceived HIV/AIDS status.

The PIT and project contractors and subcontractors will focus on inclusive and non-discriminatory recruitment and employment policies and procedures in relation to all project workers. The PIT will ensure that there will be no discrimination in recruitment or employment relating to project workers based on any personal characteristics unrelated to inherent work requirements. Such personal characteristics include, but are not limited to, gender, age, race, colour, disability, including albinism, marital status, pregnancy or maternity status, social origin, gender orientation, religion, real or perceived HIV/AIDS status, and ethnic origin.

TANROADS/TanTIP PIT will ensure that this requirement of non-discrimination in recruitment and terms of employment will also be applied and strictly adhered to by project contractors and subcontractors, as well as primary suppliers, wherever possible.

TANROADS/TanTIP PIT will require that each project contractor/subcontractor shall not make decisions relating to the employment or treatment of project workers engaged by the contractor/subcontractor on the basis of personal characteristics unrelated to inherent job requirements. The contractor/subcontractor shall base the employment of persons it engages for the project on the principle of equal opportunity and fair treatment and shall not discriminate with respect to any aspect of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access

to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices.

Table 3 presents possible mitigation measures for the Project’s potential labour-related risks

Table 3: Potential Project Labour Risks and Mitigation Measures

Potential Risk as identified in ESS2	Whom May be Affected	Magnitude of the Potential Risk	Mitigation measures
Accident and injuries (safety and health hazards)	All site workers (Skilled, Semi-Skilled and unskilled workers)	High	<p>The supervision engineer to ensure:</p> <ul style="list-style-type: none"> • Each active work site to have an OSHA trained and certified first-aider; • Developing and implementing Emergency Preparedness and Response Plan (EPRP) for each of the sub-project; • Installation of warning signs and barricades appropriately at all active worksites; • Provision of appropriate PPEs to site workers and visitors; • Code of Conducts to prescribe that wearing of protective gears is mandatory; • Provision of well stocked first aid kits and first aid training to all site workers; • Contractor shall develop, adopt and

Potential Risk as identified in ESS2	Whom May be Affected	Magnitude of the Potential Risk	Mitigation measures
			<p>sensitise all site workers on Standard Operating Procedures, guiding working in heights, lifting operations, driving under the projects, excavations, hazardous materials, machines and maintenance, health and hygiene (as applicable to the sub-project);</p> <ul style="list-style-type: none"> • Pre and post placement medical examination to be conducted for all workers; only the workers fit for the roles to be hired.
Likely incidents of child labour	contractors and sub-contractors	Low	<p>All vacancy advertisements should clearly prescribe that child labour is not permitted and persons to be employed must meet the minimum age as prescribed in Employment and Labour Relations Act (ELRA) of 2004;</p> <ul style="list-style-type: none"> • Sensitize beneficiaries on negative impacts of child labour; • Certification of labourers' age and removal of under-age (using National

Potential Risk as identified in ESS2	Whom May be Affected	Magnitude of the Potential Risk	Mitigation measures
			<p>Identification Card, Voters Registration Card, Birth Certificate or affidavit of birth in employment of workers), Introduction letter from the Local Authority to the local workers from same village or neighbouring villages;</p> <ul style="list-style-type: none"> • Ensure on compliance with the ELRA 2004 Part II Section 5 subsection 1-8; • Ensure that contractors have and implement a Child Labour Policy to deter employment and abuse of children in the project.

Potential Risk as identified in ESS2	Whom May be Affected	Magnitude of the Potential Risk	Mitigation measures
Labour influx	Semi-Skilled and unskilled workers	High	<ul style="list-style-type: none"> • Provision of employment for local community members will be a priority; • Contractor to develop and implement Hiring Procedures aiming at reducing labour influx reviewed and found acceptable to the implementing agencies; • Contractors and sub-contractors to use local leaders on recruitment of manual/unskilled workers; • Ensure that recruitment for semi-skilled labour is conducted in stations within project; • Advertisement on labour recruitment including messages that preference for local employment to be placed on notice board; • Provide equal employment opportunities for both youth, women, men and disabled; • Preparation, implementation and enforcement of

Potential Risk as identified in ESS2	Whom May be Affected	Magnitude of the Potential Risk	Mitigation measures
			<p>Codes of Conduct by the contractor;</p> <ul style="list-style-type: none"> • Trainings for workers on their obligations under the Codes of Conduct.
Worker camps	<p>Semi-Skilled and unskilled workers</p> <p>Surrounding communities</p>	Substantial	<ul style="list-style-type: none"> • Consultation on location of accommodation with surrounding communities; • Camp design and facilities; • Trainings for workers on their obligations under the Codes of Conduct as well as specific measures set out in the Project GBV Action Plan.
Risks of GBV, SH and SEA	<p>Program workers (Skilled, Semi-Skilled and unskilled workers)</p>	Substantial	<ul style="list-style-type: none"> • Contractor to have a GBV Action Plan, including a Response and Accountability Mechanism; • Provision of workers' accommodation

Potential Risk as identified in ESS2	Whom May be Affected	Magnitude of the Potential Risk	Mitigation measures
			<p>where necessary to reduce impacts of GBV to be considered.</p> <ul style="list-style-type: none"> • Awareness raising within the local community and labour force on sexual exploitation and abuse and avenues to report such cases if they arise; • Economic empowerment through provision of equal employment opportunities for both youth, women, men and disabled; • Training all construction workers and stakeholders on SEA and sexual harassment responsibilities related to the CoC and consequence for non compliance, ahead of any project related works; • Development of policies/contractual requirements related to SEA, including investigation and disciplinary procedures; • Refer all GBV/SEA cases to the programs referral

Potential Risk as identified in ESS2	Whom May be Affected	Magnitude of the Potential Risk	Mitigation measures
			system or partner agency for action.
HIV/AIDS	Program workers (Skilled, Semi-Skilled and unskilled workers)	High	<ul style="list-style-type: none"> • Sensitisation on HIV/AIDS infection, causes and prevention; • Pre and Post Counselling on HIV/AIDS; • Sensitisation on voluntary testing and provision of the same by a service provider; • Sensitisation on the proper use of ARVs; • Provision condoms to project workforce; • Economic empowerment through provision of equal employment opportunities for youths, women, men and disabled; • Provision of Information Education and Communication (IEC) materials such as posters and fliers with information on HIV/AIDS.

Potential Risk as identified in ESS2	Whom May be Affected	Magnitude of the Potential Risk	Mitigation measures
Covid 19	Program workers (Skilled, Semi-Skilled and unskilled workers)	High	<ul style="list-style-type: none"> • The signs and symptoms of COVID-19 and an explanation of how the disease is potentially spread, including the fact that infected people can spread the virus even if they do not have symptoms; • All policies and procedures that are applicable to the employee's duties as they relate to potential exposures to Covid 19; • It is helpful to provide employees with a written copy of those standard operating procedures; • Information on appropriate social distancing and hygiene practices like appropriate cleaning practices, proper way to cover coughs and sneezes following Ministry of Health recommendations; • The need to report any safety and health concerns.
Low wages	Workers (Skilled, Semi-Skilled and unskilled)	High	<ul style="list-style-type: none"> • Contractor's and sub – contractors to comply with National laws on payment of wages and

Potential Risk as identified in ESS2	Whom May be Affected	Magnitude of the Potential Risk	Mitigation measures
	workers)		salaries to workers including social security funds and other benefits
Forced labour	Workers	Low	<ul style="list-style-type: none"> • Established recruitment policy and record keeping • Random inspections of records
Discrimination	Minorities, vulnerable groups and workers	Moderate	<ul style="list-style-type: none"> • Inclusive and non-discriminatory recruitment • Inclusive and non-discriminatory employment policies and procedures

4.0 OVERVIEW OF LABOR LEGISLATION

4.1 TERMS AND CONDITIONS

Tanzanian law does not prohibit all forms of trafficking in persons, and Zanzibar has a separate legal code from the mainland of Tanzania. On the mainland, traffickers can be prosecuted under existing statutes criminalizing the sale of people, forced labour, child labour, and various sexual offenses.

The Government of Tanzania does not fully meet the minimum international standards for the elimination of trafficking but is making significant efforts to do so. These efforts included increasing funding for the anti-trafficking committee to implement the national action plan, allocating resources to the victim assistance fund, identifying more victims and referring them to shelter services, and repatriating Tanzanian and foreign victims.

The Project will recruit and manage project personnel in accordance with the Tanzania Employment and Labour Relations Act of 2004, the Occupational Health and Safety Act, 2003, Law of the Child Act of 2009, the Public Procurement Act Cap 410 (as amended in

2016) and Regulation 30c of Public Procurement Regulation of 2013 (as amended in 2016), and Guidelines for Participation of Special Groups in Public Procurement of 2017; as well as ESS 2 on Labour and Working Conditions, and on OHS measures (see ESF ESS2, para 25: The OHS measures will be designed and implemented to address: (a) identification of potential hazards to project workers, particularly those that may be life threatening; (b) provision of preventive and protective measures, including modification, substitution, or elimination of hazardous conditions or substances; (c) training of project workers and maintenance of training records; (d) documentation and reporting of occupational accidents, diseases and incidents; (e) emergency prevention and preparedness and response arrangements to emergency situations;19 and (f) remedies for adverse impacts such as occupational injuries, deaths, disability and disease). The project will be in compliance with World Bank Group Environmental, Health, and Safety (EHS) Guidelines (e.g. General EHS Guidelines: Occupational Health and Safety, Section 2.0 Occupational Health and Safety).

In Tanzania the Employment and Labour Relations Act (2004) and Labour Institutions Act (subsidiary legislations) and accompanying regulations provide a legal framework for the safeguard of worker's management and rights. The most relevant subsidiary legislations include:

- The Employment and Labour Relations (Code of Good Practice) Rules, 2007, Government Gazette, Notice No. 42 of 2007;
- The Employment and Labour Relations (Forms) Rules, 2007, Government Gazette, Notice No 65 of 2007;
- The Employment and Labour Relations (General) Regulations, 2017, Government Notice 47 of 2017.

This Act regulate employment matters in terms of employment standards i.e. maximum hours of work, minimum acceptable pay within the construction industry, night work standards, right to break during working day, leave and fair terminations, prohibition of child labour, prohibition of forced labour, freedom of association, leave provisions – annual, sick and holidays, dispute resolution/grievance management, contractual arrangements, terms and working conditions and prohibition of discriminations.

Terms such as prohibition of forced labour, prohibition of child labour, prohibition of discriminations and maximum hours of work also apply to community workers. The legislation requirements presented in the Tanzania Employment and Labour Relations Act (2004) conform to guidance provided in ESS2. The Act covers the entire scope of the minimum terms as follows:

- **Working hours:** employee may work for nine (9) hours inclusive of a one (1) hour meal break per work day; forty-five (45) hours a week; and a maximum of six (6) days a week.
- **Overtime hours:** are to be paid at a rate of one and one half (1 ½) times the employee's wage for any hours worked over a standard work day (9 hours

inclusive of a 1-hour meal break)/week (45 hours). Employees are prohibited from working more than fifty (50) hours of overtime over a four-week cycle. Overtime is not to exceed ten (10) hours a week.

- **Wages:** The minimum net salary for all project workers, which is the legal minimum wage in Tanzania is 325,000 Tshs per month, excluding social security and other payments/benefits; the amount of 325,000 Tshs per month will increase if the government increases the minimum wage.
- **Total hours:** Workers may work twelve hours in a day; however, this must not exceed the forty-five (45) hour limit of working hours a week. Tanzanian law limits work to twelve (12) working hours per day, inclusive of ordinary and overtime working hours. Employees are entitled to receive payment for all public holidays. When employees are obligated to work on a public holiday, the worker is entitled to double their basic wage for each hour worked.
- **Night work:** to be compensated at least five percent (5%) of their basic wage or overtime wage for each hour worked at night. However, some categories of workers are prohibited from night work including pregnant workers two months before delivery, mothers two months after delivery, children under the age of eighteen (18) and anyone medically certified as unfit for night work.
- **Rest Periods:** employees are entitled to a sixty (60) minute break over a five (5) hour period of consecutive work. Employers must allow workers to have a daily rest of up to twelve (12) hours between ending and commencing work; and a weekly rest of up to twenty-four (24) hours.
- **Deductions:** An employer is not authorised to make deductions from an employee's salary unless permissible by law, contractually agreed to, or court ordered.
- **Leave:** Annual leave (28 days inclusive of public holidays), sick leave (126 days in a 36-month cycle), maternity (84 days in a 36-month cycle), and paternity leave (3 days) and compassionate leave (Family Responsibility Leave usually 4 days). However, other types of leave may be negotiated through collective bargaining and documented.
- **Termination:** Both parties to a contract have the right to terminate employment. The Employment Act requires that all forms of termination be documented in writing and adequate period of notice be given prior to terminating employment.

4.2 OCCUPATIONAL HEALTH AND SAFETY

The Occupational Health Safety and Health Act, 2005 applies generally to workplaces. It governs the duties, rights and responsibilities of employers and employees in relation to occupational health and safety. Relevant provisions of this act relating to the activities of the project include: Section 36 requires that employers provide and maintain protective equipment for workers in any workplace where there are any processes involving exposure to any injurious or offensive substance or environment. Section 68(2) states that it is the employer's responsibility to ensure that: a) all workers exposed to hazards, are instructed on such hazards prevailing in the workplace, (b) safety measure are taken to avoid injury, and (c) training is provided at least once in every two years. Section 68(1) provides that no person shall

be employed at machines or any process being a machine 12 This Act applies to all workplaces except those workplaces specifically exempted by the Minister of Labour in consultation with the Labour Advisory Board. Relation to this Act apply to 18 or process liable to cause body injury or injury to health, unless he or she has been fully instructed as to the danger likely to arise in connection to the process or machine and (a) has received sufficient training in the operation of the machine or in the process; and (b) is under adequate supervision by a person who has thorough knowledge and experience of the machine or process. Section 118(1) (c) provides that there shall kept available for inspection in every workplace, in the prescribed form, a register, called the General Register and there shall be entered in or attached to that register the prescribed particulars as to every accident and case of occupational disease(s) occurring in the workplace of which notice is required be sent under the provision of this Act. Section 53 states that it is the worker's duty to report immediately to the supervisor any situation which the worker has reasonable grounds to believe presents an imminent or serious danger to his/ her life or health or that of others in the same premises, and until the employer has taken remedial action if necessary the employer shall not require workers to return to a work situation where there is continuing imminent or serious danger to life or health. Section 54 provides that any worker who has removed himself or herself from a work situation which he or she has reasonable justification to believe the present and imminent and serious danger to his or her life or health shall not be punished or subjected to undue consequence or provided the danger.

The Occupational Health and Safety Act No.5 of 2003, has relevant clauses that support ESS2. Part IV Section 43 Safety Provision; Part V Section 54, 55 and 58 Health and Welfare Provisions; Part VI Section 61 (1a), 63 (a, b), and 65 Special Provision of the Act, provide procedures for the safety and health of workers at work and work places. Furthermore, the Act describes procedures for the protection of safety, health and welfare of persons other than workers in places of work.

Specific, relevant and direct legislation on occupational safety and health is found under the Occupational Health and Safety Act of 2003. The Act is aimed at protecting against hazards to health and safety arising out of, or in connection to, work related-activities.

The OHS Act sets standards that must be observed by employers to ensure that a workplace is safe and secure. Where no standards exist to deal with a particular issue, employers are bound by OHS Act's General Duty Clause which requires employers to provide a place of employment that is free from recognised hazards known to or are likely to cause harm, death or serious physical injury to its employees.

Potentially dangerous devices or machinery must be securely fenced. All power operated devices must be powered off from transmission machinery. Employers must provide an employee with PPE to minimise risks. First aid kits, fire extinguishers and an evacuation plan must also be provided in case of emergency.

Workers are obliged to act reasonably to reduce the risk of work-related injuries.

Where loss or injury occurs by fault or negligence of the employee, the law makes them partly liable. Employees have the following duties under the OHS Act:

- Take reasonable care for the health and safety of themselves and others who may be affected by his/her actions or omissions at work;
- Comply with Employer’s health and safety regulations;
- Report to the employer or health and safety representative knowledge of any unsafe or unhealthy situation;
- Report immediately to the employer or health and safety representative any incident or accident which results in injury.

Furthermore, training of workers on Occupational Health and Safety matters will be the responsibility of PIT and the contractor. The contractor will be obligated to make staff available for this training, as well as any additional mandatory.

TANROADS will create Program Implementing Team (PIT) to coordinate Project activities as well as to oversee all aspects of the implementation of the LMP at national level, in particular to ensure contractors’ compliance. The PIT will supervise implementation of LMP on a monthly basis or at shorter intervals as defined by specific plans. In accordance with contract specifics, the contractor will be guided by the LMP to understand requirements on labour issues; hence it will help the contractor to capture and plan for labour issues and prepare management measures as part of the Contractor’s environmental and social management plan. The detailed approach is described in the sections below.

The details of management of Project workers, responsible staff and oversight mechanisms of the DTCP Program will be clearly described in the Environmental and Social Management Plan (ESMP). The table below presents the summary of roles of different responsible staff participating in the TanTIP.

Table 4: Comparison of Tanzanian and World Bank ESS2 Requirements

ESS2 Objective	Tanzania Legislation	Gaps	Project Approach
Promote safety and health at work.	The Occupational Health and Safety Act promotes the safety and health of workers.	No substantial difference	The Project will promote ESHS of all workers, including through training, signing of CoCs and contractual obligations of

			contractors.
Promote the fair treatment, non-discrimination, and equal opportunity of workers.	The Constitution of Tanzania requires equality before the law and without any discrimination. The Labour Relations Act prohibits any employer from discriminating directly or indirectly against an employee in any employment policy or practice on any of the following grounds: age; nationality, tribe or place of origin, race, national extraction, social origin, political opinion or religion, sex, gender, pregnancy, marital status or family responsibility, disability, HIV/AIDS, colour or station of life. Harassment of an employee is recognised as a form of discrimination.	No substantial difference	The Project will proactively promote non-discrimination and equal opportunities. E.g. to create improve gender parity, the Project will develop a Gender Policy.
Protect workers, with emphasis on vulnerable workers.	Children are protected under National law, see subsequent section.	ESS2 seeks for protection of women, persons with disabilities, and children.	The Project has developed a GBV Action Plan which expands the gender protections. Persons with disability will be accommodated in the Project. Children under the age of 18 will not be permitted to work under the Project.
Prevent the use of all forms of forced labour and child labour.	A child under eighteen years of age shall not be employed in a mine, factory or as crew on a ship or in any other worksite including non-formal settings and agriculture, where work conditions may be considered hazardous by the Minister. For the purpose of this subsection, "ship" includes a vessel of any	No substantial difference	A child under the minimum age of 18 will not be employed or engaged in connection with the Project.

	<p>description used for navigation.</p> <p>(4) No person shall employ a child in employment-</p> <p>(a) that is inappropriate for a person of that age;</p> <p>(b) that places at risk the child's well-being, education, physical or mental health, or spiritual, moral or social development.</p> <p>Tanzanian law further prohibits the procuring, demand and imposition of forced labour and any person who procures demands or imposes forced labour commits an offence.</p>		
Support the principles of freedom of association and collective bargaining of workers in a manner consistent with national law.	The Constitution of Tanzania protects the right to freedom of association.	No substantial difference	All Project employers must respect the right to worker's associations.
Provide workers with accessible means to raise workplace concerns.	Tanzania Employment and Labour Relations and Labour Institutions Act of 2004 have set out steps and procedures for disciplinary and grievance handling and processes determining the employer employee relations at workplaces.	No substantial difference	The Project will require contractors to provide workers with accessible means to raise concerns and provides a Project level Grievance Redress Committee to oversee all grievances and ensure their resolution in a timely manner.

5.0 RESPONSIBLE STAFF

The following functions are generally responsible for labour and working conditions for the Project. The specific responsibilities for each function, however, will be detailed in the Project Implementation Manual (PIM):

- Engagement and Management of Project Workers: PIT Project Implementing Team and the MoWT Project Implementation Team Contractors/Subcontractors Supervising/consulting firm
- Engagement and Management of TanTIP Contractors/Subcontractors
- Occupational Health and Safety (OHS):
 - Project Implementing Unit for TanTIP
 - Contractors and Subcontractors
- Training of Workers:
- Project Implementing Team for TanTIP
- Contractors and Subcontractors
- Addressing Worker Grievances:

Table 5 provides an overview of key project staff and their project-related responsibilities.

Table 5: Responsibilities

Institution/staff	Roles
PIT HR Officer	<ul style="list-style-type: none"> • Engagement and management of project workers • Engagement and management of contractors/subcontractors
PIT environmental and social specialists, including health and safety specialist	<ul style="list-style-type: none"> • Review and approve the contractor’s site-specific construction ESMPs (CESMP), Health and Safety, Labour Management Procedures, Emergence Prepared and Response Plan, GBV action plan, and Traffic Management Plans prior submission to PIT; • Include the requirements and mitigation measures from HSMPs and site specific HSMPs in the bidding documents and contractor contracts; • Ensure that contractors have an Environmental Health and Safety (EHS) Officer; • Review progress reports by the supervision engineer/consultant during civil works and conduct inspection of the sites; • Conduct supervision visits to construction sites and provide remedial measures to address any non-compliance; • Send Health and Safety Management Plan and reports to the National Occupational Health and Safety Authority for certification.
Contractor, including contractor’s OHS staff	<ul style="list-style-type: none"> • Compliance with relevant environmental and social legislative, occupational health and safety

	<p>and labour requirements (project-specific, district- and national level), including allocating adequate budget for implementation of these requirements;</p> <ul style="list-style-type: none"> • Work within the scope of contractual requirements and other tender conditions; • Prepare CESMPs LMP, GBV, EPRP, TMP, HSMP based on the site specific ESMP in the bidding documents and contracts; • Train workers about ESHS (including relevant WB & ESHS Guidelines) and the site-specific environmental and social measures to be followed; • The OHS officer of the contractor will participate in the joint site inspections with the PIT and Supervision Engineer/Consultant; • Carry out any corrective actions instructed by the PIT and Supervision Engineer/consultant; • Provide and update information to the Supervision Engineer/Consultant regarding works activities including off-site activities/facilities such as borrow pits, quarries, disposal sites, which may contribute, or be continuing to the generation of adverse environmental impacts; • In case of non-compliances/discrepancies, carry out investigation and submit proposals on mitigation measures, and implement remedial measures to reduce environmental impact; • Stop civil works which generate adverse impacts to the workers upon receiving instructions from the Supervision Engineer/Consultant and/or PIT; • Propose and carry out corrective actions in order to minimise the environmental impacts; • Send immediate reports to Supervision Engineer/Consultant in case of any accidents or incidents involving project site, project workers or otherwise occurring within the project area of influence; • Send weekly reports of non-compliance to the Supervision Engineer/consultant; • Send monthly progress reports to the Supervision Engineer/Consultant.
Supervision Engineer/Consultant	<ul style="list-style-type: none"> • Supervise compliance of project implementation in accordance with environmental and social procedures for the Project; • Maintain open and direct lines of communication between the PIT and contractor(s);

	<ul style="list-style-type: none"> • Monitoring of the implementation, functioning and effectiveness of workers' grievance resolution mechanism in place by the sub-project contractors under them; • Ensure implementation of contractor hiring procedures in accordance with the LMP; • Monitor and advise on the implementation and enforcement of Codes of Conduct of the sub-project contractors and sub-contractors; • In case of any accidents or incidents, immediately notify the PIT and support the process of documenting and reporting the case to the WB; • Prepare written reports for the PIT such as monthly and quarterly and annual reports of project implementation, non-compliance issues; summary monthly/quarterly reports covering key issues and findings from supervision activities; and consolidated summary report from contractor's monthly report. • In case of any accident event a report should reflect World Bank Incident Report be submitted to PIT; • Advice and recommend any change of project implementation, including remedial measures to comply with the LMP. • Send weekly reports of non-compliance to the PIT. • Prepare monthly, quarterly and annual reports for the PIT project implementation, non-compliance issues; summary monthly/quarterly reports covering key issues and findings from supervision activities; and consolidated summary report from contractor's monthly report.
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6.0 POLICIES AND PROCEDURES

Some of TanTIP activities which are directly under the control of contractors may result in environmental, social, risks and impacts. These activities will be mitigated directly by the same contractors. The PIT will be responsible for ensuring that all contractors/subcontractors and primary suppliers engaged in relation to the Project manage these risks adequately in compliance with national law and the provisions of the World Bank ESF. The core TanTIP approach is to ensure that contractors are efficiently mitigating the impacts of the project activities. In order for potential bidders to be aware of Environmental, Social and Occupational Health and Safety performance requirements, the TANROADS will incorporate standardised

Environmental, Social and Occupational Health and Safety clauses in the tender and contract documents. Bidders will be required to reflect the standardised Environmental, Social and Occupational Health and Safety clauses in their bids and required to implement the clauses for the duration of the project's contract.

With these clauses TANROADS will be accountable to enforce compliance by contractors. The contractor is obliged to make sure that all documentation related to Environmental, Social and Occupational Health and Safety management including the LMP, is available for inspection at any time by TANROADS. The contractual arrangements with each project worker must be clearly defined in accordance with Tanzania Employment and Labour Relations Act (2004), Occupational Health and Safety Act (2003).

Under no circumstances will the TanTIP Implementing Agency (TANROADS), Contractors, primary suppliers, or sub-contractors engage forced labour or labour obtained through trafficking in persons.

TANROADS has adopted the Environmental and Social Safeguard Policy of 2018. This policy is guided by the provisions under the Tanzania Employment and Labour Relations Act (2004), Occupational Health and Safety Act (2003), the World Bank Standard on Labour and Working Conditions (ESS2) and the ILO Conventions to which Tanzania is a party.

To ensure that the working environment is free of health and safety risks and hazards, the TanTIP shall ensure that appropriate mechanisms are put in place such as consideration of health and safety during sub-project designs; regular health and safety training to workers throughout the implementation phase; use of appropriate and adequate safety warning signage; regular monitoring and proper documentation and reporting of near misses, accidents and also provision of preventive and protection measures. Additionally, community workers who will be working under the TanTIP will be provided with facilities (protective gears) appropriate to the circumstances of their work. All TanTIP workers (whether direct/contract or migrant workers) will be provided with information that is clear and understandable concerning their works in order to avoid risks of exposure to danger or injury, as well as be informed of any known hazards or diseases associated with the work they do as patterns and conditions of employment.

The TanTIP will offer equal employment opportunity for both women and men who will be differently exposed to physical and psychological hazards and risks at the workplace. Nonetheless, exposure to same risks may also impact women and men differently. While women are always subjected to the so perceived lighter and easier work than men, the risks associated with their exposure for example effect on their reproductive system are not well established whereas those associated with normal men's work have been well established and measures to mitigate the risks well developed. It would be the responsibility of the PIT to ensure that women are well protected from the risks so as to ensure workplace safety and health for both men and women. The PIT will ensure that gender differences are incorporated in

the design of HSMP. During implementation, the Contractor must engage a professional OHS officer. The OHS officer ensures the day-to-day compliance with specified health and safety measures as well as records of any incident. The Contractor must comply and implement through ESMP, HSMP and Traffic Management Plan (TMP) by engaging OHS Officer, Environmentalist and Sociologist as key staff to help incident reporting. Minor incidents are reported on a monthly basis while serious incidents are immediately reported to the Supervising Engineer. Minor Lost Time Incidences (LTIs), are reflected in the quarterly reports to TANROADS and the World Bank, whereas major issues, which have resulted into a fatality or Incidents that caused or may cause great harm to the environment, workers, communities, or natural or cultural resources are immediately (within 24hours) flagged to the PIT. Serious incidents must be immediately reported to the World Bank Task Team Leader.

Furthermore, training of workers on Occupational Health and Safety matters will be the responsibility of PIT and the contractor. The contractor will be obligated to make staff available for this training, as well as any additional mandatory trainings required by TANROADS, as specified by the contract.

7.0 AGE OF EMPLOYMENT

As stipulated in Tanzania Employment and Labour Relations Act (2004) the minimum age of employment is 18 years, which is also stipulated in the International Labour Organisation Conventions (138) on minimum age. These two legislations prohibit the employment of underage children. TANROADS has established that minimum age of employment/work in relation to TanTIP is 18 years, and it will be among the terms of contracts for contractors, which must be reflected in any engagement of subcontractors. During the TanTIP implementation, various tools will be used to verify age of workers. Such tools include Birth certificates, Voters Registration Card and National Identity Cards which will be filled in each Employee's records. In the circumstances where these documents are not available the Affidavit of Birth will be used. The consequence of breaching implementing agencies' standard on child labour may result into termination of the contract.

It is expected that the project will engage primary suppliers to provide raw materials and other goods and services. There are risks of worst forms of child labour, including children working in gravel making, as well as risks of serious worker safety issues, including accidents, fatalities, and lack of adequate occupational health and safety equipment, in project supply chains related to construction, quarrying and transport sectors. Where a significant risk of child or forced labour or serious safety issues in relation to primary suppliers has been identified, the supplier shall be excluded from contracts on the Project, until the issues are addressed in line with national law and ESS2 requirements.

The PIT will undertake monitoring, at a minimum every six months, of all project workers, to ensure that all contractors, subcontractors, and primary suppliers engaged in relation to the project are not employing/engaging anyone under 18 years of age for work in relation to the project.

The Project will use the following process, prior to the employment or engagement of an applicant for work on the project, to verify the person's age. The PIT will ensure that each contractor, subcontractor, and primary supplier also uses this process and provides written confirmation that each worker they employ or engage in relation to the Project is at least the minimum age of 18 years. This following information will be kept on file in the PIT responsible for administrative offices:

- written confirmation from the applicant of their age; and
- where there is reasonable doubt as to the age of the applicant, requesting and reviewing available documents to verify age (such as a birth certificate, national identification card, medical or school record, or other document or community verification demonstrating age).

If a person under the minimum age of 18 years is discovered working in relation to the project, TANROADS/TanTIP PIT will take measures to terminate the employment or engagement of that person in a responsible manner, considering the best interest of that person.

To ensure that the best interests of the child under 18 years are considered, the PIT will undertake, and ensure that all contractors, subcontractors and primary suppliers also undertake, remediation within a reasonable time period agreeable to the World Bank. The remediation activities could include, among other options:

- enrolling the child in a vocational training/apprenticeship program, but which does not interfere with the child's completion of compulsory school attendance under national law.
- employment of a member of the child's family, who is at least 18 years of age, by the primary supplier, contractor, or subcontractor for project-related or other work.

In case it is found that underage children are working during the implementation of the TanTIP, the following procedures will be applied:

- i. Routine document check process without raising the alarm;
- ii. Review age documents of the child and verify that they are genuine;
- iii. If document checks confirm the child is underage, remove the child from all work immediately;
- iv. If the documentary evidence is inconclusive, checking the age of the child may entail communication or meeting with parents and guardians of

- children, contacting local labour authorities to validate identification, and conduct medical check-ups to assess age;
- v. Obtain contact details (ideally mobile phone number) of child and parents/guardian, and wherever possible, home address;
 - vi. Talk to the child to ensure they understand what is happening and why, as well as risks and hazards of child labour;
 - vii. Meet with the contractor and site supervisor/consultant to communicate the policies and basic positions regarding child labour;
 - viii. Contact the parents/guardians to ensure that they understand and agree with what is happening and to explain the risks and hazards of child labour;
 - ix. Review all the personnel records at the workplace to identify whether there are any other child workers; and
 - x. Give advice to the contractor and supervision engineer/consultant on improving age verification systems to ensure that no new child worker is hired.

8.0 TERMS AND CONDITIONS

This section sets out specific terms and conditions related to labour and working conditions for the project and which will be included in contractor bidding documents

- 1) The maximum number of hours per week that a worker can undertake work on the project is 42 hours per week, and if a worker's duties require him to exceed these maximum hours, he/she shall be paid overtime as per sections (63), (64) and (66) of the Employment Act, 11 of 2005.
- 2) The project implementing agencies, will ensure respect for any collective bargaining agreements related to project workers, whether direct hires or workers hired through contractors or subcontractors. Collective bargaining agreements specific to the project are not known at this time, but should they exist in relation to any contracted or direct-hire workers, such agreements will be respected.
- 3) The minimum net salary for all project workers, which is the legal minimum wage will be determined as per assignment month, excluding social security and other payments/benefits; the
- 4) All government civil servants working in connection with the project, whether full-time or part-time, will remain subject to the terms and conditions of their existing public sector employment agreements/arrangements.
- 5) All project workers will be given a legally enforceable written employment contract, signed by the employer and the worker, in either English or Kiswahili, depending on the worker's preference, and in a level of language that is understandable to the worker.
- 6) All project workers will sign a Code of Conduct related to GBV and OHS issues (Appendix 2).
- 7) All contractors, subcontractors, and primary suppliers will ensure that they have qualified staff who are fluent in either English or Kiswahili at all

- times in relation to project activities and in all communications with the project workforce.
- 8) The Project will ensure compliance with all legal requirements and World Bank guidelines concerning the management of the workforce in the context of COVID-19.
 - 9) The Project will not engage/employ prison labour for any purpose in relation to the project, including any work involving direct hires, workers engaged through contractors/subcontractors, and workers engaged through primary suppliers

As already indicated, the TanTIP will involve three main categories of workers namely:

- (i) Direct Project Workers, including government civil servants working in connection with the Project, who have contracts that are governed by the Employment and Labour Relations Act (2004), and are subject to the provisions of ESS2, paragraph 8, and consultants engaged by the PIT to work on safeguards, design and other work in relation to the Project;
- (ii) Contracted workers: Contractors/sub-contractors;
- (iii) Primary Suppliers workers (Local and national level service providers).

Working conditions will be made clear to the workers prior to commencement of the work. During the meeting, community beneficiaries will be informed of such working conditions such as the maximum number of ordinary days or hours that an employee will be required to work. Furthermore, payment will be made on determined mode, whether hourly, daily, weekly or monthly basing on Labour Institution Wage Order of 2013 under the section of construction services after completing assigned work.

9.0 WORKER GRIEVANCE MECHANISM

All government civil servants engaged by TANROADS and MoWT have access to a grievance procedure provided under the Public Service Act No 2, 2011.

The worker grievance mechanism (W-GRM) for project workers engaged through contractors/subcontractors to raise workplace concerns will be part of the contractual obligation of contractors. Under the W-GRM, project workers will be able to raise all workplace-related concerns, including regarding unfair treatment, problems with payment of wages or benefits, as well as unsafe or unhealthy work situations, including workplace sexual harassment. Contractors must report status of issues raised through regular reporting. Where a worker wants a higher level review, an issue raised may be appealed in to the Project level GRM at the PIT (described in detail in the SEP).

The W-GRM, however, does not replace or override the requirement that the PIT provide for workplace processes for project workers to report work situations that they believe are not safe or healthy, such as reporting requirements regarding

workplace injuries and accidents. The W-GRM also does not preclude any project worker’s ability to access any other judicial or administrative remedies that might be available under national law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements. The Project worker shall also be able to access the World Bank’s Grievance Redress Service and/or the Inspection Panel.


During the preparation of the LMP the following types of grievances were identified:

- Low wages
- Fair hiring practices
- Overtime
- Workers risks
- Hazardous environment for workers
- Contracts issues
- Contribution to social security funds
- Sexual harassment

The W-GRM is based on the following principles:

- The process will be transparent and allow workers to express their concerns and file grievances and receive timely feedback in a manner that they understand in English or Kiswahili, where appropriate.
- There will be no discrimination against those who express grievances, and all grievances will be treated confidentially.
- Anonymous grievances will also be accepted and treated equally as other grievances whose origins are known.
- Management will treat grievances seriously and take timely and appropriate action in response.
- The W-GRM will not prevent workers from using the dispute procedures provided in Part VIII of the Employment and Labour Relations Act of 2004.

Table 6: W-GRM Levels



Level		Responsible Persons/Department	Role
Level 3	Higher-level recourse for unresolved disputes (workers may choose to use the national system from outset)	<ul style="list-style-type: none"> • Labour Court • Commission for Mediation and Arbitration (CMA) • Local Government Authority/Regional Office - Labour Office 	<ul style="list-style-type: none"> • The Labour Court’s role can be divided between those relating to industrial relations matters and those relating to the determination of appeals in matters of employment rights. The role of the Court in the resolution of industrial relations disputes is to act as a Court of last resort.

Level		Responsible Persons/Department	Role
			<ul style="list-style-type: none"> • Commission for Mediation and Arbitration is to Conciliate workplace disputes. Arbitrate certain categories of disputes that remain unresolved after conciliation, establish picketing rules • Local Government Authority is a range of vital services for people and businesses in defined areas. Among them are well-known functions such as social care, schools, housing and planning, and waste collection, but also lesser-known ones such as licensing, business support, registrar services, and pest control.
Level 2	TANROADS PIT	GRC PIT Human Resources Officer	<ul style="list-style-type: none"> • Overall supervision of the project W-GRM • Worker appeal.
Level 1	Contractor/ subcontractor grievance mechanism	Responsible person for handling grievances to be identified through Contractor or Subcontractor's specific GRM	<ul style="list-style-type: none"> • Handles grievances of workers engaged or employed by them • Provides progress and status report to PIT

Specific responsibilities of project implementers for worker grievances

Contractors/Subcontractors

- Project construction contractors will prepare their labour management procedures, which will also include a detailed description of the W-GRM, before the beginning of project implementation. The W-GRMs will be proportionate to the nature and scale of the potential risks and impacts of the subproject.
- The contractor/subcontractor will also inform their respective project workers verbally and in writing at the time of recruitment, that no reprisals shall be taken

against any project worker for using the W-GRM.

- The contractor/subcontractor will provide information both orally and in writing to project workers in English and Kiswahili about the purpose of and means to access the W-GRM, through regular worker trainings, worker handbooks, on notice boards and other communications media, throughout the duration of the design and implementation of the project.

TANROADS PIT

- PIT will require all project contractors to develop and implement a W-GRM for their workforces, including subcontractors, prior to implementation of project activities.
- The PIT shall ensure that all contractors/subcontractors inform every Project worker employed/engaged of the terms of the W-GRM at the time of the worker’s recruitment.
- PIT will record and monitor all worker grievances.
- PIT will include a responsible person to record and track resolution of grievances. In the case of the project direct hires working for the PIT HR Officer will be responsible for receiving, recording and tracking resolution of such grievances.
- PIT will ensure that the all persons involved in project W-GRM resolution matters are properly trained in understanding and implementing the project W-GRM.

W-GRM Standard Operating Procedures

Access to the W-GRM:

- Multiple uptake channels will be provided by the Contractor/Subcontractor, such as comment/complaint form, suggestion boxes, email, a telephone hotline. A confidential procedure for workers to submit anonymous grievances in writing or otherwise will be made available.
- Workers are encouraged to submit issues directly to the contractor, using the contractor defined W-GRM.
- Grievances related to GBV-SEA-SH will be immediately channelled to the GBV-GRM.
- For workers who feel dissatisfied after following the contractor’s GRM, may register their concerns which will be handled according to the following steps:

Step	Reporting Officer/ Committee	Officer/ Committee Members	Time Frame	Grievance Redressed	Grievance not Redressed
Step 1	Worker complaints that are not resolved by the contractor should be submitted to the PIT HR Officer where not resolved within 30 days.	PIT HR Officer and review by the Project GRC	14 days	If the case is resolved a report will be prepared and signed by the worker, with a copy given to them.	If the grievance is not resolved, move to Step 2.

Step 2	If the worker is not satisfied with the Step 1 decision, the case will can be submitted to arbitration following national procedures.	PIT monitors	14 days	PIT records the resolution.	If the grievance is not resolved, move to Step 3.
Step 3	Where arbitration fails to satisfy the worker, the worker can appeal through Labour Courts.	PIT monitors	NA	PIT records the resolution.	

PIT will require all project contractors to develop and implement a W-GRM for their workforces, including subcontractors, prior to implementation of project activities. Project construction contractors will prepare their labour - management procedures, which will also include a detailed description of the WGM, before the beginning of project implementation. The W-GRMs will be proportionate to the nature and scale of the potential risks and impacts of the project.

9.1 Addressing Sexual Harassment Among Project Workers and Grievances Related to Workplace Sexual Harassment

Women in all project employment categories may face sexual harassment, including demands for sexual favours as a condition of employment. When employed, women may face continuous and/or unwanted demands for sexual favours under threat of dismissal or exclusion of overtime or other work benefits or opportunities. In addition, female workers may face verbal harassment of a sexual nature and sexual assault by male colleagues.

Measures the PIT will implement, including through project contractors and sub-contractors, to mitigate the risk of sexual harassment include the following:

- Implement a Code of Conduct (CoC) for all Project workers, that will include provisions related to GBV/SEA/SH, and which all contractors and subcontractors and primary suppliers will agree to abide by as a condition of contract and implement the Project GBV Action Plan.

Raise awareness regarding GBV/SEA/SH and train all Project workers, on combatting workplace sexual harassment and responsibilities related to adherence to the CoC, and consequence for noncompliance, prior to commencement of any project-related work activities.

- Ensure that all Project workers, both direct hires and those hired through contractors/subcontractors, have access to the grievance mechanism established specifically for the project workforce or the grievance redress mechanism

established generally for the project, to address concerns relating to GBV/SEA/SH.

10.0 CONTRACTOR MANAGEMENT

To ensure fair competition and transparency, contractors will be selected based on the Government of Tanzania's Public Procurement Regulatory Authority (PPRA) and World Bank Procurement Procedures which control the engagement of contractors. This includes:

- (i) Competitive bidding through transparent open advertising;
- (ii) Shortlisting and selection of contractors; and
- (iii) Contract signing.

The PIT will incorporate standard language, based on project requirements drawn from ESS2, ESS4 and other sections of the World Bank ESF and supporting documentation, in the tender and contract documents to ensure potential bidders are aware of the environmental and social requirements to be met under the project.

Tender documentation should note that the contractor/subcontractor shall actively collaborate and consult with project workers in promoting understanding, and methods for, implementation of OHS requirements, as well as providing information and training on occupational safety and health, and provision of personal protective equipment without expense to project workers. Project workers who remove themselves from dangerous work situations will not be required to return to work until necessary remedial action to correct the situation has been taken. Project workers will not be retaliated against or otherwise subject to reprisal or negative action for such reporting or removing themselves from such dangerous situations.

The PIT will also state in the tender documentation that adherence to national legislation regarding labour and employment relations and occupational health and safety is a prerequisite for participation in the Project.

The PIT will also include in the tender documents provisions that forced labour, child labour, discrimination in hiring and employment based on gender, disability, ethnicity or other personal characteristics unrelated to work requirements, sexual harassment in the workplace, and sexual exploitation and abuse are prohibited and may be grounds for removal of the contractor from the Project.

The PIT will require bidders for contracts for the Project to agree to and implement a workplace CoC that includes provisions prohibiting any form of sexual exploitation, assault or harassment of Project workers, as well as sexual exploitation or sexual assault of persons in local communities affected by the project and any form of sexual activity with individuals under the age of 18, except in case of pre-existing marriage. The CoC will apply to all persons employed or engaged, including persons employed or engaged through contractors and subcontractors, in relation to the project.

The PIT will require bidders for contracts for the project to submit a statement confirming their firm compliance with national labour and employment and occupational health and safety laws, Contractor CoC (Appendix 1) and labour-management procedures in accordance with Environmental and Social Standard 2 “Labor and Working Conditions” (ESS2) and the LMP for the project.

The PIT will make reasonable efforts to ensure that parties awarded contracts for the project are reliable law-abiding entities that do not have a history of problems relating to disrespect for national labour law, unresolved labour disputes, or frequent work-related accidents.

As part of the selection process for contractors, the PIT will request and review from prospective contractors the following information:

- Information in public records, for example, corporate registers and public documents relating to violations of applicable labour law, including reports from labour inspectorates and other enforcement bodies on OHS, child labour, forced labour, worker right of association, or other labour issues
- Business licenses, registrations, permits, and approvals;
- Documents relating to a labour management system, including OHS records, for example, labour management procedures;
- Identification of labour management, safety, and health personnel, their qualifications, and certifications;
- Workers’ certifications/permits/training to perform required work;
- Records of safety and health violations, and responses;
- Accident and fatality records and notifications to authorities;
- Records of legally required worker benefits and proof of workers’ enrolment in the related programs;
- Worker payroll records, including hours worked and pay received; and
- Identification of safety committee members and records of meetings.

During the implementation of the contract, the PIT will require that contractors submit quarterly reports on compliance with the LMP. The report should include the number and status of project workers, the number of hired and terminated employees in the given period, the number of hours worked, overtime, regularity of payment, OHS issues (injuries and fatalities, if any), safety measures, grievances raised and resolved, training provided/attended, incidents of non-compliance with national law or the LMP.

The PIT environmental and social team will be responsible for ensuring environment, social, health and safety of workers/community and road safety measures are addressed in TanTIP through integration in the contracts and that proper bill of quantities to ensure implementation of the same are in place. Based on the Environmental and Social Impact Statement, the contractor will be responsible to prepare and sign site specific:

- Environmental and Social Management Plan (ESMP);

- Health and Safety Management Plan (HSMP);
- Grievance Redress Mechanism (GRM);
- Traffic Management Plan (TMP);
- Codes of conduct (CoC) (Appendix 1, as well as require workers to sign individual CoCs, see Appendix 2);
- Community Engagement and Communication Strategy (CECS);
- Labour Management Procedures (LMP);
- Emergency Preparedness and Response Plan (EPRP);
- Gender Based Violence Action Plan (GBV).

These documents prepared by the contractor will be contractual and legal binding as outlined in **Appendix III**; and will be regularly updated based on reviews, incidence occurred, regulatory changes or project changes to ensure adaptive management of key emerging issues. The contractor will have key roles to ensure the site specific ESMP, HSMP, TMP, CECS, LMP and CoCs are implemented. Whereas TANROADS will play the managing and monitoring roles to ensure that the contractors and third parties (sub-contractors, agents or intermediaries) comply with them.

11.0 COMMUNITY WORKERS

Project will include the use of community workers in a number of different circumstances, including where labour is provided by the community as a contribution to the project, or where projects are designed and conducted for the purpose of fostering community-driven development, providing a social safety net or providing targeted assistance in fragile and conflict-affected situations. Given the nature and objectives of such projects, the application of all requirements of ESS2 will be appropriate. In all such circumstances, TANROADS will require measures to be implemented to ascertain whether such labour is or will be provided on a voluntary basis as an outcome of individual or community agreement.

Accordingly, where the project includes the provision of labour by community workers, the TANROADS will apply the relevant provisions of this ESS in a manner which reflects and is proportionate to: (a) the nature and scope of the project; (b) the specific project activities in which the community workers are engaged; and (c) the nature of the potential risks and impacts to the community workers.

As noted elsewhere in this LMP, the project will use community workers (as that term is specifically defined in ESS2, paragraph 6).

12.0 PRIMARY SUPPLY WORKERS

It is expected that the projects will engage primary suppliers to provide raw materials and other goods and services. There are risks of worst forms of serious worker safety

issues, including accidents, fatalities, and inadequate occupational health and safety equipment, in project supply chains related to construction, quarrying and transport sectors. Where a significant risk of forced labour or serious safety issues in relation to primary suppliers has been identified, the supplier shall be excluded from contracts on the Project, until the issues are addressed in line with national law and ESS2 requirements.

PIT will ensure that all purchase orders and contracts with primary suppliers contain specific provisions prohibiting forced labour and mandating compliance with all national law worker health and safety standards.

PIT will make reasonable efforts to ensure that parties engaged as primary suppliers for the project are reliable law-abiding entities that do not have a history of problems relating to disrespect for national labour law, unresolved labour disputes, or frequent work-related accidents.

PIT will ensure that no person is employed or engaged in relation to the project under circumstances that would constitute forced labour or the result of labour trafficking. To this end, PIT will maintain records of the recruitment circumstances as well as the written employment contracts of all project workers, including persons engaged through contractors, subcontractors and primary suppliers.

PIT will also conduct periodic inspections, at least once every six months, of primary supplier employment records to verify consistency and compliance with the law in relation to recruitment of workers and provision to all workers of a written signed employment contract in English or Kiswahili, depending on the worker's preference.

To address the risk of forced labour, victims of labour trafficking, and child labour among primary suppliers, PIT will undertake due diligence to identify primary suppliers and the extent to which these risks might be present in their activities for the project. If forced labour, victims of trafficking, or child labour is discovered in a primary supplier's workforce, the "Suppliers who, on an ongoing basis, provide directly to the project goods or materials essential for the core functions of the project." ESS2, footnote number 5.

PIT will act promptly to address the issue, including referring the matter without delay to the relevant government authorities, as well as relevant government or NGO trafficking victims'/forced labour victims' support services, as appropriate, to be addressed in accordance with National law.

Where there is a significant risk of serious safety issues related to a primary supplier, the PIT will require the relevant primary supplier to introduce procedures and mitigation measures to address such safety issues, which the PIT will review every four months to ascertain their effectiveness.

Where forced labour and trafficking is identified, PIT will require the primary supplier to report the situation to the police and other relevant government authorities. Depending on the circumstances, PIT will discontinue use of that primary supplier and instead use primary suppliers that can demonstrate they are

meeting the relevant requirements of National law relating to forced labour, child labour, trafficking in persons, and occupational health and safety.

APPENDICES

Appendix I: Contractor Code of Conduct for ESHS

Part 1: PREAMBLE

This ESHS code of conduct shall be adopted and embodies the commitment of the Contractor (including Sub-Contractors and day workers) to conduct construction related activities in accordance with all applicable laws, rules and regulations with high ethical standards.

The Contractor and its subsidiaries shall comply with this Code of Conduct and in a manner consistent with high ethical standards. Failure to observe this Code of Conduct may subject you to disciplinary action by the firm, up to and including termination. Furthermore, violation of this Code may also be violation of the law and due result in civil and /or criminal penalties for you, your supervisors and/or the firm.

The Contractor employees, Managers and Directors shall take all responsible steps to prevent a violation of this Code, to identify and raise potential issues, and to seek additional guidance when necessary, if you have any question's regarding the best course of action in a particular situation on this Code you should therefore promptly contact the project proponent for assistance.

In principle this Code of Conduct is an extraction of the Environmental Code of Practice for Road Works 2009. In this regard, the implementation of this Code of Conduct should be in consistency with the Environmental Code of Practice for Road Works of 2009.

Part 2: MINIMUM REQUIREMENT OF CODE OF CONDUCT

This Code of conduct identifies risks associated with: environmental and social management, resettlement, labour influx, spread of communicable diseases, sexual harassment, gender based violence, criminal behaviour, crime, child labour, and safety.

The Code of Conduct contains obligations to all project staff (including sub-Contractors and day workers) in minimum specific requirements as follows:

- a) The Contractor and its subsidiaries shall comply with applicable Laws, Rules and Regulations of the jurisdiction;
- b) The Contractor shall prepare specific Health and Safety Management Plan (HSMP), Specific Environmental and Social Management Plan (ESMP), HIV/AIDS awareness programme, Road Safety Awareness Programme, Traffic Management Plan (TMP), Borrow pit and Quarry Operation Plan, Occupational Health and Safety Awareness Programme of the proposed road project prior to the actual execution of the construction works based on the Design and Environmental and Social Impact Assessment Reports;
- c) The Contractor and its subsidiaries shall comply with applicable health and safety requirements (including wearing prescribed PPE), preventing avoidable accidents and a duty to report conditions or practices that pose a safety hazard or threaten the environment);
- d) The Contractor and its subsidiaries shall provide temporary speed calming measures, temporary speed limit signs to the highly populated areas such as at road sections under construction, approach to trading centres, villages, school premises and health centres and ensure that drivers observe speed limits for safety of other road users;
- e) The Contractor and subsidiaries are required to review the road levels before construction starts in order to blend aesthetically the horizontal and vertical alignment of the road with reference to the natural ground levels in order to allow communities to access their homes social amenities and businesses smoothly by providing proper access roads and crossing slabs to deep open drains to avoid storm water flowing into adjacent houses;
- f) The Contractor and its subsidiaries are required to avoid unnecessary clearance of trees and vegetation, avoid conflicts of water resources use with respective communities.
- g) The Contractor and its subsidiaries are required to make every effort to avoid water, air, soil pollution, land degradation and any related harmful that can damage the environment. Also all construction activities should strive to attain the high environmental standards;

- h) The Contractor and its subsidiaries are required to ensure safety of its workers and experts by providing them the required PPE to ensure safety. The standard safety signs and road marking should be provided during and after completion of road construction activities to ensure safety for all road users;
- i) The Contractor and its subsidiaries are required to provide sanitation facilities along the construction corridor (for example, to ensure workers use safe drinking water, specified decent sanitary services provided by their employer and not open areas);
- j) The Contractor and its subsidiaries after completion of construction activities are required to landscape and reinstate all the damaged areas through tree and grass planting to control soil erosion as stipulated in the ‘‘Environmental Code of Practice for Road Works, 2009’’. Among others, such damaged areas are borrowing pits, quarry sites, road diversion, stockpiled material yards, workshop, crusher sites, batching plant, asphalt mixing plant, water dams or reservoir, waste dump area and used fresh/fuel oils storage areas and campsites along the construction corridor.
- k) The Contractor and its subsidiaries are prohibited to practice any kind of discrimination (for example to job seekers on the basis of family status, ethnicity, race, gender, religion, language, marital status, birth, age, disability, or political conviction);
- l) The Contractor and its subsidiaries shall adhere to the labour laws during labour recruitment to ensure skilled and unskilled labourers are given specified work Contracts, registered with National Social Security Schemes and contribute to ‘‘Pay As You Earn (PAYEE)’’ tax;
- m) The Contractor and its subsidiaries are required to interact with the community members (for example, to convey an attitude of respect and non-discrimination);
- n) The Contractor and its subsidiaries are prohibited from engaging in any form of sexual harassment (for example, to prohibit the use of abusive language or filthy behaviour, in particular towards women or children, that is sexually provocative, demeaning or culturally inappropriate);
- o) The Contractor and its subsidiaries are prohibited to conduct any violence or exploitation (for example, the prohibition of the exchange of money, employment, goods, or services for sex, including sexual favours or other forms of humiliation, degrading or exploitative behaviour);
- p) The Contractor and its subsidiaries are required to protect children (including prohibitions against child labour, abuse, defilement, or otherwise unacceptable behaviours with children, and ensuring their safety in project areas);

Appendix II: Code of Conduct for Contractor Personnel WB Standard

Code of Conduct for Contractor's Personnel (ES) Form

CODE OF CONDUCT FOR CONTRACTOR'S PERSONNEL

We are the Contractor, *[enter name of Contractor]*. We have signed a contract with *[enter name of Employer]* for *[enter description of the Works]*. These Works will be carried out at *[enter the Site and other locations where the Works will be carried out]*. Our contract requires us to implement measures to address environmental and social risks related to the Works, including the

Note to the Bidder:

The minimum content of the Code of Conduct form as set out by the Employer shall not be substantially modified. However, the Bidder may add requirements as appropriate, including to take into account Contract-specific issues/risks.

The Bidder shall initial and submit the Code of Conduct form as part of its bid.

risks of sexual exploitation, sexual abuse and sexual harassment.

This Code of Conduct is part of our measures to deal with environmental and social risks related to the Works. It applies to all our staff, labourers and other employees at the Works Site or other places where the Works are being carried out. It also applies to the personnel of each subcontractor and any other personnel assisting us in the execution of the Works. All such persons are referred to as "**Contractor's Personnel**" and are subject to this Code of Conduct.

This Code of Conduct identifies the behaviour that we require from all Contractor's Personnel.

Our workplace is an environment where unsafe, offensive, abusive or violent behaviour will not be tolerated and where all persons should feel comfortable raising issues or concerns without fear of retaliation.

REQUIRED CONDUCT

Contractor's Personnel shall:

1. carry out his/her duties competently and diligently;
2. comply with this Code of Conduct and all applicable laws, regulations and other requirements, including requirements to protect the health, safety and well-being of other Contractor's Personnel and any other person;

3. maintain a safe working environment including by:
 - a. ensuring that workplaces, machinery, equipment and processes under each person's control are safe and without risk to health;
 - b. wearing required personal protective equipment;
 - c. using appropriate measures relating to chemical, physical and biological substances and agents; and
 - d. following applicable emergency operating procedures.
4. report work situations that he/she believes are not safe or healthy and remove himself/herself from a work situation which he/she reasonably believes presents an imminent and serious danger to his/her life or health;
5. treat other people with respect, and not discriminate against specific groups such as women, people with disabilities, migrant workers or children;
6. not engage in Sexual Harassment, which means unwelcome sexual advances, requests for sexual favours, and other verbal or physical conduct of a sexual nature with other Contractor's or Employer's Personnel;
7. not engage in Sexual Exploitation, which means any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another;
8. not engage in Sexual Abuse, which means the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions;
9. not engage in any form of sexual activity with individuals under the age of 18, except in case of pre-existing marriage;
10. ensure full respect for any wild plants, wild animals or other wildlife encountered in relation to project work sites and in relation to local communities and wildlife habitats, including protected areas located in or near the project;
11. not hunt, gather, fish, collect, harvest, or disturb any wild birds, and/or their eggs, mammals, amphibians, fish or other aquatic creatures, or reptiles and not engage in any cutting or harvesting of trees or other vegetation anywhere in relation to the project unless specifically authorized to do so by the Contractor;
12. report violations of this Code of Conduct that relate to the harvesting or disturbing of wildlife in areas related to project worksites or areas near the project and be encouraged to report any other violations of this Code of Conduct, including reporting of sexual abuse/sexual exploitation-related complaints which must be made with survivor consent;

13. complete relevant training courses that will be provided related to the environmental and social aspects of the Contract, including on health and safety matters, Sexual Exploitation and Abuse (SEA), and Sexual Harassment (SH);
14. report violations of this Code of Conduct; and
15. not retaliate against any person who reports violations of this Code of Conduct, whether to us or the Employer, or who makes use of the grievance mechanism for Contractor's Personnel or the project's Grievance Redress Mechanism.

RAISING CONCERNS

If any person observes behaviour that he/she believes may represent a violation of this Code of Conduct, or that otherwise concerns him/her, he/she should raise the issue promptly. This can be done in either of the following ways:

1. Contact [*enter name of the Contractor's Social Expert with relevant experience in handling sexual exploitation, sexual abuse and sexual harassment cases, or if such person is not required under the Contract, another individual designated by the Contractor to handle these matters*] in writing at this address [] or by telephone at [] or in person at []; or
2. Call [] to reach the Contractor's hotline (*if any*) and leave a message.

The person's identity will be kept confidential, unless reporting of allegations is mandated by the country law. Anonymous complaints or allegations may also be submitted and will be given all due and appropriate consideration. We take seriously all reports of possible misconduct and will investigate and take appropriate action. We will provide warm referrals to service providers that may help support the person who experienced the alleged incident, as appropriate. There will be no retaliation against any person who raises a concern in good faith about any behaviour prohibited by this Code of Conduct. Such retaliation would be a violation of this Code of Conduct.

CONSEQUENCES OF VIOLATING THE CODE OF CONDUCT

Any violation of this Code of Conduct by Contractor's Personnel may result in serious consequences, up to and including termination and possible referral to legal authorities.

FOR CONTRACTOR'S PERSONNEL:

I have received a copy of this Code of Conduct written in a language that I comprehend. I understand that if I have any questions about this Code of Conduct, I can contact [*enter name of Contractor's contact person(s) with relevant experience*] requesting an explanation.

Name of Contractor's Personnel: [insert name]

Signature:

Date: (day month year):

Countersignature of authorized representative of the Contractor:

Signature: _____

Date: (day month year):

ATTACHMENT 1: Behaviours constituting Sexual Exploitation and Abuse (SEA) and behaviours and behaviours constituting Sexual Harassment (SH)

ATTACHMENT 1 TO THE CODE OF CONDUCT FORM

**BEHAVIORS CONSTITUTING SEXUAL EXPLOITATION AND ABUSE (SEA)
AND BEHAVIORS CONSTITUTING SEXUAL HARASSMENT (SH)**

The following non-exhaustive list is intended to illustrate types of prohibited behaviours.

(1) Examples of sexual exploitation and abuse include, but are not limited to:

- A Contractor's Personnel tells a member of the community that he/she can get them jobs related to the work site (e.g., cooking and cleaning) in exchange for sex.
- A Contractor's Personnel that is connecting electricity input to households says that he can connect women headed households to the grid in exchange for sex.
- A Contractor's Personnel rapes, or otherwise sexually assaults a member of the community.
- A Contractor's Personnel denies a person access to the Site unless he/she performs a sexual favour.
- A Contractor's Personnel tells a person applying for employment under the Contract that he/she will only hire him/her if he/she has sex with him/her.

(2) Examples of sexual harassment in a work context

- Contractor's Personnel comment on the appearance of another Contractor's Personnel (either positive or negative) and sexual desirability.
- When a Contractor's Personnel complains about comments made by another Contractor's Personnel on his/her appearance, the other Contractor's Personnel comment that he/she is "asking for it" because of how he/she dresses.
- Unwelcome touching of a Contractor's or Employer's Personnel by another Contractor's Personnel.
- A Contractor's Personnel tells another Contractor's Personnel that he/she will get him/her a salary raise, or promotion if he/she sends him/her naked photographs of himself/herself.

Appendix III: Employer's Technical Specifications Requirements for ESHS

The Technical Specification/Employer's requirements have been prepared to guide the undertaking of the Environmental, Social, Health and Safety (ESHS)" for the proposed road projects. The Technical Specification/Employer requirements are subject to the variations and additions as deemed necessary by the Employer. Among others, the Technical Specification to be included in the Bidding Documents are as follows:

- a) The Qualified Environmental and /or Social Specialist and Health & Safety Officers shall be employed by the Contractor before the actual execution of the construction works. The Environmental and /or Social Specialist and Health & Safety Officers will be responsible for preparation of the Specific Environmental and Social Management Plan (ESMP); Borrow pit and Quarry Operation Plan, Specific Health and Safety Management Plan (HSMP); Environmental Awareness Programme, HIV/AIDS Awareness Programme, Occupational Health and Safety Awareness Programme and Road Safety Awareness Programme.
- b) The working permits shall be obtained by Contractor and its subsidiaries prior to the actual works of the construction activities. The permits among others shall include; Working Permit for Non-Resident experts, Water-Use Permit, EIA Permit, Working Permit in Protected Areas, OSHA Permit, Explosive Use Permit and other permits required by the National Laws. The obtained permits and their status shall be reported regularly.
- c) The Specific Environmental and Social Management Plan (ESMP) shall be prepared and submitted to Client for approval prior to the execution of the proposed road project. The ESMP among others shall include sub-plans such as Environmental Management Plan, Monitoring Management Plan, Emergency Preparedness Plan, Waste Management Plan, Grievances Preparedness Plan, Borrow Pits and Quarry Site Operations Plan and Reinstatement Plan.
- d) The specific Health and Safety Management Plan (HSMP) shall be prepared and submitted to the Client for approval prior to the execution of the proposed road project. The HSMP among others shall include sub-plans such as the Occupational Health and Safety Awareness Programme, Traffic Management Plan, Monitoring Management Plan, Emergency Preparedness Plan, Accident Management Plan. The Occupational Health and Safety Awareness Program shall cover among others, proper use of First Aid Kits, Fire marshal training, Proper use of PPE equipment's, emergency First Aid delivery, self-prevention

- of epidemic and pandemic diseases including Malaria, diarrhoea and tuberculosis.
- e) The Traffic Management Plan (TMP) shall be prepared and submitted to the Engineer for approval prior to commencement of the construction works to ensure smooth traffic flow and improve safety of road users, adjacent communities especially children, the elderly and people with disabilities during construction period. This plan shall include but not limited to the methods of protection of communities, give details of operation hours, types and number of safety devices, details of the location and design of diversion roads; temporary structures, barricades, temporary signs, flagmen, signals and other physical features necessary to accommodate traffic flow during construction;
 - f) The HIV/AIDS awareness programme shall be prepared and submitted to the Client for approval prior to be implemented to the communities at all villages/street/centers and to all project workers along the road project. The programme shall cover among others, Training on HIV/AIDS Prevention and control, HIV awareness and Counselling, VTC and Testing, capacity building to peer educator/mentor. The programme activities shall be reported quarterly.
 - g) The Road Safety Awareness Programme shall be prepared and submitted to Client for approval prior to be implemented to communities at all villages/street/centers along the road project to road users, and to all project workers. The programme shall cover among others, traffic management, proper use of road signs, safe driving to drivers and cyclic, safe use of road to pedestrians, regular sensitisation on accidents risks, control measures to the Machines' operators, construction sequencing, public information announcements, use of traffic control devices and other activities designed to minimise traffic disruption. The programme activities shall be reported quarterly.
 - h) Labour recruitment for both (skilled and unskilled) shall adhere to the Labour Laws during the project implementation and ensure the labourers are given the Contracts, registered with National Social Security Schemes and contribute to 'Pay as You Earn (PAYEE) Tax'. The Monthly Progress Report should be produced reflecting the number of skilled and unskilled labour, number Contracts provided, gender consideration, types of social security schemes chosen. (workers are free to choose their preferred schemes).
 - i) Vegetation (grasses) and Trees shall be planted along the road project in harmony with the road categories and function. The Vegetation, (trees and

- grasses) shall be planted at the exhausted areas such as borrow pits, quarry areas, campsite, diversion and stockpiled materials at storage yards in the major villages streets and centres. Monthly Progress reports should be produced reflecting a number of trees planted, area covered with grass and shrubs, number of villages along the road planted with trees, number of borrow pits and quarry site planted with trees/grass.
- j) The air quality baseline data shall be obtained along the road project during the mobilisation phase prior to the execution of the actual, construction works. The air quality analysis shall be done at the major villages/street/centres along the project road during the construction at least twice a year (during dry and wet season) as stipulated in the ‘‘Environmental Code of Practice for Road Works of 2009’’. The air quality data shall be reported quarterly.
 - k) The water quality baseline data shall be obtained along the road project during the mobilisation phase prior to the execution of the actual construction works. The analysis shall be done to all water bodies during road construction at least twice a year (during dry and wet season) as stipulated in the ‘‘Environmental Code of Practice for Road Works of 2009’’. The water quality data shall be reported quarterly.
 - l) The dust control shall be done by water sprinkling at the construction site, borrow pits and quarry site access road, quarry site, diversion road and along the major centres at least three time per day during dry season. Wet crushing shall be deployed. The dust control measures shall be reported in monthly and quarterly progress reports.
 - m) Noise and vibration shall be avoided at the major villages/street/centres along the road project during construction phase. The impacts shall be avoided by conducting regular maintenance of operation vehicles and machinery, blasting works shall be done during daytime after notifying the communities along the area as stipulated into ‘‘Environmental Code of Practice for Road Works of 2009’’. The noise and vibration control measures shall be reported in monthly progress reports.
 - n) Solid waste collection and separation or sorting shall be done on construction site, campsites, workshop and other project facilities in accordance to standard stipulated into ‘‘Environmental code of practice for Road Works, 2009’’. The hazzardous solid waste shall be collected for disposal by authorised dealer. Other waste shall be disposed in the authorised dumpsite or managed at site. The solid waste control measures shall be reported in the monthly progress reports.

- o) Liquid waste collection shall be done on construction site, campsites, workshop and other project facilities in accordance with the standard stipulated in the “Environmental Code of Practice for Road Works of 2009”. The hazardous liquid waste shall be collected by the authorised dealer for disposal. Waste water from toilets and kitchen, cafeteria shall be managed on site through septic tanks and soak away pits. The liquid waste control measures shall be reported in the progress reports.
- p) Prepare Grievance Redress Mechanism for resolving grievances related to the road project. Prepare a grievance register form for registering all the grievances that may arise during the construction. The progress report shall be prepared indicating how the grievances were resolved.
- q) The PPE shall be provided to all workers on site and ensure proper regular use of them by workers measures to enforce the use of PPE should be applied. The PPE shall include groves, gumboot, overall, sun google, ear musk, reflective jackets, helmet, safety signs and other as necessary. The provision and the use of PPE to workers shall be reported in the monthly progress reports.
- r) Temporally speed calming measures, road signs, barricades and warning signals shall be installed to the highly populated areas such as at road section under works, approach to trading centres, streets, villages, school premises and health centres on the road project. The installed road signs, barricades and warning signals shall be standard and reflective. Damaged and vandalised road signs shall be replaced immediately within 3 days. Any accident that may occur on daily basis shall be reported to the traffic police and accidents records must be kept and reported. Status of road safety measures shall be reported on monthly basis.
- s) The Billboard signs shall be installed at the begging and the end of the road project and among others the billboard shall include a message on HIV/AIDS prevention. Other billboards with HIV/AIDS and Environmental management massage shall be installed at all major centres/villages along the project road.

Among others, the undertaking of the road project activities shall comply with the following requirements:

- (i). Environmental Management Act, 2004, EIA and Audit Regulations of 2005;
- (ii). Environmental Code of Practice for Road works, 2009;

- (iii). Environmental and Social Impact Assessment Report (ESIA) for the project;
- (iv). Road Sector Compensation and Resettlement Guidelines, 2009;
- (v). Road Act, No.13 of 2007 and Road Management Regulation of 2009;
- (vi). Land Act, No.4&5 of 1999, Land Compensation Regulation of 2001;
- (vii). Occupational Health and Safety Act (OSHA, 2003);
- (viii). Traffic Act, 1996; and
- (ix). TANROADS Environmental and Social Safeguards Policy
- (x). Environmental and Social Safeguards Standards (ESS1,2,3,4,5,6,8,9 and 10)

Copies of the relevant National Laws, Guideline, Regulation and Donors Safeguards Frameworks can be obtained from:

1. Tanzania National Roads Agency
P.O BOX 11364
DAR ES SALAAM
3rd Floor, 10 Shaaban Robert Street/Garden Avenue Junction,
P. O. BOX 11364, Dar es Salaam Tanzania
Tel: +255 222 926 001 – 6, Fax: +255 222 926 011
Email: tanroadshq@tanroads.go.tz
Website: www.tanroads.go.tz
2. The website of Tanzania Parliament. www.Parliament.go.tz
3. Development Partners/ Donors websites.

14.6 Appendix VI: Incident Classification Guide⁴

Classification is a two-stage process:

- **Preliminary Classification** - use the examples in Tables 1 to 3 to make the preliminary classification of the incident, based on the information available.
- **Confirmed and Contextual Classification** – use the set of questions in Tables 4 to 6 to make the contextual classification. The results of the contextual classification will guide how to communicate the incident internally, and the tools that can be used to resolve it.

Preliminary Classification

Examples of indicative, serious and severe incidents are set out in Tables 1, 2 and 3. These examples are intended to illustrate the range and variety of environmental, social, and occupational health and safety incidents but are not an exhaustive listing of all possible types of incidents.

Indicative Incidents

Table 1 – Examples of Indicative Incidents (these are not inter-related)

Environmental	Social	Occupational Health & Safety
Small-volume hydrocarbon or chemical spills	Small-scale crop damage or livestock deaths	Underuse of PPE by Works Contractor
Localised dust, light, or noise pollution	Grievances due to project use of public roads	Local increase in the occurrence of communicable disease
Illegal hunting of wildlife (non-endangered)	Project interference with locally significant practices or sites	Minor job site injuries
Small volume sediment, pesticide, or fertiliser run-off into local waterways	Vehicle damage to public or private roads caused by Works Contractors	Poor “housekeeping” at site, e.g., littering and random disposal of solid waste
Minor off-site disposal of solid waste from project	Nuisance-level contact between employees and community	Lack of understandable warning or traffic control signage
Poor quality or delayed site restoration and revegetation	Minor instances of inappropriate behavior of security forces or other Contractor personnel	Almost empty first aid kit at work site
Poorly functioning erosion-control measures	Overloading of local commercial services from use by project personnel	Poorly organised or sporadic health & safety induction and training
	Minor impacts on livelihood restoration and/or access to	Multiple “slip and trip” hazards throughout the site

⁴ Any incident that is purportedly related to the Bank project should be considered by the team. The classification process may, however, conclude that the incident is not project related and that no action by the Bank is, therefore, required apart from documentation.

Environmental	Social	Occupational Health & Safety
	community natural resources	
	Minor impacts on cultural sites/areas	Lack of Health & Safety plan and/or training for staff
	Minor social conflict related to or affecting the project	
	Some problems with consultation/outreach about the project	
	Delays by GRM in handling/addressing grievances	

Serious Incidents

Table 2 – Examples of Serious Incidents (these are not inter-related)

Environmental	Social	Occupational Health & Safety
Large-volume hydrocarbon or chemical spills, or other hazardous substances impacting the environment	Widespread crop damage or livestock deaths	Injury/ies requiring off-site medical attention
Over-exploitation of local natural resources	Cases of mistreatment of communities potentially, including vulnerable groups, by project workers or security forces, including incidents such as sexual harassment	Instances of serious communicable diseases among workforce
Large-volume or long-term sediment, pesticide, or herbicide runoff into waterways	Significant impacts to protected physical cultural resources	Presence of Unexploded Ordinance (UXO) at worksite
Medium to large-scale deforestation	Works have commenced without compensation and resettlement being completed	Consistent lack of health & safety plans and training at work site
Lack of implementation of agreed environmental restoration program	Significant and repeated community impacts from project vehicles and construction activities	Chronic non-use of PPE at project work site
	Lack of clarity about consultations with Indigenous Peoples and broad community support for the project	Repeated non-compliance or failure to remedy non-compliance
	GRM not functioning	
	Inadequate consultation and engagement of stakeholders in the project leading to significant conflict and/or delays	
	Non-violent community protests against the project, or mild community unrest	

Severe Incidents

Table 3 – Examples of Severe Incidents (these are not inter-related)

Environmental	Social	Health & Safety
Hydrocarbon or chemical spills, or release of other hazardous substances into the environment, causing widespread impacts, and/or requiring large-scale remediation	Forced evictions or resettlement of communities without due process or compensation	Any fatality Permanent disability
Poaching or hunting and trafficking of threatened or endangered species	Abuses of community members (including vulnerable groups e.g., women, children, youth, elderly, disabled/sick, LGBT) by site security forces or other project workers, including but not limited to GBV	Outbreak of life threatening communicable disease
Sediment, pesticide, or herbicide runoff causing permanent damage to waterways	Significant damage to nationally protected areas or to UNESCO World Heritage sites	Criminal and political attacks at worksite
Destruction of internationally recognised critical habitat	Human trafficking and child labor	Forced labor by project's Works Contractor
Major river contamination causing decimation of fish population or other aquatic resources	Violent community protests against the project	Works Contractor is unresponsive regarding ongoing worksite risks of bodily injury
	Significant impacts on Indigenous Peoples' land/natural resources and/or culture and there is no evidence of consultation, broad community support, mitigation of harm and/or culturally appropriate benefit-sharing	Persistent non-compliance and/or inability or unwillingness to remedy non-compliance that could result in bodily injury or harm
		Murders, kidnappings, manslaughter and assaults, while criminal matters and not safeguards incidents per se, have occurred in Bank projects and should be treated as severe incidents. These incidents would be referred to local authorities with notification to WB Security

Confirmed and Contextual Classification

The following tables provide questions to assist in making a contextual classification, which will help classify the severity of an incident.

Table 4 - Incident Details

1	Is the incident GBV related? ⁵	If yes, please see GBV Guidance Note for specific incident protocols to be followed
2	What was the reported or identified incident, and what is the information source?	
3	Are the basic facts of the incident clear and uncontested, or are there various conflicting versions?	
4	Does the incident appear to be caused by the project?	
5	Where did the incident occur?	
6	When did the incident occur?	
7	What were the conditions or circumstances under which the incident occurred?	
8	What is the extent of the incident? Individual person, local, regional, national, international?	
9	How urgently is a response required on the ground?	
10	Is the incident still ongoing or is it contained?	
11	Is loss of life or severe harm involved?	
12	Has a similar incident occurred before?	If so, when and how often? If so, has the Bank tried to encourage compliance around this issue in the past?

Table 5 - Key Incident Context Questions

1	What is the financial cost of the incident?	
2	Have major biodiversity or cultural heritage assets been affected by the incident?	
3	Does the Task Team have the personnel and other resources to evaluate and advise on how to address or resolve the incident?	
4	Does the incident violate the terms of the Project Legal Agreement and Contractor or Borrower contract(s) or ToR(s)? Different incidents require specialised skills, e.g., follow up on GBV cases requires staff specialised.	
5	Does the Contractor or Borrower have sufficient capacity to evaluate and address or resolve the incident in a timely manner (including financial and technical resources)? Is this evaluation likely to be deemed objective (non-biased)?	
6	Who is directly responsible for the incident? For its investigation? For its resolution?	
7	Does the incident suggest potential larger Safeguards compliance or EHS issues are present? Does the incident indicate larger project-	

⁵These questions do not apply to GBV. With any information on GBV, it is important to protect the identity (or identities) of the complainant(s). This includes removing all identifiable characteristics (this goes beyond name and address, and may include conditions such as being handicapped, blind in one eye, etc. which in small settings becomes an identifiable characteristic). GRMs should record no more than two points of data on the incident: i) nature of the complaint (what the complainant says in her/his own words); ii) if to the best of their knowledge the perpetrator was associated with the project. Additional demographic data such as age and sex can be collected as usual.

	wide problems may be present?	
8	Are additional internal Bank specialist resources or external Bank contracted specialists needed to investigate, evaluate and resolve the incident?	
9	Does the incident have the potential to prevent or impede implementation of the project?	
10	Is the Contractor or Borrower resistant to or hindering the evaluation, or resolution of the incident? Consider the appropriateness/effectiveness of the Borrower's response (ownership; timeliness; technical expertise; adequate attention to causes, systemic issues related to identification, reporting, etc.; adequate follow-up with victims/negatively affected sites/etc. After initial data collection, review of generic/systemic lessons that should be learned from the incident and follow up on implementation of corrective actions should be carried out.	
11	Should the Bank Senior Management be informed of the incident, and are there any specific recommended actions for their consideration (e.g., consider suspending the project until the incident can be investigated, evaluated, or resolved)?	

Table 6 - Additional Incident Context Questions

1	If a project Works Contractor is involved, what is the OHS performance record of the Contractor?	
2	What is the Works Contractor or Borrower's opinion on the severity or significance of the incident?	
3	What does the country context suggest?	
4	What does the regional context suggest?	
5	What is the Safeguard Compliance and EHS/OHS performance record of the Borrower?	
6	What is the larger portfolio context?	
7	Does this incident form part of a broader pattern of incidents at the project, country or Bank engagement level that gives it even broader significance?	

14.7 APPENDIX VII: TANTIP GBV ACTION PLAN

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF WORKS AND TRANSPORT



TANZANIA NATIONAL ROADS AGENCY (TANROADS)

P. O. Box 11364, 3rd Floor, 10 Shaaban Robert Road/Garden Avenue Junction
Dar es Salaam, Tanzania. Tel: +255 222 926 001 – 6,
Fax: +255 222 926 011, Email: tanroadshq@tanroads.go.tz

GBV ACTION PLAN

FOR

TANZANIA TRANSPORT INTEGRATED PROJECT (TanTIP)

MARCH 2022

Project ID: **P165660**

Project Name: **Tanzania Transport Integrated Project (TanTIP)**

Client: **Tanzania National Road Agency - TANROADS**

Level of GBV Risk Identified through Risk Assessment: **Substantial**

Level of Risk-Based on Contextual Analysis: **Substantial**

Acronyms & Abbreviations

CBOs	Community-Based Organizations
CDO	Community Development Officer
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
COVID-19	'CO' stands for 'corona,' 'VI' for 'virus,' and 'D' for disease, '19' for 2019
DC	Development Corridor
DCTP	Development Corridor Transport Project
DHS	Demographic Health Survey
ESF	Environmental and Social Framework
ESHS	Environmental Social Health and Safety
ESIP	Environment and Social Implementation Plan
ESMP	Environment and Social Management Plan
ESMS	Environment and Social Management System
ESS	Environmental and Social Standard
FGD	Focus Group Discussion
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immuno-Deficiency Syndrome
FDIs	Foreign Direct Investments
GBV	Gender-Based Violence
GoT	Government of Tanzania
GRM	Grievance Redress Mechanism
IA	Implementing Agency
IPF	Investment Project Financing
M&E	Monitoring and Evaluation
MoHCGE	Ministry of Health, Community Development, the Elderly Children and Gender

NGO	Non-Government Organization
OHS	Occupational Health and Safety
PAP	Project Affected Person
PIT	Project Implementation Team
RE	Resident Engineer
SEA	Sexual Exploitation and Abuse
SH	Sexual Harassment
STDs	Sexual Transmission Diseases
TANROADS	Tanzania National Roads Agency
TB	Tuberculosis
ToR	Terms of Reference
VAC	Violence Against Children
VAW/VAWG	Violence Against Women/Violence Against Women and Girls
VC	Village Chairperson
VRTs	Violence Response Teams
VEO	Village Executive Officer
WB	World Bank
WEO	Ward Executive Officer

PART 1: DESCRIPTION OF ACTIVITIES

1.1 Introduction

The Tanzania Transport Integrated Project (TanTIP) comprises sub projects supporting the upgrading and rehabilitation of trunk and regional roads and airports that are playing a key role in the socio-economic activities of the areas. The Project aims to improve the transport infrastructure connectivity of the country's four DCs. The Project will consist of three components namely: (i) Upgrading and Rehabilitation of Trunk and Regional Roads, (ii) Upgrading and Rehabilitation of Regional Airports, and (iii) Institutional Support and Capacity Building in the Transport Sector. The Project will be implemented by the Government of Tanzania (GoT) through Tanzania National Roads Agency (TANROADS) with the support of the World Bank. The immediate focus will be to contribute to the efficient and safe movement of goods and people in accessing services and economic opportunities. The Project will also support Tanzania-wide geographical reach in the development of trunk, regional roads and airports.

The importance of road and airport development can be justified and linked to many aspects related to social, political and economic development through promotion of tourism attracting investments from both local and Foreign Direct Investments (FDIs), increasing the freight and passengers transport quality (level of service) and capacity, economic growth through unlocking of trade routes allowing an increase in the capacity of the existing project line and reducing travel time for passengers and goods, promote agricultural products as well as livestock products from productive area and employment generation as well as improvement of accessibility to different regions. However, large infrastructure development may increase or create risks of Sexual Harassment (SH), Sexual Abuse and Exploitations (SEA), and other types of Gender-Based Violence (GBV), related but not limited to the influx of workers to such projects.

TANROADS engaged the services of a Consultant to prepare a GBV Action Plan in accordance with the World Bank's requirements under the Environmental and Social Framework (ESF). This GBV Action Plan details the operational measures that TANROADS will be put in place to identify, assess, and mitigate the risks of GBV, including managing SEA and SH that are Project related.

1.2 Scale of Civil Works

Upgrading and rehabilitation of roads and airports will involve large civil works and require a large labor force and associated goods and services that may not be available locally. The scale of civil works will range from pre-construction (mobilization) through

decommissioning. A large number of workers will be employed by contractors during rehabilitation/upgrading of roads/airports and each contractor and subcontractors will determine the actual number of workers needed. The Project expected workers will include skilled, semi-skilled and unskilled labor; the Project Labor Management Plan (LMP) estimates that the Project will need to engage 2,150 workers in total. Mostly the unskilled labor will be sourced from local communities along/around the project areas. The contractors' requirement for skilled labor is expected to be 10% of all workers, making all DCTP contractors engage about 180 skilled employees, 540 semi-skilled, and 1080 non-skilled workers as well as 100 sub-consultants and 50 service providers.

1.3 Gender-Based Violence (GBV)

GBV may be exacerbated by World Bank-financed IPF involving major civil works. Four broad categories of GBV that may be exacerbated by World Bank-financed IPF involving major civil works include Sexual Exploitation and Abuse, Workplace Sexual Harassment, Human Trafficking and Non-SEA ie intimate partner violence, physical assault, psychological or physical abuse, and, denial of resources, opportunities or services. However, SEA and workplace SH are the types of GBV most likely to occur in or be exacerbated by IPF and are the primary focus of this Action Plan. These risks increase in settings where incidents of violence against women and girls and violence against children are normalized and/or committed with impunity, and where survivors are unlikely to seek assistance due to social stigma, retaliation, or other security issues.

1.4 Elaborating the Gender Based Violence and Sexual Exploitation and Abuse concepts

Gender Based Violence (GBV) is an umbrella term for any harmful act that is perpetrated against a person's will and that is based on socially ascribed (i.e. gender) differences between males and females. It includes acts that inflict physical, sexual or economic, psychological/emotional abuse/violence including threats of such acts, coercion, and harmful practices occurring between individuals, within families and in the community at large. These include sexual violence, domestic or intimate partner violence, trafficking, forced and/or early marriages and other traditional practices that cause harm. These acts can occur in public or in private. Women and girls are affected disproportionately by GBV across the globe.

Sexual exploitation refers to any actual or attempted abuse of a position of vulnerability, differential power or trust for sexual purposes, including but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another person.

Sexual abuse on the other hand is "the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions." Sexual Exploitation and Abuse (SEA) is therefore a form of gender-based violence and generally refers to acts perpetrated against beneficiaries of a project by staff, contractors, consultants, workers and Partners.

Sexual Harassment (SH) occurs between personnel/ staff and involves any unwelcome sexual advance or unwanted verbal or physical conduct of a sexual nature. SEA/SH are therefore a subset of GBV and represent the primary focus of the grievance mechanisms presented here.

SEA versus SH: SEA occurs against a beneficiary or member of the community. SH occurs between personnel/staff and involves any unwelcome sexual advance or unwanted verbal or physical conduct of a sexual nature. The distinction between the two is important so that agency policies and staff training can include specific instructions on the procedures to report each.

The World Bank Good Practice Note⁶ defines four key types of GBV that WB funded projects may exacerbate:

- (a) SEA - exploitation of a vulnerable position, use of differential power for sexual purpose; actual or threatened sexual physical intrusion;
- (b) Workplace sexual harassment - unwanted sexual advances; requests for sexual favors, sexual physical contact;
- (c) Human trafficking - sexual slavery, coerced transactional sex, illegal transnational people movement; and
- (d) Non-SEA - physical assault, psychological or physical abuse, denial of resources, opportunities, or services and IPV.

The most likely violations to occur in a WB funded project are SEA and SH.

Gender-based violence (GBV) service provider: An organization offering specific services for GBV survivors, such as health services, psychosocial support, shelter, legal aid, safety/security services.

Potential perpetrators of SEA/SH can be any personnel associated with the project and may include not only construction workers, but also consultants and project staff supervising the civil works or undertaking technical assistance activities or studies, or the security guards hired to protect a project site.

Males and females can experience SEA and SH. However, women and girls are at a higher risk of these forms of violence based on gender discriminatory attitudes, norms and practices that contribute to sexual violence, abuse and harassment of females by males globally. When occurring to women and girls, these acts fall under the umbrella of ‘gender-based violence,’ defined in detail below, and for this reason the World Bank sometimes references SEA and SH as GBV. Nevertheless, all projects must anticipate and address the heightened risk for women and girls to SEA and SH.

⁶ WB 2018, page 3.

PART 2: GBV PROJECT RISKS

GBV is a risk for any project that interfaces with a community. However, risks increase in settings where incidents of violence against women and girls are normalized and/or committed with impunity, and where survivors are unlikely to seek assistance due to social stigma, retaliation, or other security issues. It is therefore essential for projects to take into consideration both contextual risks such as high levels of poverty, high prevalence of violence against women and girls (intimate partner violence, child marriage, harmful cultural practices) and gender biased social cultural norms, and project related risks such as high labor influx, male dominated labor force interacting to exacerbate or create the risk of SEA/SH and other types of GBV. If not well managed, these factors can lead to harm, and further marginalization and abuse of women, girls and children who are already vulnerable.

2.1 Contextual GBV risks in the Project Area

The prevailing cultural and social norms in the project area discriminates against women/girls and propagates male domination. The data from Kagera, Arusha, Iringa, Tanga, Mtwara, Ruvuma, Lindi and Njombe to be financed under DCTP indicates that GBV is prevalent: 45% of women aged 15-49 in Tanzania have experienced physical, sexual or emotional violence (emotional abuse can happen to anyone at any time in their lives. Children, teens, and adults all experience emotional abuse. The acceptance of the use of violence by husbands/partners is high - whereby recent data of 2015-2016 from the DHS -indicates 58% of women and 40% of men believe that a husband is justified in beating his wife in certain circumstances.

Additionally, results from the Focus Group Discussions (FGDs) undertaken during the Environmental and Social Impact Assessment (ESIA's) study of the proposed project indicate that incidents of GBV is substantial, forced and early marriage of girls is a common cultural practice, and that women and girls do not freely participate in public consultations compared to men. School enrollment and retention rates among girls in the project regions are exceptionally low as a result of their domestic responsibilities, child marriage, teenage pregnancy, lack of money for school fees, long distances to schools, and lack of sanitation facilities and supplies among other factors heightening GBV risks. The FGDs noted that some areas had a functional referral pathway and the close working relationship between the police and Local Government Authority (LGA's) and Non-Governmental Organizations (NGOs).

2.1.1 SEA/SH Project Risks

While labor influx clearly increases risks, the changes in local power dynamics that can arise with a new project mean that local workers or partners of local women and girls employed by the project may be at increased risk of becoming perpetrators of GBV. It is therefore important to consider broadly the range of potential perpetrators, combined with other contextual and project-related risks, to ensure projects integrate appropriate SEA/SH risk mitigation strategies.

It is not sufficient to focus only on non-local workers that will be employed through the project as potential perpetrators. In activities to raise awareness of GBV and service provision, violence that occurs at the hands of a variety of perpetrators should be addressed. Potential perpetrators include any personnel associated with the project not only construction workers but consultants, project staff or those offering technical assistance or even security guards hired to protect the site as well as construction materials. The risks pertaining to presence of workers camps include Exposure to Transmission of STIs/HIV/TB/ COVID-19; Crimes related to sexual abuse/raping and exploitation; Sexual exploitation of minors and transactional sex amongst minors.

Women and older adolescent girls may be hired as domestic staff by project workers, and/or may congregate around project sites to sell food and other goods. Close proximity without appropriate supervisory and preventative measures may increase the risk of sexual exploitation by project workers of female domestic workers and vendors.

The project in exhausting local services, exerting pressure on the environment may result in increased or emergence of GBV in the context of high acceptability of violence against women and girls. The project will involve large civil works and will require a large labor force and associated goods and services that may not be supplied locally. Some construction workers may migrate from outside the Contractors Camp to stay in other Village/ Street around Project area and live in their homestead. Construction workers are predominantly male, and when migrating to the Project area, typically are separated from their families on the construction site for extended periods of time.

Projects with a large influx of workers, particularly in impoverished communities, may increase the likelihood of exploitive and coercive sexual relations involving sex in exchange for goods or money. This could range from project workers engaging in the local prostitution trade, and/or becoming engaged in coercive sexual relationships with community members, particularly minors. Labour influx may contribute to other forms of child violence, such as child marriage, particularly in communities where marriage to an employed man is seen as the best survival strategy for an adolescent girl.

Large infrastructure projects may disrupt roads, schools, etc. Settings where projects are close to schools, or along routes frequently traversed by local women and girls may increase exposure to workers and, in turn, risks of sexual exploitation or abuse. This is compounded when workers are not adequately supervised, or when there is inadequate lighting and other safety measures around schools and foot routes. Similarly, SH is a risk for any work environment, particularly environments that are stringently hierarchal, give significant and/or undue power to manage, and do not promote and reflect female leadership. In large infrastructure projects, additional risk factors for SH may include female laborers working alongside male laborers without adequate supervision, without separate washrooms for males and females; and without specific feedback mechanisms for females to share concerns about their working environments, including concerns about sexual harassment. When risks are not

identified or understood, development projects may compound existing risks of GBV in a society or community, or even create new risks.

It is therefore essential for the project to take into consideration both contextual and project-related risks of high labor influx, high levels of poverty, polygamy, harmful cultural practices and social - cultural norms, high prevalence of violence against women and girls in the context of project areas interacting to exacerbate or create the risk of GBV/SEA/SH. If not well managed, these factors can lead to further marginalization and abuse of women, girls and children who are already vulnerable.

PART 3: LOCAL INSTITUTIONAL, POLICY AND REGULATIONS FOR SAFETY OF WOMEN AND GIRLS

3.1 Referral Pathways

A referral pathway outlines the various multi-sectoral support and referral services for a survivor and aims at improving the quality and timelines of care received.

Referral pathway guidelines for GBV survivors in Tanzania were established in collaboration with agencies and service providers like Ministry of Health, Community Development, the Elderly, Children and Gender (MoHCGE) Local Government Authority (LGAs) (District/Municipal level, Ward level and Village/Mtaa), Police Gender and Children's Desk, traditional/religious/ influential community leaders, psychosocial service providers), Ward health committees, Ward Social welfare officer, WEO, VEO, VC NGOs, CSOs, CBOs) Legal Aid clinics and the courts of law which work to ensure that survivors freely and safely navigate and benefit from well-coordinated services. They are outlined in the National Plan Towards Ending Violence Against Women and Children 2017/18-2021/22.

National Policy Guidelines for Prevention and Response to GBV: The Policy Guideline provides a framework for the delivery of health services to all in need, including GBV survivors. The objectives of the Policy Guideline are to strengthen efforts of the MOHSW to prevent and respond to GBV and to direct the health sector to establish effective linkages with the community and multispectral actors. It outlines the roles and responsibilities of the MOHSW and key partners in the provision of quality services to GBV survivors by integrating them into the existing national health delivery infrastructure—guided by principles of respect for human rights, professional ethics, and compassion.

This Guideline was instrumental to the development of the **National Management Guidelines for the Health Sector Prevention and Response to GBV**. They are based on the National Policy Guideline for Prevention and Response to GBV. The guidelines provide a framework for medical management, referral for psychosocial care, advice for integrating GBV services into existing health services, the linkage between health facilities and local communities, and support and linkages to social and legal protection systems. The guidelines also provide guidance on GBV monitoring and evaluation and quality assurance; consent and GBV medical forms; Police Form Three (PF3); GBV Register; laboratory investigation for GBV and preventive treatments; and GBV indicators.

On its side, the MoHSW of Tanzania in its Guidelines for the Health Sector defines the term 'GBV' to as follows: A term of any act, omission, or conduct that is perpetrated against a person's will and that is based on socially ascribed differences (gender) between males and females. In this context, GBV includes but is not limited to sexual violence, physical violence and harmful traditional practices, and economic and social violence. The term refers to violence that targets individuals or groups on the basis of their being female or male. The

term ‘violence against women means any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life.

Following the mapping of services, TANROADS shall identify GBV service providers with capacity and establish a multisectoral referral pathway in project sites modeling and operating as per the guidelines. The mapping out and review capacity and quality of GBV Service Providers in the project area will be undertaken in the first quarter after signing of the contract as outlined in this Action Plan. The IA GBV Specialist shall collaborate with service providers and establish referral protocols for how survivors will be supported to access services in a timely and safe manner according to their needs and wishes.

3.2 Type of Support Services for Survivors

GBV is a complex issue and a survivor requires multi sector services and care to heal and recover. The services include;

Medical / Health Care Services, these are interventions to address physical and reproductive health consequences and injuries resulting from GBV incidents. This includes Post Violence Care (PVC) within 72hrs, Provision of Post Exposure Prophylaxis (PEP) and Emergency Contraception (EC) within 120hrs.

Mental Health and Psycho-Social Support, these include interventions supporting the mental health of survivors of GBV. Survivors are supported with services to enable them to recover from the emotional, psychosocial, and social effects of GBV. Survivors are provided Psychological First Aid (PFA) to gain the necessary stability for informed decision-making. Survivors may also need psychological counselling from trained persons to overcome stress, trauma, and depression. Social worker’s/case workers may accompany them to other services in the referral pathways with the consent of survivors.

Security Services this includes the involvement of law enforces to facilitate access to justice. Survivors report cases to the police, are provided with a reporting number (OB No.), and investigating officers process court files with statements, evidence among others.

Provision of Legal Assistance services that can promote or help survivors to know their rights, claim their legal rights and make informed decisions with respect to seeking justice. Legal aid is most often accessed through private NGOs and is discussed under the civil society subsection below. The WRC is a dispute resolution body and is considered to be the most locally accessible tier in Tanzania’s court system.

Safe houses/shelters are places that provide immediate security, temporary refuge, and support to survivors and their families in imminent danger who are escaping violent or abusive situations or are at risk of further violence and who wish to be protected through safe

shelters, police or Violence Response Teams (VRTs), community security and relocation. The shelters should be staffed by professionals and their location should be confidential.

One Stop Centres give access to holistic services to survivors. They include health, psychosocial support, legal and police services under one roof and free of charge. Where they cannot be provided under one roof, there can be a coordinated multisectoral approach with identified partners providing specific services in a coordinated manner. One such centre is found in Iringa which is one of the project sites

The Gender and Children’s Desks established by the Tanzania Police Force at police stations to offer “woman-friendly” services. Gender and Children’s Desks, staffed by male and female police officers, provide private locations for discussing sensitive matters—including GBV—and officers frequently offer escort services (for example, to the hospital), represent survivors in court, and may also provide temporary shelter at the police station. They are minimum guidelines for the establishment of Gender and Children’s Desk to assure responsiveness to survivors as well as uniformity of service across the country as well as Standard Operating Procedures (SOPs) for the prevention and response of gender-based violence and child abuse. As at January 2021, 400 Gender and Children’s Desks have been established

Overall, there are opportunities for linkages with the community through survivor’s family members; community leaders; and community individuals and organizations such as Community Health Workers, community-based distributors, Traditional Birth Attendants, community-based organizations, and faith-based organizations. Health facility management teams shall work closely with community representatives through dispensary, health center, and hospital governing committees at all levels. These will include other committees focused on HIV/AIDS, social services and security. HealthCare providers at all levels shall inform the community and survivors on where to access services, including safe houses, drop-in centers, dispensaries, health centers, and hospitals; and shall implement outreach activities.

TANROADS will undertake a mapping of service providers across the project sites and will schedule regular consultations with them. TANROADS will work to ensure that through this mapping an effective referral pathway is established. The consultations shall be for purposes of assuring their effectiveness. They will also inform gaps and challenges that may hinder quality survivor centred services and support and help identify where they are inadequately resourced e.g. rape kits at the health care facility or gender and children police desks.

TANROADS anticipates that the support services will include amongst others:

- Provision for accessible information on services available to survivors of GBV/SEA/SH;
- Provision of accessible, effective, and responsive health, social welfare, police, prosecutorial, and other services to redress cases of GBV/SEA/SH;

- Provision of specialized facilities, like women safe spaces for survivors of GBV/SEA/SH; and
- Provision of effective rehabilitation and reintegration programs for perpetrators of GBV/SEA/SH.

Budget to facilitate access to services by survivors of project related SEA/SH is as indicated in section 5 of this document. The costs shall be part of TTIP component 3.

3.3 Relevant Statutory and Other Laws of Tanzania

Apart from existing referral pathways mechanism Tanzania also have National laws and regulations that address GBV, SEA and workplace Sexual harassment such as; Constitution of Tanzania of 1977 amended in 2001 article 13 (sub 6(e), Marriage Act 1971 Revised 2002, The Sexual Offenses Special Provisions Act (SOSPA Act 1998), The law of the child Act 2009, National Management guideline for the health sector response to and prevention of gender Based Violence 2011, The Employment and Labour Relations Act 2004. and the National Plan of Action to End Violence Against Women and Children 2017/18-2021/22.

Article 13 of the Constitution of the United Republic of Tanzania of 1977 prohibits discrimination on the basis of gender among other things. Articles 12 to 29 incorporate the Bill of Rights and Duties, which set out the basic rights and duties of citizens which are broad enough to assert and protect rights holders against GBV. Every citizen has a duty to respect women's rights. Other rights under the said Bill of Rights and Duties include the right to equality before the law; the right to life; the right to personal freedom; and the right to privacy and personal security. It is clear that GBV falls within the ambit of constitutional protections though not in a more explicit way.

Public Health Act 2009 provide for the promotion, preservation and maintenance of public health with the view to ensuring the provision of comprehensive, functional and sustainable public health services to the general public and to provide for other related matters. Section 54 of this law states that " A person shall not cause or suffer from nuisance, likely to be injurious or dangerous to health, existing on land, premises, air or water". Therefore, TANROADS shall develop this project road so that nobody suffers from nuisance or causes danger to people's lives.

Occupation Safety and Health Act (2003) The law requires employers to provide a good working environment to workers in order to safeguard their health. The employers need to perform medical examinations to determine fitness before engaging employees. Employers must also ensure that the equipment used by employees is safe and shall also provide proper working gear as appropriate. TANROADS and contractor shall observe this law during construction.

Employment and Labour Relations Act No. 6 of 2004 The Act makes provisions for core labour rights; establishes basic employment standards as well as prohibiting discrimination on the basis of sex or gender role, provides a framework for collective bargaining; and provides for the prevention and settlement of disputes. Section 7 prohibits direct and indirect discrimination in the workplace including on the basis of sex, gender, pregnancy, marital status, disability, HIV/AIDS and age. Sexual harassment is also prohibited as articulated in Section 7(5). NROADS shall see to it that the Contractor adheres to employment standards as provided for by the law.

The Penal Code (revised 2002) criminalizes various GBV offences through the 1998 Miscellaneous Amendments also known as the Sexual Offences Special Provisions Act (SOSPA). The SOSPA made special provisions concerning sexual and other offences and widened the offences to include trafficking in persons, sexual harassment and FGM. The SOSPA introduced stiff penalties for sexual offences: the imposition of a minimum sentence of 30 years, imprisonment and compensation to a survivor of violence and life imprisonment for offenses committed against a child less than 10 years; life imprisonment for the crime of gang rape; no less than 10 years imprisonment for gross indecency; 5 to 20-year imprisonment for sexual exploitation of children and grave sexual abuse with a punishment of imprisonment between 15 to 30 years and in cases where the survivor is less than 15 years, imprisonment from 20 to 30 years

TANROADS shall work to ensure that all its contractors, consultants and/or other project related individuals adhere to and comply with laws and shall invest time to create awareness on the importance of assuring safe and secure project implementation for all.

3.4 TANROADs Safeguard Instruments on Addressing GBV/SEA/SH

TANROADS has developed several Safeguard instruments such as Environmental and Social Safeguard Policy 2018, Contractors Environmental, Social, Health and Safety requirements (ESHS), as well as HIV/AIDS Policy 2018, which guide Contractors to prepare Safeguards tools such Specific Occupation Health and Safety Plan, HIV/AIDS, Sexual Transmitted Disease (STDs), Tuberculosis (TB), Coronavirus Disease (COVID – 19) Specific Environmental and Social Management Plan (ESMPs) and Health and Social Management Plan (HSMPs), Contractors Labor Management Strategy, Specific GBV/SEA strategy that protects workers and community members against SEA, sexual harassment, gender based violence, child abuse, recruitment and anti-retaliation as well as ensure the protection of people and communities working with, including mechanisms to limit, report and respond to potential cases of sexual exploitation, abuse and sexual harassment cases.

These tools form parts of bidding requirements to Contractors during tendering. This would highlight what is in place and the gaps and in an operational way inform the contractors and supervising consultants to address the GBV risks.

3.5 Workers Code of Conduct

TANROADS has a Code of Conduct that provides a framework of cooperation in response to SEA/SH survivors' support and incident notification. TANROADS existing CoC is part of contractor procurement and they will commit to have all workers sign the CoC which is the standard version from WB. Prior to project Implementation the Contractor has to adopt the standard CoC from TANROADS to be signed by all project workers. Also, the Contractor will have to review available plans, strategies and regulations that address GBV, SEA and SH at workplace in order to update accordingly. The Contractor would be required to operationalize this action plan by implementing the required actions. This would in an operational way assist the contractors and supervising consultants to address the same.

Code of conducts will provide a set of standards for behavior that staff, consultants, contractors, incentive workers, volunteers of an organization are obliged to adhere to. It is mandatory for all contractors/consultants/etc to ensure all workers sign a Code of Conduct (CoC) prepared by TANROADS which is the standard version from WB. The CoC to be used during worker's recruitment specifies appropriate behavioral conduct, responsibility and penalties for non-compliance of rights, SEA/SH other social misconducts. The CoC prohibit sexual relations with minors (under 18 years of age, subordinates, vulnerable groups, and protects them against various forms of sexual harassment in the work place. The CoC will also highlight the sanctions that will be taken against project workers for violation of SEA/SH. It will show where SEA/SH grievances will be reported. The CoC will be translated into languages that are understood by the workers. Project workers will be sensitized on the CoC and communities will be made aware of the CoC provisions during public sensitizations.

3.6 Establishment of a Reporting Mechanism

TANROADS shall develop and put in place a reporting mechanism with multiple channels to facilitate confidential logging in of GBV/SEA/SH complaints in all the project locations. TANROADS shall recruit a GBV Specialist within 30 days after the project contract is signed. The GBV Specialist will develop SEA/SH reporting procedure that will guide survivors to report and PIT to respond. It will be necessary to identify and integrate GBV/SEA/SH entry points within the GM with clear procedures and tools for safe, confidential, and ethical management of related complaints. It (reporting procedure) will provide for timely and safe reporting of SEA/SH incidences including the mandatory requirement of notifying the WB of an incident that occurs within 24hours of knowing about it. The procedure will be guided by a survivor centric approach outlining professional standards and work ethics for the protection of women and children, including confidentiality, non-discrimination, respect, consent, safety and also outlining the responsibilities of the key actors in addressing the incident including supporting the survivor.

PART 4: GRIEVANCE REDRESS MECHANISM

GRM for GBV/SEA involves a formal process for receiving, evaluating and redressing Project-related grievances from affected communities, workers and the public. The DCTP recognizes vulnerability of the different Project participants involved or affected by the Project activities (such as community members, workers and other beneficiaries).

To address GBV risks appropriately, the **GRM needs to be in place prior to contractors mobilizing**. TANROADS shall develop the GRM for GBV/SEA before the implementation of the project. It is required that, the borrower shall have a grievance mechanism that will be “proportionate to the potential risks and impacts of the project”. This is meant to apply to all aspects of the project including when addressing GBV or both SEA and SH survivors, there are risks of stigmatization, rejection, and reprisals against survivors. To enable community members and staff persons to safely access the GRM, multiple channels shall be provided through which survivors can be registered in a safe and confidential manner will be enabled. The Mechanism will be disclosed through training, sensitization/ awareness meetings that are accessible for different groups and during times and in places where everyone can participate; stakeholder engagement; World Bank & TANROADS websites; TANROADS Regional offices; Direct to stakeholders through formal letters, phone numbers, radio, e-mail and WhatsApp groups; Community informer; VGs focal persons; Public Address System; Visual displays in public places such as market & business centres, village/ward offices, worship areas, schools etc. Brochures/leaflets, posters; Social media and Non-technical summary of documents and reports. (as described in SEP, Table 4-1).

GBV/SEA GRM Principles

The GRM for GBV/SEA/SH and VAC cases will be based on the following principles:

- i. The process will be transparent and allow workers/community to express their concerns and file grievances;
- ii. Anonymous grievances will be treated equally as other grievances, whose origin is known;
- iii. Grievances will be treated confidentially, except anonymous ones;
- iv. Workers/community will be informed of how their grievances are resolved;
- v. Multiple/accessible channels through which SEA/SH complaints can be registered will be established.

Others principles specific to addressing GBV include;

- a) **Confidentiality and anonymity**
 - i. Grievances will be treated confidentially, except anonymous ones;
 - ii. Separate logging in SEA/SH cases from other cases.
 - iii. No identifiable information of SEA/SH cases in the GRM logbook

iv. Separate coding system for names should be created and stored in a locked cabinet in the offices of GRM levels. The complaint logbook should also be stored in a different locked cabinet.

v. No identifiable information on the survivor should be stored in the GRM

b) Survivor Safety

i. Feedback on the case is provided to the survivor only and strong caution is exercised before communicating any results beyond the survivor.

ii. Put in place Info sharing procedure to ensure that only those having a role to play in the response to an allegation (i.e. GBV service providers) receive case level information.

iii. The GRM should record information on not more than three aspects related to the GBV incidents: (a) the nature of the complaint (what the complainant says in her/his own words without direct questioning, (b) if, to the best of their knowledge, the perpetrator was associated with the project, and if, possible, (c) the age and sex of the survivors.

c) Survivor centricity

i. Process to seek survivor’s informed consent is in place throughout the GRM process.

ii. There will be no discrimination against those who express grievances;

iii. Management will treat grievances seriously and take timely and appropriate action in response.

iv. All those handling SEA/SH complaints in the GRM must be trained on SEA/SH and survivor centred approaches

Information about the existence of the grievance mechanism will be readily available to all project workers/community (direct and contracted) through notice boards, public offices such as WEO, VEO and community centres, “suggestion/complaint boxes”, and other means such Mobile phone, walk –ins as needed.

GBV-GRM Levels

Levels	Responsible Persons/Department	Role
Project Committee	The committee at project level will consist of PIT Members (Project Engineer, Sociologist (Chairperson), WEO, Supervising Engineer (RE), Contractor (PM), -Legal officer, Land officer, GBV Specialist, HRO and Local NGOs/ CBOs).	<ul style="list-style-type: none"> • Project Committee will maintain records related to GBV grievances following ethical and safety procedures as outlined in the GBV Action Plan. • Monitor the status and effective referral of GBV/SEA/SH complaints • Notify the WB of any project related SEA/SH incident in a timely manner • Establish TOR’s for a SEA/SH Committee that will be responsible for the investigation/verification of SEA/SH incidents reported and give

Levels	Responsible Persons/Department	Role
		recommendations to the alleged perpetrators employer for action.
GBV Specialist	GBV Specialist will work closely with GBV service providers identified in the Project areas.	<ul style="list-style-type: none"> • Register grievances • Filing grievances • Provide psychological first aid to survivor and refer survivor to services • Notifying the designated GBV focal point in the Project GRC of the allegation in line with pre-established information-sharing protocols • Provide feedback to survivors • Be part of the SEA/SH committee set up by the PIT that will establish if the alleged perpetrator is a project worker, if there is a breach of CoC, recommend to the employer sanctions/actions to be taken.

Standard Operating Procedures

Access to the GBV GRM:

Information about the existence of the grievance mechanism will be readily available to all project workers/community (direct and contracted) through notice boards, public offices such as WEO, VEO and community centres, suggestion/complaint boxes, and other means such mobile phone, walk-ins as needed.

TANROADS will put in place the necessary mechanisms to address SEA/SH. The proposed mitigation measures as per the risk level in the current project is as follows:

- a) Define GBV requirements and expectations included in the contractual obligations as well as reinforce CoCs that address GBV/SEA/SH in the project locations to cultivate an environment free from GBV and SEA/SH as well as regular dissemination of the CoC to the workers;
- b) Develop and elaborate the roles of the GRM committees in addressing GBV and SEA at the different levels; ward, village and project for effective management of complaints.
- c) Develop criteria for selection of the focal person for GBV/SEA at each level – ward, village and/or project and the terms of reference
- d) Ensure a GBV specialist is in place to support SEA/SH risk management measures in TANROADS;
- e) Develop and deliver information, education, and communication (IEC) materials for stakeholders to indicate that the project and/area is a GBV/SEA/SH free zone, as well

as provide information on GBV response services (such as hotline numbers and where to seek assistance when needed). Other information to be highlighted include:

- i. No sexual or other favors can be requested in exchange for services;
 - ii. Project staff including contractors and subcontractors are prohibited from engaging in SEA/SH and this information should be clearly spelt out during training and other forms of communication to the staff;
 - iii. Any case or suspicion of SEA/SH should be reported to [hotline number, GM or citizen engagement/feedback mechanism];
 - iv. Information on protection of whistleblowers; and
 - v. The range of services available for survivors including healthcare, protection and psychosocial care – the referral pathway for the project.
- f) Identify and map GBV service providers to ensure information is made available to health service providers on where psychosocial support and emergency medical services for survivors of GBV can be accessed (within the healthcare system);
- g) Develop SEA/SH prevention policy and response procedures that outline key requirements for reporting cases if they arise, measures to enable safe, ethical, survivor-centered response and disciplinary processes;
- h) Train all project staff contractors, subcontractors and workers and integrate understanding of the CoC, GBV, SEA/SH as well as accountability and response framework including the referral processes, responsibilities and reporting in other trainings; and
- i) Utilizing the GM developed under the project with a separate channel to manage GBV-related complaints at the community and organization levels to enable reporting in a safe, confidential survivor-centric manner. The project GM will ensure all incidents of GBV/SEA/SH reported either through the general GM system that is related to the new project are relayed to the PIT and WB within 24 hours.

TANROADS PIT

PIT will be responsible for oversight of grievance handling across all subproject sites, and will carefully monitor the status and effective referral of GBV/SEA/SH complaints. The GBV Specialist will be hired during the first quarter after signing of the contract by the TANROADS and GBV Specialist will be included in PIT. PIT will be responsible for the Supervision and monitoring of GRM Committees for GBV/SEA cases at all levels and reporting on GRM implementation in a monthly basis. GBV focal point persons will be identified based on a set criterion from the GRM Committees to provide follow up support to survivors, refer them to services and to the GBV Specialist for registration of incidents and follow up on accountability procedures according to their wishes. Other GRM committee members will refer survivors to the focal point person and to services. GRM Committees will be trained on survivor centred approaches, GBV/SEA GRM and reporting protocols.

The grievances related to project impact, violation of labour rights as well as GBV/SEA/SH will form a substantial part of the staff induction training and awareness to all project workers/community, worker's will be sensitized on Codes of Conduct for their acceptance and signature. The contractor will be required to demonstrate proof that each employee has

signed the Code of Conduct and has been inducted on the GRM procedure. Furthermore, as part of the contractor’s human resources policies, there should be a project workers GRM/procedure for women workers involved in public works to report cases of sexual harassment and procedures to address these kinds of cases.

Grievance Committees, contractors and subcontractors

For grievances registered with grievance committees, contractors and subcontractors, they will be responsible for keeping records and reporting cases to PIT.

During the setup of the GRM in each institution, the recording of SEA/SH grievances should include:

- Nature of complaint;
- The date that the complaint was logged;
- Location where the complaint is related to;
- Any follow up actions taken to support the survivor;
- Outcome of verification/investigation of incident;
- Corrective actions taken to avoid the recurrence of similar grievances in the future, if applicable.

Employers generic Code of Conduct stipulates the contractor’s requirements to deal with GBV as indicate in **Annex A**. Figure 2 below shows stepwise procedure for management of GBV cases. The first level GRM has been replaced with the nominated GBV focal person.

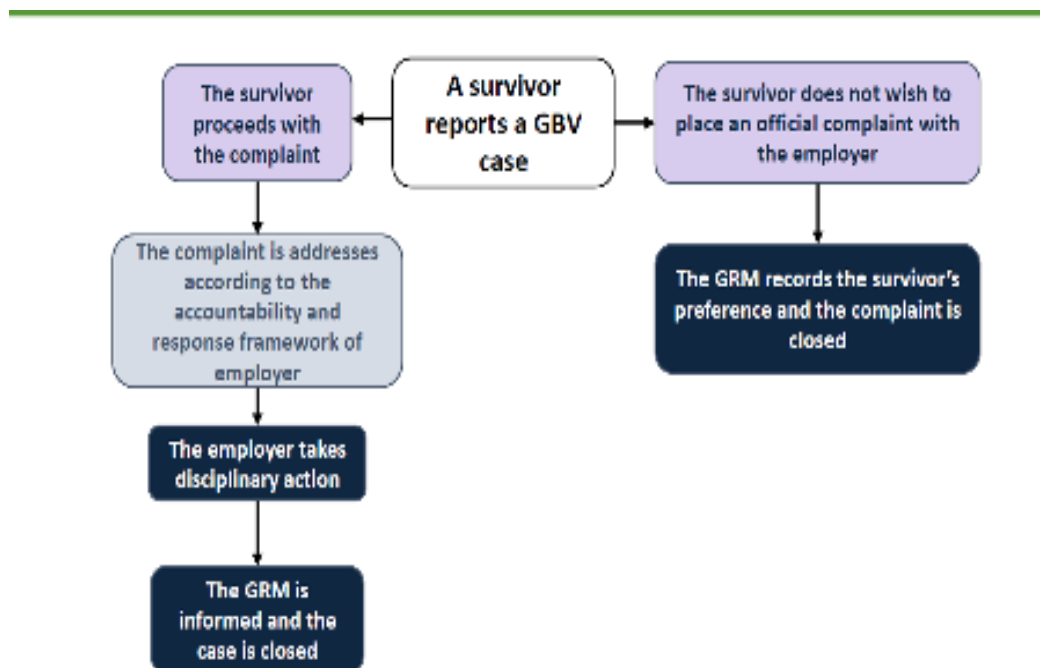


Figure 2: Stepwise procedure for management of GBV cases

PART 5: PIT's CAPACITY TO PREVENT AND RESPOND TO GBV RISKS

5.1 Conduct Staff Assessments

Prior to implementing sensitization and training, it is useful to conduct staff knowledge, attitudes, and practice assessments to determine the level, scope and type of sensitization and training that will need to be conducted by GBV/SEA Specialist for different staff members of PIT, Contractors and Consultants. In addition, this information can be used to documents a baseline so that proposed projects can measure changes in providers' knowledge, attitudes, and practices over time. The staff assessment should cover:

- Personal perceptions, attitudes and beliefs related to violence against women and girls
- Knowledge of gender issues and human rights
- Knowledge of SEA and SH issues
- Knowledge of CoC, SEA/SH reporting channels, available services/referral pathway
- Understanding of the legal framework, national policies and protocols focusing on SEA/SH and VAC

Technical skills related to addressing violence against women and girls

5.2 Strategy of Conducting Staff Training and Sensitization

In general, the training should consider the following key activities to build staff capacity:

- Contractors and Consultant staff from project site to service providers should first sensitized about issues related to SEA/SH.
- Evidence suggests that civil professionals are likely as any other members of society to hold views informed by the socialization and which may be detrimental to the welfare of survivors, such as blaming the GBV survivor. Staff also need to have a basic understanding of the nature and scope of violence against women and girls, the dynamics of abuse, risk factors and consequences as well as importance of upholding rights to security and protection of women and girls and ultimately all members of society.
- Specialized staff, including all civil professional providing direct services to survivors, should receive additional and ongoing training on key elements related to intake, examination, record keeping, etc.

Specialized staff should also receive ongoing support to manage the challenges of working with survivors, through supervision, in-service trainings, case reviews, etc.

5.3 Provide Staff Training and Sensitization on SEA/SH

After reviewing the outcomes of the staff assessments, facilities can determine how best to offer sensitization and training that is focused on SEA and SH issues. The staff to be trained will include the PIT members whose, (Sociologist-GBV/SEA specialist, Environmentalist, Land officer, Legal expert, Labor expert, Community Development Officer, Project Engineers, RE, Project manager, WEO, VEO and Health and Safety Officer who will be responsible for coordinating, providing guidance and follow up operation of GBV/SEA mechanism and implementation. Among others, the PIT in collaboration with GBV specialist will continue to build up the capacity to Contractors and Consultant staff/workers as well as communities along/around the project areas as the cornerstone of any facility's ability to address violence against Accountability and response framework

Such as: -

- Responsibilities and reporting
- Confidentiality and whistle blower protection clauses
- Identification of SEA/SH risk factors
- Impacts of SEA/SH
- Referral procedure
- GBV/SEA related issues
- Staff Management
- Recording of grievances
- Reporting ethics
- Survivor centricity and consent
- Data storage and confidentiality.

In a bid to sustain GBV/SEA knowledge and skills throughout the project, TANROADS commits to

- Holding intensive training workshops for staff with the help of outside experts or institutions;
- A supervising consultants and contractors so as to assure GBV/SEA free environment is promoted.
- Arranging for ongoing training and support from individuals or organizations with specific expertise in areas such as psychology or law;
- Distributing written educational information to providers on a regular basis;
- Incorporating the issue of violence against women and girls into other training workshops for road and airport projects

5.4 Implementation of the Action Plan

This Action Plan will be implemented and monitored by PIT at Project level. TANROADS will also be responsible to ensure all required safeguards specialists are in place as per Contractor and consultant contract before the project civil works commence.

5.5 A Survivor-Centered Approach

Survivor - Centred Approach is the best practice recognizes that it is essential to respond appropriately to a survivor's complaint by respecting the survivor's choices. This means that the survivor's rights, needs and wishes are prioritized in every decision related to the incident. The survivor of SEA/SH, who has the courage to come forward, must always be treated with dignity and respect. Every effort should be made to protect the safety and wellbeing of the survivor and any action should always be taken with the survivor's consent. These steps serve to minimize the potential for re-traumatization and further violence against the survivor. Confidentiality is essential throughout the process. Otherwise, the survivor risks retaliation and a loss of security.

If the alleged perpetrator is an employee of the contractor, consultant or Implementing Agency (IA), to protect the safety of the survivor, and the workplace in general, the IA, contractor or consultant should assess the risk of ongoing abuse to the survivor and in the workplace. This should be done in consultation with the survivor and with the support of the GBV service provider. Reasonable adjustments should be made to the alleged perpetrator's or survivor's work schedule and work environment—preferably by moving the perpetrator rather than the survivor—as deemed necessary. The employer should provide adequate leave to survivors seeking services after experiencing violence.

ACTION PLAN

This section details the specific measures for mitigating SEA/SH risks under the Tanzania Transport Integration Project (Tan TIP). These include the mitigation measures already in place as well as steps to undertaken to further mitigate and respond to risks and cases of GBV/SEA in the project sites.

Table 1. Indicative budget for SEA/SH Action Plan activities

	<i>Activity to Address SEA/SH risk</i>	<i>Steps to be taken</i>	<i>Time Lines</i>	<i>Responsible</i>	<i>Monitoring (Who will monitor)</i>	<i>Output indicators</i>	<i>Estimated Budgets (TSHS)</i>
<i>1</i>	<i>Sensitize the communities ,workers, local leaders, Trainer of the trainees, PIT members, contractor and consultant on the importance of addressing SEA/SH on the project, and the mechanisms that will be implemented</i>						
a)	Training to PIT-members, NGOs, CBOs Contractor and Consultant Staff, Trainer of Trainees on SEA/SH to include School Outreach, Community and NGOs will be trained and provided training material as per availability of resources <ul style="list-style-type: none"> • Accountability and response framework • Responsibilities and reporting 	<ul style="list-style-type: none"> • Secure GBV/SEA training expert, • Prepare the training modules and materials • Conduct training for targeted members • Arrange date and venue for training to be undertaken • Include SEA/SH as an agenda in quarterly meetings • Invitation of experts • Preparation training material 	Quarter 1 following signing of the works contract Quarterly (Throughout Project implementation.)	GBV/SEA expert, PIT, TANROADS Project Staff, Contractor and Consultant staff	PIT/TANROAD S	Number of training conducted to PIT-members, workers, communities, vulnerable groups and local leaders and reports produces)	30,000,0000 From TTIP Component 3

	<ul style="list-style-type: none"> Confidentiality and whistle blower protection clauses SEA/SH, causes, risk factors Impacts of SEA/SH Referral pathway/services available SEA/SH GRM SEA/SH grievance handling Boundaries of reporting Survivor centred approach Data storage, sharing and confidentiality (Information sharing protocol ISP) 	<ul style="list-style-type: none"> Dissemination material Invitation of NGOs, CBOs representatives Selection of trainer of trainee's sensitization of project workers Selection of trainer of trainee's sensitization of the community Invitation of community leaders School Outreach 					
b)	<p>Training to community, Schools, vulnerable groups and local leaders) on SEA/SH to include</p> <ul style="list-style-type: none"> - on SEA/SH Responsibilities of a 	<ul style="list-style-type: none"> Secure technical expertise, Prepare the training module and materials Conduct training for targeted members Include SEA/SH as an 	Quarter 1 following signing of the works contract	communities, vulnerable groups and local leaders)	PIT/TANROAD S	Number of training conducted to PIT-members, workers, contractor's communities, vulnerable groups	30,000,000 From TTIP Component 3

	<p>given community, Vulnerable group and Local leaders on SEA/SH</p> <ul style="list-style-type: none"> • SEA/SH, causes, risk factors • Impacts of SEA/SH • SEA/SH grievance handling procedure • Boundaries of reporting • Survivor centred approaches • Referral pathway/available services • GRM & reporting protocol 	<p>agenda in quarterly meetings</p> <ul style="list-style-type: none"> • Arrange public meeting • Develop School outreach • Mapping • Use of Stakeholder Engagement Strategy to include Women and Girls • Introduction of group discussion • Invitation of NGOs, CBOs and 	<p>Quarterly (Throughout Project implementation.)</p>			<p>and local leaders and reports produces)</p>	
c)	<p>Contractor and Consultant Management trained on SEA/SH</p> <ul style="list-style-type: none"> • Responsibilities of a given Contractor and Consultant on SEA/SH Action Plan implementation/monitoring 	<ul style="list-style-type: none"> • Prepare the training module and materials • Conduct training for targeted members • Arrange date and venue for training to be undertaken • Include SEA/SH as an agenda in quarterly 	<p>Quarter 1 following signing of the works contract</p> <p>Quarterly (Throughout Project</p>	<p>GBV/SEA expert, PIT, TANROADS Project Staff, Contractor and Consultant staff</p>	<p>PIT/TANROADS</p>	<p>Number of training conducted to PIT-members, workers, communities, vulnerable groups and local leaders and reports produces)</p>	<p>30,000,000 From TTIP Component 3</p>

	<ul style="list-style-type: none"> SEA/SH causes and risk factors Impacts of SEA/SH SEA/SH grievance handling procedure Boundaries of reporting Survivor centered approach Code of conduct Available services 	<ul style="list-style-type: none"> meetings Selection of representative by group Preparation of CoC 	implementation.)				
2	<i>Conduct GBV/SEA assessment at project sites</i>						
	Conduct a GBV risk assessment and GBV mapping in project area to inform risk mitigation strategies	<ul style="list-style-type: none"> GBV Specialist to conduct assessment in the project area GBV Specialist to conduct a desk review of GBV/SEA in project area. 	First quarter after signing works contract together with the GBV/SEA assessment	PIT/ GBV Specialist	TANROAD S/ PIT	GBV assessment report.	10,000,000 From TTIP Component 3
	Conduct a GBV/SEA risk assessment to inform risk mitigation strategies	<ul style="list-style-type: none"> GBV Specialist to conduct assessment in the project area GBV Specialist a desk reviews an of GBV/SEA in project area 	First quarter after signing works contract together with the GBV/SEA assessment	PIT/GBV Specialist	TANROAD S/ PIT	GBV assessment report	10,000,000 From TTIP Component 3

b.	Mapping out and review capacity and quality of GBV service Providers in the project area	<ul style="list-style-type: none"> Review capacity and quality of GBV service providers Conduct field visits to identify and map out key actors and service providers on GBV/SEA in project area and collect data at the community/sub county level. 	<p>First quarter after signing works contract</p> <p>First quarter as part of the baseline data</p>	PIT/GBV Specialist LGAs	TANROAD S/ PIT	GBV service mapping and capacity and quality assessment Report	20,000,000 From TTIP Component 3
b.	Stakeholder consultations	<ul style="list-style-type: none"> Develop interview/facilitation guides Conduct stakeholder meetings/FGDs Conduct regular SEA/SH safety audits Prepare field visit reports 	<p>Prior to initiating construction.</p> <p>Maintained throughout Project implementation.</p>	PIT/GBV Specialist LGAs	TANROAD S/ PIT	<p>Report on stakeholder consultations</p> <p>Safety Audit reports</p>	40,000,000.00 From TTIP Component 3
c.	Update a GBV referral pathway	<ul style="list-style-type: none"> PIT to undertake a review of the existing referral pathway and update the referral pathway/list for service providers. Disseminate the referral pathway/list to 	<p>Third quarter after signing works contract</p> <p>Maintained throughout project</p>	PIT/GBV Specialist LGAs	TANROAD S/ PIT	<p>Referral pathway updated</p> <p>Report on Number/type of GBV/SEA preventive and</p>	25,000,000.00 From TTIP Component 3

		stakeholders including service providers	implementation.			response services available. Report on No. of referrals of SEA/SH incidents to the project GRM by other service providers	
3	Strengthen Institutional capacity for GBV/SEA risk mitigation and response						
a.	Engage GBV/SEA Specialist in TANROADS to supervise and provide technical support for the implementation of GBV/SEA Action Plan	<ul style="list-style-type: none"> Procure services of a qualified and competent GBV/SEA specialist to supervise and provide technical support for the implementation of GBV/SEA in projects. TANROADS has social development specialists that have been supporting GBV and VAC activities in road projects and these will support initial phases of the project before the GBV specialist is hired 	In the first Quarter after contract signing	PIT/GBV Specialist LGAs	TANROAD S/ PIT	Qualified GBV/VAC specialist hired	20,000,000 From TTIP Component 3

b.	Support capacity of local systems to prevent and respond to GBV/SEA (police, health, legal, CDO's, CBO's) i) Strengthen the reporting mechanisms & procedures of local systems ii) Strengthen a survivor centred referral and response. iii) Strengthen coordination for better services with local/national GBV/SEA service providers	<ul style="list-style-type: none"> Identify key stakeholders to engage Develop training plan Develop training material/content using global/national standards, human rights and survivor centered approaches Conduct training and mentoring Conduct regular coordination meetings with service providers for effective referrals 	Maintained throughout Project implementation.	PIT/GBV Specialist LGAs	TANROAD S/ PIT in coordination with LGAs, Police, specialized NGOs	Number of trainings conducted Number of coordination meetings conducted Level of Community awareness about GBV and SEA referral pathway	50,000,000 From TTIP Component 3
4	<i>Integrate GBV/SEA risk management in Contractors' Environment and Social Implementation Plan (ESIP)</i>						
a)	Incorporate GBV/SEA risk in the Contractor's Environment and Social Implementation Plan (ESIP)	<ul style="list-style-type: none"> Integrate GBV/VAC considerations in the Contractor's Environment and Social Implementation Plan (ESIP) 	First Quarter after signing of the works contract during project implementation.	Contractor, Supervised/ PIT/ Facilitators/Consultant	TANROAD S/PIT	Updated ESIP with GBV/VAC	Contractors Budget
b)	Develop and establish/review SEA/GBV response and	<ul style="list-style-type: none"> Develop/review SEA/GBV Allegation Procedures to report 	Quarter 4 after signing of works contract	TANROADS/PIT, Project Staff;	TANROAD S/PIT	An established and functional accountability	15,000,000 From TTIP Component 3

	accountability framework to include: Allegation Procedures to report SEA/GBV incidents and internally for case accountability procedures which should clearly lay out confidentiality requirements for dealing with cases	<p>SEA/SH issues</p> <ul style="list-style-type: none"> • Inform employees and the community on how to report cases of SEA/SH, CoC breaches to the GRM, and how such cases are handled • Develop mechanisms to hold accountable alleged perpetrators; disciplinary action for violation of the CoC by workers. 	During project implementation.	Contractors		framework	
5	<i>Review the IA's capacity to prevent and respond to GBV/SEA</i>						
a)	<p>Review for attention to GBV/SEA:</p> <ul style="list-style-type: none"> • Human resource manuals and staff capacity. • Existing GBV/SEA Policies and procedures. • Project code of conduct. 	<ul style="list-style-type: none"> • Capacity assessment of implementing agency • Review TANROADS ESMS and procedures/Guidelines • Review the TANROADS Referral Pathways and reporting mechanisms • Review Project Frameworks to identify GBV/SEA policies and procedures. 	<p>During the first Quarter of Contract signing</p> <p>To continue during Project Implementation</p>	TANROADS/PIT, Project Staff;	TANROAD S/PIT	<p>GBV/SEA prevention and mitigation measures addressed in policy documents</p> <p>Establish how the referral pathway will be strengthened</p>	20,000,000 From TTIP Component 3
b)	TANROADS will hire GBV/SEA Specialist to	<ul style="list-style-type: none"> • Recruit/train an officer with GBV/SEA skills 	In the first Quarter after	TANROADS/PIT, Project Staff;	TANROAD S/PIT	A qualified and competent	Covered under 4 (a)

	support and supervise issues related specifically for TTIP		contract signing			GBV/SEA/VAC staff recruited	
c)	Develop M&E programme	<ul style="list-style-type: none"> Develop a comprehensive M&E plan to monitor work and implementation Monitor SEA/SH Implementation Plan 	In Quarter 2 of second year after contract signing Maintained throughout Project implementation.	TANROADS/PIT, Project Staff; Facilitators/Consultant	TANROAD S/PIT	M&E framework in place	20,000,000 From TTIP Component 3
d)	Conduct GBV/SEA orientation training for project staff	<ul style="list-style-type: none"> Develop a training plan Develop training materials Conduct training for project staff 	Quarter 2 after contract signing Retraining during Project implementation.	TANROADS/PIT, Project Staff; Facilitators/Consultant/LGAs	TANROAD S/PIT	Number of training conducted for project staff Percentage of workers that have attended CoC training.	10,000,000 Contractor
6	<i>Sensitize communities about GBV/SEA/SH</i>						
a)	Establish partnerships with CBOs/CSO's and local government institutions	<ul style="list-style-type: none"> Identify and select partners and officially inform them Engage partners, conducting joint community meetings and awareness - raising 	Quarter 3 of contract signing Maintained throughout Project implementation.	TANROADS/PIT, Project Staff; LGAs Facilitators/Consultant	TANROAD S/PIT	Number of partnerships formed	10,000,000 From TTIP Component 3

b)	Identify and train	<ul style="list-style-type: none"> Establish a trained, dedicated and committed network of community focal persons 	<p>Quarter 1 of contract signing</p> <p>Maintained throughout Project implementation.</p>	TANROADS/PIT, Project Staff; Facilitators/Consultant	TANROAD S/PIT	No. of focal points and persons identified and trained	10,000,000
c)	Develop specific Stakeholder engagement strategy for GBV/SEA related issues	<ul style="list-style-type: none"> Develop a comprehensive GBV/SEA Stakeholder Strategy 	<p>Quarter 1 of contract signing</p> <p>Maintained throughout Project implementation.</p>	TANROADS/PIT, Project Staff; Contractors/Consultant	TANROAD S/PIT	Stakeholder Implementation Strategy developed	Contractors budget
d)	Develop information dissemination strategy	<ul style="list-style-type: none"> Develop a strategy Identify the methods to disseminate the information Disclosure of information to stakeholders through multimedia outlets 	<p>Quarter 3 of contract signing</p> <p>Maintained throughout Project implementation.</p>	TANROADS/PIT, LGAs, Contractors/Consultant	TANROAD S/PIT in coordination with LGAs	A GBV/SEA communication strategy in place	Contractors budget
e)	Develop relevant materials for community engagements	<ul style="list-style-type: none"> Develop relevant materials translated in local languages of the project location 	<p>Quarter 2 of contract signing</p> <p>Maintained throughout Project</p>	TANROADS/PIT, LGAs, Contractors/Consultant	TANROAD S/PIT in coordination with LGAs	No. and type of GBV/SEA material developed	Contractors budget

			implementation.				
f)	Community outreach to schools on the risks of GBV/SEA	<ul style="list-style-type: none"> Develop a school outreach Plan in consultation with the School heads Conduct sensitization targeting teachers, parents and students 	<p>Quarter 1 of contract signing</p> <p>Maintained throughout Project implementation.</p>	TANROADS/PIT, LGAs, Contractors/Consultant	TANROAD S/PIT in coordination with LGAs/schools	Number of school outreaches conducted	Contractors budget
g)	Conduct community sensitization sessions	<ul style="list-style-type: none"> Develop a Community GBV/SEA and sensitization program, material and messages Conduct community sensitization 	<p>Quarter 1,2 and 3 of contract signing</p> <p>Maintained throughout Project implementation.</p>	TANROADS/PIT, LGAs, Contractors/Consultant	TANROAD S/PIT in coordination with LGAs	Number of community sensitization conducted	Contractors budget
7	<i>GBV/SEA sensitive channels for reporting in GRM</i>						
a)	<p>Review GRM for specific GBV/SEA/SH procedures</p> <p>Sensitize the community and project workers on</p>	<ul style="list-style-type: none"> Undertake internal review of GRM for GBV/SEA mitigation Integrate GBV/SEA entry points within the GRM with clear procedures <p>Review the GM to ensure it meets the GBV needs</p>	<p>Quarter 1 after signing of works contract</p> <p>Ongoing throughout the project</p>	TANROADS/PIT, LGAs, Contractors/Consultant	TANROAD S/PIT in coordination with LGAs	<p>GRM with GBV/SEA procedure integrated In the GRM</p> <p>Victims/Survivors</p>	10,000,000 From TTIP Component 3

	the channels available for reporting any cases of gender based violence, sexual harassment or sexual exploitation and abuse.	<p>that currently exist. This should create a conducive environment that is safe for the victims/survivors to report</p> <ul style="list-style-type: none"> • Guide the community and employees on the channels of reporting cases of GBV and what constitutes sexual harassment • Outline for the employees the penalties and disciplinary actions that will be taken against anyone 	implementation			of GBV/SEA/SH can easily reach out to report an attempt of action of violence against them and receive a supportive response immediately	
b.	Identify and train GBV/SEA/SH focal points/person within the GMC who will be responsible GBV/SEA cases and referrals to the PIT and or other relevant stakeholders as defined in the referral pathway.	<ul style="list-style-type: none"> • Identify and select GBV/SEA focal persons within the GRC • Clarify the role of the focal points in GBV/SEA as referral points • Train the focal points on GBV/SEA basics and the referral pathway 	<p>During Quarter 2 following signing of the works contract</p> <p>Retraining during project implementation.</p>	TANROADS/PIT, LGAs, Contractors/Consultant	TANROAD S/PIT in coordination with LGAs	GBV focal points selected and trained	Covered under 7 (b)
c)	Review GRM reports/logs for	<ul style="list-style-type: none"> • Review logs for 	During project implementation.	TANROADS/PIT, LGAs/RE	TANROAD S/PIT in	Number of GBV/SEA cases	5,000,000 From TTIP

	GBV/SEA sensitivity	GBV/SEA documentation to ensure it follows standards for documenting GBV/SEA cases			coordination with LGAs	documented	Component 3
8	<i>Define and reinforce GBV/SEA/SH requirements in procurement processes and contracts</i>						
a.	Incorporate GBV/SEA/Requirements and expectations in the contractor and consultants' contracts.	<ul style="list-style-type: none"> Ensure that GBV/SEA issues are incorporated in all contracts signed by contractors and consultants 	During project implementation.	TANROADS/PIT, LGAs/RE	TANROAD S/ World Bank	GBV/SEA standards in procurement/contract document	
b.	Allocation of funds for GBV/SEA/SH related costs in procurement documents.	<ul style="list-style-type: none"> Clearly define SEA/SH requirements and expectations in the bid documents 	During preparation of bid and Contract documents	TANROADS/PIT,	TANROAD S/ World Bank	<p>Bid documents with clearly defined SEA/SH requirements</p> <p>Contract documents with clearly defined SEA/SH clauses/requirements</p>	
c.	Workers (Contractor/consultant) sensitization on GBV/SEA.	<ul style="list-style-type: none"> Develop a training plan for workers, contractors and consultants Conduct training on GBV/SEA risks, responsibilities and 	<p>Quarter 2 after signing works contract</p> <p>During project implementation.</p>	TANROADS/PIT, LGAs/RE	TANROAD S/PIT in coordination with LGAs	Number of contractors' and consultants staff trained,	15,000,000 (Includes fees for external Facilitators)

		legal/policy requirements					
d.	Codes of Conduct translated and signed in the local language	<p>Define the requirements to be included in the CoC which addresses GBV/SEA/SH</p> <p>Review CoC for provisions/clauses that guard against GBV/SEA/SH</p> <p>Have CoCs signed by all those with a physical presence at the project site.</p> <p>Train project-related staff on the behavior obligations under the CoCs.</p>	Prior to Project implementation	TANROADS/PIT, LGAs/RE	TANROAD S/PIT in coordination with LGAs	Percentage of workers that have signed a CoC	Covered under Contractor's Cost
9	<i>Separate toilet and shower facilities for men and women and GBV/SEA-free signage</i>						
a.	Provide separate facilities for men and women and display signs, posters and pamphlets around/along the project site that signal to workers and the community that the project site is an area where GBV/SEA is prohibited	<p>Provide separate facilities</p> <p>Design and print pamphlets and posters.</p> <p>Distribute the pamphlets and posters to the project site</p> <p>Install signage on the facilities</p> <p>Visit Project gangs/camps to check on the availability and usability of separate sanitary facilities.</p>	<p>In quarter of Contract signing</p> <p>During project implementation</p>	TANROADS/PIT, LGAs/RE/ Contractor/RE	TANROADS/P IT in coordination with LGAs	<p>Separate toilet and shower facilities for men and women</p> <p>Display signs/IEC materials</p>	Covered under Contractor's Costs and materials

ANNEX A:

Individual Code of Conduct

Implementing ESHS and OHS Standards

Preventing Gender Based Violence

- I, _____, acknowledge that adhering to environmental, social, health and safety (ESHS) standards, following the project's occupational health and safety (OHS) requirements, and preventing Gender Based Violence (GBV) is important.
- The Company considers that failure to follow ESHS and OHS standards, or to partake in activities constituting GBV—be it on the work site, the work site surroundings, at workers' camps, or the surrounding communities—constitute acts of gross misconduct and are therefore grounds for sanctions, penalties or potential termination of employment. Prosecution by the Police of those who commit GBV may be pursued if appropriate.
- I agree that while working on the project I will:
- Consent to Police background check.
- Attend and actively partake in training courses related to ESHS, OHS, and GBV as requested by my employer.
- Will wear my personal protective equipment (PPE) at all times when at the work site or engaged in project related activities.
- Take all practical steps to implement the contractor's environmental and social management plan (C-ESMP).
- Implement the OHS Management Plan.
- Adhere to a zero-alcohol policy during work activities, and refrain from the use of narcotics or other substances which can impair faculties at all times.
- 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 sexually exploit or abuse project beneficiaries and members of the surrounding communities.
- Not engage in sexual harassment of work personnel and staff—for instance, making unwelcome sexual advances, requests for sexual favours, and other

verbal or physical conduct of a sexual nature is prohibited. E.g. looking somebody up and down; kissing, howling or smacking sounds; hanging around somebody; whistling and catcalls; in some instances, giving personal gifts.

- Not engage in sexual favours—for instance, making promises of favourable treatment (e.g. promotion), threats of unfavourable treatment (e.g. loss of job) or payments in kind or in cash, dependent on sexual acts—or other forms of humiliating, degrading or exploitative behaviour.
- Not use prostitution in any form at any time.
- Not participate in sexual contact or activity with children under the age of 18—including grooming, or contact through digital media. Mistaken belief regarding the age of a child is not a defence. Consent from the child is also not a defence or excuse.
- Unless there is the full consent⁷ by all parties involved, I will not have sexual interactions with members of the surrounding communities. This includes relationships involving the withholding or promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex (including prostitution). Such sexual activity is considered “non-consensual” within the scope of this Code.
- Consider reporting through the GRM or to my manager any suspected or actual GBV by a fellow worker, whether employed by my company or not, or any breaches of this Code of Conduct.
- With regard to children under the age of 18:
 - Bring to the attention of my manager the presence of any children on the construction site or engaged in hazardous activities.
 - Wherever possible, ensure that another adult is present when working in the proximity of children.
 - Not invite unaccompanied children unrelated to my family into my home, unless they are at immediate risk of injury or in physical danger.
 - Not use any computers, mobile phones, video and digital cameras or any other medium to exploit or harass children or to access child pornography (see also “Use of children's images for work related purposes” below).

⁷ **Consent** is defined as the informed choice underlying an individual's free and voluntary intention, acceptance or agreement to do something. No consent can be found when such acceptance or agreement is obtained using threats, force or other forms of coercion, abduction, fraud, deception, or misrepresentation. In accordance with the United Nations Convention on the Rights of the Child, the World Bank considers that consent cannot be given by children under the age of 18, even if national legislation of the country into which the Code of Conduct is introduced has a lower age. Mistaken belief regarding the age of the child and consent from the child is not a defense.

- Refrain from physical punishment or discipline of children.
- Refrain from hiring children for domestic or other labour below the minimum age of 14 unless national law specifies a higher age, or which places them at significant risk of injury.
- Comply with all relevant local legislation, including labour laws in relation to child labour and World Bank's safeguard policies on child labour and minimum age.
- Take appropriate caution when photographing or filming children (See Annex 2 for details).
- 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.
- Sanctions
 - I understand that if I breach this Individual Code of Conduct, my employer will take disciplinary action which could include:
 - Informal warning.
 - Formal warning.
 - Additional Training.
 - Loss of up to one week's salary.
 - Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.

- Termination of employment.
- Report to the Police if warranted.
- I understand that it is my responsibility to ensure that the environmental, social, health and safety standards are met. That I will adhere to the occupational health and safety management plan. That I will avoid actions or behaviours that could be construed as GBV. Any such actions will be a breach this Individual Code of Conduct. I do hereby acknowledge that I have read the foregoing Individual Code of Conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to ESHS, OHS, GBV issues. I understand that any action inconsistent with this Individual Code of Conduct or failure to act mandated by this Individual Code of Conduct may result in disciplinary action and may affect my ongoing employment.

Signature: _____

Printed Name: _____

Title: _____

Date: _____

ANNEX B:

GBV/SEA ASSESSMENT FORM

A. GBV/SEA-related issues	YES	NO
1. Are there grievance-handling procedures in place for SEA/SH cases?		
2. Is there a policy for the handling of SEA/SH cases?		
a. Is the policy available to all staff, beneficiaries, and potential survivors?		
b. Is the policy written in the local language?		
3. Does the SEA/SH grievance mechanism include the following:		
a. Clearly understood entry points for people to submit grievances?		
b. Clear responsibilities regarding who registers SEA/SH allegations?		
c. Procedures for investigating SEA/SH allegations?		
d. A system for recording SEA/SH allegations and outcomes?		
e. Procedures for protecting the confidentiality of survivors?		
B. Staff management		
1. Is there a SEA/SH grievance manual for staff?		
2. Do the grievance policy and/or procedures provide guidance on:		
a. Types of SEA/SH cases?		
b. Information to collect from survivors?		
c. Referral pathways to be used to provide support to survivors?		
3. Are the grievance mechanism's policy and procedures regarding SEA/SH cases well communicated to all staff?		

4. Are adequate resources allocated for the grievance mechanism to function effectively?		
5. Is training provided to staff members managing SEA/SH cases?		
	Yes	No
C. Communications with users		
1. Are project-affected people told how to submit SEA/SH complaints?		
a. Are communications materials about the grievance mechanism—such as informational brochures and posters—prominently displayed and readily accessible?		
b. Do the communications materials include clear explanations regarding:		
– How to report a SEA/SH incident?		
– To whom?		
– What to expect in terms of available services?		
– What to expect in terms of confidentiality?		
c. Is the information about the SEA/SH GM available in the local languages?		
2. Can survivors submit their grievance:		
a. In person?		
b. In writing?		
c. By email?		
d. By SMS (short message service/text message)?		
e. At a dedicated website/online platform?		
f. On a telephone hotline?		
3. Can the grievance mechanism be accessed free of charge?		
4. Are users promised confidentiality?		
D. Recording of grievances		

1 . Are there clear guidelines about how to respond to a survivor disclosing a SEA/SH allegation?		
2 . Are they readily available?		
3 . Are staff members aware of what data are appropriate for them to collect from survivors and for what purposes?		
4 . Are staff members trained on how to receive, document/record, and respond to SEA/SH allegations?		
5 . Are SEA /SH allegations logged and documented?		
6 . Are SEA/SH allegation report forms readily available?		
7 . Are the outcomes and responses to all SEA/SH cases recorded?		
E . Business standards		
1 . Are there clear procedures in place to follow-up on received SEA/SH allegations?		
2 . Is there evidence that substantiated SEA/SH allegations have led to disciplinary actions or contractual consequences?		
3 . Are there clear guidelines in place to help determine when a case is considered closed?		
F . Reporting		
1 . Is anonymized SEA/SH data being regularly reported? (Only three basic indicators should be included: age of survivor, sex of survivor, and whether or not the incident is project-related .)		
	Yes	No
G. Survivor-centricity and consent		
1. Do women and child survivors have the reporting their allegation to a female staff member?		
2. Are special safeguards in place to allow survivors under the age of eighteen to submit grievances?		
3. Is survivor consent over the use and sharing of data systematically collected?		
4 . Is a survivor consent form readily available in the local languages?		
H . Data storage and confidentiality		
OFFLINE		

1 . Are cases received in a private setting or a dedicated space that maintains confidentiality?		
2 . Are SEA/SH allegations recorded separately from other types of grievances?		
3 . Are the survivor files and SEA/SH data stored with adequate precautions to protect client anonymity and safety, for instance in secure files and locked drawers or cabinets?		
4 . Is there a coding system for paper files to anonymize the data, such as identifying survivors by a code instead of by name?		
5. Are there contingency plans for the destruction or relocation of paper files during an emergency evacuation?		
6. Are staff members aware that survivor files should not be discussed with anyone unrelated to the case?		
ONLINE		
1 . Is there an encryption system for online SEA/SH case filing?		
2 . Is the software used to record allegations password-protected by each agency?		
3 . Are precautions being taken to prevent the loss of stored electronic data, such as antivirus protection and database backup?		
I . Referrals and data-sharing		
1 . Are written standard operating procedures in place to facilitate joint action by different agencies?		
2 . Is an information sharing protocol readily available among the various agencies and GBV service providers?		
3 . Are GBV terminology, data collection tools, and incident-type classification standardized across organizations?		
4 . Is a referral protocol readily available with up-to-date information about where to refer survivors for care and support?		
5. Is a care action plan template readily available?		
6. Do the services offered to survivors by service agencies match international quality standards?		

ANNEX B:

Main mandates of key GBV service providers

Agencies providing health and medical support services

Are typically health care center (s) and medical organizations. The main services provided are medical stabilization, treatment of acute pain and injuries, medical documentation and forensic evidence collection, testing and preventive care for sexually transmitted infections and HIV/AIDS (post-exposure prophylaxis); contraceptive counseling, psychological and mental health services, prenatal care, and referrals and transport for hospital care and surgeries. Traditional justice actors, such as elders and community leaders. The main services provided are legal counseling, aid, and support, in addition to legal representation when the GBV survivor wishes to press charges against the perpetrator.

Agencies providing legal and justice-related service

Are typically organizations specializing in legal assistance and advice for survivors, such as paralegals and attorneys; courts, including prosecutors, judges, and officers; and Organizations providing economic empowerment opportunities for survivors are typically women's centres and peer support groups for women and girls. The main services provided are the provision of economic opportunities to reduce the survivor's vulnerability through skills training programs, income-generation projects, small-loan programs, and rehabilitation/social reintegration programs.

Agencies providing psychosocial support services

Are typically peer support groups, women's organizations, and religious leaders, among others. The main services provided are counselling; psychological, emotional, and spiritual support; case management; advocacy to assist survivors in accessing needed services; and assistance with social reintegration.

Agencies providing safety and security-related services

Are typically police and security services, safe shelters, and protection officers. The main services provided are guarantees of safety and security for survivors and their families, including the provision of temporary protection or accompanying a survivor to the relevant authorities; referrals to national justice systems; and the provision of safe places to stay.

ANNEX C:

ENVIRONMENTAL, SOCIAL, HEALTH AND SAFETY (ESHS)

CODE OF CONDUCT

Part 1: PREAMBLE

This ESHS code of conduct shall adopted and embodies the commitment of the Contractor (including Sub-Contractors and day workers) to conduct construction related activities in accordance with all applicable laws, rules and regulations with high ethical standards.

The Contractor and its subsidiaries shall comply with this Code of Conduct and in a manner consistent with high ethical standards. Failure to observe this Code of Conduct may subject you to disciplinary action by the firm, up to and including termination. Furthermore, violation of this Code may also be violation of the law and due result in civil and /or criminal penalties for you, your supervisors and/or the firm.

The Contractor employees, Managers and Directors shall take all responsible steps to prevent a violation of this Code, to identify and raise potential issues, and to seek additional guidance when necessary, if you have any question's regarding the best course of action in a particular situation on this Code you should therefore promptly contact the project proponent for assistance.

In principle this Code of Conduct is an extraction of the Environmental Code of Practice for Road Works 2009. In this regard, the implementation of this Code of Conduct should be in consistency with the Environmental Code of Practice for Road Works of 2009.

Part 2: MINIMUM REQUIREMENT OF CODE OF CONDUCT

This Code of conduct identifies risks associated with: environmental and social management, resettlement, labour influx, spread of communicable diseases, sexual harassment, gender based violence, criminal behaviour, crime, child labour, and safety.

The Code of Conduct contains obligations to all project staff (including sub-Contractors and day workers) in minimum specific requirements as follows:

- a) The Contractor and its subsidiaries shall comply with applicable Laws, Rules and Regulations of the jurisdiction;

- b) The Contractor shall prepare specific Health and Safety Management Plan (HSMP), Specific Environmental and Social Management Plan (ESMP), HIV/AIDS awareness programme, Road Safety Awareness Programme, Traffic Management Plan (TMP), Borrow pit and Quarry Operation Plan, Occupational Health and Safety Awareness Programme of the proposed road project prior to the actual execution of the construction works based on the Design and Environmental and Social Impact Assessment Reports;
- c) The Contractor and its subsidiaries shall comply with applicable health and safety requirements (including wearing prescribed Personal Protective Equipment (PPE), preventing avoidable accidents and a duty to report conditions or practices that pose a safety hazard or threaten the environment);
- d) The Contractor and its subsidiaries shall provide temporary speed calming measures, temporary speed limit signs to the highly populated areas such as at road sections under construction, approach to trading centres, villages, school premises and health centres and ensure that drivers observe speed limits for safety of other road users;
- e) The Contractor and subsidiaries are required to review the road levels before construction starts in order to blend aesthetically the horizontal and vertical alignment of the road with reference to the natural ground levels in order to allow communities to access their homes social amenities and businesses smoothly by providing proper access roads and crossing slabs to deep open drains to avoid storm water flowing into adjacent houses;
- f) The Contractor and its subsidiaries are required to avoid unnecessary clearance of trees and vegetation, avoid conflicts of water resources use with respective communities.
- g) The Contractor and its subsidiaries are required to make every effort to avoid water, air, soil pollution, land degradation and any related harmful that can damage the environment. Also all construction activities should strive to attain the high environmental standards;
- h) The Contractor and its subsidiaries are required to ensure safety of its workers and experts by providing them the required Personal Protective Equipment (PPE) to ensure safety. The standard safety signs and road marking should be provided during and after completion of road construction activities to ensure safety for all road users;
- i) The Contractor and its subsidiaries are required to provide sanitations facilities along the construction corridor (for example, to ensure workers use safe drinking

water, specified decent sanitary services provided by their employer and not open areas);

- j) The Contractor and its subsidiaries after completion of construction activities are required to landscape and reinstate all the damaged areas through tree and grass planting to control soil erosion as stipulated in the ‘Environmental Code of Practice for Road Works, 2009’. Among others, such damaged areas are borrowing pits, quarry sites, road diversion, stockpiled material yards, workshop, crusher sites, batching plant, asphalt mixing plant, water dams or reservoir, waste dump area and used fresh/fuel oils storage areas and campsites along the construction corridor.
- k) The Contractor and its subsidiaries are prohibited to practice any kind of discrimination (for example to job seekers on the basis of family status, ethnicity, race, gender, religion, language, marital status, birth, age, disability, or political conviction);
- l) The Contractor and its subsidiaries shall adhere to the labour laws during labour recruitment to ensure skilled and unskilled labourers are given specified work Contracts, registered with National Social Security Schemes and contribute to ‘Pay as You Earn (PAYEE)’ tax;
- m) The Contractor and its subsidiaries are required to interact with the community members (for example, to convey an attitude of respect and non-discrimination);
- n) The Contractor and its subsidiaries are prohibited of the sexual harassment (for example, to prohibit the use of abusive language or filthy behaviour, in particular towards women or children, that is sexually provocative, demeaning or culturally inappropriate);
- o) The Contractor and its subsidiaries are prohibited to conduct any violence or exploitation (for example, the prohibition of the exchange of money, employment, goods, or services for sex, including sexual favours or other forms of humiliation, degrading or exploitative behaviour);
- p) The Contractor and its subsidiaries are required to protect children (including prohibitions against child labour, abuse, defilement, or otherwise unacceptable behaviours with children, and ensuring their safety in project areas);
- q) The Contractor and its subsidiaries are required to avoid conflicts of interest (such that benefits, contracts, or employment or any sort of preferential treatment or favours, are not provided to any person with whom there is a financial, family, or personal connection);

- r) The Contractor and its subsidiaries are required to protect, provide safe equipment's and proper use of construction properties found along construction corridor and campsites (for example, to prohibit theft of construction equipment and material, carelessness or waste);
- s) The Contractor and its subsidiaries are prohibited to demolish or relocate any affected properties followed by the construction corridor prior to effecting compensation to the Project Affected Persons (PAPs);
- t) Non retaliation against workers who report violations of the Code, if that report is made in good faith; and
- u) All workers and Contractor's Experts are responsible to read, accept and sign the requirements of this Code of Conduct as condition of employment and any violation of this Code can result to serious contractual measures to be taken including contract termination, dismissal, or referral to legal authorities.

CONTRACTOR CERTIFICATION:

I agree/I do not Agree.....

Name and Signature of an Authorized Person of the Company.....

Name of the Company.....

Address of the Company.....

Address and Stamp of the Company

ANNEX D:

ENVIRONMENTAL, SOCIAL, HEALTH AND SAFETY (ESHS) - TECHNICAL SPECIFICATIONS / EMPLOYER REQUIREMENTS

The Technical Specification/Employer's requirements have been prepared to guide the undertaking of the Environmental, Social, Health and Safety (ESHS)" for the proposed road projects. The Technical Specification/Employer requirements are subject to the variations and additions as deemed necessary by the Employer. Among others, the Technical Specification to be included in the Bidding Documents are as follows:

- a) The Qualified Environmental and /or Social Specialist and Health & Safety Officers shall be employed by the Contractor before the actual execution of the construction works. The Environmental and /or Social Specialist and Health & Safety Officers will be responsible for preparation of the Specific Environmental and Social Management Plan (ESMP); Borrow pit and Quarry Operation Plan, Specific Health and Safety Management Plan (HSMP); Environmental Awareness Programme, HIV/AIDS Awareness Programme, Occupational Health and Safety Awareness Programme and Road Safety Awareness Programme.
- b) The working permits shall be obtained by Contractor and its subsidiaries prior to the actual works of the construction activities. The permits among others shall include; Working Permit for Non-Resident experts, Water-Use Permit, EIA Permit, Working Permit in Protected Areas, OSHA Permit, Explosive Use Permit and other permits required by the National Laws. The obtained permits and their status shall be reported regularly.
- c) The Specific Environmental and Social Management Plan (ESMP) shall be prepared and submitted to Client for approval prior to the execution of the proposed road project. The ESMP among others shall include sub-plans such as Environmental Management Plan, Monitoring Management Plan, Emergency Preparedness Plan, Waste Management Plan, Grievances Preparedness Plan, Borrow Pits and Quarry Site Operations Plan and Reinstatement Plan.
- d) The specific Health and Safety Management Plan (HSMP) shall be prepared and submitted to the Client for approval prior to the execution of the proposed road project. The HSMP among others shall include sub-plans such as the Occupational Health and Safety Awareness Programme, Traffic Management Plan, Monitoring Management Plan, Emergency Preparedness Plan, Accident Management Plan. The Occupational Health and Safety Awareness Program shall cover among others, proper use of First Aid Kits,

Fire marshal training, Proper use of PPE equipment's, emergency First Aid delivery, self-prevention of epidemic and pandemic diseases including Malaria, diarrhoea and tuberculosis.

- e) The Traffic Management Plan (TMP) shall be prepared and submitted to the Engineer for approval prior to commencement of the construction works to ensure smooth traffic flow and improve safety of road users, adjacent communities especially children, the elderly and people with disabilities during construction period. This plan shall include but not limited to the methods of protection of communities, give details of operation hours, types and number of safety devices, details of the location and design of diversion roads; temporary structures, barricades, temporary signs, flagmen, signals and other physical features necessary to accommodate traffic flow during construction;
- f) The HIV/AIDS awareness programme shall be prepared and submitted to the Client for approval prior to be implemented to the communities at all villages/street/centres and to all project workers along the road project. The programme shall cover among others, Training on HIV/AIDS Prevention and control, HIV awareness and Counselling, VTC and Testing, capacity building to peer educator/mentor. The programme activities shall be reported quarterly.
- g) The Road Safety Awareness Programme shall be prepared and submitted to Client for approval prior to be implemented to communities at all villages/street/canters along the road project to road users, and to all project workers. The programme shall cover among others, traffic management, proper use of road signs, safe driving to drivers and cyclic, safe use of road to pedestrians, regular sensitization on accidents risks, control measures to the Machines' operators, construction sequencing, public information announcements, use of traffic control devices and other activities designed to minimize traffic disruption. The programme activities shall be reported quarterly.
- h) Labour recruitment for both (skilled and unskilled) shall adhere to the Labour Laws during the project implementation and ensure the labourers are given the Contracts, registered with National Social Security Schemes and contribute to 'Pay as You Earn (PAYEE) Tax'. The Monthly Progress Report should be produced reflecting the number of skilled and unskilled labour, number Contracts provided, gender consideration, types of social security schemes chosen. (workers are free to choose their preferred schemes).
- i) Vegetation (grasses) and Trees shall be planted along the road project in harmony with the road categories and function. The Vegetation, (trees and grasses) shall be planted at the exhausted areas such as borrow pits, quarry areas, campsite,

diversion and stockpiled materials at storage yards in the major villages streets and canters. Monthly Progress reports should be produced reflecting a number of trees planted, area covered with grass and shrubs, number of villages along the road planted with trees, number of borrow pits and quarry site planted with trees/grass.

- j) The air quality baseline data shall be obtained along the road project during the mobilization phase prior to the execution of the actual, construction works. The air quality analysis shall be done at the major villages/street/centres along the project road during the construction at least twice a year (during dry and wet season) as stipulated in the ‘‘Environmental Code of Practice for Road Works of 2009’’. The air quality data shall be reported quarterly.
- k) The water quality baseline data shall be obtained along the road project during the mobilization phase prior to the execution of the actual construction works. The analysis shall be done to all water bodies during road construction at least twice a year (during dry and wet season) as stipulated in the ‘‘Environmental Code of Practice for Road Works of 2009’’. The water quality data shall be reported quarterly.
- l) The dust control shall be done by water sprinkling at the construction site, borrow pits and quarry site access road, quarry site, diversion road and along the major centres at least three time per day during dry season. Wet crushing shall be deployed. The dust control measures shall be reported in monthly and quarterly progress reports.
- m) Noise and vibration shall be avoided at the major villages/street/centres along the road project during construction phase. The impacts shall be avoided by conducting regular maintenance of operation vehicles and machinery, blasting works shall be done during daytime after notifying the communities along the area as stipulated into ‘‘Environmental Code of Practice for Road Works of 2009’’. The noise and vibration control measures shall be reported in monthly progress reports.
- n) Solid waste collection and separation or sorting shall be done on construction site, campsites, workshop and other project facilities in accordance to standard stipulated into ‘‘Environmental code of practice for Road Works, 2009’’. The hazardous solid waste shall be collected for disposal by authorized dealer. Other waste shall be disposed in the authorized dumpsite or managed at site. The solid waste control measures shall be reported in the monthly progress reports.

- o) Liquid waste collection shall be done on construction site, campsites, workshop and other project facilities in accordance with the standard stipulated in the ‘Environmental Code of Practice for Road Works of 2009’. The hazardous liquid waste shall be collected by the authorized dealer for disposal. Waste water from toilets and kitchen, cafeteria shall be managed on site through septic tanks and soak away pits. The liquid waste control measures shall be reported in the progress reports.
- p) Prepare Grievance Redress Mechanism for resolving grievances related to the road project. Prepare a grievance register form for registering all the grievances that may arise during the construction. The progress report shall be prepared indicating how the grievances were resolved.
- q) The PPE shall be provided to all workers on site and ensure proper regular use of them by workers measures to enforce the use of PPE should be applied. The PPE shall include groves, gumboot, overall, sun google, ear musk, reflective jackets, helmet, safety signs and other as necessary. The provision and the use of PPE to workers shall be reported in the monthly progress reports.
- r) Temporally speed calming measures, road signs, barricades and warning signals shall be installed to the highly populated areas such as at road section under works, approach to trading centres, streets, villages, school premises and health centres on the road project. The installed road signs, barricades and warning signals shall be standard and reflective. Damaged and vandalized road signs shall be replaced immediately within 3 days. Any accident that may occur on daily basis shall be reported to the traffic police and accidents records must be kept and reported. Status of road safety measures shall be reported on monthly basis.
- s) The Billboard signs shall be installed at the begging and the end of the road project and among others the billboard shall include a message on HIV/AIDS prevention. Other billboards with HIV/AIDS and Environmental management massage shall be installed at all major centres/villages along the project road.

Among others, the undertaking of the road project activities shall comply with the following requirements:

- (i). Environmental Management Act, 2004, EIA and Audit Regulations of 2005;
- (ii). Environmental Code of Practice for Road works, 2009;

- (iii). Environmental and Social Impact Assessment Report (ESIA) for the project;
- (iv). Road Sector Compensation and Resettlement Guidelines, 2009;
- (v). Road Act, No.13 of 2007 and Road Management Regulation of 2009;
- (vi). Land Act, No.4&5 of 1999, Land Compensation Regulation of 2001;
- (vii). Occupational Health and Safety Act (OSHA, 2003);
- (viii). Traffic Act, 1996; and
- (ix). Development Partners Safeguard Policies

Copies of the relevant National Laws, Guideline, Regulation and Donors Safeguards Policies can be obtained from:

1. Tanzania National Roads Agency

P.O BOX 11364

DAR ES SALAAM

3rd Floor, Airtel House, Ali Hassan Mwinyi/ Kawawa Roads Junction,

P. O. BOX 11364, Dar es Salaam Tanzania

Tel: +255 222 926 001 – 6, Fax: +255 222 926 011

Email: tanroadshq@tanroads.go.tz

Website: www.tanroads.go.tz

- 2. The website of Tanzania Parliament. www.Parliament.go.tz 3. Development Partners/ Donors websites.**

ANNEX E:

METRICS FOR PROGRESS REPORTS

The following are minimum contents of the monthly and progress reports that reflect the employer's Environmental, Social, Health and Safety policies and /or the ESHS requirements of the project. The Contractor shall be responsible for preparation of the monthly and quarterly progress reports as per Contract requirement. The contents of the project ESHS reports should be determined by the ESHS risks of the Works and not necessarily by the scale of Works. **A. Minimum requirement for Metrics for Regular Reporting:**

- a) Environmental incidents or non-compliances with contract requirements, including contamination, pollution or damage of ground water or surface water supplies; health and safety incidents, accidents, injuries and all fatalities that require treatments;
 - b) Interactions with the Regulators: identify agency, dates, subjects, outcomes (report the negative if none)
 - c) Status of relevant permits acquisition: full site inspections (by area: road section, work camp, accommodations, quarries, borrow areas, spoil areas, clinic, HIV/AIDS centre, community centres, etc.);
- Status of relevant permits and consents: number required, number received, actions taken for those not acquired:
- List of areas/facilities with permit required (quarries, water, asphalt and batch plants), dates of application, dates issued (actions to follow up if not issued), dates submitted to the Resident Engineer (or equivalent), status of the area (waiting for permits, working abandoned without following the Reclamation Decommission Plan being implemented, etc.);
 - List of areas with landowner agreements required (borrow and spoil areas, camp sites) dates of agreements, dates submitted to Resident Engineer (or equivalent);
 - Identify major activities undertaken in each area being reported monthly and highlights of environmental and social protection (land clearing, boundary marking, topsoil salvage, traffic management, decommissioning planning, decommissioning implementation);
 - For quarries; status of relocation and compensation (completed, or details of monthly activities and current status).

d) Health and Safety supervision:

- Safety officer: number of days worked, number of full inspections & partial inspections, reports to construction/project management;
- Number of workers, work hours, metric of PPE use (percentage of workers with full and or partial, Personal Protection Equipment (PPE) etc.) worker's violations observed (by type of violation, PPE or otherwise), warning given, repeated warnings given, follow-up actions taken (if any);

f) Workers conditions and accommodations;

- Number of skilled and unskilled labour and their gender;
- Number of day workers, and campsite workers;
- Types and number of provided basic services to workers; e.g. drinking water, Hearth services;
- Dates of last inspections, and highlights of inspection including status of accommodations' compliance with national laws and good practice, including sanitation hygiene, space, etc.;
- Number of received complaints, solved and unsolved complaints.
- Actions taken or recommended to improve the conditions;

g) Provide HIV/ AIDS status; health services, information and/or training, location of clinic, number of non-safety disease or illness treatments and diagnosis.

h) Provide Gender issues (for experts and local separately); number of female workers received training on road safety for using flag signs, percentage of workforce, gender issues raised and addressed (cross-reference grievances or other sections as needed);

i) Environmental and Social Training;

- Number of new workers, number of workers received induction training, dates of induction training;
- Number of dates of toolbox talks, number of workers received Occupational Health and Safety (OHS) training, environmental and social training;
- Number and dates of HIV/AIDS sensitization training, number of workers received training (being reported monthly);

j) Environmental and Social Supervision:

- Environmentalist: days worked areas inspected and numbers of inspections of each (road section, campsite, accommodations, quarries, borrow areas, spoil disposal areas, swamps, forest crossing etc.) Highlights of activities/findings (including violations of the environmental and/or social best practices, actions taken), report to environmental and/or social specialist/construction/site management;
- Sociologist: days worked, number of partial and full site inspections (by area: road section, work camp, accommodations, quarries, borrow areas, spoil areas, clinic, HIV/AIDS centre, community centres, etc.); highlights of activities (including violations of environmental and/or social requirements observed, actions taken) report to environmental and/or social specialist/construction/site management.
- Health and Safety persons: days worked (full site inspections at road construction sections, campsite, quarries, borrow areas, spoil areas, diversion, workshop etc.) number of injuries and accident per day, number PPE used per month, number of road signs installed at site and used etc.), report to environmental and/or social specialist/construction/site management.

k) Grievances: There shall be a grievance register special form for registering all the grievances happening during construction, Number of complaints registered by dates, solved and unresolved by date, how received, to whom referred to for action, resolution and date (if completed), data resolution reported to complainant, any required follow-up (Cross-reference other sections as needed):

- Workers and Community Grievances

l) Traffic and vehicles/equipment:

- Traffic accidents involving project vehicles and equipment; provide date, location, damage, cause, follow-up;
- Accidents involving non-project vehicles or property (also reported under immediate metrics): provide date, location, damage, cause, follow-up:
- Overall condition of vehicles/equipment (subjective judgment by environmentalist); non-routine repairs and maintenance needed to improve safety and/or environmental performance (to control smoke, etc.).

m) Environmental mitigations and issues (what has been done):

- Dust: number of working bowsters, number of watering/day, number of complaints, warnings given by environmentalist, actions taken to resolve; highlights of quarry dust control (covers, sprays, operational status); % of rock/moral/spoil lorries with covers, actions taken for uncovered vehicles;
- Erosion control: controls implemented by location, status of water crossings, environmentalist inspections and results, actions taken to resolve issues, emergency repairs needed to control erosion/sedimentation;
- Quarries, borrow areas, spoil areas, asphalt plants, batch plants: identify major activities undertaken this month at each, and highlights of environmental and social protection; land clearing, boundary marking, topsoil salvage, traffic management, decommissioning planning, decommissioning implementation;
- Blasting; number of blasts (and locations), status of implementation of blasting plan (including notices, evacuations, etc.), incidents of off-site damage or complaints (cross-reference other sections as needed). Early warning to the communities and workers at the site.
- Liquid Waste, if any: material spilled, location, amount, actions taken, material disposal (report all spills that result in water or soil contamination).
- Waste management: types and quantities generated and managed, including amount taken offsite (and by whom) or reused/recycled/disposed on-site;
- Details of tree and grass plantings and other mitigation measures taken on site monthly;

n) Compliance:

- Compliance status for conditions of all relevant consents/permits, for the Work, (including quarries, water etc.): statement of compliance or listing of issues and actions taken (or to be taken) to reach the compliance;
- Compliance status of ESMP and HSMP requirements: statement of compliance or listing of issues and actions taken (or to be taken) to reach compliance;
- Other unresolved issues from previous months related to environmental and social: continued violations, continued failure of equipment, continued lack of vehicle covers, spills not dealt with, continued

compensation or blasting issues, etc. Cross-reference other sections as needed

APPENDIX F

Tips and Actions for Survivors of GBV/SEA/SH

Individuals who are at risk or experience violence need to find a safe space immediately (with a neighbor, relative, local leader, or police).

- i. Individuals who experience violence shall immediately inform a trusted individual or contact the police. The police can be reached at the police hotline.
- ii. As soon as possible, survivors of violence should report to a medical facility.
 - In case of sexual violence, it is recommended that survivors do not clean themselves or bathe, as this will destroy any evidence that needs to be collected.
 - If possible, survivors should not change clothing. If changing clothing is necessary, then survivor should place the soiled clothes in a paper bag or wrap them in a newspaper, **BUT NOT** in a plastic bag. If possible, survivors should wait to urinate or defecate until they reach the health facilities. Survivors should use clean containers to collect urine or stool samples if they cannot wait.
- iv. Report immediately to a health facility for emergency medical care.
- v. At the health facility, report to the reception/triage desk. Do not wait in line. Get a card and report to a healthcare provider immediately.
- vi. Survivors that experience violence should report to any of the facilities that offer GBV services (health care facility, police, drop in centre, safe house, social welfare centre). If the survivor reports to a health care facility first; he/she should be treated without making a prior police statement and later report to a police station/post. If the survivor reports to the police first, he/she should from there go to a health care facility
- vii. If you happen to go to the police station first, ensure that you visit the hospital as soon as possible or within 72 hours of the offense.
- viii. At the police station, report the incident, make a statement, and obtain a PF3 form. The PF3 form is FREE of charge.
- ix. Before signing any statement at the police station, read it carefully to confirm its contents.

- x. Survivors should relinquish any evidence (e.g., clothing) with the police that might be pertinent to pressing criminal charges against an assailant.

Appendix G Standards for Developing a Well-Coordinated Referral System to Respond to Survivors' Needs

In addition to improving the quality of care available to survivors of GBV, the establishment of a well-coordinated system of referrals for survivors is critical. An efficient referral system will improve both the quality and timeliness of care and support that survivors are able to receive through formal pathways. Together with community awareness raising campaigns, a referral system that is structured around survivors' needs is expected to enhance the care and support that survivors receive through informal channels.

1. Establishing a strong referral system

- a. Organize joint opportunities for training of key stakeholders, including local government authorities, and community.
- b. Create inter-sectoral mechanisms for the development of a strategy to establish and manage a referral system and to apply the existing GBV-related laws at the local, ward, and district levels;
- c. Explore options for strengthening the capacity of existing duty bearers (for example, Social Welfare Officers and Community Development Officers) to take on the role of coordinating and monitoring services among providers in their districts;
- d. Seek and foster partnerships between existing organizations and service providers working on GBV (and other forms of violence, including violence against children), and strengthen coordination across these groups to ensure a tighter network of services and care

Appendix H: Working with GBV Service Providers

One of the most effective ways of addressing SEA/SH lies in working with GBV service providers and community organizations that are able to support the project in addressing any cases of SEA/SH, as well as helping to understand increased risks and proactively prevent SEA/SH. Prior to project appraisal, teams therefore need to identify organization(s) (e.g., NGOs and local institutions) who are trusted by the local community and are working on GBV prevention and response. In areas with high GBV

prevalence, there may already be an existing mapping of GBV prevention and response actors in a given community. Coordination with local women's organizations, government stakeholders (e.g. Ministry of Health, etc.) essential agencies.

GBV service providers for survivors of SEA/SH should be identified in accordance with international standards that articulate a minimum basic package of services, ideally including case management support, health services, psychosocial support, police support and security, access to legal services, and shelter, if needed. When identifying GBV service providers, the quality of service provision should be a key consideration.

In keeping with a survivor-centred approach, accessing services should be the choice of the survivor. Access to police and justice services should be made available should the survivor choose to pursue charges through the local justice system.

It is important to map community organizations working on women's and girls' rights as they may be both entry points to services for survivors and useful allies for awareness-raising activities around the CoCs. When identifying community-based organizations, Task Teams can look for those with experience working with the local population to address the root causes of GBV by providing livelihood support or by implementing community-based interventions to challenge the norms and attitudes that underlie GBV. These two activities fall under the broad categories of GBV prevention and response.

The activities that GBV service providers provide a project depend upon the risk level. These can include the following:

Undertaking a community mapping of GBV risk "hot spots" and vulnerable target groups that may be most susceptible to project-induced GBV, particularly SEA;

In consultation with basis of the community mapping, identifying the specific SEA/SH prevention activities to be undertaken to address SEA/SH risks

Providing services to survivors and/or becoming a victim advocate/victim accompanier, or undertaking case management organization. If required and in High-risk situations, the project should equip this organization with funds that will enable it to facilitate access to timely, safe and confidential services for the survivor (including money for transportation, documentation fees, and lodging if needed);

Providing training related to ensuring knowledge of standards laid out in the CoC and services that are available for survivors;

Ensuring that the project has "safe spaces" where survivors can report allegations of SEA/SH to trained personnel;

Raising awareness about the existing GM and supporting the development of a SEP; and
Channelling complaints to the GM (see separate note on GMs for SEA/SH in World Bank financed projects).

Contracting the GBV service provider. Experience has shown that the most effective approach is for the TANROADS to hire the GBV service provider. Among the advantages of this approach are:

The same GBV service provider can be used for multiple contractors, which is not only more cost effective, but also helps ensure consistent provision of services across the project.

The GBV service provider can be contracted and mobilized well in advance of the contractor, thereby avoiding any risk of gaps in support during the initial stages of the project.

Having the GBV service provider report directly to will make it easier to ensure quality control and consistency of service delivery.

Ideally the GBV service provider would also cover HIV/AIDS support services—but not all have the capabilities to do so. In High SEA/SH risk contexts, it may be advisable to put a GBV service provider/NGO under contract to the IA to provide a range of SEA/SH prevention services throughout the life of the project, as well as case referral services if cases of SEA/SH arise under the project. In other (somewhat less risky) circumstances, it may be more appropriate to require the TANROADS to hire a fulltime GBV specialist to ensure the provisions are being adhered to appropriately.

Appendix J: World Bank SEA/SH Risk Assessment Tool

A tool for Task Teams to assess the risk of GBV, particularly SEA, has been developed by the World Bank and can be found online. This SEA/SH Risk Assessment Tool helps Task Teams understand the issues and risks of SEA/SH in the project areas. It takes into consideration both project-specific details, such as labour influx levels, as well as the country context where the project takes place such as situations of conflict, the tool gives each project a risk “score” based on the responses to the questions. The questions are meant only as a starting point and are not intended to be exhaustive. As multiple forms of GBV have the same risk factors and drivers, the tool can be used to understand the overall context and how the project may interact with this context in relation to multiple forms of GBV, not just SEA/SH.

The SEA/SH Risk Assessment Tool is designed to be applied at the outset of a new project. It is recommended that the SEA/SH risk rating be included in the Project Concept Note (PCN) for consideration at the PCN review meeting. On the basis of additional information gathered during project preparation, the risk should be updated as appropriate for the Quality Enhancement Review (QER) meeting or at the Decision Review meeting.

As with any tool, there may be situations where it is prudent to adopt a higher risk category than the tool suggests, if local conditions warrant. It should be emphasized that estimating SEA/SH risk is not an exact science. The tool is meant to help launch the Task

Team on a path to understanding how the proposed project may have SEA/SH-related impacts. The tool is periodically monitored for its usefulness and accuracy for rating SEA/SH risk. preparation, the risk should be updated as appropriate for the QER meeting or at the Decision Review meeting.

This tool does not address how the project itself may promote gender equality and reduce SEA/SH

through its activities. Rather, this is an attempt to reduce the risk of SEA/SH, and allow Task Teams to determine the level of risk that a project has to increase SEA/SH.

The tool is comprised of the following sections:

- Section A provides an overview of the “Country context,” specifically related to the country’s

commitment to gender equality and its national incidence of violence.

- Section B, “Project context,” is critical since no matter what the country context, the project

in itself can create new risks and vulnerabilities for SEA/SH that may not have existed before.

This section is weighted more heavily than Section A.

It is important to note that none of the indicators in the tool can alone predict SEA/SH, nor does having

a good score on any one indicator protect a project from the risk of exacerbating SEA/SH. No matter what the project context, Bank projects can influence the risk of SEA/SH, often increasing it, by virtue of shifting existing power dynamics and financial relationships. A lower risk score does not mean that the project does not carry any danger of exacerbating SEA/SH, nor does a high-risk score mean that the project cannot proceed. Rather, this is a tool to help Task Teams to think about the types of measures needed to prevent SEA/SH and adequate response provisions that can be implemented to best accommodate their project setting.

The tool contains indicators on GBV against which Task Teams assess their project. For example, the first two indicators under Section A provide an estimate of how prevalent IPV and any sexual violence perpetrated by a partner or a non-partner is at the national level. The first indicator “Prevalence intimate partner violence” is intended to give an overview of levels of violence against women in the country. No direct correlation has been established between the risk of SEA within a project and the

In addition, an accompanying Risk Assessment Methodology Guidance Note provides greater detail and guidance for the Risk Assessment Tool and can be found here.

