Appraisal Environmental and Social Review Summary

Appraisal Stage

(ESRS Appraisal Stage)

Date Prepared/Updated: 11/22/2023 | Report No: ESRSA03157

I. BASIC INFORMATION

A. Basic Project Data

Country	Region	Project ID	Parent Project ID (if any)
Zambia, Tanzania	EASTERN AND SOUTHERN AFRICA	P180801	
Project Name	Transport Corridors For Economic Resilience (tracer)		
Practice Area (Lead)	Financing Instrument	Estimated Appraisal Date	Estimated Board Date
Transport	Investment Project Financing	12/4/2023	1/25/2024
Borrower(s)	Implementing Agency(ies)	Estimated Decision Review Date	Total Project Cost
		11/22/2023	270,000,000

Proposed Development Objective

The PDO of the SOP is to improve efficiency, connectivity and climate resilience of key regional transport and trade corridors in Eastern and Southern Africa.

The PDO of SOP1 is to improve year-round transport and trade connectivity between Zambia and Tanzania, and expand economic activity along the Dar es Salaam Corridor.

B. Is the project being prepared in a Situation of Urgent Need of Assistance or Capacity Constraints, as per Bank IPF Policy, para. 12?

No

C. Summary Description of Proposed Project Activities

SOP1 will include transport and trade facilitation improvements along the main transport corridor from Zambia to Nakonde on the border to Tanzania toward Dar es Salaam port as well as support to economic activities along the corridor. Improvements will cover regulatory and policy aspects, capacity building, physical infrastructure and systems. SOP1 will also include preparatory studies for better utilization of railways and other interventions to be implemented in ensuing SOPs along the Trans Caprivi economic corridor.
Specifically, Component 1 will comprise: (i) climate-resilient design and construction of the Serenje-Mpika section of the Dar es Salaam Corridor; (ii) design and implementation of physical and system improvements to the One Stop Border Post (OBSP) at Nakonde to complement Tunduma on the Tanzanian side of the border; (iii) development and implementation of the Safety, Mobility, Automated, Real-time Traffic Management (SMART) corridor concept on the

Lusaka-Nakonde section of the Dar es Salaam Corridor; (iv) support to regional corridor management; and (v) preparatory studies for key sections along the Trans-Caprivi and Nacala Corridors (feasibility studies, detailed designs and ESIA for sections on the Nacala corridor, as well as the detailed design for sections on the Trans-Caprivi Corridor. Component 2 on corridor-oriented development will finance SME activities in the basin of the Dar es Salaam Corridor. Component 3 on institutional and sectoral capacity development will comprise: (i) developing the Zambia Transport & Logistics Strategy and Roadmap; (ii) developing a strategy and action plan for enhancing the operational efficiency and financial sustainability of Zambia Railways Company (ZRL); (iii) supporting the domestic construction industry in Zambia; (iv) building institutional capacities in project related government-entities; and (v) project management, monitoring and evaluation. The project will also include a Contingent Emergency Response Component (CERC).

D. Environmental and Social Overview

D.1 Overview of Environmental and Social Project Settings

The proposed Program aims to strengthen the economic resilience of Zambia and the region by developing regional transport corridors that connect Zambia with Tanzania, Malawi, and Namibia. The proposed project is a Series of Projects (SOP), with SOP 1 consisting of three components: Component 1 focuses on resilient transport and trade facilitation along the Dar es Salaam Corridor, with a budget of US$234 million. Component 2 focuses on corridor-oriented development, with a budget of US$21 million. Component 3 focuses on sectoral capacity development and project management, with a budget of US$15 million.

The specific project locations include the rehabilitation of the Serenje – Mpika 203km road section, the construction of OSBP facilities at Nakonde, and a weighbridge facility at Mpika. Additionally, Environmental and Social Impact Assessment (ESIA) studies will be conducted for the Livingstone – Katima Mulilo 212 km road section along the Trans-Caprivi Corridor, and the Lusaka – Luangwa 207 km road section of the Nacala Corridor.

Component 1, the development of the Serenje - Mpika road section, passes through high agricultural productivity areas such as Mkushi, Chitambo, Lavushimanda, and Mpika.

These areas are major producers of export crops like maize and wheat. The planned road section also passes through protected areas such as Kasanka National Park, Lavushi Manda, Kasanka National Parks, Mpika Protected Forest Reserve, and several Game Management Areas (GMAs) and tourist destinations. The rehabilitation of this road section will result in a smoother road surface, reducing the risk of road traffic accidents involving Heavy Goods Vehicles. The proposed OSBP at Nakonde is an existing border post area that will require reconfiguration and expansion.

The Livingstone – Katima Mulilo road section of the Trans-Caprivi corridor runs through Caprivi Game Park, Zambezi National Park, and follows the course of the Zambezi River. The Lusaka-Luangwa Road section of the Nacala corridor, particularly from Lusaka to Chanida, is the second busiest corridor in the country. It connects to the Nacala port in Mozambique through Malawi and to the Beira port through either Malawi or Zimbabwe. The Lusaka-Luangwa Road section also passes through or around national parks, forest reserves, and GMAs.

The proposed road corridors have several villages, settlements, and small-medium businesses along them. Within the road reserve (within 30 m from the centerline of the road on both sides), there are huts, kitchens, pit latrines, shops,

and vending stalls. Most households along the road corridors are classified as "poor," with over half of these households having income levels below the upper poverty line. Zambia has high income inequality, with a Gini Index estimated at 57.1. As of 2015, nearly 54.4% of the population lived on less than US$1.90 per day (measured in purchasing power parity).

Agriculture is the main land use along the proposed road corridors. Women play a key role in household farming and roadside trading but have fewer employment opportunities in rural areas, especially in road projects, compared to men. In addition to agriculture, the project area is home to well-protected game populations in the National Parks and Game Management Areas in the valley. The national parks include the North Luangwa National Park, Kasanka National Park, and Lavushi Manda National Park.

The proposed project sites are susceptible to common diseases such as malaria, diarrhea, bilharzia, respiratory tract infections (RTIs), and skin rashes. Malaria vectors are widespread in the project sites, especially during the rainy season. The population along the road corridors is also vulnerable to HIV/AIDS, tuberculosis (TB), and malaria, which continue to threaten lives and overall well-being. Gender-based violence (GBV) is widespread in Zambia and disproportionately affects women and girls. According to the 2018 Zambia Demographic and Health Survey, 36 percent of Zambian women have experienced physical violence at least once since the age of 15, and 32 percent of ever-married women have experienced controlling behaviors by their husbands.

D.2 Overview of Borrower's Institutional Capacity for Managing Environmental and Social Risks and Impacts

The Road Development Agency (RDA), under the Ministry of Infrastructure, Housing and Urban Development (MIHUD) are expected to implement the physical infrastructure, including preparation of studies and designs. The Transport and Logistics services component will be implemented by the Ministry of Transport & Logistics (MTL) in Zambia, in consultation and coordination with the respective ministries in Tanzania and Malawi. Due to the multidisciplinary nature of the activities, a PIU will be established under RDA to manage the projects day-to-day. However, the RDA uses in-house E&S staff for the Improved Rural Connectivity Project (P159330) (IRCP). The staff have not been dedicated to IRCP but instead, conduct their daily duties and supervise the project. The PIU should be headed by full-time project directors and staffed with full-time technical experts and specialists in, inter alia, project management; procurement; financial management; environmental, health and social aspects who are all independent of any other external duties and responsibilities. The provision of a project implementation services consultants will also be considered. These provisions will be stated in the ESCP.

All three entities -RDA, MIHUD and MTL- are actively involved in Bank-financed operations but their E&S capacities and capabilities for overseeing implementation of different project activities are limited. The RDA is implementing IRCP and their current safeguard performance rating is moderately unsatisfactory due to inadequacies managing resettlement impacts; environmental and social incidents; and occupational, health and safety risks and impacts. The MIHUD and MTL's capacity to manage ESF is expected to be low since it is new to this sector. The Bank is organising an ESF training in November 2023 and it is expected that elements of the RDA will attend. However, the borrower's E&S performance and implementation of E&S mitigation measures and plans on P159330 Improved Rural Roads Connectivity Project (IRCP) has been challenging and the performance rating has been recently downgraded to MU. There are several reasons for this. During implementation of IRCP the PIU have encountered various challenges

including; (i) the poor enforcement of the Health Safety Management Plan (HSMP) by the contractors and a lack of oversight by the Supervising Consultants; (ii) ZEMA Environmental Project Brief approval delays; (iii) unfilled OHS/E&S Specialists positions within the Consulting Engineers and contractor's organization resulting in selected E&S compliance at project sites. In addition, the PIU have not enforced any contractual remedies for non E&S and OHS compliance. There is a reluctance to do so because it would mean a stop works and the PIU E&S specialists would be blamed for delaying the project. In short, there are significant E&S implementation issues within IRCP. The MU performance rating could improve if the PIU takes positive action and improves its own E&S culture, implements the SCAP that seeks to address the shortcomings from a recent fatality and reinvigorates the SEs to oversee contractor's compliance to the agreed and approved E&S and OHS standards. Substantial technical capacity support will be required during project preparation and implementation to assist the RDA, MIHUD, and MTL, as well as the PIU in designing and implementing the project in a manner which meets the ESF requirements.

RDA's current plan is to utilize its own Environmental and Social Management Unit (ESMU) in an oversight role to ensure that the project implementation complies with environmental and social requirements. The Unit currently has four specialists, which is sufficient for project preparation. However, during implementation, separate and dedicated environmental, social, and Occupational Health and Safety (OHS) specialists are needed. The current RDA specialists have other responsibilities within RDA and will not be solely focused on the project. Therefore, all ESMU staff members will require specialized training in areas such as the World Bank Environmental and Social Framework (ESF) and its Environmental and Social Standards (ESSs), as well as OHS. To strengthen the environmental and social management capacity during implementation, it is necessary to recruit qualified environmental and social specialists, OHS specialists, third-party supervision consultants, and a service provider to manage the risk of sexual exploitation and abuse (SEA) and sexual harassment (SH) in the project. As part of its due diligence, the Bank will conduct a capacity assessment and determine the appropriate staffing and training for the ES structure within the Project Implementation Unit (PIU) and other responsible entities and key project participants (such as construction companies and SMEs). These arrangements will be outlined in the Project's Environmental and Social Commitment Plan (ESCP).

II. SUMMARY OF ENVIRONMENTAL AND SOCIAL (ES) RISKS AND IMPACTS

A. Environmental and Social Risk Classification (ESRC) — High

A.1 Environmental Risk Rating — High

The proposed environmental risk rating is High. The environmental risk assessment is focused on the preparatory E&S studies of Series of Projects (SoPs), the physical rehabilitation of the road infrastructure from Serenje to Mpika, the possible laying of fibre optic cables parallel and concurrently with the road rehabilitation, construction of a weighbridge and the OSPB, current RDA, MIHUD and MTL E&S capacity, and component 2 will focus on road corridor orientated development and the development of Small Medium Enterprises (SMEs) and Component 3 activities consist of institutional and sectoral capacity development. The environmental risks associated with this large-scale road rehabilitation project are assessed to be substantial but the borrower's capacity and its past E&S performance has raised the ESRC to High. The likely environmental risks and impacts from the proposed project activities are typically direct, indirect and cumulative in nature. The environmental risks and impacts are focused on the potential environmental and OHS risks and impacts from road rehabilitation and operation, existing EHS liabilities along existing

targeted road infrastructure and with SMEs that may include (i) the loss of critical and natural habitats (inc flora and fauna) if not avoided, minimized and mitigated during preparation from road widening, workers camps, batching areas, laydown areas, temporary access roads or by-pass roads, storage areas and indiscriminate development of borrow pits and quarries; (ii) bulk extraction of raw materials including gravel, sand and water resources will likely result in land degradation, loss of landscape aesthetics, loss of arable, fertile land and present a water hazard during the rainy season; (iii) increased localized air pollution from dust, batching and vehicle exhaust; (iv) nuisance and occupational noise and vibration; (v) local soil and water resource contamination from leakages and run off from quarrying, batching activities, bitumen manufacturing, storage of hazardous materials, servicing of equipment etc; (vi) Occupational and Community Health and Safety incidents, vehicle incidents on and off site involving workers, members of the public, and vulnerable road users (pedestrians, motorcycles etc); (vii) local water resource competition from excessive consumption for construction activities, workers camps etc; (viii) increased vehicle speeds due to a high quality road infrastructure resulting in an increased number of road fatalities (ix) possible fragmentation of habitats and severance of animal migration routes and pathways; (x) impacts on cultural heritage; (xi) a heightened risk of borrow pit (activities or legacy pits) drownings (xii) the generation of solid, construction, hazardous and electronic wastes; (xiii) use of pesticides; (xiv) the removal of vegetation and trees to accommodate possible road widening activities, bypass roads and access roads and; (xv) the limited capacity of RDA, MIHUD and MTL to manage projects effectively under ESF. In Component 2 activities the SMEs may generate environmental risks and impacts that consist of solid and hazardous waste generation, inadequate OHS practices, unsustainable land management practices, generation of water and air pollution etc. Component 3 activities consisting of institutional and sectoral capacity development will likely generate low OHS risks. Cumulative impacts could be intensified by the road rehabilitation and its operation from incremental effects of exhaust pollution together with the air pollution from local established industry and adverse agricultural environmental practices. Increased vehicle emissions together with local sources of GHG emission contribute to climate change. There is the potential for increased sediment and contaminant runoff from rehabilitated road infrastructure into local waterways especially during the rain season above the current contribution from local industry, agriculture and domestic sources.

A.2 Social Risk Rating High

The social risk rating has been assessed as high. The project aims to improve transport and trade connectivity between Zambia and Dar es Salaam port, which will expand economic activity along the North-South/Dar es Salaam corridor and provide safer roads and access to jobs. However, the project also poses high social risks and impacts, mainly due to land acquisition, involuntary resettlement impacts (including physical and economic displacement), restrictions on land use, risks of sexual exploitation and abuse (SEA) and sexual harassment (SH) due to labor influx, and capacity constraints to manage the social risks. The activities under components 1 and 2, which will finance the rehabilitation of the Serenje-Mpika road, upgrade of the one-stop border post at Nakonde, and the development of SMEs businesses along the road corridors, will pose most of the social risks. The rehabilitation of the road may result in the loss of lands, houses, water points, church buildings, shops, fruit trees, and other homestead facilities such as storage sheds, kitchens, and resting places, as well as livelihoods for affected people. Based on the Resettlement Action Plan (RAP) prepared in 2022, it is estimated that approximately 7,176 people will be physically displaced, and 488 households will likely lose their shelter. Similarly, land acquisition will be required for the construction of the Border Post at Nakonde, and temporary land arrangements are also expected for worker/labor camps, storage of machinery, access roads, and borrow pits. Encroachments along the right-of-way may also be affected, along with economic activities (formal and informal) temporarily affected by access restrictions during construction works. The potential negative effects on vulnerable populations, including the elderly, disabled individuals, and female-headed households, will be assessed in the Environmental and Social Impact Assessment (ESIA) and Resettlement Action Plans

(RAPs). During the construction phase, there may be an increase in labor influx, which could heighten the risk of SEA/SH for women and girls in the communities along the corridors. This is due to persistent barriers such as gender discrimination and sexual violence, which may prevent women from participating in road construction, transport, and trade-related activities, as the industry in Zambia is predominantly male-dominated. There is also a social risk associated with marginalization and conflict in the selection of Small and Medium Enterprises (SMEs) for socio-economic development along the corridor under component 2 of the project. This could potentially exclude certain groups from benefiting from the project's development initiatives. Additionally, the project will involve the use of direct workers, contractor workers, and primary supply workers, which may pose labor and working condition risks if there is non-compliance with national legislation and Environmental and Social Standards (ESS2) requirements on non-discrimination of workers, working hours, wages, overtime, compensation, benefits, and grievance management. For example, if workers are not paid fair wages or are forced to work long hours without proper compensation or are inappropriately treated or harassed, this could lead to labor exploitation, violation of workers' rights, and poor working conditions. There are also risks associated with the inter-institutional coordination among the different participating agencies to manage the environmental and social risks of the project in accordance with the Environmental and Social Framework (ESF).

B. Environment and Social Standards (ESSs) that Apply to the Activities Being Considered

B.1 Relevance of Environmental and Social Standards

ESS1 Assessment and Management of Environmental and Social Risks and Impacts — Relevant

Component 1 will focus on the development of the Serenje – Mpika section of the North – South corridor and will include (i) update of the feasibility and design studies (ii) rehabilitation of the road section to bituminous standards including the possible installation of fiber optic cables concurrently and parallel to the routes (iii) provision of supporting infrastructure (systems upgrade of axle load control facilities – weighbridge at Mpika (iv) upgrade of an One Stop Border Post (OSBP) at Nakonde that includes design and construction of access roads, parking areas, building of facilities to incorporate Information Communications Technology (ICT). The component will prepare studies for key sections along the corridors such as feasibility studies, detailed designs, ESIA for identified sections in need of rehabilitation and upgrade along key corridors (Trans Caprivi and Ncala). While the rehabilitation of the North-South corridor is assessed to be a substantial risk project, it is the borrower’s capacity and capabilities to effectively implement E&S requirements that has raised the environmental risk rating to High. Component 2 will focus on road corridor orientated development and the development of Small Medium Enterprises (SMEs) and Component 3 activities will consist of institutional and sectoral capacity development.

The likely environmental risks and impacts from the proposed project activities in phase 1 are typically direct, indirect and cumulative environmental impacts. The direct, indirect and cumulative environmental impacts may include (i) the potential loss of critical and natural habitats; (ii) bulk extraction of raw materials; (iii) localized air pollution from dust and vehicle exhaust; (iv) nuisance and occupational noise and vibration; (v) local soil and water resource contamination from leakages and run off; (vi) OHS and CHS incidents and accidents; (vii) local water resource competition and excessive consumption for construction activities, workers camps etc; (viii) increased vehicle speeds; (ix) impacts on cultural heritage; (x) a heightened risk of borrow pit (activities or legacy pits) drownings; (xi) the generation of solid, construction, hazardous and electronic wastes; (xii) the use of pesticides; (xiii) the removal of

vegetation and trees to accommodate possible road widening activities, bypass roads and access roads (xiv) construction works flooding, soil erosion and sediment run off; (xv) the contribution of the rehabilitated road infrastructure to increased flooding, run off and contamination of waterways and air pollution from vehicle exhausts over and above the current and past contributions along the route by industrial, agricultural and domestic sources of air pollution and water contamination. Component 2 activities the SMEs may generate environmental risks and impacts that consist of solid and hazardous waste generation, poor OHS practices, unsustainable land management practices, generation of water and air pollution etc. Component 3 consisting of institutional and sectoral capacity development will likely generate low to moderate OHS risks. All feasibility studies, detailed designs, and ESIAs for identified sections in need of rehabilitation and upgrade along key corridors (Trans Caprivi and Ncala), under subcomponent 1.4, are classified as type-I technical assistance as per the OESRC Advisory Note (05/2019) and hence the TOR, workplans or other documents defining the scope and outputs of TA activities will need to be reviewed and cleared for consistency with ESSs 1-10.

The activities under components 1 and 2, which involve financing the rehabilitation of the Serenje-Mpika road, upgrading the one-stop border post at Nakonde, and developing SMEs along the road corridors, are likely to pose key social risks. The rehabilitation of the road may impact residential and small businesses along the right-of-way (ROW), leading to the loss of lands, houses, and livelihoods for affected people, some of whom may need to resettle. Similarly, land acquisition will be required for the construction of the Border Post at Nakonde, and temporary land use is also expected for worker/labor camps, storage of machinery, access roads and borrow pits. The potential negative effects on vulnerable populations, including the elderly, disabled individuals, and female-headed households, will be evaluated once the Environmental and Social Impact Assessment (ESIA) report is completed. However, during the construction phase, there may be an increase in labor influx, which could heighten the risk of SEA/SH for women and girls in the communities along the corridors. This is due to persistent barriers such as gender discrimination and sexual violence, which may prevent women from participating in road construction, transport, and trade-related activities, as the industry in Zambia is predominantly male-dominated. In addition, there is a social risk associated with marginalization and conflict in the selection of Small and Medium Enterprises (SMEs) for socio-economic development along the corridor under component 2 of the project. This could potentially exclude certain groups from benefiting from the project's development initiatives. Moreover, the project will involve the use of direct workers, contractor workers, and primary supply workers. If there is non-compliance with national legislation and Environmental and Social Standards (ESS2) requirements, there may be labor and working condition risks. This includes issues such as non-discrimination of workers, working hours, wages, overtime, compensation, benefits, and grievance management.

All three entities (RDA, MIHUD & MTL) are actively involved in Bank-financed operations and have low E&S capacities and capabilities to oversee the implementation of the different activities under phase 1. The proposed TA activities under component 3 are not anticipated to have significant downstream or induced impacts. Nevertheless, the ESCP will incorporate specific provisions to enhance environmental and social considerations in the ToRs for the capacity building activities. This will ensure that the outcomes of the TA align with the ESF.

The E&S management requirements will be reassessed during project implementation for the purpose of this proposed project with a view to developing a gold standard of E&S capacities and capabilities requirements through recruitment of suitably qualified Environmental and Social Specialists, OHS specialists, undergo ESF training, review of all TORs for SE, SC, Third Party Supervision Consultants, endorsement of selected PIU staff, development and

implementation of a training plan for PIU, consultants and contractors, ensure integration of OHS and other E&S requirements into all procurement and contracting activities, awareness of available contractual remedies etc.

ESS2 Labor and Working Conditions Relevant

The standard is considered relevant. The proposed project will require a significant amount of labor force, particularly for the rehabilitation of the Serenje-Mpika road and the OSPB construction. The majority of the labor force will be hired locally, except for skilled workers who may not be available in the local communities. The Serenje-Mpika road section spans approximately 203 km and will involve civil works, which may require labor camps. The project activities will involve three types of workers: direct workers (public and civil servants responsible for project operations and technical specialists hired from the market), contracted workers (workers hired by civil contractors), and primary-supply workers (workers from construction-material suppliers, such as sand and gravel and loading/construction material-transport services). The involvement of community workers is yet to be determined.

The project activities under the Serenje-Mpika rehabilitation and OSPB construction will generate multiple hazards such as; (i) worker exposure and impact with fast- moving, overloaded, unsafe vehicular traffic and motorcycles exacerbated by low light conditions, poor visibility and a lack of traffic management; (ii) exposure to live electrical conductors running parallel to the road; (iii) over exertion, fatigue, dehydration and exhaustion (including heat); (iv) impact with onsite vehicles and plant equipment; (v) trips, slips and falls; (vi) noise and hand arm vibration; (vii) possible landslides; (viii) impact injuries from dropped/fallen equipment and loads; (ix) inhalation of fumes and dust from vehicles, plant machinery, hazardous materials, batching operations resulting in fainting or collapse, acute or chronic lung diseases and illnesses; (x) exposure to other hazardous materials including fuel, chemical additives; (xi) entrapment within machinery moving parts etc; (xii) vehicle accidents on site. Other key labor risks include failing to abide by national legislation regarding working hours, wages, overtime, compensation, benefits, child or forced labor, discrimination and SEA/SH.

An appropriately scaled and detailed Occupational Health and Safety (OHS) plan, based on Environmental Safety Health Guidelines (ESHGs), Good International Industry Practice (GIIP), and national laws, will be required. This plan should include hazard identification, risk assessments, method statements, emergency prevention and preparedness, response arrangements, OHS training and communication, road safety measures, contractor's OHS committees, site OHS inspection checklists, and checklists for other activities and areas of concern. The Project Implementation Unit (PIU), third-party supervision consultants, and contractors should have sufficient staff members who are qualified and experienced in OHS. It is necessary to establish a properly mapped out and staffed OHS organization to effectively implement OHS risk control measures. All terms of reference (TORs) for PIU E&S, OHS staff, and supervising consultants should be reviewed and approved by the Bank to ensure that OHS provisions, qualifications, and OHS responsibilities are included in the contracts. Similarly, all contracts and procurement-related documents should include appropriate OHS clauses, remedies, actions, and responsibilities.

In line with the requirements of the standards, the PIU will prepare labor management procedures (LMP) with details regarding the modalities for hiring and disengaging workers, procedures to ensure that all workers receive clear contractual agreements with detailed wage/remuneration rates and payment schedules/timelines, code of conduct (including relating to SEA/SH), age of employment to prevent child labor, forced labor prohibitions, non-discrimination in hiring especially related to women's employment and provision of safe working conditions, and contractor management, based on the provisions of ESS2 and in the ESHGs, and considering national laws and regulations. The

LMP will also determine the resources required to address labor-related issues. To ensure the proper implementation of labor issues, contractors will need to hire staff with relevant skills. The PIU Social Specialists will provide overall guidance, while the Supervision Engineer's team will include staff with expertise in labor issues. Both the PIU and contractors will be responsible for ensuring that primary supply workers have systems in place to meet their obligations under ESS2. Additionally, the LMP will include provisions/procedures for a labor specific GRM, where all project workers can raise their work-related grievances including SEA/SH. Contractors will develop respective GRM and include them in the C-ESMP.

ESS3 Resource Efficiency and Pollution Prevention and Management Relevant

ESS 3 is relevant to the project because the activities will likely generate impacts related to air pollution, water use, raw material use, management of hazardous (including e-wastes) and non-hazardous wastes and the management of chemicals and hazardous materials. The likely environmental risks and impacts related to ESS 3 from all components are generated from (i) bulk extraction of raw materials including gravel, sand and water resources will likely result in land degradation, loss of landscape aesthetics, loss of arable and fertile land; (ii) increased localized air pollution from dust, batching and vehicle exhaust; (iii) local soil and water resource contamination from leakages and run off from quarrying, batching activities, bitumen manufacturing, bulk storage of hazardous materials, servicing of equipment etc; (iv) local water resource competition from excessive consumption for road construction activities, dust suppression, batching, workers camps etc; (v) the generation of solid, construction. electronic and hazardous wastes; (vi) the use of pesticides in road maintenance; (vii) the removal of vegetation and trees to accommodate possible road widening activities, bypass roads and access roads; (viii) existing liabilities along the existing road infrastructure (solid waste, contaminated land etc); (ix) soil erosion and sedimentation through increased storm water runoff during the wet season and; (x) the generation of solid and hazardous waste, poor OHS practices, unsustainable land management practices, generation of water and air pollution etc from SME activities.

The updated ESIA for the Serenje-Mpika rehabilitation and E&S instruments for OSPB construction, operation and maintenance will be reviewed to ensure all potential direct, indirect and cumulative environmental risk and impacts associated with ESS 3 are assessed and appropriate mitigation measures and plans are in place. The ESIA will be developed and include appropriate scaled ESMPs and relevant management plans such as (i) wastewater and water management plans, solid, construction, e-waste, hazardous waste management plans (ii) Hazardous Materials (Hazmat) storage plan (fuel and other chemicals) to ensure containment, prevention of fires, emergency response plans etc; (iii) Pesticide Management Plan (iv) borrow pit management plans where legal and licensed sources of materials will be extracted and to prevent drownings and other OHS risks and; (v) capacity building and training requirements (vi) monitoring activities (vii) the appropriate siting of large concrete or asphalt batching plants or similar construction material manufacturing plants away from areas of critical and natural habitats, population centres, water resources and other natural, critical or community sensitive areas. Risks and impacts associated with project feasibility studies, E&S instrument development and SME activities are likely to substantial due to the current low E&S technical capacity but mitigated and managed by adopting an activity Terms of Reference in accordance with ESS 3.

ESS4 Community Health and Safety Relevant

ESS 4 is considered relevant because the likely risks and impacts are related to traffic and road safety, ecosystem services, management and safety of hazardous materials and emergency preparedness and response. The main potential health and safety risks to the local community are hazards associated with subproject construction and operational activities that will likely include (i) traffic and road safety risks resulting from and an expected significant increase in construction traffic in rural areas leading to vehicle impacts with local community members and livestock (ii) inappropriate sized and standardized infrastructure (including roads, bridges, culverts) leading to road surface flooding, blockages and collapse during operational use and extreme weather events (iii) spread of Covid-19, contraction of Malaria and other communicable diseases to the local communities due to worker influx into the rural areas; (iv) inappropriate disposal of wastes of all types (wastewater, solid, hazardous) leading to the spread of infectious diseases among the local community, potential indirect increase in the number of local community members engaged in waste picking, and community health impacts from local water resource contamination and air pollution from burning of solid and hazardous waste etc; (v) batching plants, maintenance areas and workers camps could store bulk fuel and chemicals resulting in fuel and chemical leakage from compromised containment into the ground water or protected waterway or a catastrophic loss of fuel due to an accident or a loss of containment leading to a fire that could spread to nearby communities or pollute local water resources; (vi) a lack of emergency response coordination at project sites leading to the uncontrolled spread of contaminants, fire and delayed treatment for any road traffic casualties etc; (vii) inappropriate storage of hazardous materials (other than fuel) resulting in inadvertent community exposure through water and air pollution; (viii) irreversible damage to local ecosystem function and; (ix) incidents SEA/SH especially of women and girls in the communities.

The safety and protection of vulnerable road users (Pedestrians including children, mothers with children, motorcycles, bicycles etc.) and other road users (trucks, cars, public transport etc) is critical throughout road rehabilitation and road operations. Road traffic incidents are likely; (i) where there are road works and construction activities; (ii) where vulnerable road users are canalized next to moving traffic; (iii) construction vehicles traveling on narrow roads unpaved or paved roads to borrow pits, batching plants (iv) where construction traffic is detoured or diverted through populated areas, schools, community centres, areas of commerce etc; (v) off site at or near contractor's camps where long vehicles are turning or where unlicensed or untrained, inexperienced drivers and operators are driving or operating vehicles and plant machinery etc. During road operations traffic accidents are likely to occur where there are (i) overtaking traffic colliding with pedestrians, oncoming and turning vehicles; (ii) poorly lit and signed bends, curves, brows of a hill, crossing areas; (iii) hidden junctions and entry and egress points; (iv) narrow parts of the road (iv) at night; (v) disobedience of the highway code; (vi) unsafe drivers who are physically impaired, distracted, speeding, reckless or otherwise dangerous; (vi) poorly maintained vehicles; (vii) poor weather conditions; (viii) unmaintained and potholed roads and; (ix) young and inexperienced drivers etc.

The ESIA associated ESMP for each section of road rehabilitation will require the borrower to incorporate road safety aspects from the Good Practice Note on Road Safety such as (i) thoroughly assess the potential traffic and road safety risks to all vulnerable road users, other community members, contracted workers, other members of the public throughout all phases of the road rehabilitation (pre construction, construction, operations and decommissioning (removal of the contractor, asphalt plants etc); (ii) the incorporation into the road design practical and feasible measures to mitigate against such risks; (iii) if necessary, undertake a road safety assessment of the completed sections of road and implement improvement measures; (iv) ensure safe driver, safe vehicle and safe journey by conducting driver training, driver licensing, vehicle licensing, maintenance and roadworthiness tests, oversight and monitoring measures, driver alcohol and substance testing, speed monitoring, comprehensive driver contracts; (v) preplanned and

safe routes for construction traffic and; (vi) traffic management plans on works sites and the physical separation of vulnerable road users from works and normal traffic flows.

Community health and safety risks will be screened in the ESIAs and the mitigation measures may include (i) appropriate road safety policies, plans, construction standards and mitigation measures detailed in the ESMPs (ii) appropriate use of international recognized infrastructure construction codes with an emphasis on climate resilience (iii) appropriate waste management plans including the use of the standards and management procedures set out in the WB ESHGs and agreed GIIP where appropriate (v) comprehensive and well-rehearsed emergency response measures to address potential subproject anticipated incidents, arising from both natural and man-made hazards along the road corridors that includes but is not limited to a catastrophic fuel leak into a waterway or ground water from a bulk fuel installation, an explosion of a fuel installation, a flood, a road traffic casualty etc.; (vi) the appropriate level of Covid 19, Malaria and other current communicable diseases mitigation measures for worker camps and on site (vii) the ESIA should include a thorough assessment of the potential for pollution events that will contaminate local community water resources etc. (vii) the appropriate management of hazardous materials to prevent discharge to the environment, fire or accidental or intentional access by local community members and, (viii) preparation and adoption of a SEA/SH Action Plan, and also incorporate relevant provisions in contractor bidding documents including a Code of Conduct for the workers, set up a SEA/SH compliant Grievance Management and raise awareness on SEA/SH among the beneficiaries and, (ix) Hiring an SEA/SH service provider to implement the SEA/SH action plan effectively.

ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement Relevant

This standard is considered relevant due to the potential risks of land acquisition and involuntary resettlement, including physical and economic displacement, associated with the activities under components 1 and 2. These activities include the rehabilitation of the Serenje-Mpika road and the upgrade of the one-stop border post at Nakonde. The rehabilitation of the road may result in the loss of lands, houses, water points, church buildings, shops, fruit trees, and other homestead facilities such as storage sheds, kitchens, and resting places , as well as livelihoods for affected people.

Based on the Resettlement Action Plan (RAP) prepared in 2022, it is estimated that approximately 7,176 people will be physically displaced and 488 households will likely lose their shelter. Similarly, land acquisition will be required for the construction of the Border Post at Nakonde, and temporary land arrangements are also expected for worker/labor camps, storage of machinery, access roads, and borrow pits. Encroachments along the right-of-way may also be affected, along with economic activities (formal and informal) temporarily affected by access restrictions during construction works.

To mitigate these risks, RAPs will be prepared, consulted upon, cleared by the Bank, and fully implemented prior to the commencement of any construction/rehabilitation and/or land acquisition in respective sites, ancillary facilities, or any associated facilities as defined under ESS1, to the extent that the Borrower has control or influence over them. The PIU will hire independent and qualified expert(s) for the updating of the Serenje-Mpika section RAP, which was prepared in 2022, and for the preparation of all other RAPs under the project, to ensure that they meet the requirements of ESS5 and other relevant ESF provisions. Supervision consultants will oversee their implementation, and an independent entity will be hired to conduct an audit of the RAPs after their implementation is complete.

The RAPs will be developed based on a comprehensive census and inventory of the project-affected persons (PAPs) and assets. This process will involve engaging PAPs and other relevant stakeholders in meaningful consultations, disclosing

project impacts and benefits to stakeholders, and providing them with opportunities to contribute to the resettlement planning process. The RAP will also include detailed data on gender and other vulnerable PAPs, and specialized assistance will be provided to address specific issues relevant to female-headed and vulnerable households.

ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources Relevant

ESS 6 is considered relevant to this project because of possible direct and indirect impacts on biodiversity and habitats from the inappropriate extraction of raw materials and natural resources, poor borrow pit and contractor's camps siting, the use of unlicensed primary suppliers and the impacts to the sustainable management of living natural resources. The national parks are unlikely to be directly impacted from the road rehabilitation and any realignment because the North Luangwa National Park is approximately 50km to the SE of the project site, Kasanka National Park is approximately 80km to the north, and Lavushi Manda National Park approximately 40km to the NW.

The existing road does not pass directly through any environmental sensitive areas. The rehabilitation of the roads, construction of bypass routes, access roads, contractor's camps, laydown areas, use of areas for batching plants and other areas in both phases may lead indirectly to the loss and degradation of natural, modified or critical habitats, pollution of aquatic habitats, degradation of the environment etc. Other risks to biodiversity from road rehabilitation include (i) the project's cumulative and direct contribution to pollution from solid, hazardous and construction waste disposal, spillages from hazardous material storage, batching areas, discharges of fuel and oil from vehicles and plant machinery; (ii) the construction of impermeable road surfaces may increase point and diffuse sources of oil or fuel water run-off and concentrated in sediment run off and other pollutants; (iii) exploitation and destruction of forest areas through abstraction of raw materials for project activities and from accidental fires started by workers or other project activities; (iv) legal and illegal extraction of sand and gravel inside and outside of sensitive areas for road construction material leading to land and habitat degradation, clearing vegetation for workers camps, batching areas, laydown areas; (v) negatively impact on climate change resilience through over exploitation of water resources for construction activities in drought prone areas and; (vi) poaching by workers.

The ESIAs should influence project design of the road sections by careful project siting, avoid protected areas and other critical and natural habitats, including forested areas etc. Environmental risks and impacts can be mitigated by, to the extent possible, undertaking the following measures; (i) the project design follows the current alignment of the roads; (ii) access roads and bypass roads avoid critical and natural habitat; (iii) construction and maintenance of good drainage and natural water flows; (iv) minimize roadside habitat loss; (v) exercise due diligence in the siting and design of borrow pits, construction camps, and other complementary facilities. Mitigation measures should extend out to the contractors to include remedies for noncompliance that need to be incorporated within bidding documents and contracts; (vi) avoid natural and critical habitats and creating impacts by careful spatial placement of infrastructure; (vii) water-use and pollution prevention by effective solid waste and wastewater management and effective management of hazardous materials; (viii) evaluation and verification of primary suppliers' systems and practices and; (ix) a workers code of conduct with explicit measures to prevent poaching. The ESIA must include an assessment of critical and natural habitats along the road length and in other areas of activity. The ESIA will include an ESMP, a BMP if required and will guide project design using the mitigation hierarchy (following the principles of avoidance, minimization, restoration, and offsets) based on ESSs, ESHG and GIIP. Risks and impacts associated with project feasibility studies and

E&S instrument development are likely to High and mitigated by adopting an activity Terms of Reference coordinated and managed by a project ESMP in accordance with ESS 6.

ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities — Not Currently Relevant

ESS7 is not considered relevant to this project as there are no distinct social and cultural groups in the project area that exhibit characteristics of indigenous or traditionally under-served communities as spelled out under this standard. Should a subsequent screening process indicate that a particular group meets the requirements of ESS7 and will be impacted by this project, a social development plan in accordance with this standard will be developed.

ESS8 Cultural Heritage — Relevant

ESS 8 is considered relevant. In Zambia cultural heritage includes archeological heritage (some 2337 identified sites), traditional heritage (tangible and intangible heritage of approx. 151 sites), historical heritage (bridges, buildings etc.) and natural heritage (waterfalls, lakes, caves etc with approx. 353 sites). Most cultural heritage sites in Zambia fall within sensitive ecological areas, rural areas, and remote areas, but are not necessarily co-located with the alignment of the roads in all phases of the project. Most cultural heritage in Zambia is protected by law (Forest Act, National Heritage Conservation Commission Act etc) and are gazetted. Therefore, the ESIAs should assess the impacts on tangible and intangible cultural heritage within the project areas and provide suitable mitigation strategies. In addition, a chance find procedure will be prepared as part of the ESMP for the contractors.

ESS9 Financial Intermediaries — Not Currently Relevant

This standard is not currently relevant.

ESS10 Stakeholder Engagement and Information Disclosure — Relevant

The project stakeholders are diverse and include various trade and transport stakeholders, local communities, individuals, and families living around the project areas. Stakeholders also include business and trade associations, transport operators, media, civil society, NGOs, and academic and research organizations.

A stakeholder engagement plan (SEP) was prepared in the early stages of project preparation. Consultation and engagement with stakeholders during the project's preparation stage included community stakeholder engagements that took place along the Serenje-Mpika road corridor (North-South/Dar es Salaam Corridor) between 2017 and 2022. These engagements were attended by village headmen, local businessmen/women, local subsistence farmers, school-going children, and ordinary community members. Other people were engaged through telephone conversations, as the phone numbers of the RDA Officials were made available during community engagements. The vulnerable community members, especially the elderly, were mostly engaged during one-on-one discussions at their homesteads. The concerns of the stakeholders were varied and can be found in Table 2 of the SEP. Additional stakeholder consultation will be conducted throughout project preparation and implementation.

The SEP includes a grievance redress mechanism (GRM) to receive and address project-related complaints and grievances from project-affected people, groups, and stakeholders. It also provides safe, confidential, and non-stigmatizing avenues for lodging SEA/SH cases, along with a referral pathway for such cases.

B.2 Legal Operational Policies that Apply

OP 7.50 Projects on International Waterways	No
OP 7.60 Projects in Disputed Areas	No

B.3 Other Salient Features

Use of Borrower Framework No

N/A

Use of Common Approach No

N/A

C. Overview of Required Environmental and Social Risk Management Activities

C.1 What Borrower environmental and social analyses, instruments, plans and/or frameworks are planned or required during implementation?

The required actions to manage the environmental and social risks of the Project include; (i) update the Environmental and Social Impact Assessment (ESIA) and Resettlement Action Plan (RAP) for the Serenje-Mpika section of the North-South Corridor by an independent and qualified expert(s). The ESIA should be prepared, disclosed, consulted, and submitted to the Bank for review and clearance before the procurement process for the respective subproject begins. The RAP should be adopted and implemented before taking possession of the land and related assets, and after full compensation has been provided and displaced people have been resettled and provided with moving allowances, (ii) prepare studies for key sections along the corridors such as feasibility studies, detailed designs, ESIA for identified sections in need of rehabilitation and upgrade along key corridors (Trans Caprivi and Ncala) during project implementation; (iii) conduct of E&S screening of the OSPB at Nkonde and weighbridge and develop appropriate E&S instruments to manage E&S risks and impacts during project implementation; (iv) the development of Health Safety Management Plans (HSMPs) and Contractor' ESMPs (CESMPs) during the implementation of Serenje-Mpika rehabilitation, OSBP and weighbridge after contract award; (v) Environmental and Social Commitment Plan (ESCP) in draft status for appraisal and, thereafter, amended during negotiations; (vi) Labor Management Procedures (LMP) draft prior to appraisal and finalised and disclosed before project effectiveness; (vii) Stakeholder Engagement Plan (SEP) will be finalized and publicly disclosed before appraisal; and (viii) Develop an SEA/SH Action Plan and hire a service provider to implement the SEA/SH Action Plan. These timeframes will be reflected in the ESCP. The preparation of the listed E&S instruments will undergo public consultations and the documents will be disclosed at the appropriate periods. The E&S risk classification will be re-assessed and accordingly revised/updated during project implementation. Gender gaps will be examined in these instruments as well, and

gender actions to address those gaps and indicators to measure progress will be incorporated into the project design. As part of the project's assessment of social and economic development opportunities along the corridor, the risks and impacts, such as marginalization and conflict, in the selection of SMEs will be assessed. Additionally, the selection criteria for the SMEs should be clearly defined with stakeholders and beneficiaries, and aspects such as poverty and vulnerability should be considered critical in the selection process.

III. CONTACT POINTS

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