



# Concept Environmental and Social Review Summary

## Concept Stage

### **(ESRS Concept Stage)**

Date Prepared/Updated: 12/22/2022 | Report No: ESRSC03219



**BASIC INFORMATION**

**A. Basic Project Data**

Country	Region	Project ID	Parent Project ID (if any)
Eastern and Southern Africa		P178685	
Project Name	Ruzizi 3 Regional Hydropower Project		
Practice Area (Lead)	Financing Instrument	Estimated Appraisal Date	Estimated Board Date
Energy & Extractives	Investment Project Financing	2/14/2023	3/14/2024
Borrower(s)	Implementing Agency(ies)		
Democratic Republic of Congo, Republic of Burundi, Republic of Rwanda	Ruzizi III Energy Limited (REL)		

**Proposed Development Objective**

The Project Development Objective is to increase the supply of clean hydropower electricity to Democratic Republic of Congo, Rwanda and Burundi by leveraging private capital.

Financing (in USD Million)	Amount
Total Project Cost	760.00

**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 [including overview of Country, Sectoral & Institutional Contexts and Relationship to CPF]**

The Ruzizi 3 Regional Hydropower Plant Project (Ruzizi 3 HPP or Project), which will have an installed generation capacity of 206 MW, is located in Central Africa along the Ruzizi River which forms a natural border between Rwanda, Burundi and Democratic Republic of Congo (DRC), flowing southwards from Lake Kivu into Lake Tanganyika. Ruzizi III will be located downstream of the existing Ruzizi I (29.2MW) and Ruzizi II (43.8 MW) HPPs, commissioned respectively



in 1958 and 1989. Ruzizi I HPP is located 3 km downstream of the outlet of Lake Kivu and controls the discharge from Lake Kivu. A fourth hydropower scheme, Ruzizi IV, is also planned in the future.

The Ruzizi 3 HPP is configured to include the construction of a dam (51 meters high), a 3.8 km long headrace tunnel, a power station (206 MW installed capacity with an expected annual production of 1,140 GWh) and a 7 km long double circuit 220 kV transmission line to a substation at Kamanyola which is adjacent to the common border between the three countries. It includes a compact reservoir (approx. 46 hectares of inundated surface area) to provide regulation capacity and support the daily peak demand of the three countries. The scope of the Project also includes the following ancillary infrastructure: (i) permanent roads and access roads (9.6 km in DRC and 19.5 km in Rwanda), (ii) quarries and Borrow pit sites, and (iii) Spoil Disposal Areas. Associated Facilities that will help dispatching the electricity produced by Ruzizi 3 include:

- Kamanyola 220 kV Substation is situated in DRC and developed by EGL with financial support from KfW. A Feasibility Study, ESIA and RAP were prepared in 2014. These studies will be updated by appraisal to reflect recent developments in the Ruzizi III Project and align with the World Bank's Environmental and Social Standards.
- Kamanyola-Buhandahada 220 kV Transmission Line. It's situated in DRC and is being developed by EGL with financial support from the KfW. Pre-Feasibility studies for the 68.5 km line have been completed. However, the studies will need to be updated by appraisal to take into account changes made to the Ruzizi-III HPP, and align with the World Bank's Environmental and Social Standards.
- Kamanyola - Bujumbura 220 kV Transmission Line is developed in Burundi by REGIDESO with financial support from AfDB and KfW. Burundi line is already under construction and completion of works is expected in 2023.
- Kamanyola – Karongi 220 kV TL is developed by Rwanda Energy Group (REG) with financial support from the EIB. Feasibility studies are underway and ESIA is due by appraisal.
- Kamanyola - Kibuye 220 kV TL is developed by Rwanda Energy Group (REG) with financial support from the EIB. A pre-feasibility study and ESIA were prepared in 2014. However, the feasibility study and ESIA will be updated by appraisal and a RAP prepared.

The WB contribution to the Project will include the two following components:

- Component 1 will contribute to the financing of the main construction contract that will cover construction of infrastructure including (i) the access roads; (ii) the dam, the spillway and the bottom outlets; (iii) the power intake, the eco-flow bypass and associated hydro unit; (iv) the headrace tunnel; (v) the penstocks and surface powerhouse with three turbine-generator units; (vi) the 30 kV site transmission lines, substation and transmission lines to Kamanyola substation; and (vii) the employer's village. These will be included in the scope of a single turnkey Engineer-Procure-Construct (EPC) contract combined with the International Federation of Consulting Engineers (FIDIC) Emerald book contract for underground works.
- Component 2 will comprise technical assistance and capacity building to the Economic Community of the Great Lakes Countries for Energy (EGL), its member States, and the public utility companies in order to strengthen their participation in the development of the project. It will also include advisory and analytical work to strengthen the member State's institutional, legal, and regulatory framework to facilitate the trade and dispatch of electricity between the public utility companies.

The Project will be an important part of the power system in the three Contracting States (CS). It will offer significant benefits to the region to which it will provide clean power potentially generating significant revenues and boosting development and stability. Aside from fulfilling energy needs, the Project will enable the displacement of more



expensive thermal generation in the region and support the absorption of variable renewable energy sources (such as solar). The Project could thus become a catalyzer for a green energy transition in the sub-region.

The CS/EGL will : (i) handle operation and maintenance of REL’s Corporate Social Responsibility investments (electrification of villages; support to the development of fish farming and fisheries activities in the future reservoir; support to the development of sustainable water supply systems in the villages; support to roads improvement; flour mills and small processing installation in the villages; support to improve schools -construction of new rooms and provision of schooling equipment and access to electricity; support to health centers, by provision of medicines and medical equipment); (ii) manage the Ruzizi III Bridge over the Ruzizi river; (iii) create and operate the regional dispatching center; (iv) monitor E&S Conditions in the Environmental Permit; (v) ensure cascade management and watershed and transboundary coordination/dialogue; (vi) implement eventual security management plans, and (vii) implement technical assistance activities. These activities are non-private sector related activities and will follow the ESF Environmental and Social Standards (ESSs).

Activities to be implemented by Ruzizi III Energy Limited (REL) include construction, operation and maintenance of the hydropower plant; construction and maintenance of access roads (~20km); construction and operation of 220 kV Switchyard; construction and operation of 7.2km 220kV T-line from the switchyard to the Kamanyola substation; construction and operation of permanent Operators’ Camps; exploitation and rehabilitation of quarries, borrow areas and river diversion. The RAP will be implemented by REL. REL will directly employ 25 people with priority to the citizens of the CSs for capacity building purposes. Permanent access roads will be included in the main EPC contract where REL is the employer. REL will be responsible for the maintenance during the operation phase. The bridge over the Ruzizi River will be an operating border crossing point. It will be rebuilt under EPC contract, but it will be managed by the immigration authorities of both countries. CSs/EGL/REGIDESO/Rwanda Energy Group (REG) will develop, finance, construct, own, ensure, operate and maintain the above listed Transmission Lines-TL. Lenders’ E&S standards requirements (WBG’s PS and ESSs) will be applied as they are the most stringent and national standards will be complemented as needed so that all facilities will meet WBG’s PS and ESSs.

Public Disclosure

#### D. Environmental and Social Overview

D.1. Detailed project location(s) and salient physical characteristics relevant to the E&S assessment [geographic, environmental, social]

The Ruzizi 3 HPP is located on the Ruzizi River, which forms the border between the DRC and Rwanda in the African Great Lakes region, and is the outlet for water flowing from Lake Kivu into Lake Tanganyika. Its catchment area includes Lake Kivu’s catchment area, which covers an area of approx. 7,000km<sup>2</sup>. The Ruzizi River is 161km long and the first 40km flows through a steep confined gorge surrounded by steep mountain slopes, where the dam will be constructed. Ruzizi III will be situated downstream of the existing Ruzizi I&II HP The average annual flow of the river at the Project dam site is 110 m<sup>3</sup>/s and 206 m<sup>3</sup>/s at the outflow into Lake Tanganyika.

The Ruzizi 3 HPP includes the dam, headrace tunnel, power station, reservoir and ancillary facilities such as access roads. The 7km T-Line runs from the facility to a substation at Kamanyola in DRC, which is adjacent to the common border between the three countries.

The Project area of influence does not encroach on legally protected areas such as national parks. The nearest legally protected areas are the Nyungwe national Park (22 km to the North) and the Ruzizi River National Park (88 km downstream). The Ruzizi National Park is located north-west of Bujumbura on the border with the DRC. It comprises a



floodplain of about 2 km wide and 35 km long along the east bank of the Ruzizi River and a smaller area of delta where the Ruzizi enters Lake Tanganyika.

There are four vegetation types that are considered largely natural (Riparian Thicket; Riparian Wetlands; Hillslope Thicket / Forest and Hillslope Grassland / Savannah). These occupy a total of approximately 48 ha in the Project area and distributed across the different infrastructure or reservoir footprints, of which 22 ha of Hillslope Grassland / Savannah above the Ruzizi Valley between the upper reaches of the reservoir and the towns of Bugarama and Kamanyola. It is evaluated as high sensitivity on the basis of the high proportion of indigenous species and intact ecological functionality.

However, Ruzizi River is a Critical Habitat for fish and natural habitats such as Hillslope Grasslands are found in the project settings. The Lake Kivu and Ruzizi River basins are facing problems of deforestation, soil erosion and ever-increasing quantities of sediment in the Ruzizi River. From Bukavu/Kamembe to Bugarama/Kamanyola, the V-shaped valley, whose depth increases and whose bottom narrows downstream, has a relatively steep slope and very steep sides, which is particularly conducive to the installation of hydroelectric structures. The area has been classified as being very prone to landslides.

To address landslide and seismic risks, design of Ruzizi III HPP including relocation of dam axis has been carried out to minimize/cancel landslide risks. This has been a significant re-engineering of the project and responds to concerns identified by the sponsors with the original layout as well as comments from the World Bank. All major infrastructures have been moved in landslide free locations. In addition to that, REL has implemented a platform for acquiring and processing continuously satellite data of surface displacement in the Ruzizi valley. Data are available since 2017 and will be continuously collected and analyzed during construction and operation to predict any landslide event and implement stability works/emergency plans impacting access roads or associated facilities. Seismic risk is covered through the selection of stringent design earthquake and higher international standards.

#### D. 2. Borrower's Institutional Capacity

The Ruzizi 3 HPP is being developed as a public-private partnership (PPP) between the three Contracting States, the Economic Community of the Great Lakes Countries for Energy (EGL) and a consortium of private developers, Industrial Promotion Services (IPS) of Kenya and Scatec (the Consortium). Ruzizi 3 Energy Limited (REL) is a special purpose vehicle company established to develop the Project. After Financial Close, it is expected that the three Contracting States will each have a stake of 10% in REL whereas the Consortium will own the remaining 70% stake. Key roles and responsibilities of main stakeholders are described hereunder: Contracting States (CSs)/EGL: EGL acting as the agent for the three CSs. Land compensation will be carried out by CS under supervision of a Joint Implementation Unit made of representatives of REL and EGL. The 3 CS would need to collectively fund the acquisition, CSs/EGL/REGIDESO/Rwanda Energy Group (REG) will develop, finance, construct, own, ensure, operate and maintain Kamanyola Substation in DRC and the four Transmission Lines-TL listed under Summary Description of Proposed Project. As described above, Ruzizi III Energy Limited (REL) will be the main implementing entity and will take the full responsibility of the environmental & social management of risks and impacts associated with activities designed, constructed, operated and/or owned by REL. REL Organizational Chart and key staff include one E&S Manager, one Health & Safety Officer, and a Land Acquisition Team (Rwanda, DRC). REL and his owners (Statkraft Norfund-SN Power owned by Scatec ASA; Industrial Promotion Services -IPS, the industrial development arm of Aga Khan Fund for Economic Development-AKFED) is familiar with WBG's Performance Standards (PSs). REL shared with the Bank on November 22, 2022 a draft ESMS and it will be assessed by the Bank, finalized by REL and approved prior to completing appraisal. Any gaps in the ESMS will be addressed in the environmental and social action plan. The EPC Contractor will finalize the detailed engineering design of the Project, procure all the equipment and materials necessary, and through various subcontracts deliver a functioning facility to REL. EPC Contractor will exploit and maintain quarry and borrow pit sites. EPC Contractor and subcontractors will be required to have an adequate EHS



team matching the geographical scope of works. Independent Engineer will undertake commissioning certifications, maintenance studies during operations, independent assessment on matters requested by REL/Offtakers, and provide opinions on Change Orders during construction. The Lender Technical Advisor will be mobilized by the Non-concessional Lenders to carry out their joint due diligence and monitor progress during construction for disbursement purposes. This will be procured in January 2023. The Dam Safety panel (under procurement with AfDB funding) to carry out technical review and make sure dam safety plans are prepared as per the WB ESS4-Annex 1. REG, Régie de Production et de Distribution d'eau et d'électricité du Burundi (REGIDESO) and Société Nationale d'Electricité (SNEL) de la RDC, will take the full responsibility of the environmental & social management of risks and impacts associated with the four transmission lines, which are associated facilities. The Owner's Engineer (Employer's Representative under FIDIC Silver Book language) to help REL on studies, EPC design review and construction supervision. The Implementation Agreement does not include a comprehensive description of the WB Performance Standards applicable under OP 4.03 nor the relevant ESSs under the ESF for Non-Private Activities. Prior to appraisal, the project team will conduct a thorough review of the Implementation Agreement to consider whether any amendments or additions are necessary as a condition of the Bank supporting this Project. In addition, an assessment of implementation capacity will be carried out by appraisal.

## II. SCREENING OF POTENTIAL ENVIRONMENTAL AND SOCIAL (ES) RISKS AND IMPACTS

### A. Environmental and Social Risk Classification (ESRC)

High

#### Environmental Risk Rating

High

The overall environmental and social Categorization under OP 4.03 World Bank Group Performance Standards for this Project is Category A, as activities may present significant adverse environmental or social risks or impacts that are diverse, irreversible, or unprecedented due to scope and complexity of works. The combined Categorization and environmental risk classification under the ESF for activities that do not qualify as Private Sector Activities under paragraph 4 of OP4.03 is High, based on (i) magnitude and scale of planned physical works (A rockfill embankment dam height at axis 51.5 m, will create a small reservoir occupying 46 ha and inundating areas of agricultural land in both Rwanda and DRC; construction of 7-km-long 220 kV transmission line; water intake, 3,820 m headrace tunnel, and an aboveground powerhouse; construction/rehabilitation of 29.1 km of access roads including bridges; construction of workers' accommodation camp adjacent to the 220 kV switchyard, borrow/quarry site, spoils disposal areas, associated facilities, etc.); (ii) ESIA national and provincial authorities capacity to supervise and inspect all E&S mitigation measures listed in the ESIA/ESMP; (iii) key environmental risks and impacts associated with OP4.03 PSs (Seismic risks, landslide risk, dam Safety; loss of critical fish habitat for reservoir (2.2 km), imp act to Ruzizi River as Critical Habitat; reduction of aquatic fish habitats in dewatered stretch with Minimum Flow (10m<sup>3</sup> /s)(5.5 km); alteration of flows in hydropeaking reach; dam barrier to fish migration; loss of 92.5 ha of largely Natural Habitat (36% of footprint) of which 22 ha high ecological importance; alteration to air quality and ambient dust levels in the immediate vicinity of worksites; localized increase in ambient noise levels; risk of contamination of soil, groundwater from accidental spills and leaks of hazardous substances such as fuel and oils; risk of increased sediment loads in the Ruzizi River from runoff ; waste generation, risks related to labor and working conditions including occupational health and safety and impact on ecosystem services (loss of natural habitat, change in fish stock, contamination of soils, etc.). Additionally, the transportation of Project personnel, material and equipment will substantially increase traffic safety risks. Direct, indirect and cumulative impacts are expected and will be linked in particular to problems of erosion and sedimentation, aquatic species, hydrology, floods in Burundi, compensation water and management of



water releases. Potential downstream environmental implications that may arise if technical assistance activities under component 2 (advisory and analytical work to strengthen the member State’s institutional, legal, and regulatory framework to facilitate the trade and dispatch of electricity between the public utility companies) lead to more future investments. In addition REL’s Corporate Social Responsibility investments (road improvements, water supply, health, education, flour mills, etc.) may entail OHS risks, generation of waste, habitat alteration and fragmentation; soil erosion resulting from vegetation clearing and storm water runoff; soil and water resources (superficial and ground water) pollution due to accidental spillages of hazardous materials; increased water abstraction; noise and vibration; air emissions; road traffic safety risks, fill of wetlands, removal of graves, etc.

**Social Risk Rating**

High

The social risk rating under OP 4.03 World Bank Performance Standards for Private Sector Activities is classified as category A and High under the ESF for activities that do not qualify as Private Sector Activities under paragraph 4 of OP4.03. The Project is a greenfield project and is likely to induce significant adverse impacts on the human population. The activities are likely to induce the following adverse risks and impacts: poor labor and working conditions including poor management labor camps, high level of labor influx due to the size of the civil works , possible risks of increasing child labor with primary suppliers of construction materials or service providers to the workers; restriction on use of natural resources through the alteration of the natural river (environmental flow, decrease of river’s flow), water, air and biodiversity pollution. Risks are anticipated to have a potential adverse impact on the adjacent communities’ health and safety (increased traffic safety risk due to transport of project personnel, materials and equipment, increased exposure to natural hazards, dam break, communicable diseases, STDs). Risks related to community health and safety also include such Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH) due to worker influx as well as due to the possible presence of private or public security services, increase of various types of social ills (e.g. public drunkenness', increase in sex-work), pressure on social services, especially health facilities, increase in communicable diseases such as COVID-19 as well as sexually transmitted diseases (STDs), local inflation of prices, including pressure on accommodation and rent, increase in traffic and related accidents and potential impacts on crops or informal vendors along the access roads, risk of hazardous events (flooding risks and dam breakage that may have significant adverse impacts on the human population); physical and economic displacement impacts (2387 PAHs) as a result of land acquisition (226ha) and restrictions on land use and on natural resources and potential impacts on social conflict as a result of an increased pressure on land use and availability as well as livelihood impacts (e.g. subsistence fishing) as a result of alteration to flow conditions; impacts on cultural heritage mainly on tangible cultural heritage sites (mainly modern era churches, religious prayer sites and graves) but possibly also intangible cultural heritage. The capacity of REL to manage E&S risks and impacts (see section E.2) and contextual risks have also been considered in the assessment. For example, the continuing volatility of the security situation in eastern DRC may have direct and/or indirect impacts on the project. The activities of many armed groups have subjected Congolese civilians to human rights violations with killings currently of the order of 5,000 people annually in the three provinces of Ituri, North Kivu and South Kivu. Recent presidential elections in Burundi and DRC have also been associated with political unrest.

Public Disclosure

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

**B.1. General Assessment**

**ESS1 Assessment and Management of Environmental and Social Risks and Impacts**

**Overview of the relevance of the Standard for the Project:**



The WB ESF will apply to all activities that do not meet the definition of Private Sector Activity under paragraph 4 of OP4.03 and generate risks and impacts that are the responsibility of the Contracting States (SCs)/EGL. The CSs will (i) develop, finance, construct, own, ensure, operate and maintain Kamanyola Substation and the four Transmission Lines (TLs), which are associated facilities, (ii) ensure watershed and transboundary coordination/dialogue, (iii) monitor of E&S Conditions in the Environmental Permit; (iv) develop and implement technical assistance activities; (v) operate and maintain local socio-economic facilities (road improvements, water supply, health, education, flour mills to be constructed under REL's Corporate Social Responsibility initiatives); (vi) manage the Ruzizi III Bridge; (vi) create and operate the regional dispatching center;etc. The above listed private activities will apply the following World Bank's Environmental and Social Standards (ESSs) that have been assessed as relevant at this stage of project preparation: ESS1, ESS2, ESS4, ESS5, ESS6 and ESS10.

Overview of the relevance of PS 1 for the Project: The OP 4.03 will apply to the following activities to be designed, constructed, operated and/or owned by REL construction, operation and maintenance of the hydropower plant; construction and maintenance of access roads (~20km); construction and operation of 220 kV Switchyard; construction and operation of 7.2km 220kV T-line from the switchyard to the Kamanyola substation; construction and operation of permanent Operators' Camps; exploitation and rehabilitation of quarries, borrow areas and river diversion works, etc. The above listed private activities will apply the following World Bank Group's Performance Standards (PSs) that have been assessed as relevant at this stage of project preparation: PS1, PS2, PS3, PS4, PS5, PS6, PS7 and PS8. All Non-Private and Private Activities will apply relevant WBG Environment, Health, and Safety (EHS) Guidelines, Good Practice Notes and relevant Good International Industry Practice (GIIP). Identification of Risks and Impacts of private activities: The Environmental and Social Impact Assessment (ESIA) was commissioned by EGL in 2011/2012 and was then updated in 2020 comparing two designs, the original and the alternative. In September 2021, REL launched a second update to align with international lenders updated policies (AfDB, AFD, IFC, EIB, KfW, BII and WB). AfDB (Integrated Safeguards System - Policy Statement and Operational Safeguards (2013)); EIB (Environmental and Social Sustainability Framework (2022)) and IFC (Environmental and Social Performance Standards (2012)). For this project, the AFD, KfW and British International Investment (BII) have adopted the International Finance Corporation (IFC) environmental and social standards. The updated ESIA/ESMP is not consistent with the ESSs and World Bank Group's Performance Standards (PSs), and comments were shared with the client on July 17, 2022. The scope of the original/updated ESIA includes the main components of the project and ancillary facilities such as the transmission line, access roads, quarries, and spoil disposal areas, among others. It also entails Low / Medium resolution Environmental Flows Assessment ; Cumulative Impact Assessment; Critical Habitat Assessment (CHA); Climate Change Vulnerability and GHG Emission assessment. However, it does not include associated facilities, and a transmission line maintenance program. The updated ESIA contains a preliminary CH and NH habitat assessment and SLR has determined that Ruzizi River is a Critical Habitat for fish and natural habitats because of the presence of two Critically Endangered fish species. However, more focused fieldwork is needed to confirm presence or absence of key species. The ESIA/ESMP will be updated to address the above listed gaps and any materially changes due to the detailed design proposed by the EPC Contractor. The updated ESIA also entails a series of additional studies and plans which included: streamlined of CHA; fish surveys; land and asset valuation; a stakeholder engagement plan and Grievance Mechanism (GM).These additional studies started in December 2021 and will be completed by appraisal. Identification of Risks and Impacts of non-private activities. Kamanyola Substation and the four Transmission Lines are associated facilities. EGL has agreed to share with Bank in January 2023 a road map for carrying out E&S due diligence associated with the above listed associated facilities. For investments under REL's Corporate Social Responsibility programme, an ESMF will be prepared by REL no later than 90 days after the start of civil works and as part of the Corporate Social Responsibility programme package. For Technical





Assistance (TA) activities, CSs/EGL shall ensure that the consultancies, capacity building, training, and any other technical assistance activities under the Project are carried out in accordance with terms of reference acceptable to the World Bank, that are consistent with the ESSs. In addition to WBG’s PS and ESSs, national standards and permitting requirements will apply to the following: additional quarry sites ; blasting activities; updated ESIA reports and access roads. Fishers will be required to purchase permits for fishing to limit the risk of overfishing. The updated ESIA/ESMP includes information on the migratory fishes and a cumulative impact assessment (CIA). Scope of CIA includes existing and Future Hydropower Developments within the watershed; transmissions Lines ;master Plan for the Development of the Ruzizi Plain; Water Abstraction for Use as Potable Water; Gishoma Peat-Fueled Power Plant, climate change; anthropogenic pollution; soil degradation; natural hazards, etc.. It will extended in the updated ESIA to the Ruzizi Delta Park and Lake Tanganyika. Relevant Valued environmental components (VECs) include :River hydrology; River geomorphology; fish and fish habitats including fish migration; Ruzizi delta RAMSAR site and Ruzizi national park; Lake Tanganyika; Social environment of the Ruzizi Plain; labor influx; livelihoods and ecosystem services. Potential significant cumulative impacts include (i) impacts on community health and safety because of the overlap of the Project quarry and access roads with roads used by the Gishoma peat-fueled power plant; (ii) Ruzizi IV – additional loss of fish habitat, and (iii) impacts on community health and safety and the labor market caused by cumulative influx of job seekers attracted by opportunities associated with the construction of the associated transmission lines. The CIA presented in the ESIA will be refined with the guidance of the Bank, and this before appraisal. for e.g., it will need to have stakeholder involvement, VEC identification and scope shall include indirect affected areas (including Burundi). The updated ESIA report also includes a GHG Assessment and Climate Resilience as climate change is considered to pose a threat to the Ruzizi III HPP. Retention of sediments by the reservoir, resulting lowered sediment loading in the river, impacts on the river morphology; flow regime with the discharge of peak and off-peak flows; management of the environmental flows downstream of the dam; etc. are some of the anticipated cumulative impacts to be assessed once the detailed design is available. Management Programs: E&S mitigation measures are listed in the updated ESIA, and additional studies will be consolidated and incorporated in an Environmental and Social Management Plan (ESMP). Programs to be reflected in ESAP and prepared by REL include : Environmental & Social Management system; Community Waterborne Disease Strategy, operational Risk Assessment and Public Safety Plan; Emergency Preparedness Plan; Influx Management Strategy; Corporate Social Responsibility Programme; Reservoir Zoning Plan; Alien Fish Management Plan; BMP, etc.

**Areas where “Use of Borrower Framework” is being considered:**

Use of borrower framework is not being considered for the project.

**ESS10 Stakeholder Engagement and Information Disclosure**

ESS10 will apply to stakeholder engagement activities to be carried out by the contracting states. These will include construction, operation and maintenance of roads improvements, water supply, health, education, flour mills; creation and operation of the regional dispatching center; operation and maintenance of Ruzizi III Bridge over the Ruzizi river; provision of overall project area security, watershed, cascade management, Transboundary Coordination and dialogue; construction and maintaince of Kamanyola Sub-station and the four Transmission Lines described under ESS1; supervision of the effective compliance of the Project with Environmental Permit conditions is issued by environmental authorities in DRC and Rwanda. The contracting states/EGL will be asked to engage with relevant stakeholders around the WB-supported activities. EGL will prepare by appraisal a Stakeholder Engagement Plan (SEP) consistent with with the World Bank’s Environmental and Social Standards.

Requirements for Stakeholder Engagement and Information Disclosure for private sector-led activities:



This standard is relevant under PS1: Private sector-led project activities must also include stakeholder engagement for all concerned parties including those affected by subcomponent activities and other parties that may be involved in service delivery.

A Stakeholder Engagement Plan (SEP) was prepared as part of the ESIA (2021) Report which establishes the general principles for the SEP. During the preparation of the ESIA the following consultations were conducted: Two information workshops on the project, intended for institutional stakeholders: one in DRC (Bukavu) on 27 January 2020 and the other in Rwanda (Kamembe) on 5 February 2020; Three preliminary public consultation sessions for communities: two in Rwanda (Bugarama and Nzahaha) on 28 August 2020, and the third in South Kivu (Kashenyi/Kamanyola) on 12 October 2020. Once the ESIA has been validated by the Developer, a new round of consultations with communities and other stakeholders will be organized in both countries to receive, process, and integrate public comments. In addition, these consultations will be oriented to understand women’s security and health concerns and how these communities address GBV issues. Women-only consultations will be undertaken in a safe and enabling places and conducted by women facilitators. The updated/ESMP ESIA will then be the subject of a public inquiry procedure in the DRC and, possibly, further public consultations in Rwanda.

The following project stakeholders have been identified during the ESIA process to be either directly impacted by the project or to have an interest in the project: Supranational organizations: EGL, and Lake Kivu and Ruzizi River Basin Agency (ABAKIR); Central administrations: Ministry of Environment of both countries, represented by Rwanda Environment Management Authority, (REMA) and ACE (DRC), and Energy ministries and agencies, the Kivu Lake Monitoring Program (KLMP) incorporated in 2020 in REMA; the Regional Coordination Unit of the Master Plan for the Development of the Ruzizi Plain and Agricultural producers’ organizations (of which there are currently around a hundred in the Plain). Devolved administrations and relevant institutions: Ruzizi District (Rwanda) and South Kivu Province (DRC); Devolved administrations: Municipalities, territories, sectors and villages; Communities: local populations including IPs, village leaders, elders and other opinion leaders; Civil society organizations (CSOs): professional associations and groups, professional unions, local and national NGOs; Others: Donor representatives and other partners. To avoid any future misunderstanding or misrepresentation that could lead to disputes or conflicts with cooperatives in the Ruzizi Plain, the updated ESIA/ESMP report recommends maintaining a dialogue with representatives from these organizations.

A standalone SEP will be prepared for the Project, in line with the World Bank Group’s Performance Standards (PSs) and will expand on the SEP established for the ESIA. The SEP will be disclosed in country and by the Bank prior to project appraisal. The SEP will be implemented throughout Project implementation and shall be updated regularly to reflect possible shifts in the stakeholder environment. The SEP will undertake an engagement process with affected Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities, as required in ESS7 to promote effective project design, to build local project support, and to reduce the risk of project-related delays or controversies. This engagement process will include stakeholder analysis and engagement planning, disclosure of information, and meaningful consultation, in a culturally appropriate and gender and inter-generationally inclusive manner.

The Client will ensure that a grievance mechanism (GM) sensitive to SEA/SH complaints is established for the project, as described in ESS10, which is culturally appropriate and accessible to affected Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities and takes into account the availability of judicial



recourse and customary dispute settlement mechanisms among Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities. The GM shall include procedures for handling SEA/SH incidents in an ethical and confidential manner, following a survivor-centered approach

## **B.2. Specific Risks and Impacts**

**A brief description of the potential environmental and social risks and impacts relevant to the Project.**

### **ESS2 Labor and Working Conditions**

#### **ESS2 Labor and Working Conditions**

This ESS will apply to the activities undertaken by the Contracting states activities and associated facilities. The Contracting States/EGL will develop and implement Labor Management Procedures (LMP) consistent with ESS2 requirements related to labor and working conditions for public sector activities under the project, including the activities of the JIU.

The ESS2 will apply to “the Contracting States” Activities since they are considered Non Private Activities under OP4.03. They have already in place adequate labor and working conditions policies for their workforce, including a grievance mechanism, and will be asked to maintain the same if deemed adequate. As noted above, the Contracting States will develop and implement Labor Management Procedures (LMP) consistent with ESS2 requirements related to labor and working conditions for public sector activities under the project, including the activities of the JIU. Consistent with ESS2, prepare, adopt and implement occupational health and safety (OHS) including COVID19 measures for Project workers as part of the ESMF for CSR initiatives.

Overview of the relevance of PS 2 for the Project:

Performance standard 2 is considered relevant. The project will include direct ( REL) and contracted workers (OE, EPCs, Panel of Experts) as well as third party suppliers. The development, construction and operation of Ruzizi III is expected to require a significant number of workers, requiring an estimated workforce of 500-1,000 workers during the period of peak construction activities. Labor and working conditions, including risks related child and forced labor, workers camp and OHS, will be identified and assessed under ESIA update.

Worker influx and a worker camp (one camp planned in Rwanda) is anticipated. REL requires in their contracts with the EPC Contractor, that they shall recruit construction workers from Burundi, DRC and Rwanda, with preference given to recruitment of workers from Project affected communities. The Contractor shall use its best efforts to ensure that a minimum of 25% of unskilled workers are from Burundi, 25% from DRC, 25% from Rwanda and overall, 15% of the total working hours of employees shall be women. Although the Project will make an effort to hire locally the workforce required to construct or rehabilitate the diverse civil works, it is likely that specific skills are not found locally and therefore there will be a need to hire international or national workers from other parts of the country(ies). Two scenarios have been considered: low-in-migration would represent 5 and 26% of the existing population in each village (6 villages) and high in-migration between 13 and 65%, assuming the influx would be spread regularly within these 6 villages.

As noted in its draft ESMS currently under review by the Bank, REL will require the EPC Contractor to prepare a Recruitment Policy and Local Skills Development Programme, that will among others, describes the Contractor’s recruitment procedures and employment management systems for contractors.



It is also likely that the project will require the use of private security services, but this will be in limited numbers and around the project sites where equipment will be stored.

The EPC contractor for civil works is responsible for the construction and maintenance of worker's accommodation and shared base camp facilities (recreation, medical center, etc.), and for the provision of basic services. As part of the technical offers, each EPC contractor will provide a preliminary Occupational Health & Safety Plan and job hazard analyses. Each contractor will be responsible for the training of its own personnel and visitors. The Occupational Health & Safety Plan of EPC contractors will include mandatory EHS training to its workers before accessing the construction site; the training will last 0.5 days for skilled workers and accompanied visitors and 3 days for non-skilled workers. The EPC Contractor will be required to develop human resources (HR) policies and procedures consistent with the requirements of PS2, which will be provided in the Environmental and Social Action Plan (ESAP).

REL has developed HR policy for management of its employees. The policy is available for staff in English. The policy includes the labor management principles that will be adopted and will ensure that workers are provided with working conditions that are in line with national labor laws of Burundi, DRC and Rwanda and consistent with World Bank Group's Performance Standards (PSs), including provisions for nondiscrimination, equal opportunity, and free collective bargaining. The HR policies and procedures will be reviewed during appraisal to ensure that these are aligned with the PS2 requirements that include ensuring that such workers are provided with working conditions that are in line with national labor law, including provisions for non discrimination, equal opportunity, and free collective bargaining and language aspects (French, English and various local languages) where it is anticipated that there will be language barriers between workers, in particular between management and staff, this can lead to misunderstandings and workplace conflict and possibly pose OHS risks. For contracted workers that will be mainly be employed by the EPC contractor, REL will prepare an Labor Management Procedures (LMP) that will cover private sector activities by Project Appraisal. The LMP will also include a worker grievance mechanism (GM), which will be available to all Project workers and will be aligned with national labor legislation as well as PS2. The GRM will include ethical and confidential ways to receive and manage complaints related to SEAH. The HR Policies and Procedures will also include Code of Conduct with specific language on expected behavior in particular related to sexual exploitations and abuse (SEA) and sexual harassments (SH), with applicable sanctions in case of non-compliance and including prohibitions against sexual activity with anyone under the age of 18. The Project will ensure that regular trainings in local languages are conducted by the contractor for workers on labor provisions, codes of conduct, SEA/SH risks and consequences, and the grievance redress mechanism sensitive to SEA/SH.

The accommodation camps for the Project's workers will be built and operated in line with the WBG Guidance note on Workers' Accommodation.

REL has prepared an Influx Management Strategy (IMS) as part of the updated ESIA/ESMP and shall be discussed with local authority, finalized and disclosed locally. It will be finalized with the objective to integrate selected influx management interventions into existing management plans. This will include monitoring and evaluation indicators to assess their effectiveness. A Security Risk Assessment (SRA) and Security Management Plan (SMP) will also be required to ensure that risks related to the use of security services are managed in accordance with the Banks Good Practice Note on Assessing and Managing the Risks and Impacts of the Use of Security Personnel.



### ESS3 Resource Efficiency and Pollution Prevention and Management

#### ESS3 Resource Efficiency and Pollution Prevention and Management

The scope of activities under responsibility of the Governments of Rwanda, Burundi and DRC is better defined, and include operation and maintenance of Corporate Social Responsibility CSR programme activities (roads improvements, water supply, health, education, flour mills); construction and maintenance of Kamanyola Sub-station and the four Transmission Lines described under ESS1. These will generate during construction and operation hazardous and non-hazardous waste. The ESMF for CSR Initiatives will identify and assess all risks and impacts for projects activities to ESS3 (including energy, water use, raw materials, air emissions, vegetation and soil loss, waste management). The final Corporate Social Responsibility programme shall integrate E&S considerations and include an ESMF. E&S due diligences for associated facilities (Update of existing ESIA reports) and Corporate Social Responsibility program (E&S screening, preparation of an ESA instrument based on screening findings) will identify and assess all risks and impacts for subproject activities to ESS3 (including energy, water use, raw materials, air emissions, vegetation and soil loss, waste management (such as fecal sludge), etc.) and will propose standardized measures to address these risks.

#### PS 3 Resource Efficiency and Pollution Prevention

Performance Standard 3 is considered relevant. The updated ESIA will identify and assess all risks and impacts for project activities to PS3 (including energy, water use, raw materials, air emissions, vegetation and soil loss, waste management (such as fecal sludge), etc.) and will propose standardized measures to address these risks.

Waste management: The typical waste generated by hydropower schemes such as Ruzizi-III include the following:  
Non-hazardous waste: Waste from the camps and canteens, paper, cardboard, plastics, wood and vegetation, inert wastes from construction and demolition (concrete, scrap iron, bricks, etc.). The amount of domestic waste to be generated from the workers' camp can be estimated at 0.5 kg/per person/day, or about 500 kg/day for 1,000 workers. Hazardous waste: Engine oils and used hydraulic fluids, residues of paint, solvents and resins, fluids from transformers, medical wastes, sludge from septic tanks, and various concrete additives. Quantities of hazardous waste are variable and project specific. Explosives for the tunnel construction are considered as hazardous substances and will be handled accordingly. The EPC Contractor bidding documents require the Contractor to prepare a waste management plan, which will require preparation of a detailed inventory of wastes, estimation of quantities and identification of management solutions in alignment with Rwanda and DRC regulations and Good International Practice. Preliminary mitigation measures to manage hazardous and non-hazardous wastes are being included in the ESMP and other will be subsequent instruments and tools (Hazardous Substance Handling and Storage Management Plan, Site Waste Management Plan and Pollution Prevention and Control Plan as part of the Construction Environmental and Social Management Plan-CESMP) to be prepared by the EPC.

Raw Materials and resource efficiency: The material (primarily rock and aggregates) needed for upstream cofferdam; dam, LB platform; Open air spillway - Inlet; bottom Outlet; diversion tunnel; power waterways; headrace tunnel; surge tank; access tunnel; powerhouse; Switchyard; access roads, bridges, etc.) will be sourced from excavation works and from a licensed borrow areas. The Ruzizi III transmission line would be made up of a variety of materials, from concrete and steel for the foundations, steelwork for the tower and aluminum/steel for the conductors. The current ESIA report has identified and assessed a number of Quarries and Borrow Areas and the EPC Contractor shall prepare and implement a Quarry and Borrow Area Management Plan for areas to be exploited for rockfill material, aggregates and rip rap material as well as for the other borrow area (sand, gravel, laterite clay) that details all the



E&S measures to be implemented for the operation of these sites: Basalt from the Ruganzu quarry situated on the reservoir rim (high on the hillside on the Rwanda side. A rock crusher will be installed at the quarry; Borrow area for core clay also situated on the reservoir rim on the Rwanda side; a potential quarry situated near the Ruzizi River on the left bank between the contractor's camp and the powerhouse. A rock crusher will be installed at the quarry. The Contractor shall prepare and implement a Blasting Management Plan. Blasting will be permitted only when proper precautions are taken for the protection of persons, the Works, and property, with written permission from the relevant local authorities.

The Contractor shall be responsible for the design, provision, construction, operation, and maintenance of all accommodation and related facilities required for his labor. The accommodation provided for the Contractor's Personnel in a camp or an alternative structure outside of the Works area will comply with the provisions of the 2009 guidance note by IFC and the EBRD on Workers' accommodation: processes and standards.

Energy and water efficiency: The water requirements will be determined by the EPC Contractor during the detailed design. It can be anticipated that water will be required for industrial uses (e.g. washing & screening of aggregates, concrete batching, field compaction, dust suppression, wet-drilling) and domestic uses (e.g. drinking, food preparation and other canteen operations, laundry, bathrooms and other sanitary facilities located within the Project temporary facilities such as accommodation camps and offices. Water will be abstracted from the Ruzizi River, and where necessary, treated to applicable standards and distributed to construction facilities through buried pipelines.

Soil erosion and runoff: Soil erosion might result from construction activities where the vegetation cover is removed. Main soil erosion will result from excavation. Soil erosion and landslides may occur along the access roads, during the construction period, particularly in the rainy season. An erosion control and sediment management plan will be prepared during the EPC design activities and will consider both structural and non-structural measures to manage and control erosion and sediment mobilization.

Management of air pollution: drilling, blasting, loading, hauling, conveying rocks, crushing and transporting the final product are all activities which generate dust. Vehicle movements on unpaved roads and excavation activities, especially in the dry season will generate dust.

Noise and vibrations: During the construction phase, noise could be generated by the construction/rehabilitation works, using construction machinery and the movement of vehicles.

GHG emissions: The Project is expected to generate significant greenhouse gas emissions during the construction phase. A GHG calculation will be performed as part of the project preparation. The clearance of vegetation in the impounded area (46 ha) prior to filling the reservoir with water will limit the formation of chemical compounds resulting from the anaerobic decomposition of these materials, compounds which may prove to be toxic (H<sub>2</sub>S, NH<sub>3</sub>) or with a climatic impact (CO<sub>2</sub> and CH<sub>4</sub>). The overall GHG emissions covering the construction period and a 100-year operation period have been calculated and in Rwanda the project is expected to result in a 66% reduction in the national emission intensity for electricity production.

Cumulative impacts: The assessment shall focus on the Project's contribution to cumulative impacts on hydrology, geomorphology and aquatic biodiversity in the Ruzizi River extending to the Ruzizi Delta Park and Lake Tanganyika variations of Reservoir Water Level and Downstream Flow.

#### **ESS4 Community Health and Safety**

ESS4 Community Health and Safety. The relevance of ESS4 is expected to apply to technical assistance activities including cascade management, Transboundary Coordination and dialogue and capacity building. It may also be relevant with regards to security management as the CSs have to agree with Company on security plan for Project,



and ensure security beyond works areas. In addition, ESS4 will apply to Operation and maintenance of Ruzizi III Bridge over the Ruzizi river. In accordance with ESS3, the ESMF to be prepared for REL's Corporate Social Responsibility investments shall include measures to manage traffic and road safety risks, assess and propose measures manage specific risks and impacts to the community arising from CSR initiatives. The update ESIA reports for construction and maintenance of Kamanyola Sub-station and the four Transmission Lines described under ESS1, shall also propose measures to manage traffic and road safety risks.

PS 4 Community Health, Safety and Security. Performance Standard 4 is considered relevant. The flow may entail downstream impacts on fishery activities and on disease vectors (disease vectors promoted by slow-moving water conditions that would otherwise not thrive in faster flowing unregulated rivers). During the construction phase, the adverse impacts that have been identified are related to road safety due to increase of vehicle circulation, community accidents with project sites that may have improper signage, an increase of communicable diseases such as COVID-19, TB and spread of STDs, exacerbation of SEA/SH risks due to worker influx as well as increased pressure on existing health system and other social infrastructure, risks related to use of security services, project impacts on water quality, impacts on health due to air pollution and disturbance from noise, dust and vibration generated by project activities and natural hazards (project may cause increased frequency or such events may cause impacts on project structure). Hazards for community health and safety during operations are related to structural failures of the Ruzizi III HPP, hazardous substances, potential increase of waterborne vector borne diseases, noise pollution, general hazards from project facilities, water quality, natural hazards (e.g. increase in floods), potential drowning due to peak and off-peak flows and periodic testing and electrical hazards. Measures to minimize the impacts will be identified in the updated ESIA/ESMP and appropriate mitigation measures will be included in the site specific management plans.

Road safety. The Project construction phase represents several risks to community health and safety, and these are related to noise and dust from worksite and Project traffic. The Feasibility Study indicates that the duration of the civil works is 1,168 days. Therefore, assuming that a typical truck has a capacity of ~60 m<sup>3</sup>, there will be in the order of 36 return-trip truck journeys per day on average, and during periods of peak activity there may be up to c. 50-60 return trips per day. The updated ESIA will make a preliminary estimate of the order of magnitude of truck movements and propose a generic traffic management plan. Dust and other particle pollution by construction activities can negatively impact the health and the quality of life of people working on and living close to the sites. REL shall ensure that EPC contractors prepare and implement a Dust Management Plan as well as a Blasting Risk Management Plan, which shall include a communication strategy with Affected Communities to inform and manage perceptions of the risks of blasting activities. Underground and blasting in quarries will occur. Details design will be available in the next stage of the project, and EPC will use it to prepare and implement a Blasting Management Plan. Transportation, storage and handling of explosive shall be performed according to the rules and regulations in DRC and Rwanda and relevant international standards. If crops and livelihoods are impacted by blasting activities, compensation may will be needed and handled by the EPC. Hydropeaking operation, dam failure, rapid change in river water level during turbine ramp-up, will represent community safety risks, the updated ESIA will address these issues and propose mitigation measures. Dam Safety: according to the International Commission on Large Dams' definition of a "large dam", Ruzizi III is a large dam as it will be 51 meters in height. An Independent Panel of Experts for dam safety will be appointed before appraisal, and the recruitment process is underway by the AfDB (ToRs cleared by the WB). This a risk to the project as the Panel would have been in place to review the ESIA's. The panel will be required to review by appraisal the design and all aspects of the work, including flood hydrology, hydraulics, seismology, geology, concrete technology and turbines designed to operate in sediment laden water, and the Construction Supervision and Quality Assurance Plan including TORs, RFP, and budget estimate for construction supervisory consultancy. In addition, a dam break risk assessment will be undertaken in alignment with the approach



recommended by the International Commission on Large Dams. Risk reduction measures will be integrated into the design to ensure that the overall risk of dam break is tolerable as per ICOLD risk acceptability criteria. Community exposure to disease: the impounding of water created by dams often results in an increase in water related vector borne diseases such as malaria, schistosomiasis, and filariasis (including onchocerciasis). Site specific Security Risk Assessments (SRA) will be carried out by REL prior to contractors' deployments and if necessary, Security Management Plans (SMP) will be elaborated within the same timeframe to ensure that the risks are adequately mitigated. Where the use of security personnel has been established, REL will prepare a Security Personnel Management Plan prior to their recruitment and deployment and in accordance with the Banks Good Practice Note on Assessing and Managing the Risks and Impacts of the Use of Security Personnel. A SEA/SH Prevention and Response Plan (SEA/SH Action Plan) will be developed for the Project and annexed in the ESMP, which will outline relevant risk mitigation measures, including an accountability and response framework, in alignment with the World Bank's Good Practice Note Addressing Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH) in Investment Project Financing involving Major Civil Works (2d ed. 2020). REL shall develop an appropriate accountability and response framework, which shall include an independent project Grievance Mechanism specifically for SEA/SH complaints to be handled in an ethical and confidential manner, following as well as survivor-centered response protocols. In addition, REL will develop codes of conduct for all project staff, including personnel and Project workers, which outline prohibited SEA/SH conduct and applicable sanctions and ensure that all workers receive training on SEA/SH and the codes of conduct. The project will likewise ensure that a GBV risk assessment for the relevant project zones is undertaken as well as GBV service provider mapping and assessment of quality of services to accompany the SEA/SH Grievance Mechanism. Finally, the Project will undertake community awareness-raising and independent consultations with women in safe and enabling spaces (conducted with female facilitators) to assess risk for women and girls in project zones. All SEA/SH requirements will likewise be outlined in the bid documents for prospective contracting entities. Regarding staffing, a GBV Specialist will be engaged as part of REL's E&S team to implement and ensure compliance with the mitigation measures established in the SEA/SH Action plan.

### **ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement**

#### **ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement**

ESS5 is relevant for land acquisition activities to be carried out by the Contracting States. The Implementation Agreement signed between the CSs, EGL and REL defines the distribution of responsibilities regarding the Project's acquisition of land and land rights. The CSs will provide all State lands or lands possessed by any Public Authority needed for the Project; shall acquire by agreement with private landowners or by expropriation the real property rights possessed by private landowners, and grant rights to these lands to REL; shall provide all necessary State-owned and private-owned land rights to REL in compliance with ESS5. According to the project, the basis of this framework is that in order to make the land available, the 3 CS would need to collectively fund the acquisition. Raising a scenario where for example 1 CS would need to fund acquisition of land in another CS. As a way of getting comfortable with this and ensuring a framework that could be relied on by the CS to fund acquisition of land in each other's territory, the CS therefore required that (i) a neutral party REL develop the RAP and (ii) a Joint Implementation Unit (JIU) setup between REL, EGL and the 3 Contracting States is responsible for approving land acquisition budget and supervise implementation. The RAP will be implemented by REL under ESS5. A Joint Implementation Unit (JIU) has been established in July 2021 by the Contracting States/ EGL and REL. The JIU has the overall responsibility of approving the Resettlement Action Plan, including its budget. It will also acquire the private lands and land rights required for the Project. Each contracting State will provide its share of the funds





necessary for the RAP implementation into an account from which REL will draw to pay the compensations and other assistance measures.

REL has the overall responsibility of the Project management, including all Environmental and Social Aspects. As such, REL has the responsibility of preparing and implementing the Resettlement Action Plan. This includes the census of affected persons, identification and survey of affected properties, inventory and valuation of affected assets. REL will establish an Environmental and Social Supervision Unit to coordinate and oversee the effective implementation of the Resettlement Action Plan. This E&S Supervision Unit will be managed by REL E&S Manager and will include a team dedicated to the RAP implementation.

Anticipated impacts: The Project's components will be installed on both the Rwanda and DRC riverbanks. No Project components are situated in Burundi. Therefore, no land acquisition will be required in Burundi. A rockfill embankment dam (51 m in height) will be constructed creating a small reservoir occupying 46 ha and inundating areas of agricultural land in both Rwanda and DRC. However, no dwellings or structures are impacted by the dam construction and reservoir impoundment. For all components, whether permanent or temporary (used only for construction purposes), the land will be acquired permanently. The Project's land requirements amount to 226.28 ha.

The local communities' means of livelihood are predominantly based on crop farming. Fishing activities do occur but are not a main source of livelihood for the local communities. The impact producing factors for local communities' livelihoods are therefore mostly limited to the land acquisition process during pre-construction and construction, and to changes in the river flow during operation. During pre-construction: the land acquisition process and the involuntary resettlement process will occur before the start of any construction activity and will be limited to the Project's footprints. During construction, no construction activity will occur outside the Project's footprints. No new land acquisition is expected to occur. No impact on fishing activities or fish farming are expected during construction. During operation, the changes of the river flow are not expected to cause any discernible change for agricultural activities along the riverbanks, for fishing activities or for fish farming activities downstream of the powerhouse release.

A RAP is currently being prepared by a consultancy firm (SLR Consulting) and is expected to be finalized prior to Project appraisal. The draft RAP covers the Projects components as they are defined in the Feasibility Study, the preliminary report has identified the total number of PAHs that will be physically displaced by the project to be 7 in Rwanda and 50 in DRC. A total of 841 PAHs in Rwanda and 1,546 PAHs in DRC are expected to be impacted both physically and economically. The RAP did not find any involuntary displacement impact in Burundi. SLR/REL social survey Jan. 2022 found several Batwa families living amongst the local communities and at least 11 families would be affected by the Project land acquisition (based on a survey sample of 20% of the affected households, 5 in Rwanda and 6 in DRC). None of the physically displaced households has been identified as renting their house.

The socioeconomic survey identified the vulnerable households, those that are landless households, women-headed households, elder-headed households, disabled-headed households and Historically Marginalized Households. According to these criteria 38% of the surveyed households are vulnerable, with a percentage of vulnerability which is higher in DRC (47%) than in Rwanda (22%). Notably, 8% of surveyed households (11% in DRC and 2% in Rwanda) fall into more than one category of vulnerability. The two categories that tend to overlap the most are women-headed households and landless households: in DRC, where this trend is most evident, 9% of women-headed households are



landless. The socio-economic baseline assessment also discovered that gender biases exist in the access to land. These gender biases may lead to women's individual eligibility to compensation not being respected or it will be more difficult for them to secure access to replacement lands with regards to the resettlement process.

At a minimum, the loss of these assets will be compensated for by the Developer at full replacement costs. Land for land compensation will be prioritized, however, shall there be challenges in finding replacement land due to land scarcity, the RAP will need to include a robust livelihood restoration plan (LRP).

REL will consider feasible alternative project designs to avoid the relocation of Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities from communally held or attached land and natural resources subject to traditional ownership or customary use or occupation. If such relocation is unavoidable REL will not proceed with the Project unless FPIC has been obtained; REL will not resort to forced eviction, and any relocation of Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities will meet the requirements of PS5/ESS5.

#### **ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources**

##### **ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources**

Relevance of ESS6 is considered as the scope of activities under responsibility of the Governments of Rwanda, Burundi and DRC include ; land acquisition, Ownership & Maintenance of Corporate Social Responsibility Initiatives (roads improvements, flour mills, etc.); cascade management, watershed and transboundary coordination/monitoring of cumulative effects on aquatic ecology; construction and maintenance of Kamanyola Sub-station and the four Transmission Lines described under Section C. Land acquisition would avoid critical natural habitats and other sensitive environmental, minimizing land acquisition as set out in relevant ESSs. The ESA instruments for CSR Initiatives and associated facilities will consider not only fauna, flora, species of conservation concern, but also the integrity/fragmentation of habitats. The final of Corporate Social Responsibility program will include E&S considerations and an ESMF. Consistent with ESS6, the ESMF and site-specific environmental and social instruments (including ESIA and ESMPs) shall spell out requirements for assessment and mitigation measures to ensure that Project activities do not alter or cause the destruction of critical and/or natural habitats. The updated ESIA/ESMP includes a framework Biodiversity Action Plan (BAP).The BAP covers the biodiversity mitigation requirements that will fall under the responsibility of REL until such time as responsibility for implementing the commitments are agreed and can be assigned to other government agencies or consultants for implementation. However, to meet ESS6 requirements, and as agreed with REL and EGL, additional due diligences including the preparation of a BMP and Offset plan may be required. REL and EGL shall refer to ESS6 Guidance note for Borrowers for more details about expected content of the BMP. Some activities of the BMP and Offset plan will be implemented by the CSs including Basin and regional entities such as ABAKIR. Mitigation measures specific to Critical habitat (CH) will need to be presented. For CH, a demonstration that a net gain will be achieved is needed while for natural habitat (NH), the measures must demonstrate that no net loss is achievable.

The updated ESIA contains a preliminary CH and NH habitat assessment and SLR has determined that Ruzizi River is a Critical Habitat for fish and natural habitats because of the presence of two Critically Endangered fish species (Chiloglanis ruziziensis; Chiloglanis asymetricaudalis) and three migratory species of fish (Acapoeta tanganicae; Labeobarbus leleupanus; Labeobarbus somerini). Outcomes of the CHA are based on thin evidence. The CHA applies the IFC PS6 thresholds which don't work well for fish, as a result the IFC thresholds have not been properly applied.



More focused fieldwork is needed to confirm presence or absence of key species. The review of the ESIA by the Bank may lead to the requirement of implementing a biodiversity offset, as such it is advisable that some offset scenarios be presented in the Biodiversity Action Plan. Ecological flow studies/analysis shall meet essential needs of species/riparian habitats.

Overview of the relevance of PS 6 for the Project: PS 6 is considered relevant for the project. Construction of dam, access road, powerhouse, camp, spoil disposal areas will likely have impact to biodiversity. Clearing of the reservoir footprint (46 ha) will be needed prior to reservoir filling. Bushmeat remains popular with many people in the project area. Construction of the transmission line, excavation and foundation works will entail tree and vegetation removal (or height reduction). Demand may increase due to the presence of an estimated workforce of 500-1,000 workers during the period of peak activities, encouraging hunting, trapping or the poaching of many consumable species. Fifty-nine (59) species were recorded in Hillslope Grassland / Savannah during fieldwork, which represents 26% of the project area species. Although the 43 ha of open river is classified as modified habitat for aquatic ecology, it is classified as largely natural habitat for terrestrial fauna as it still supports species such as hippopotamus, although water birds were few in number and diversity. The remaining terrestrial habitats comprise modified habitats (mostly agriculture) and occupy 162 ha (or 63% of total habitat area in the Project area). The Project is situated on the Ruzizi River which flows from Lake Kivu to Lake Tanganyika. Historically, fish species present in the river included the Critically Endangered species, which triggers criterion 1 of the WBG's PS6 on Critical Habitat. As stated above, per the updated ESIA/ESMP, Ruzizi River is determined by SLR as Critical Habitat for fish. In addition, other aquatic impacts include loss of critical fish habitat for reservoir (2.2 km), reduction of aquatic fish habitats in dewatered stretch with Minimum Flow (10m<sup>3</sup>/s)(5.5 km); etc. Additional due diligence will be conducted including stakeholder consultations, additional information on the migratory fishes and the cumulative impacts on access to natural resources and ecological services; appropriate environmental flow (EF) to guarantee favorable ecological conditions for the fish and aquatic biodiversity in the dewatered stretch of the Ruzizi River between the dam and the powerhouse, etc. REL will then update BAP and ESMP (operation phase) to include the monitoring of biological and hydrological data (flow/water level) at key locations downstream of the dam.

A Biodiversity Action Plan (BAP) is a requirement of WBG's Performance Standard 6 for projects located in Critical Habitat. The updated ESIA/ESMP includes a framework BAP, which describes the strategy and timeline for identifying actions to deliver net gain or no net loss including mitigation measures that fall outside the ambit of the EPC contractor. The project is required to compensate for the 'loss' of 48 ha of largely natural terrestrial habitat with the aim of achieving no net loss, and for 43 ha of modified critical aquatic habitat with the aim of achieving net gain for fish species. Mammals are poorly represented in the project area. Only one threatened mammal species is present, namely hippopotamus, which is present on reaches near Bugarama. The project area is located in the southern part of the Albertine Rift Montane Forests terrestrial ecoregion, which supports an estimated 732 avifauna species. However, many of the habitats and landscape of the ecoregion are absent in Project area and avifaunal species richness is significantly lower.

Several Ecosystem Services are identified within the project area, including fishing, gathering, hunting, traditional medicines, wood collection and freshwater. The updated ESIA shall need additional information on the regulating/supporting services associated with Hillslope Thicket / Forest, Riparian Wetland, Hillslope Grassland / Savanna, etc.

Mitigation actions to address project impacts on these ecosystem services shall be outlined in the Biodiversity Management Plan (BMP) to be prepared to prevent and minimize potential negative impact to the flora and fauna by the project activities. The Biodiversity Management Plan (BMP) and Offset plan will be developed by REL and EGL by appraisal in case the additional fieldwork confirms presence of one Endangered range-restricted species. It will be a



two-step action : (i) develop a ToR, to be reviewed and approved by the Bank, to complete a biodiversity assessment, including a critical habitat assessment, and (ii) carry out the approved biodiversity assessment before the commencement of works and adjust mitigation strategy and BMP accordingly. The updated ESIA shall assess potential impact to terrestrial biodiversity, fish and Biotopes in downstream.

### **ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities**

ESS7 is currently considered relevant for the Project. Although not inextricably linked to the land they currently occupy or depend on its natural resources for their livelihood, Twa people of the Great Lakes or 'Batwa' are present in the villages directly affected by the Project. The social assessment carried out by the Project indicate that they reside in mixed settlements with other groups and form one part of a broader community. The 2012 and 2021 Pre-ESIA (SOFRECO) identified that they are present in the vicinity of the Project but concluded that they were not among PAP. The SLR/REL social survey January 2022 has found several Batwa families living amongst the local communities. It is estimated that ~20 families are living in the villages in the immediate vicinity of the Project in Rwanda and ~60 in DRC. At least 11 Batwa families have been identified as affected by the Project land acquisition. Despite the relocation impacts, it is not anticipated that the project will induce circumstances requiring FPIC as the IPs are living amongst the local communities and not living on land and natural resources subject to traditional ownership or under customary use or occupation. REL will therefore prepare a plan by Project Appraisal, such as an Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities plan or may consider a broader integrated community development plan, addressing all beneficiaries of the project and incorporating necessary information relating to the affected Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities.

### **ESS8 Cultural Heritage**

ESS8 is considered relevant because non-private activities include (i) REL's Corporate Social Responsibility investments (Electrification of villages; support to the development of fish farming and fisheries activities in the future reservoir; support to the development of sustainable water supply systems in the villages; support to roads improvement; Flour mills and small processing installation in the villages; Support to improve schools -construction of new rooms), and (ii) associated facilities (Kamanyola Substation and the four Transmission Lines-TLs). These investments will entail excavations and cemeteries and graves may be found adjacent to roads in the project area. In addition, construction of TLs and support to the development of fish farming and fisheries activities may affect sacred sites. The ESMF to be prepared for CSR investments and the updated ESIA for associated facilities shall include a Cultural Heritage and Chance Finds Procedure in accordance with national regulations. It provides guidance for notifying, evaluating, recording and managing previously unknown artifacts that may be discovered during construction. Contractors will be required prepare and implement a Cultural Heritage management and Chance Finds Procedure as part of the CESMP.

Performance standard 8 is considered relevant for the Project. The updated ESIA has identified impacts on tangible sites (mainly modern era churches, religious prayer sites and graves), impacts on intangible cultural heritage have been identified at this stage. The Contractor shall prepare and implement a Cultural Heritage management and Chance Finds Procedure as part of the CESMP. If cultural heritage elements located adjacent to a construction site or



the external boundaries of the future reservoir, will be protected from potential damages due to construction methods.

**ESS9 Financial Intermediaries**

The standard is currently not considered relevant for the project.

**C. Legal Operational Policies that Apply**

**OP 7.50 Projects on International Waterways** Yes

**OP 7.60 Projects in Disputed Areas** No

**III. WORLD BANK ENVIRONMENTAL AND SOCIAL DUE DILIGENCE**

**A. Is a common approach being considered?** Yes

**Financing Partners**

A common approach is being discussed/considered among the Financing Partners. Other FPs include the AfDB, AFD, EIB, EU, KfW, MIGA, BII. It has been tentatively discussed that the WBGs Performance Standards could be applied for the common approach. and will be memorialized in written arrangements with the Financing Partners. The adequacy of the Implementation Agreement will be evaluated in light of the E&S standards agreed to by the lenders.

**B. Proposed Measures, Actions and Timing (Borrower’s commitments)**

**Actions to be completed prior to Bank Board Approval:**

- Prepare, disclose and implement an updated ESIA including a GBV risk assessment
- Prepare, disclose and implement a Security Risk Assessment (SRA) and Security Management Plan (SMP)
- Prepare, disclose and implement an updated Resettlement Action Plan (RAP)
- Prepare, disclose and implement a Stakeholder Engagement Plan (SEP) with principles of Free, Prior and Informed Consent
- Prepare, disclose and implement a Grievance Mechanism (GM) which includes procedures for SEA/SH case handling
- Ensure that HR policies and procedures are in place along with a worker grievance mechanism (GM), available to all project workers and aligned with national labor legislation as well as PS2
- Prepare, disclose and implement Labor Management Procedures for Project’s non-private activities.
- REL will prepare, disclose and implement an Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities plan or may consider a broader integrated community development plan.

**Possible issues to be addressed in the Borrower Environmental and Social Commitment Plan (ESCP):**

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Possible issues to be addressed in the possible issues to be addressed in the Borrower Environmental and Social Action Plan (ESAP) under OP/BP 4.03:

- REL will develop and implement an Environmental and Social Management System (ESMS) in line with WBG’s PS1 and will retain suitably qualified E&S professionals to effectively manage the E&S risks and impacts linked to the operation of the hydropower plant as per Lenders’ E&S Requirements.
  - REL will regularly update its Stakeholder Engagement Plan (SEP) to ensure continuous and comprehensive engagement with affected stakeholders
  - REL to develop a Biodiversity Compensation Strategy and a BMP and Offset plan in case the project is confirmed to be located in critical habitat for fish
  - REL will establish an adaptive environmental flow release (EFR) strategy for Ruzizi III HEPP that responds to changes to optimize conditions in the dewatered section and Critical Habitat fish species, This adaptive EFR strategy should be documented as part of the project ESMP, and implemented in coordination with operations engineering staff.
  - REL to develop and operational Risk Assessment and Public Safety Plan;
- REL will prepare, disclose and implement a SEA/SH prevention and response plan including a service mapping and assessment of quality of services
- - REL will prepare, disclose and implement an Influx Management Strategy Influx Management Plan (IMP)
  - REL will ensure that EPC Contractors implement a workers’ grievance mechanism (GM) in line with WBG’s PS2. EPC Contractors will inform workers of the GM at recruitment and regularly explain how the mechanism works.
  - REL will maintain ongoing discussions and be an active stakeholder in the Ruzizi basin, and will actively engage with relevant government agency and ministry regarding implementation of mitigation to address cumulative impacts.

Possible issues to be addressed in the possible issues to be addressed in the Borrower Environmental and Social Commitment Plan (ESCP):

- The contracting states/EGL ensure that the consultancies, capacity building, training, and any other technical assistance activities under the Project are carried out in accordance with terms of reference acceptable to the World Bank, that are consistent with the ESSs.
- Update the existing ESIA reports prepared for associated facilities (Kamanyola Sub-station and the four Transmission Lines described under ESS1) by appraisal
- Prepare, disclose and implement a Stakeholder Engagement Plan (SEP)
- Prepare disclose and implement a LMP
- REL and EGL to prepare an ESMF as part of the Corporate Social Responsibility programme package
- EGL to ensure that REL Signs Memorandum of Understanding with local authorities or governmental agencies who will be involved in the implementation of the Corporate Social Responsibility programme
- The contracting states/EGL will, include E&S messaging in awareness raising and capacity building activities supported by the World Bank, as relevant
- The contracting states will regularly engage with relevant stakeholders regarding its activities supported by the World Bank, including watershed and transboundary dialogue
- The contracting states will maintain its existing grievance mechanism for its workforce within Lake Kivu and Ruzizi River Basin Agency (ABAKIR);



- The contracting states will implement biodiversity mitigation requirements that are not under the responsibility of REL and/or those that are assigned to other government agencies.

**C. Timing**

**Tentative target date for preparing the Appraisal Stage ESRS**

20-Sept-2023

**IV. CONTACT POINTS**

**World Bank**

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**Borrower/Client/Recipient**

- Borrower: Democratic Republic of Congo
- Borrower: Republic of Burundi
- Borrower: Republic of Rwanda

**Implementing Agency(ies)**

Implementing Agency: Ruzizi III Energy Limited (REL)

**V. FOR MORE INFORMATION CONTACT**

Public Disclosure



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## **VI. APPROVAL**

Task Team Leader(s):	Thierno Bah, Pierre Jacques Lorillou, Norah Kipwola
Practice Manager (ENR/Social)	Africa Eshogba Olojoba Recommended on 21-Dec-2022 at 11:44:5 GMT-05:00
Safeguards Advisor ESSA	Peter Leonard (SAESSA) Cleared on 22-Dec-2022 at 18:32:40 GMT-05:00