REPUBLIC OF RWANDA

Ministry of ICT and Innovation

RWANDA DIGITAL ACCELERATION PROJECT (P173373)

FINAL
ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

October 2021

EXECUTIVE SUMMARY

1. Project Background

This document is an Environmental and Social Management Framework (ESMF) for the "*Rwanda Digital Acceleration Project (P173373)"*. The proposed project is designed to accelerate country-wide digital transformation, as well as facilitate Rwanda's integration in the emerging regional digital market. The project will expand digital adoption, bringing more Rwandans online by addressing the major barriers that dampen demand for digital services and spearheading a series of interventions that promote digital inclusion. The project will also enable Rwanda to leverage critical enabling digital platforms and data-driven solutions to improve the efficiency of public service delivery and expand the adoption of digitally-enabled services. Finally, the project will also increase Rwanda's capacity to support digitally-enabled innovation and productivity-gains, by strengthening the local digital innovation and entrepreneurship ecosystem, supporting tech firms to move from start-ups to growth and the adoption of digital technologies in key sectors.

To implement the project, the Government of Rwanda is negotiating a loan from the World Bank (WB)/ International Development Association (IDA) and Asian Infrastructure Investment Bank *(AIIB)* as the co-financing agency. The total project amount is two hundred million US dollars (200m $) including 100$ million provided as a loan and 100$ million as a grant. The Project will be funded equally by the World Bank (WB)/ International Development Association (IDA) and the Asian Infrastructure Investment Bank (AIIB). The project will be implemented by the Rwanda Information Society Authority (RISA) under the Ministry of ICT and Innovation and the Development Bank of Rwanda (BRD).

2. Project objectives and Project components

Project Development Objectives: Increase access to broadband, digital public services, and strengthen the digital innovation ecosystem. To meet this objective, the proposed project is designed around four integrated and mutually reinforcing components:

Component 1: Digital Access and Inclusion (US$60.5 million)
This component will increase digital access and inclusion through investment in digital access enablers, focusing on under-served areas and groups. A series of interventions that address key demand-side barriers identified as hampering access to high-quality broadband will be financed. This includes support for smart devices affordability financing schemes, an umbrella basic digital literacy initiative, as well as a local connectivity access scheme targeting unconnected government offices, schools, hospitals, and marketplaces.

Component 2: Digital public service delivery (US$100 million)
This component will strengthen the GoR's ability to deliver digital services, allowing for increased resilience and adaptability to health, climate, and other shocks. Activities financed aim to respond to the COVID-19 crisis by 'building back better' through investments that strengthen GoR's ability to deliver services that are secure, data-driven, paperless, and cashless, and that improve both the front-end user-experience of digital public services as well as back-end government efficiency.

Component 3: Digital Innovation and Entrepreneurship (US$29.5 million)
This component aims to strengthen the local digital entrepreneurship ecosystem and talent base. Activities financed will support better innovation ecosystem coordination, better service provision by entrepreneurship support organizations (ESOs), expand access to early-stage financing, and promote advanced digital innovation capabilities.

Component 4: Project Management (US$10 million)
This component will finance project management associated with administering the project. It will finance the operational and staffing costs of the Single Project Implementation Unit (SPIU), including the hiring of expert consultants in key areas such as project management, technical advisory and implementation support. Operational costs would also be covered, including support for capacity building and training. This component will also cover continuous stakeholder consultation costs, and any larger M&E work undertaken.

3. Methodology

The methodology used to prepare this ESMF included document reviews that focus on World Bank ESF Requirements, National Policy, institutional and regulatory frameworks, different laws and ministerial orders applied to this project, World Bank Environmental and Social Standards, World Bank Environmental Health and Safety Guidelines, the Project Appraisal Document (PAD), interviews, stakeholder consultations at National and District levels. The information from the above documents together with the review of baseline information and from interviewed stakeholders were analysed and put together to prepare this ESMF.

4. Policy, Legal and Institutional Framework:

National regulations are discussed along with World Bank Environment and Social Standards, and international conventions ratified by Rwanda. To ensure a harmonized approach in addressing the E&S risks and impacts of the project, and as permitted under AIIB's Environmental and Social Policy (ESP), it was agreed that the WB ESF will apply to the project in lieu of AIIB's Environmental and Social Policy (ESP). The WB has categorized the E&S risks of the project as "Moderate" (which is equivalent to Category B if AIIB's ESP were applicable). Therefore, nine of WB's Environmental and Social Standards (ESS) will be applicable to the project, namely WB's ESS on Assessment and Management of E&S Risks and Impacts (ESS1), Labour and Working Conditions (ESS2), Resource Efficiency and Pollution Prevention and Management (ESS3), Community Health and Safety (ESS4), Land Acquisition, Restrictions on Land Use and Involuntary Resettlement (ESS5), Biodiversity Conservation and Sustainable Management of Living Natural Resource (ESS6), Cultural Heritage (ESS8) and Financial Intermediaries (ESS9).

Further, the proposed E&S instruments will be prepared and implemented in full compliance with Rwanda regulations including Ordinary Law N° 43/2013 of 16/06/2013 Governing Land in Rwanda, Law N° 66/2018 of 30/08/2018 Regulating Labour in Rwanda, law (No. 48/2018 of 13/08/2018) on Environment determining the modalities for protecting, conserving and promoting the environment, Ministerial Order N° 001/ 2019 of 15/04/2019 establishing the list of projects that must undergo environmental impact assessment, instructions, requirements and procedures to conduct environmental impact assessment, and law No 32/2015 of 11/06/2015 relating to expropriation in the public interest.

5. Environmental and Social Baseline Information

The proposed project will be implemented countrywide. To understand potential environmental and social impacts associated with the project, it is paramount to understand the environmental and social baseline. Baseline information collected includes climatic conditions in Rwanda (looking at seasons, rainfall zones, characteristics etc.), population (population dynamics, characteristics among others), Morphology, Geology, Relief and Drainage, Terrestrial Resources and relation to the project (land resources, Forestry Resources, Rangeland resources and livestock production, Wildlife resources, Vegetation) Aquatic Resources (Wetlands, lakes and rivers), Energy, Biodiversity, Employment, Poverty, Health, Education, ICT access among others. This information was collected through documents, consultation with key informants and site visits in 30 districts.

6. Potential Environmental and Social Impacts Associated with the Project

This project shall create more opportunities in line with improved access and availability of internet connection. It will further have immense positive environmental and socio-economic benefits through connection of clients from various spheres of life, government arms that would benefit from improved communication among others. While there are adverse impacts envisaged in the project, mitigation measures for these have been put forward. Below is a summary of positive and negative impacts.

Key positive environment and social impacts associated with the projects include: (i) provision of employment opportunities, (ii) provision of markets for construction materials during the construction and installation phase, (iii) improved service delivery through online, e-commerce and teleconferences, (iv) replacement of physical production and distribution of music, video, books, and software, etc. by the delivery of digital information over the network, (v) access to affordable smart devices and acquiring basic digital skills through component, (vi) reduced resource consumption, waste generation and CO2 emissions, and (vii) reduction of deforestation as people will lower the dependency on paper by using soft copies and information transfer through internet, etc., and hence contributing to climate change mitigation.

Potential negative environmental and social impacts include: (i) hazardous waste generation from mainly end-of-life backup power batteries and poor waste management could lead to pollution, (ii) E-waste generation from institutions that will be connected to internet and digital platforms as well as phones used by a large number of people, (iii) noise pollution from installation of equipment and backup generators, (iv) localized dust emissions from trenching and installation of equipment, emissions from vehicle fleets (exhaust fumes) and backup generators, (v) risk of exposure to electromagnetic fields from proximity to transmitting antennas, (vi) occupational risks from optical fiber cables such as permanent eye damage due to exposure to laser light, (vii) potential for exploitation and unfair wages, discrimination at work and exposure to GBV/ SEA/ SH, spread of HIV/ AIDs and poor working conditions. These could impact on timely project delivery, lead to injury and even fatalities, (viii) communities exposure to traffic related hazards, dust emissions, noise and potential construction accident, and (ix) easement and land acquisition, especially for fiber optics installation and towers or antenna installation.

The above negative impacts will be addressed through the preparation and implementation of site specific instruments and some of the mitigation measures including the preparation of Environmental and Social management plans, Labour management plans, land acquisition and easement plans, e-waste collection and recycling or safe disposal, avoiding sensitive and protected areas, use Personnel protective equipment during construction and installation, awareness and sensitization program etc.

7. Public Consultations

In line with ESS10 and national regulations, consultations were conducted with stakeholders who are directly or indirectly involved in project. Stakeholders were identified in two categories: (1) stakeholders at the central level, and (2) stakeholders at the local level including local authorities, and representatives of women, youth and vulnerable people. During the public consultation, the consultant applied different participatory methods, namely interviews, one-to-one discussions, focus group discussions (FGD) with district officials. With the currents restrictions and to minimize the risks of COVID-19, community meetings and public gathering were avoided. Stakeholders were informed on the proposed project and by using the key guiding questionnaires the consultant obtained relevant information on the likely impacts of the project activities and suggestions from stakeholders.

8. Grievance Redress Mechanism (GRM)

In line with ESS2 and ESS5, the RISA GRM shall be utilized with its approach to addressing grievances. RISA commits to establish a comprehensive Grievance Redress System for management of all kind of grievances raised by all stakeholders including a workers' GRM under ESS 2 and a community GRM for PAPs under ESS 5 given the mobility involved in this project. The GBV action plan will mitigate GBV risks inclusive of referral pathways for rehabilitation of victims.

9. Project Implementation Arrangements

A Single Project Implementation Unit (SPIU) will be set up and operationalized within the Rwanda Information Society Authority (RISA) through the project preparation advance (PPA). The SPIU will oversee all project-related fiduciary functions, including managing financial management (FM), procurement, M&E, environmental and social commitments, etc. The SPIU will be staffed with requisite experts. The SPIU structure aligns with guidelines provided by the Ministry of Public Service and Labour (MIFOTRA). The project will ensure that technical staff transfer and provides hands on training to ministries staff. This approach would help to ensure sustainability at project close closure.

Several Ministries/Departments/Agencies (MDA) will support the SPIU at RISA with respect to project sub-components. This includes providing technical inputs, supporting quality assurance, and on-the-ground implementation for various activities financed. RISA will maintain the role as central coordinator and convener of all committee meetings. The BRD will, however, oversee implementation of sub-component 1.1. Related to device affordability, in close collaboration with RISA, based on a subsidiary agreement where it will act as a financial intermediary.

A Project Steering Committee (PSC) will be set up to provide strategic oversight and governance for the project. The PSC will be chaired by MINICT and the Chief Executive Officer (CEO) of RISA will be the Secretary. Its members will include representatives of the main technical lead institutions for each sub-component (RURA, NIDA, NCSA, and BRD), MDAs expect to play a consistent role across project components to provide technical inputs on implementation.

10. Monitoring and Evaluation

The SPIU will be responsible for monitoring progress towards achieving the PDO and intermediate indicators based on the Results Framework. It will do so by ensuring that the SPIU is staffed with an M&E expert, tasked with coordinating M&E centrally, and by ensuring that an adequate M&E system is established based on the M&E plan. The status of project implementation will be documented in progress reports prepared on a semi-annual basis and submitted to the WB for review. These will include updates on results, disbursements, FM, M&E, procurement etc. And social as well as a work plan. In-built systems for tracking results and satisfaction surveys will be leveraged to support citizen engagement and solicit beneficiary feedback. Related tools will be embedded directly in project delivery to ensure feedback in real time, using digital tools and systems to register beneficiaries and report their feedback (e.g., using tablet-based or rapid mobile/short message service survey tools). Beneficiary focus groups will also be leveraged to inform design and track progress over time.

11. ESMF budget and ESMF disclosure

Upon the clearance of the ESMF by the World Bank, the Government of Rwanda, through RISA, will locally disclose the ESMF and will authorize the Bank to disclose it through its external website. The estimated budget for ESMF implementation is US$ 671,100 and most of the budget will be used for screening process, preparation of ESMPs, consultation training and awareness.

Given the nature of the project, the potential adverse impacts associated with this project are moderate and can be managed through proposed mitigation measures in this ESMF and simplified ESMP as appropriate. This framework will apply to all project activities under Rwanda digital Acceleration project and it should be reviewed and approved by the World Bank prior to project appraisal.

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ACRONYMS AND ABBREVIATIONS

AIIB : Asian Infrastructure Investment Bank
BP : Bank Procedures
BDF : Business Development Fund
BRD : Development Bank of Rwanda
CSA : Climate Smart Agriculture
DEO : District Environment Officer
EA : Environmental Assessment
EDPRS : Economic Development and Poverty Reduction Strategy
ESF : Environmental and Social Framework
ESIA : Environmental and Social Impact Assessment
ESMP : Environmental and Social Management Plans
ESMF : Environment and Social Management Framework
ESCP : Environmental and Social Commitment
E&S : Environment and Social
FAO : Food and Agricultural Organization
HSMP : Health and Safety Management Plan
IDA : International Development Association
ICT : Information Communication and Technology
IT : Information Technology
ESS : Environmental and Social Standards
GDP : Gross Domestic Product
GGCRS : Green Growth and Climate Resilience Strategy
GHG : Greenhouse Gases
FCAP : Facilitated Collective Action Process
GoR : Government of Rwanda
HIV/AIDS : Human Immune Deficiency Syndrome
INGO : International Non-Government Organisation
JADF : Joint Action Development Forum
LMP : Labour Management Procedure
SEP : Stakeholder Engagement Plan
M&E : Monitoring and Evaluation
MoE : Ministry of Environment
MINECOFIN : Ministry of Economic Planning and Finance
MINALOC : Ministry of Local Government
MINICT : Ministry of Information, Technology and Communication and Innovation
PPSD : Project Procurement Strategy for Development
PSC : Project Steering Committee
RPF : Resettlement Policy Framework
RISA : Rwanda Information Society Authority
RSB : Rwanda Standard Board
MoU : Memorandum of Understanding
RDB : Rwanda Development Board
REMA : Rwanda Environment Management Authority
RLMUA : Rwanda Land Management and Use Authority
RURA : Rwanda Utilities Regulatory Authority
RWRB : Rwanda Water Resource Board
SDG : Sustainable Development Goals
SPIU : Single Project Implementation Unit
UNFCCC : United Nations Framework Convention on Climate Change
VDP : Village Development Plan
WBG : World Bank Group

1. INTRODUCTION

1.1 Project background

The Government of Rwanda (GoR) has distinguished itself as one of the continent's most ardent champions of the digital agenda, with sizable public investments made in digital infrastructure and public e-services expansion. On the back of near universal (>90%) mobile broadband network and identity (ID) coverage, Rwanda is a regional frontrunner in global United Nations 'e-government'[1] and heralded as a 'proof of concept' country for adopting cutting-edge technologies such as drones for last-mile medical care provision or robotics for Covid-19 screening. Beginning as early as 2002, Rwanda began charting an ambitious course for achieving rapid digitization through a series of five-year national ICT strategies. This agenda is spearheaded by the GoR's leadership at the highest level, the Ministry of Innovation and ICT (MINICT), and its implementing arm, the Rwanda Information Society Authority (RISA), created in 2017. While the country has made impressive gains, stark gaps remain in digital adoption and there is room to expand the private sector's contribution to the growth of Rwanda's digital economy.

A WB digital economy diagnostic, conducted in FY19,[2] revealed that only modest progress has been made towards supporting widespread public adoption of broadband and digital public services now on offer, expanding the country's digital skills base, and supporting digital businesses at scale, including the development of locally relevant content and commercial services. This has, inter alia, limited the ability of most Rwandans to employ digitally enabled social distancing strategies, during the COVID-19 pandemic, placed a dampening impact on commercial activity, but also interrupting Government's delivery of core digital public services. Building on investments made to date, the GoR is therefore committed to tackling the lingering digital adoption and inclusion gap by actively addressing key barriers, boosting its capability for offering more innovative digital public services, and crowding in the private sector, preparing the country for a data-driven and e-service based economy capable of supporting sustainable recovery in a post-COVID context.

In this context, the Government of Rwanda is negotiating funds from the World Bank (WB)/ International Development Association (IDA) and the Asian Infrastructure Investment Bank (AIIB) as co-financing agency. The total project amount is two hundred million US dollars ($200m) including $100 million provided as loan and $100 million as grant. The Project will be funded equally by the World Bank (WB)/ International Development Association (IDA) and the Asian Infrastructure Investment Bank (AIIB). The project will be implemented by the Rwanda Information Society Authority (RISA) under the Ministry of ICT and Innovation and other partners including the Development Bank of Rwanda (BRD).

The proposed project is designed to accelerate country-wide digital transformation, as well as facilitate Rwanda's integration in the emerging regional digital market. The proposed project will expand digital adoption, bringing more Rwandans online by addressing the major barriers that dampen demand for digital services and spearheading a series of interventions that promote digital inclusion. The project will also enable Rwanda to leverage critical enabling digital platforms and data-driven solutions to improve the efficiency of public service delivery and expand the adoption of digitally-enabled services. Finally, the project will also increase Rwanda's capacity to support digitally-enabled innovation and productivity-gains, by strengthening the local digital innovation and entrepreneurship ecosystem, supporting tech firms to move from start-ups to growth and the adoption of digital technologies in key sectors.

[1] Rank 120/193 in UN E-government Development Index (EDGI)
[2] Key findings are featured in the 15th edition of the Rwanda Economic Update

1.2. Project Description and project components

1.2.1. Project boundaries

The project will be implemented in all 30 districts of Rwanda composing 4 provinces, namely Eastern, Southern, Northern, Western province and Kigali City.

1.2.2. Project Development Objective (PDO)

PDO Statement

Increase access to broadband, digital public services, and strengthen the digital innovation ecosystem. PDO Level Indicators are:

(a) **PDO indicator 1: Increase access to broadband**
Internet penetration rate (mobile + fixed) (of which, percent female)

(b) **PDO indicator 2: Increase access to digital public services**
Number of fully transactional G2P, G2B and G2G e-services that are introduced, upgraded, or enabled.

(c) **PDO indicator 3: Strengthen the digital innovation ecosystem**
Number of start-ups creating a digital technology solution (of which percentage female owned)

1.2.3. Project components

The project aims to accelerate country-wide digital transformation focusing on critical digital enablers that "future-proof" economic growth. Based on the findings and recommendations of the Digital Economy Initiative for Africa (DE4A) diagnostics conducted, project activities seek to expand digital adoption, by spearheading a series of innovative access initiatives. The project will also enhance government's digital service capabilities, equipping government with the ability to harness the power of big data and offer quality data-driven solutions based on shared digital standards, platforms, and infrastructure. Finally, the project will increase Rwanda's capacity to support digitally-enabled innovation, by strengthening the local entrepreneurship ecosystem, supporting tech firms to move from startups to growth and by developing Rwanda's digital talent base.

Table 1. Project components

Components	Allocation (US$ million)
1. Digital Access and Inclusion *Focused on creating digitally enabled citizens*	**60.5**
1.1: Access to affordable smart devices	15.0
1.2: Basic digital skills for all	8.0
1.3: Last mile connectivity access	33.5
1.4: Legal, regulatory, and institutional capacity for broadband market development	4.0
2. Digital Public Service Delivery *Focused on creating a digitally enabled government, as well as creating entry points for private sector innovation*	**100.0**
2.1: Digital identification, authentication, and trust services	39.3
2.2: Government data management, sharing and analytics	10.7
2.3: E-services in key sectors	30.5
2.4: Cybersecurity resilience and data protection	19.5
3. Digital Innovation and Entrepreneurship *Focused on supporting digitally enabled businesses*	**29.5**
3.1: Regional digital entrepreneurship hub	22.0
3.2: Next generation capabilities for the digital economy	7.5
4. Project Management *Project implementation support*	**10.0**
TOTAL	**200.0**

✪ Component 1: Digital Access and Inclusion (US$60.5 million)

This component will increase digital access and inclusion through investment in digital access enablers, focusing on under-served areas and groups. A series of interventions that address identified demand-side barriers hampering access to high-quality broadband will be financed. This includes support for smart device affordability financing schemes, an umbrella basic digital literacy initiative, as well as a local connectivity access scheme targeting unconnected government offices, schools, hospitals, and marketplaces. Activities supported will help to connect more users to high-speed internet, and subsequently enable wider access to, and demand for, data-driven public and commercial e-services (financed under Components 2 and 3). Financing provided will support wider local readiness for COVID-19 response and recovery, as digital tools and systems have proved critical to an agile response, where digital access is viewed as a basic pre-requisite. By providing catalytic funding to stimulate demand by key user-groups and in low-income market segments the project hopes to crowd in more private sector investment on the supply-side. Upstream support for an enabling legal, regulatory and policy environment for competitive broadband market development will also be provided, with a view of stimulating wider access, quality, affordability and sustainability, resulting in a more vibrant broadband market that can support wider access and service expansion.

✓ Sub-component 1.1: Access to affordable smart devices (US$15 million)

This sub-component will provide financing support to facilitate device purchase by low-income households and key user-groups. Activities will target users currently unable to afford upfront smart device purchase, and secure needed credit. Prioritized user-groups will include Rwanda's poorest households, teachers and students. The scheme will be led by RISA, leveraging support from the Development Bank of Rwanda (BRD), to allow for the use of commercial financing instruments offered by the financial intermediary. Various financial instruments will be considered, and a phased approach is envisaged, including initially piloting, evaluation and incremental scale-up over time. The project will finance an in-depth market assessment and feasibility study to refine key design elements. Key approaches considered include grant-based subsidies for Rwanda's poorest households, with eligibility and subsidy levels based on the *Ubudehe* household income classification system and existing device ownership, as well as guarantees to manage the challenges associated with high credit risk and cost, but other interventions will also be explored. Key activities to be financed include:

(a) **Technical assistance and capacity building for fund development** to allow for the establishment of a device affordability fund at the Development Bank of Rwanda (BRD)**,** based on an in-depth feasibility study and market sounding, and the development of a fund-specific project implementation manual that will detail how financial instruments introduced will be implemented and disbursed, including eligibility criteria and processing requirement.
(b) **Capitalization of a device affordability fund and operationalization of related financing schemes**, where the project will cover the costs of the financial instruments deployed, and any other operational costs.
(c) **Independent verification,** whereby the project would finance a third-party verification agent to verify compliance for the financing schemes.
(d) **Communication and outreach** through campaigns, sharing success stories and lessons learned to publicize the device affordability scheme to key stakeholders and targeted beneficiaries.

✓ *Sub-component 1.2: Basic digital skills for all (US$8 million)*

This sub-component will help tackle Rwanda's lingering basic digital skills gap through a national digital literacy scheme that will enable end-users to access and use basic digital devices and data-driven services safely and effectively. This activity will help expand the national coverage of Rwanda's existing flagship Digital Ambassador's Program (DAP), with the aim of training more people in basic digital literacy across all 2,148 cells. A revamped iteration of the existing scheme

(version 2.0) will be scaled, and run by the RISA, building in more sustainability, inclusion, and performance-based management, including tailored and task-based training approaches sensitive to gender and persons with disabilities. The scheme will also be broadened to enable the participation of more non-profit and for-profit digital skills providers. The initiative will be anchored in an overarching digital skills assessment and new national digital skills framework, developed in close collaboration with the MINICT, MINEDUC and digital skills providers. Key activities to be financed include:

(a) **Technical assistance for a digital skills architecture and M&E framework,** development of a national digital skills framework aligned with global best practices and continued evaluation of the DAP.

(b) **Financing development and operationalization of the new DAP 2.0 model** covering incremental operating costs, training, and equipment, and setting up a shared digital skills training platform allowing partner agencies to contribute through training material, shared M&E tools, building in more sustainability.

- ✓ ***Sub-component 1.3: Last mile connectivity access (US$33.5 million)***

This sub-component will expand access to high-speed internet among select public institutions, as well as targeted public spaces to enable wider digital services provision. Financing will connect select government offices, schools, hospitals and citizen service access points with broadband, and support movement toward a more resilient, secure and centrally managed dedicated government network (GovNet), connecting public sector organizations at central, district, sector and cell-level that currently lack high-speed internet access. The GoR is also keen to connect key commercial centers with public Wi-Fi that can stimulate greater commercial digital services usage. Demand aggregation and pre-purchase of capacity will be leveraged to catalyze infrastructure investment. Upfront purchase of internet bandwidth from private sector operators, under indefensible right of use (IRU) OpEx contracts, covering a period of 10-15 years, will serve as the investment guarantee needed to incentivize private sector CapEx investment in the roll-out of last-mile access network that connect target locations, but also benefit the wider consumer base in the vicinity of connected locations, with government serving as the anchor tenant required for enhanced service provision. A market study will support a comprehensive needs assessment and refine the implementation approach. key activities to be financed include:

(a) **Support for network planning and management:** RISA will receive targeted technical assistance to support network planning, development of technical specifications and capacity requirement to develop a closed virtual network, and central Networks Operations Center (NOC) to enhance its management of GovNet.
(b) **Connectivity capacity purchase for select public institutions and priority locations.** Awarded on a competitive basis, covering the provision of international internet bandwidth and various geographic lots, featuring minimum capacity and technical requirements for targeted institutional and locations.
(c) **Enabling ICT infrastructure for target institutions**, for facilitating internet access and use. Institutions such as public schools prioritized for connectivity access will be supported with electricity ad basic IT equipment for teaching.

- ✓ ***Sub-component 1.4: Legal, regulatory, and institutional capacity for broadband market development (US$4 million)***

This sub-component will provide upstream enabling legal, regulatory support, as well as capacity building to stimulate broadband market development, focusing on the telecommunication sector. It will support modernization of the legal, regulatory, and institutional frameworks governing the telecoms sector, with financing for technical assistance, training, systems and equipment acquisition

needed to support regulatory reform in selected areas, with the aim of boosting competition, access, inclusion through service expansion, innovation and adoption of emerging technology.

Areas for support identified include:

(a) quality of service (QoS) monitoring,
(b) Number portability,
(c) strengthening of the Universal Access Fund (UAF) as well as emerging technologies,
(d) support for operationalizing IFC's recommendations on development of a new broadband policy, spectrum management, infrastructure sharing, and;
(e) Support for climate change adaptation through specialized trainings for MDAs on emergency response preparedness, operational support for current e-waste management strategy, development of climate resilient-and energy-efficient infrastructure standards.

Technical assistance will also be provided to enable the collection of gender-disaggregated data. The MINICT, RISA and RURA are expected to be the main beneficiaries of activities financed under this sub-component.

✪ **Component 2: Digital public service delivery (US$100 million)**

This component will strengthen the GoR's ability to deliver digital services, allowing for increased resilience and adaptability to health, climate, and other shocks. Activities financed aim to respond to the COVID-19 crisis by 'building back better' through investments that strengthen the GoR's ability to deliver services that are secure, data-driven, paperless, and cashless, and that improve both the front-end user-experience of digital public services as well as back-end government efficiency. This will be achieved by developing and leveraging re-usable and shared digital infrastructure and platforms for digital identification and other trust services, as well as data management that (a) enable expansion of sectoral digitization and e-service initiatives; (b) allow the GoR to scale the provision of just-in-time critical G2G, G2B and G2C e-services; and (c) support big data analytics that inform policy making, planning and e-service development. An enabling environment for securely scaling e-services will also be supported through investments that strengthen GoR's capacity for managing risks related to cybersecurity and data protection.

✓ ***Sub-component 2.1: Digital identification, authentication, and trust services (US$39.3 million)***

This sub-component will strengthen the existing foundational ID ecosystem, comprised of national identification (ID) and civil registration, to support the expansion and efficiency of service delivery in key sectors for both in-person and online transactions. The investments planned will bring Rwanda's foundational ID ecosystem in full compliance with the ten Principles on Identification for Sustainable Development and in alignment with other international best practices, to maximize the socio-economic benefits and development impacts that stem from trusted and inclusive ID systems while mitigating the risks. Activities to be financed include:

(a) **Modernizing the national ID system** by: (i) introducing new credentials, such as a cost-efficient national ID card, and verifiable virtual credential and a mobile ID equivalent; (ii) improving the quality of data, efficiency and inclusiveness of registration, in support of identity verification and authentication; (iii) extending national ID coverage to children (with consent of parents and guardians and adhering to other child protection norms) in order to facilitate enhanced education, health and social protection service delivery. This will finance related consultancy services, central software and hardware upgrades and replacement, registration campaigns, registration kits, credential issuance, cybersecurity security and data protection measures, and related capacity building of both government personnel and the users.
(b) **Digitizing civil registration archives** by converting paper birth and death certificates, marriage registration forms and other civil registration documents into digital formats and indexing them. This will improve the ability of NIDA to provide effective pre-registration services for the modernized national ID and will become the basis for an efficient retrieval of civil registration

records and better user experience in support of public and private sector services that require proof of civil registration status.

(c) **Strengthening the use of the national ID for in-person identity verification and introduction of a digital ID for fully remote service delivery** by: (i) developing capabilities for fingerprint, iris, demographic and SMS one time password identity verification mechanisms in support of more efficient in-person transactions, with an effective exception handling mechanisms to ensure that there is no exclusion from accessing services; (ii) introducing various digital credentials, authentication and e-signature capabilities for online transactions. This will finance consultations, consultancy services, policy and regulatory development, technical designs, software and hardware upgrades, and integration of the new identity verification and authentication modalities into service delivery in key sectors (e.g. hardware, software and process re-engineering for priority MDAs, as well as developing tools for the private sector to do the same), and related awareness raising.

(d) **Stakeholder engagement, help desks, and grievance redressal for the ID-related services** by: (i) creating accessible channels to enable citizens and residents who face challenges with registration or using their credentials (including in cases of verification failure) to seek recourse within reasonable time frames**;** (ii) organizing meaningful consultations with communities, civil society, government institutions and the private sector to inform the design and implementation of this ID sub-component. This will finance business processes re-engineering for handling grievances, an online complaints portal, a call center, development of a grievance tracking management platform, and related public consultations and communications**.**

- ✓ ***Sub-component 2.2: Government data management, sharing and analytics (US$10.7 million)***

This sub-component will improve the GoR's ability to securely manage, share, analyze and harness data for improved service delivery, policy development and planning, on the back of shared data frameworks, platforms, infrastructure and big data analytic capabilities. Stronger capacity for managing, sharing, and analyzing government data will play an integral role in enhancing GoR's ability to expand and improve its e-service offering. Activities financed are designed to fully capture the opportunity presented by big data and lay the foundation for the introduction of more advanced use cases in big data analytics, including leveraging predictive capabilities to support forecasting. Support provided will primarily be anchored at RISA, and include the development of shared data governance frameworks, shared government data infrastructure, whole-of-government data interoperability structures, pooled data analytics capacity, featuring the creation of a central 'Government Data Hub' envisioned as a collaborative platform for better use of digital data by government. Key activities to be financed include:

(a) **Developing national and big data governance and management frameworks**, including technical assistance to support the development of enabling legal, strategic and policy frameworks through feasibility studies, data sharing guidelines, templates, standards, and protocols as well as related training.

(b) **Operationalizing the Government Data Hub**, including financing related software, hardware, hosting, and technical assistance for deploying and operationalizing the hub at RISA, in close collaboration with sectoral MDAs that produce large amounts of data. Further, support for cataloguing and tagging, cleaning, and formatting government data for upload, and anonymizing data for release will also be provided. This will also allow government to make data sets public.

(c) **Financing upgrade of the Government Enterprise Service Bus (GESB),** operated by RISA to enable seamless back-end data exchange between various MDAs. Support will be provided for training on the GESB's maintenance and operation, as well as any technical assistance required to support systems integration.

(d) **Implementation of strategically selected big data use cases** to demonstrate the value of big data analytics in priority sectors (e.g., health, education, social protection and agriculture), including those supporting climate change adaptation.

✓ ***Sub-component 2.3: e-Services in key sectors (US$30.5 million)***

This sub-component will expand the availability of high-quality transactional e-services in key sectors. Priority sectors identified include health, social protection, agriculture, local government, as well as trade and industry. Support provided will cover (a) just-in-time support for the roll-out of demand-driven G2G, G2B and G2P e-services primed for full digitization that leverage and demonstrate the value of using reusable and shared infrastructure and solutions financed by the project; and support (b) more comprehensive and in-depth flagship sectoral digitization initiatives that involve the development of sector specific back-end systems (but building on shared frameworks and infrastructure) and sector-wide business processes re-engineering. Funding related to category (a) e-services will be allocated on an annual basis, following a structured prioritization exercise with sectoral MDAs, and due consideration to both readiness and expected impact. Meanwhile, the flagship digitization initiatives selected in the health and social protection sectors, based on their expected high-level contribution to COVI9-19 response and recovery, will showcase how sector-wide digitization can facilitate cross-cutting transformation of service delivery. RISA will be spearheading all e-services financed, working closely with respective MDAs, through its sectoral Chief Digital Officers and dedicated technical committees established. Cybersecurity, data privacy, and secure data-sharing principles, informed consent and user-centric design will be mainstreamed for all e-services financed under this sub-component, with special attention given to ensuring access by vulnerable groups. To ensure adequate technical capacity at RISA, MINICT and within sectoral MDAs to launch, maintain and upgrade respective e-services and back-end systems financed, this sub-component will also cover an extensive digital skills training program for the civil service staff. Key activities to be financed include:

(a) **Support for strategic planning and design of e-services** for both the digital flagships initiatives in key sectors, as well as demand-driven citizen-, business- and government-facing e-services including end-user consultations.
(b) **Development of select e-services in key sectors**. Financing provided will cover aspects such as software development, systems integration, IT equipment, data hosting requirements, technical and end-user training, as needed. Some priority e-services have already been identified for implementation in year one, including support for a new e-Parliament system, a Unified Registry System, and a Building Permit Management Information System.
(c) **Flagship sectoral digitization initiative: Health.** Help transform service delivery in the health sector by enabling the full digitization and integration of existing and health systems such as the Health Information Exchange (HIE) platform, Electronic Medical Records (EMR) system introduced across multiple points of care, supporting its set-up and use at more health posts.
(d) **Flagship sectoral digitization initiative: Social protection.** focus on streamlining and digitizing G2P payments for social transfers, digitization of SACCOs, including existing paper-based records and support for related systems financing.
(e) **Comprehensive capacity building and change management through skills assessment and training** to creating a cadre of digitally savvy government leaders and IT professionals to facilitate the successful development, deployment, and maintenance of e-services.

✓ ***Sub-component 2.4: Cybersecurity resilience and data protection (US$19.5 million)***

This sub-component will strengthen the GoR's capacity to mitigate risks associated with the expansion of digital public services by enhancing its capabilities to detect, prevent, respond, mitigate, and recover from cybersecurity attacks as well as manage data protection. It will support the development of a robust enabling environment through strengthened cybersecurity governance and institutional frameworks, technical and operational capabilities, as well as cyber skills development for a trusted online transactions environment and the security and resilience of digital infrastructure and systems. It will also lay the foundations for safeguarding data protection in

compliance with forthcoming legislation, by supporting the establishment and operationalization of a Data Protection Office (DPO). Key activities to be financed include:

(a) **Strengthened cybersecurity management capacity**, which will feature support for the newly established NCSA and existing Rwanda Computer Security Incident Response Team (CSIRT).
(b) **Foundations for data protection operationalization** that will finance (i) the development of governance and institutional frameworks (ii) the DPO's technical and operational capacity and (iii) capacity building awareness raising programs.

✪ **Component 3: Digital Innovation and Entrepreneurship (US$29.5 million)**

This component will strengthen the local digital entrepreneurship ecosystem and talent base. Activities financed will support better innovation ecosystem coordination, better service provision by entrepreneurship support organizations (ESOs), expand access to early-stage financing, and promoted advanced digital innovation capabilities. By strengthening the local entrepreneurial and innovation ecosystem, this component will contribute to the Covid-19 pandemic response and recovery by supporting startups that can aid the development of data-driven, digital products and services relevant to the response. Activities financed will leverage and complement the interventions proposed under Component 2 by also encouraging the use of new public dataset made available and public goods introduced. A stronger local entrepreneurship ecosystem will also aide in developing locally relevant content and services that can help stimulate digital adoption and uptake of digital services, auxiliary to interventions under Component 1.

✓ ***Sub-component 3.1: Regional digital entrepreneurship hub (US$22 million)***

This sub-component will improve the survival and growth rates of technology-enabled startups in Rwanda and strengthen Rwanda's position as a regional 'test bed' for innovation. Support will be provided to create an enabling strategic, policy, regulatory and institutional environment that is conducive to stimulating growth of digital innovation, businesses and startups, positioning Rwanda as a regional digital entrepreneurship hub. Mechanisms to strengthen the quality, sustainability, and range of ESOs and related services available will be financed, including support for acceleration services that can strengthen international market linkages. All support provided will consider the challenges that start-ups and young firms have been facing due to the Covid-19 pandemic. Interventions made will help create a more robust and attractive pipeline of viable start-ups poised for scale-up and strengthen Rwanda's innovation capacity, contributing to wider job creation and productivity gains critical to COVID-19 recovery. Key activities to be financed include:

(a) **Enabling strategies, policies and institutions for digital innovation,** support will also be provided to MINICT, RISA, the Rwanda Development Board (RDB) and Kigali Innovation City (KIC), including financing for training, technical assistance IT equipment, operating costs associated with industry consultation, etc.
(b) **Performance-based grants for ESOs that serve digital startups,** which aim to encourage quality-based and self-sustaining ESO models that offer better services,[3] and entrepreneurship support programs.[4]
(c) **International accelerator that serves digital startups**, with financing support provided to attract a high-quality international player to the local market allowing local startups to benefit from their existing expertise, curricula, networks, and brand power.
(d) **Early-stage finance mobilization for digital innovation,** including support for investment

[3] Competitively selected ESOs will have to demonstrate their ability to contribute toward the achievement of their performance contracts to reduce the risk of funding non-viable or non-performing entities, as well as reliance on donor funding.
[4] Through the innovation window under the performance contract for ESOs, innovation challenges to catalyze new public sector services using newly available data sets could be introduced. In addition, beneficiary start-ups could be engaged to help improve the government data hub's data sets as appropriate.

events, training programs and establishment of an early-stage financing mechanism to be managed by the BRD, which could potentially serve as a fund of funds to catalyze private sector investment whereby the project would contribute financing to capitalize the fund as well as the overhead fees.

- ✓ ***Sub-component 3.2: Next generation capabilities for the digital economy (US$7.5 million)***

This sub-component will equip young Rwandans with advanced 21st-century digital skills, boosting local capacity to contribute to digital entrepreneurship and innovation. A two-pronged approach will be adopted; on the one hand supporting wider access to digital skills within traditional TVET and tertiary education and supporting business-models for advanced digital skills provision on the other. By building the local digital talent pipeline and equipping Rwandans with advanced skills for jobs of the future, this sub-component will actively help stem the rise in unemployment expected on account of Covid-19. Key activities to be financed include:

(a) **Further development of the Rwanda Coding Academy (RCA)**[5], managed by the MINICT, allowing the RCA to scale and develop a more effective operating and training model.

(b) **Performance-based grants for technology boot camps** and other innovative digital technology skills training models that support their expansion and operations.

(c) **Ph.D. scholarships for highly specialized digital training**, such as AI, robotics, and block chains, awarded on a yearly and competitive basis. Supported scholars will be required to support digital government initiatives.

- ✪ **Component 4: Project Management (US$10 million)**

This component will finance project management associated with administering the project. It will finance the operational and staffing costs of the Single Project Implementation Unit (SPIU), including the hiring of expert consultants in key areas such as project management, technical advisory and implementation support. Operational costs would also be covered, including support for capacity building and training. This component will also cover continuous stakeholder consultation costs, and any larger M&E work undertaken.

1.3. Use and Justification of the ESMF

The WB has categorized the E&S risks of the project as “Moderate” (which is equivalent to Category B if AIIB’s ESP were applicable). Nine of WB’s Environmental and Social Standards (ESSs) will be applicable to the project, namely the WB’s ESS on Assessment and Management of E&S Risks and Impacts (ESS1), Labour and Working Conditions (ESS2), Resource Efficiency and Pollution Prevention and Management (ESS3), Community Health and Safety (ESS4), Land Acquisition, Restrictions on Land Use and Involuntary Resettlement (ESS5), Biodiversity Conservation and Sustainable Management of Living Natural Resource (ESS6), Cultural Heritage (ESS8) and Financial Intermediaries (ESS9) and Stakeholder Engagement and Information Disclosure (ESS10).To ensure a harmonized approach in addressing the E&S risks and impacts of the project, and as permitted under AIIB’s Environmental and Social Policy (ESP), it was agreed that the WB ESF will apply to the project in lieu of AIIB’s Environmental and Social Policy (ESP). Given that the project is made of a series of subprojects for which the location and detailed information is not yet available, it was agreed that an Environmental and Social Management Framework (ESMF) will be prepared. The ESMF provides guidance on the management of environmental and social impacts

[5] RCA is a special model school incepted by the Government of Rwanda. It is hybrid of both general education and TVET. It teaches Software Development, Embedded Systems Programming, and Cyber-Security. The Rwandan government and the Swiss Agency for Development and Cooperation (SDC) recently launched the Rwanda Coding Academy in partnership with the Ministry of ICT, Ministry of Education and Rwanda Polytechnic. See: http://www.rca.ac.rw/about-us.php

and risks, the institutional arrangements, and E&S instruments to be prepared as part of the implementation of the project.

1.4. Objectives of ESMF

The objective of this ESMF is to ensure that implementation of Rwanda Digital Acceleration project is carried out in an environmentally and socially responsible manner. The ESMF has included World Bank Environmental and Social Standards applicable to the project, the national legal and institutional arrangements, environmental screening and assessment guidance, monitoring and reporting formats, and capacity requirements for its effective operationalization which is all geared towards ensuring that the proposed project will be environmentally and socially sustainable.

Therefore, the ESMF aims to provide clear guidelines and processes for determining the level of required environmental and social management and development of mitigation measures, so as to avoid, manage or minimize potentially negative environmental and social impacts associated with the project. The ESMF specifically helps to:

i) Establish clear process and procedures for environmental and social assessment such as screening of sub-project activities as the first step to determine the level of assessment required, that is, ESMP or ESIA, and necessary management approaches during project implementation.
ii) Provide for continuous improvement and identification of potential social and environmental risks and impacts of the proposed Project.
iii) Ensure adherence to national, regional and international laws, policies and regulations relevant to the project.
iv) Specify appropriate roles and responsibilities of government departments, lead agencies and other stakeholders, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to the project subcomponents.
v) Assess the RISA capacity, training and technical assistance needs to implement the provisions of the ESMF and make recommendations for strengthening the capacity.
vi) Provide criteria for selection of sites for the construction activities of the projects under the program and for the design of environmental and social impact mitigation measures;
vii) Undertake stakeholder consultations, document issues that are raised in relation to the expansion.
viii) Provide recommendations on ensuring review and adherence to developed project compliance procedures, Environmental and Social Management Plan (ESMP) plans.

1.5. Methodology for ESMF Preparation

The consultant prepared this ESMF using the following approach and methodology:

1.5.1. Desk review

The preparation of the ESMF involved a review on the existing baseline information and literature material. Detailed review and analysis of the national relevant legislations and policies as well as World Bank ESF and other relevant documents were done. Key documents reviewed include existing policies, regulations, strategic plans and institutions related to Rwanda Digital Acceleration Project, reviewed World Bank Environmental and Social management Framework (ESF) especially Environmental and Social Standards pertinent to the proposed project. Key document reviewed include:

- ✓ Project documents (Project Appraisal Document, Appraisal Environmental and Social Review Summary, Draft Environmental and Social Commitment Plan, and Draft Stakeholder Engagement Plan prepared for the project),

- ✓ Information and Communication technology documents (Digital Content Promotion strategy, CT Sector Strategic Plan (2018-2024), Rwanda Smart City Master Plan, CT hub strategy,

- ✓ National Environmental and Social regulations and policy documents (National Transformation Strategy(NST1), Land Use Master Plan, Land policy, laws and regulations including expropriation law, Environment and Climate change Policy 2019, Environmental law 2018, Ministerial order no 001/2019 of 15/04/2019 establishing the list of projects that must undergo environmental impact assessment, instructions, requirements, and procedures to conduct environmental impact assessment, General Environmental guidelines 2007, Waste management including E-Waste strategy, Regulation N°002 of 26/4/2018 governing E-Waste management in Rwanda published by RURA, Standards for "handling, collection, transportation and storage of various categories of Electrical and Electronic waste (e-waste) in Rwanda, and

- ✓ World Bank Environmental and Social Framework (ESF)/Environmental and Social Standards (ESSs).

1.5.2. Public consultations and visits to 30 districts

In compliance with National regulations and international standards, Stakeholder engagement was key for the preparation of this ESMF. Stakeholder engagement involved stakeholder analysis and planning, and consultation with stakeholders. The consultant organized consultations with stakeholders at the central level including government officers and private operators. At the central level, consulted institutions included the Ministry of Environment (MoE), Rwanda Environment Management Authority (REMA), Rwanda utilities Regulatory Agency (RURA), Ministry of ICT, RISA, Rwanda Land Management and Use Authority (BDF, Development Bank of Rwanda (BRD) and Rwanda Development Board (RDB). At the local level, the consultant consulted with District Environment Officers, District Labour Inspectors, the District Joint Action Forum, PSF at the district level, representatives of women, youth, vulnerable people, and people living with disabilities in all 30 districts. Further, the consultant consulted private operators including telecommunication companies (Airtel, MTN, etc.), a phone company (Mara phone), an E-waste management company (Enviroserve) and a tower management company (IHS Rwanda).
During the Public consultation, the consultant applied different participatory methods: interviews, one-to-one discussions, and focus group discussions (FGDs) with district officials. With the current restrictions and to minimize the risks of COVID-19, community meetings and public gatherings were avoided. Stakeholders were informed about the proposed project and by using the guiding questionnaires, the consultant obtained relevant information on the likely impacts of the project activities and suggestions from stakeholders. This was also an opportunity for data collection using questionnaires and guiding questions developed at the inception phase.

1.6. E&S risk management tools to be prepared

- ✓ **Environmental and Social Commitment Plan**

The Environmental and Social Commitment Plan (ESCP) sets out material measures and actions, any specific documents or plans, as well as the timing for each of these so that the Program is implemented in accordance with the Environmental and Social Standards (ESSs). It also states RISA responsibility for compliance with all requirements of the ESCP even when implementation of specific measures, monitoring and actions is conducted by its contractors and sub-Contractors.

- ✓ **Labour Management Procedure**

The Labour Management Procedure aims to:

a) Ensure fair treatment at work for all employees in RISA led projects to protect or mitigate the risks of potential discrimination in employment, remuneration disparities, Gender Based Violence and aspects of Sexual Harassment at the workplace.

b) Provide commitment from management towards sustainable project execution in compliance with ESS2
c) Ensure safety of workers and remind all project teams of the need to adhere to resident worker related legislation, standards and best in duty practice.
d) Provide all project teams with the main legal backings on workers' rights, duties, employer's duties among others

- ✓ **Resettlement Policy Framework**

The Resettlement Policy Framework (RPF) shall be used for the social screening and assessment of infrastructure project components to be funded within the framework of the Rwanda Digital Acceleration Project. It is not anticipated to acquire considerable land, but activities planned especially under component 1.3 may need land or easements that cause loss of crops and trees. Therefore, the ESMF will guide implementation of proposed activities to ensure that displacement issues are resolved and that the livelihoods of the affected persons are not negatively impacted and, where it is unavoidable, they are compensated and/or resettled.

- ✓ **Stakeholder Engagement Plan**

The SEP aims to provide key stakeholders with program information, alternative approaches to its implementation, potential impacts and strategies to mitigate those negative impacts while optimizing the positive, educate stakeholders on the grievance management mechanism and Gender Based Violence framework the program plans to utilize, identify key stakeholders that are affected, and/or able to influence the Program and its activities and provide stakeholders an opportunity to make input into the program risk management process by highlighting their expectations, fears, concerns and what needs to be done among others. At the sub project level, the following tools will be prepared: ESIAs, ESMPs, RAPs, and SEP, progress reports, monitoring plans, and grievance logs.

1.7. ESMF structure

This ESMF is structured as follows:

1. Executive summary: discusses significant findings and recommended actions on environmental and socio – economic issues, main environmental and socio – economic impacts and the suggested mitigation measures and states other noteworthy matters;

2. Project description: describes the proposed project and its geographic, ecological, social, economic and cultural context, including any off-site investments such as housing, and raw material and product storage facilities).

3. Institutional and legal framework: discusses the policy, legal, and administrative framework within which the ESMF is carried out. This will include environmental requirements of any co – financiers, identify relevant international environmental agreements to which the country is a party and relevant World Bank Environmental and Social Standards, Environment, Health and Safety Guidelines and any other requirements.

4. Environmental and Social baseline information: This section assesses and presents the dimensions of the study area by describing relevant physical, biological, and socio - economic conditions, including any changes anticipated before the project commences.

5. Potential environmental and social impacts and mitigation measures: To predict and assess the project's likely positive and negative impacts, in quantitative terms to the extent possible. This is to include occupational health and safety risks in relation to all relevant activities. It also provides proposed mitigation measures.

6. Environmental and Social Monitoring Framework: This section will include the monitoring framework for the ESMF implementation to ensure compliance and implementation of mitigation measures.

7. Subproject review and screening procedures: this section will describe the process for screening and preparation of site-specific instruments

8. Stakeholders Engagement and Grievances redress mechanism: this section will outline consultation and engagement conducted and future consultations and engagement,

9. ESMF implementation arrangements, budget and capacity building and training: this section establishes a clear understanding of the institutional requirements, roles and responsibilities for adopting and implementing the ESMF. It also Outline a training and capacity building programme for the institutions responsible for implementing the ESMF.

10. Conclusion and recommendations: It provides key conclusions and recommendation for the implementation of ESMF.

11. Annexes (screening forms and sample terms of reference for site specific instruments)

2. POLICY, INSTITUTIONAL AND LEGAL FRAMEWORK

This section of the ESMF outlines and reviews the existing legislations, policies and institutions and identifies requirements as well as gaps and conflicts of the relevant legal and institutional arrangements that would guide the development of the project in line with the national and international laws applicable to the project. Because Rwanda is a signatory to various international conventions and laws, it is important that national projects are in line with these laws and therefore some of the relevant international conventions are reviewed in this chapter.

2.1. National environmental and social management requirements

2.1.1. Policy framework

- ✓ **Rwanda Environment and Climate Change Policy, 2019**

The overall objective of the Environmental Policy is the improvement of man's wellbeing, the judicious utilization of natural resources and the protection and rational management of ecosystems for sustainable and fair development. The policy seeks to achieve this through improved health and quality of life for every citizen and promotion of sustainable socio economic development through a rational management and utilization of resources and Environment, integrating Environmental aspects into all the development policies, planning and in all activities carried out at the national, provincial and local level, with the full participation of the population, conservation, preserve and restoration of ecosystems and maintenance of ecological and systems functions.

The RDAP investments trigger this policy and will integrate the Rwanda Environment Policy in its implementation by protecting, restoring or maintaining both the quality of ecological and systems functions, involving all stakeholders in project activities and improving/ maintaining public health and safety.

- ✓ **Land policy, 2019**

The Rwanda land policy calls for rational use and sound management of national land resources, and that land use be based on established master plans. The policy also provides development of land use plans based on suitability of the areas/lands thus distinguishing the different categories of land and their purpose.

Project activities are not expected to acquire the land as trenches will be traced in road reserve, but this can happen through the proper alignment and the choice of the project engineers which can involve the small land acquisition. This will require RISA to observe the procedures of the national land policy that stipulates that land must be used for productive and development purposes without compromising its use by future generations.

- ✓ **E-waste management policy, 2018**

E-waste encompasses all discarded and disposed Electrical and Electronic Equipment (EEE), which is defined as equipment dependent on electric currents or electromagnetic fields in order to work properly, but also any for the generation, transfer and measurement of such currents and fields.

This policy aims at minimizing the adverse effects of e-waste on the environment and human health through appropriate legal and regulatory framework for e-waste management; promoting the establishment of e-waste management facilities and investment in E-waste management to ensure sustainability of e-waste management in Rwanda and; increasing the knowledge capacity of stakeholders by promoting the investment, education and awareness ineffective e-waste management. The environment and climate change policy highlights e-waste among the key emerging challenges and fastest growing of pollution. Furthermore, the environment law recognizes e-waste as hazardous and toxic waste and must be collected, treated and changed in a manner that

does not degrade the environment in order to prevent, eliminate or reduce their adverse effects on human health, natural resources and environment. The project activities will generate e-waste especially at the end life of the equipment to be used and their management should well follow the operations and procedures of e-waste management in Rwanda.

- ✓ **National Strategy for Transformation (NST1), 2018-2024**

The National Strategy for Transformation (NST1) entails interventions to enable the transformation journey towards achieving Vision 2050 aspirations. It merges the 7 Year Government Program (2017-2024) and the national medium-term development strategy, which were previously standalone documents. It integrates far-sighted, long-range global and regional commitments by embracing: (i) the Sustainable Development Goals (SDGs), (ii) the African Union Agenda 2063 and its First 10-Year Implementation Plan 2014-2023, (iii) the East African Community (EAC) Vision 2050, and (iv) the COP 21 Paris Agreement on Climate Change and other agreements.

The NST1 focuses on three pillars—mainly Economic Transformation, Social Transformation and Transformational Governance—and considers the seven (7) cross-cutting areas to attain inclusive and sustainable development: Capacity Development, HIV/AIDS and Non-Communicable Diseases, Disability and Social Inclusion, Gender and Family Promotion, Regional Integration and International Positioning, Disaster Management, Environment and Climate Change.

The objectives of the economic transformation pillars include: (i) create decent jobs for economic development and poverty reduction, (ii) accelerate urbanization to facilitate economic growth, (iii) promote industrial development, export promotion and expansion of trade related infrastructure, (iv) develop and promote a service-led and knowledge-based economy, (v) increase agriculture and livestock quality, productivity and production and (vi) sustainably exploit natural resources and protect the environment. the social transformation targets to (i) move towards a poverty free Rwanda, (ii) ensure a quality healthy population, (iii) develop a competitive and capable Rwandan population, (iv) ensure quality of education for all aiming at building a knowledge-based economy and (v) transition to a modern Rwandan household in urban and rural areas.

The present project is in line with all NST1 pillars as it will be a booster for economic development through improving online services, ease the socializing through enhancing the cheap and timely communication and facilitate the transformational governance by facilitating human resource management, information sharing and storage.

- ✓ **Green Growth and Climate Resilience Strategy, 2011**

Rwanda adopted the national Green Growth and Climate Resilience Strategy (GGCRS) in 2011 with the vision for Rwanda to be a developed climate-resilient and low-carbon economy by 2050. The mainstreaming and implementation of the GGCRS is mandated to the ministry responsible for environment and climate change, which is currently the Ministry of Environment. The GGCRS stipulates 4 strategic objectives:

- Energy security and a low-carbon energy supply that supports the development of Green Industry and Services;
- Sustainable land use and water resource management that results in food security;
- Appropriate urban development and preservation of biodiversity and ecosystem Services; and
- Social protection, improved health and disaster risk reduction that reduce vulnerability to climate change.

The proposed project is in line with this strategy as it will contribute to the reduction of unnecessary movement which will reduce the Green House Gases emissions that would have been emitted and deforestation to make the papers will be tackled through promoting the use of soft information, soft data transfer and storage.

✓ **Updated Nationally-Determined Contribution (NDC), 2020**

NDC document presents the Government of Rwanda's update of its first Nationally Determined Contributions (NDCs) for mitigation and adaptation for the period starting from 2020 up to 2030. The Government of Rwanda is committed to taking urgent action to mitigate and adapt to the effects of climate change. As a Party to the United Nations Framework Convention on Climate Change (UNFCCC), the country seeks to contribute to the ambitious goal of limiting temperature rise to 2^{o}C with efforts to reach 1.5^{o}C agreed under the Paris Agreement. Because Rwanda is highly vulnerable to climate change, adaptation is a key concern and a priority for the country.

✓ **International Conventions**

It is worth noting that Rwanda is a signatory to many agreements and conventions on environmental management. These include support for the provisions of Agenda 21 amongst other declarations and statements of principles, such as the Rio Declaration in 1992 on Environment and Development. Rwanda is also a party to the Basel and Bamako Conventions on the control of trans-boundary movements of hazardous wastes and their disposal, both conventions were developed with the purpose to ensure: the imports of hazardous wastes are prohibited; the generation of hazardous wastes and other wastes is minimized; that adequate disposal facilities exist for sound environmental management of wastes; and that management of waste minimize the risk to human health. Rwanda is also a signatory of Paris Agreement; United Nations Framework Convention on Climate Change (UNFCCC) and Stockholm Convention on persistent organic pollutants, as well as the Convention on Biological Diversity. Appropriate measures should be taken for proper waste management to make sure that the environment is kept safe.

2.1.2. Legal and Regulatory framework

This section describes the relevant policies and strategies, legal instruments, institutional arrangement and framework applicable to the implementation of proposed project with respect to environmental safeguards compliance.

✓ **Rwandan Constitution, 2015**

The constitution is the supreme law of the country. Any law, decision or act contrary to this Constitution is without effect. The Articles 22 and 53 of the Constitution of the Republic of Rwanda, promulgated in 2003 and revised in December 2015, articulate the rights and responsibilities of all citizens and the role of the state regarding the environment by providing that every citizen is entitled to a healthy and satisfying environment and that every person has the duty to protect, safeguard and promote the environment respectively. The guidance of the Constitution on environmental preservation and management as a crosscutting issue is reflected in the National Vision 2050 and the National Policy on Environment of 2017.

The Constitutional rights as articulated in Vision 2020, Vision 2050 and the Environment Policy are given effect by the Law No. 48/2018 of 13/08/2018 on environment. The Constitution also recognizes the ownership of property and every person's right to private property. Under Article 34 of the Rwandan constitution, every citizen has a right to private property, whether personal or owned in association with others.

Furthermore, it states that private property, whether individually or collectively owned, is inviolable. However, this right can be interfered with in case of public interest, in circumstances and procedures determined by law and subject to fair and prior compensation. The Article 35 stipulates that private ownership of land and other rights related to land are granted by the State. The constitution provides that a law should be in place to specify modalities of acquisition, transfer and use of land.

The Project activities will likely have adverse environmental impacts on environment through e-waste generation. The mitigation measures for environmental protection will be guided by the law No 48/2018 of 13/08/2018 on Environment.

- ✓ **Law on Environment, 2018**

The most relevant legislation for this study is the Law on Environment. The legislation sets out the general legal framework for Environment protection and management in Rwanda. It centres on avoiding and reducing disastrous consequences on the environment. The Ministry of Environment puts in place the instructions and procedures for the environment conservation. Until very recently, REMA was responsible for the approval of ESIA reports; this responsibility has now been transferred to Rwanda Development Board (RDB) where there is a department for ESIA, responsible for review and approval of all ESIA reports.

This project will observe the law No 48/2018 of 13/08/2018 on environment by preparing Environmental and Social Impact Assessment (ESIAs) or Environmental and Social Management Plans (ESMPs) in order to ensure reduction of disastrous consequences on the Environment in its activities. The project will also monitor the compliance with environmental safeguards in all sites.

- ✓ **Law n° 27/2021 of 10/06/2021 governing land**

The recently approved law n° 27/2021 of 10/06/2021, (replacing the 2013 law), determines modalities of allocating, acquisition, transfer and management of land in Rwanda. It also establishes the principles applicable to rights recognized over all lands situated on Rwanda's national territory and all rights united or incorporated with land, whether naturally or artificially.

According to article 9, a person who acquired land through inheritance, succession, purchase, donation, exchange, land sharing or legal grant by competent authorities, owns it in accordance with one of the following tenure modalities: (i) emphyteutic lease and (ii) freehold. Article 41 states that a holder of land rights enjoys full rights in exploiting his or her land in accordance with legal provisions. The State grants the right to free ownership of land and protects the land rights holder from being dispossessed of the land whether totally or partially, except in case of expropriation in the public interest in accordance with relevant laws. Project activities shall respect the land use plans of the area where the land is located and if any private land is affected then the person will be compensated in accordance with this law and World Bank ESS5.

- ✓ **Ministerial order N°001/2019 of 15/04/2019 establishing the list of projects that must undergo an environment impact assessment, instructions, requirements and procedures to conduct environmental impact assessment**

Article 3 and the appendices of this Order specify the works, activities and projects that have to undertake an environmental impact assessment (ESIA), partial ESIA or no ESIA before being granted permission to commence. Towers and antennas are under the category of projects that must undergo a partial environmental impact assessment. Other activities will be screen based on this ESMF and World Bank ESS1 to determine if ESIA is required.

- ✓ **Expropriation Law in the Public Interest, 2015**

The law No. 32/2015 of 11/06/2015 related to expropriation in the public interests determines the procedures relating to expropriation of land in the interest of the public. Article 3 of the law stipulates that it is only the government that has authority to carry out expropriation. However, the project, at any level, which intends to carry out acts of expropriation in the public interest, shall provide funds for inventory of assets of the person to be expropriated and for just compensation on its budget.
According to the organic law, no person shall hinder the implementation of the program of expropriation on pretext of self-centred justifications and no land owner shall oppose any underground or surface activity carried out on his or her land with an aim of public interest. In case it causes any loss to him or her, he or she shall receive fair and just compensation for it. The law identifies properties to be valued for just and fair compensation including land and activities that

were carried out on the land such as different crops, forests, any buildings or any other activity aimed at efficient use of land or its productivity. However, as per Article 27 of the law No. 32/2015 of 11/06/2015, the owner of land designated for expropriation in the public interest shall provide proof of rights to land and property incorporated thereon like land titles or any other documentary evidence showing he/she has property ownership.

✓ **Regulations on E-waste management in Rwanda, 2019**

In a bid to manage increasing e-waste in Rwanda, Rwanda Utilities Regulatory Agency (RURA) issued the Regulation n°002 of 26/4/2018 Governing E-Waste Management in Rwanda. This Regulation sets a regulatory framework for electrical and electronic waste management in Rwanda and reiterates that any person carrying out activities related to e-waste collection, transportation, retailing, importation, dismantling, recycling, refurbishing shall hold appropriate license issued by the Regulatory Authority.

This regulation is established for protecting the environment and human health by preventing or reducing the adverse impacts of the generation and management of waste from electrical and electronic equipment, and by promoting resource efficiency through reuse, recycling and other forms of recovery of E-waste in environmental friendly manner. Key requirements under this regulation include:

- Any person carrying out activities related to waste collection, transportation, retailing, importation, dismantling, recycling, refurbishing shall hold an appropriate licence issued by the Regulatory Authority, under this regulation.
- Any collector and transporter of e-waste shall: a) ensure that the e-waste collected is stored in proper and secured manner till is sent to the licensed dismantler or recycler;
- The applicant for e-waste collection and transportation license shall: (i) have adequate equipment for collection and transportation as specified in E-waste standard; (ii) ensure segregation at source of e-waste with other types of solid waste and handled them separately in accordance with standard;(iii) e-waste containers shall not be overfilled and shall be appropriately covered and labelled; (iv) the containers shall be immediately replaced once they are worn out; (v) have a collection point adequate to serve the geographical area and the volume of separated e-waste tonnage captured; and (vi) provide a copy of a EIA certificate, if the applicant intends to construct a storage facility.

In Rwanda there already are e-waste recycling plants established by the government and managed by a private operator, EnviroServe, with a capacity of treating 10 tones every week. Further, e-waste collection points are being established in all 30 districts by the end of 2021. To manage e-waste anticipated from the proposed project, it is recommended that RISA will establish a working agreement with the plants to facilitate the collection, transport and recycling of e-waste across the country.

✓ **Regulations occupational Health and safety.**

Apart from the environmental law, the other law that deals with occupational health and safety is the labour law approved in 2018. The entire section 5, article 77 to article 82, is dedicated to the provisions on occupational health and safety in working areas while article 19 provides obligations of employer as well as rights of employee in case of occupational Health and safety incidents. RISA will ensure that those provisions are complied with during RDAP implementation. Some of these provisions are the following:

Article 19: Occupational accident or disease: An employee who has an occupational accident or disease while his/her employer has contributed for him/ her in a social security body in Rwanda, he/she is entitled to compensation in accordance with Laws governing social security in Rwanda. An employee having an occupational accident or disease while the employer has not contributed for him/her in a social security body in Rwanda, receives from the employer compensation equivalent to the social benefits he/she would have received from a social security body in Rwanda if the employer had contributed for him/her, including medical and related expenses. An employee cannot

be dismissed as a result of occupational accident unless a recognized doctor declares him/her unfit to resume service in the employment he/she held prior to the accident. If it appears that the employee is fit to work again, the employer offers him/her another employment suitable to his/her ability.

Article 77: General health and safety conditions in the workplace: An employer must ensure the health, safety and welfare in the workplace for employees working in his/her enterprise and for all persons who frequent the enterprise. An employee is not required to pay any cost in connection with measures aimed at ensuring occupational health and safety.

Article 78: Occupational Health and Safety Committee: An enterprise establishes an Occupational Safety and Health Committee.

Article 79: Personal protective Equipment: An employer provides every person entering an area in an enterprise where he/she is likely to be exposed to the risk of injury or harm from contamination, with suitable protective equipment and instructions for their use and verify that they are used.

Article 80: First aid, fire-fighting and imminent danger: An employer takes the necessary measures for first aid, fire-fighting, preventing and fighting imminent danger that can occur in his/her enterprise.

Article 81: Preventing and fighting occupational accidents and diseases

In order to prevent and fight occupational accidents and diseases, an employer does the following:

- to assess risks of occupational accidents and diseases;
- to develop occupational safety and health policy and monitor its implementation;
- to prevent risks of occupational accidents and diseases;
- to reduce in the best possible way risks of occupational accidents and diseases;
- to fight occupational accidents and diseases;
- to adapt modalities of preserving occupational health and security of employees with new technology.

Article 82: Declaration of occupational accidents, disease or death: An employer declares to the management of the social security body in Rwanda and to the Inspectorate of Labour where the enterprise is located, occupational accident, disease or death in accordance with relevant Laws. In case the employer fails to declare occupational accident, disease or death, the victim of an accident or of the disease is entitled to do it. It can also be done by the beneficiary of the victim of accident or disease or of the deceased or by the competent authority within a period provided for by relevant Laws.

2.1.3. Institutional framework for environmental and social management in Rwanda

The institutional framework for environmental management is currently enshrined in the Law 48/2018 of 13/08/2018 on Environment.

a) Ministry of Environment (MoE)

This Ministry leads the Environment and Natural Resources (ENR) sector which is divided into 5 subsectors, namely (i) integrated water Resources Management, (ii) Environment and Climate Change, (iii) Forestry, (iv) Land Management and Use, and (v) Mining. The Ministry is also responsible for meteorological services. MoE is responsible for the development of policies, laws and regulations as well as coordination of all activities in the environment and natural resources sector, as well as their follow up and evaluation. The Ministry of Environment has the following main responsibilities:

- ✓ To develop and disseminate the environment and climate change policies, strategies and programs
- ✓ To monitor and evaluate the implementation and mainstreaming of environment and climate change policies, strategies and programs across all sectors, especially productive sector;
- ✓ To oversee and evaluate institutions under its supervision by providing guidance on the implementation of specific programs to be realised by the institutions under its supervision and local government;
- ✓ To mobilise the necessary resources for the development, protection and conservation of the environment for the climate change adaptation and mitigation.

b) Rwanda Environment Management Authority (REMA)

Rwanda Environment Management Authority (REMA) was established in 2004 to act as the implementing organ of environment-related policies and laws in Rwanda. REMA is also tasked to coordinate different environmental protection activities undertaken by environmental promotion agencies; to promote the integration of environmental issues in development policies, projects, plans and programmes; to coordinate implementation of Government policies and decisions taken by the Board of Directors and ensure the integration of environmental issues in national planning among concerned departments and institutions within the Government; to advise the Government with regard to the legislation and other measures relating to environmental management or implementation of conventions, treaties and international agreements relevant to the field of environment as and when necessary; to make proposals to the Government in the field of environmental policies and strategies; etc.

b) Rwanda Development Board (RDB)

RDB was created by Organic Law N° 53/2008 of 02/09/2008 with a mission of improving the well-being of all Rwandans by fast-tracking development, catalysing sustainable economic growth, and creating prosperity for all. According to the recent restructuring of government institutions, RDB was assigned the responsibility of reviewing the ESIA report and authorizing the project to proceed by issuing an ESIA certificate.

c) Rwanda Utilities Regulatory Authority (RURA)

Rwanda Utilities Regulatory Authority (RURA) was initially created by the Law n° 39/2001 of 13 September 2001 with the mission to regulate certain public Utilities, namely: telecommunications network and/or Telecommunications services, electricity, water, removal of waste products from residential or business premises, extraction and distribution of gas and transport of goods and persons. This Law was further reviewed and replaced by Law Nº 09/2013 of 01/03/2013 establishing Rwanda Utilities Regulatory Authority (RURA) and determining its mission, powers, organization and functioning. This Law gives to RURA the mandate to regulate:

- Telecommunications, information technology, broadcasting and converging electronic technologies including the internet and any other audio-visual information and communication technology;
- Postal services;
- Renewable and non-renewable energy, industrial gases, pipelines and storage facilities;
- Water supply including tariffs;
- Sanitation;
- Transport of persons and goods; and
- Other public utilities, if deemed necessary.

Under the proposed project, RURA will play a critical role especially in e-waste management by certifying companies involved in E-waste management but also in ensuring that established regulations and guidelines for E-waste are complied with. Further, RURA is planning to register all operators in electronic repairs with the aim to facilitate the collection and management of e-waste.

d) RISA

RISA will implement the project and will monitor the compliance with environmental and social requirements across project sites.

e) BRD

As a financial intermediary, BRD has already developed an Environmental and Social Management System under other two World Bank funded projects. Therefore BRD will implement the ESMS to ensure that E&S requirements are complied with within financed activities.

f) Ministry of Labour and Public Service(MIFOTRA)

MIFOTRA is responsible for designing and monitoring implementation of national policy and legislation governing employment including occupational health and safety. Though its Inspection directorate, the Ministry is responsible for monitoring compliance with this Law, its implementing orders, collective agreements as well as awareness and providing advice on matters relating to Laws governing labour and social security.

However, at site level and on day to day basis the responsibility of occupational will be under the Safeguards Specialists, Human Resources staff (Social Safeguards Specialist, Environmental Safeguards Specialist, and HR Officer) and Project managers to ensure safety and health at workplaces. However, all project workers will be trained on occupational health and safety, its approaches and hazard avoidance concepts. Each contractor will have the safeguards staff who will have Occupational Health and Safety as his responsibility and the overall coordination will be ensured by SPIU safeguards staff.

g) Local Governments

The proposed project will be implemented in all 30 districts of Rwanda. Under the general guidelines and procedure for ESIA, each district is tasked to perform the following functions:

- At the request of RDB, review subproject briefs so as to advise on Terms of Reference;
- Provide information or advice to developers and ESIA Experts when consulted during the ESIA process;
- At the request of RDB, review ESIA or ESMP reports and provide comments to RDB;
- Assist RDB in organizing public hearings;
- Host public hearings as well as individual consultations;
- Gather written comments from public and transmit them to RDB;
- To be actively involved in the implementation of Environmental and Social Management Plans (ESMP) and Monitoring Plan (ESMP) and work closely with all concerned Stakeholders.

2.2. World Bank Environmental and Social Framework (ESF)

The World Bank has recently adopted Environmental and Social Framework (ESF) that are replacing the environmental and social safeguard policies that have been in use over the last 4 decades. These Standards are designed to avoid, minimize, reduce or mitigate the adverse environmental and social risks and impacts of the project. They provide guidelines for Bank and borrowers in the identification, preparation, implementation and monitoring of programs and projects.

This ESMF has been designed so that all project activities funded under this project will comply with both the Environmental laws of the Government of Rwanda and ESF of the Bank. The Bank's environmental and social standards (ESS) are presented below:

- Assessment and Management of Environmental and Social Risks and Impacts (ESS1);
- Labour and Working Conditions (ESS2),
- Resource Efficiency and Pollution Prevention and Management (ESS3),
- Community Health and Safety (ESS4);
- Land Acquisition, Restrictions on Land Use and Involuntary Resettlement (ESS5);

- Biodiversity Conservation and Sustainable Management of Living Natural Resources (ESS6);
- Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities (ESS7);
- Cultural Heritage (ESS8);
- Financial Intermediaries (ESS9);
- Stakeholder Engagement and Information Disclosure (ESS10).

The World Bank (WB) and GoR agreed that the project will trigger all environmental and social Standards of the WB, except ESS7. This is because the country does not possess among its nation (i) a group self-identified as distinct indigenous group and recognized as such by others, (ii) collective attachment to geographically distinct habitats, ancestral territories, areas of seasonal use or occupation, etc., (iii) no group with customary cultural, economic, social or political institutions distinct or separate from mainstream society or culture and (iv) no group speaking a distinct language or dialect often different from the official language or languages of the country or region where they live.

Table 2: World Bank Environmental and Social Standards Applicable to the project

World Bank Environmental and Social Standards	Applicability and Relevance to the Project? (Yes/ No)	Compliance Plan
ESS1:Environmental Assessment	Yes	An ESMF will be developed and submitted to the WB for review and consideration to enhance project compliance. ESIAs, ESMPs, and Environmental and Social Audits will be conducted when specific sites and activities are identified prepared.
ESS2: Labour and Working Conditions	Yes	Specific Labour Management Procedures (LMP) will be developed with a Grievance Redress Mechanism (GRM) for handling grievances both of civil and criminal nature including GBV &SEA among workers. And other than conducting timely sensitization and awareness sessions on GBV/SEA and SH, signage on GBV/SEA and SH will be erected strategically at the project work sites and various district boards. All workers shall also be provided with PPE, code of conduct and letters of engagement specifying the terms and conditions of their engagements. There shall be a workers' GRM, Incident Management and investigation procedure. All workers will be inducted into the NITA-U HIV/AIDS as well as the sexual harassment policies
ESS3: Resource Efficiency and Pollution Prevention and Management	Yes	The project seeks to minimize generation of hazardous and non-hazardous waste including but not limited to batteries, spoils from splicing activities, damaged and end of life solar panels, off cuts from treated poles and human waste management, etc. e-waste management specifically has been integrated into project design. Therefore, waste management practices will be upheld throughout the project cycle. The ESIA and ESMPs shall take this into account aspects of resource efficiency. Agreement will be established with existing e-waste monument Plant, Cell phone operators and repairs for the collection, transport and recycling of e-waste.
ESS4: Community Health and Safety	Yes	While the project shall concentrate on road reserves and other government facilities, interactions with host communities shall be inevitable with a potential impact on access points for example where trenching goes through paths for communities and animals, noise during below ground borrowing in tarmacked areas. There is also the potential of road accidents as the project shall utilize vehicular movements as well as a risk of HIV/AIDS and COVID-19 transmission. As mitigation, care shall be taken to ensure prompt risk assessments and adherence to set controls prior and during project

World Bank Environmental and Social Standards	Applicability and Relevance to the Project? (Yes/ No)	Compliance Plan
		implementation. Traffic management plan will be developed and implanted especially for fiber optic works To address the risk of HIV/AIDS and COVID-19 transmission, continuous awareness sessions on the prevention and spread of HIV/AIDS, provision of condoms at work sites, and adherence to COVID-19 MOH SOPs.
ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Yes	The project will utilize road reserves and Government owned land to avoid any involuntary displacements from personal property. Right of Way permits will be obtained prior to commencement of project implementation works. An RPF will be developed to provide guidance in the event that land has to be acquired. RAPs will be prepared where necessary.
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Yes	The project will not affect wetlands and Protected Areas like wildlife reserves, forests and parks. However, laying fiber optic in road reserve site clearance may affected site biodiversity and utilization of poles could also impact on avifauna? Utilization of un-cleaned tools (contaminated with soils from other areas) could also introduce invasive plant species along the route. Permits from relevant authorities and appropriate Toolbox talks shall be carried out as an addition to the ESMP and Risk Assessments carried out to check on these ESIA and ESMPs shall take this into account.
ESS7: Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities	No	This standard is not applicable in Rwanda,
ESS8: Cultural Heritage	Yes	The project shall develop and rely on a chance finds procedure given the fact that it involves point excavations for pits and trenching. Awareness sessions to be carried out for project implementation teams and this shall form part of the construction contracts to be awarded for the project. The chance finds procedure will be included in the ESMF and subsequently ESMPs shall follow.
ESS9: Financial intermediaries	Yes	One Financial intermediary is considered during the implementation of this project. That is the Development bank of Rwanda (BRD). And ESMS will be prepared and implemented for the FI
ESS10: Stakeholder Engagement and Information Disclosure	Yes	A Stakeholder Engagement Plan developed for Rwanda Digital Acceleration Project which provides for open and transparent engagement providing for effective and inclusive engagement throughout the project cycle. A GRM and stakeholder engagement plan shall be utilized throughout the project cycle

2.3. Comparison between Rwandan and World Bank ESSs

This section compares the similarities and differences between National requirements and the World Bank environmental and social standards (ESSs). Basically, there is no significant difference in regard to the environment and social management framework between national requirements and World Bank safeguards. Some gaps identified in the national Rwandan legislation and the World Bank Environmental and Social Framework are presented below:

Table 3: Differences between Rwanda regulations and World Bank ESF

ESF requirements	National Legal requirements	Gaps	Recommended Actions
Standard 1: Assessment and Management of Environmental and Social Risks and Impacts			
(i)To identify, evaluate and manage the environment and social risks and impacts of the project in a manner consistent with the ESSs.	The Law 48/2018 of 13/08/2018 suggests a systematic process of identifying environmental, social and economic impacts of a project before a decision of its acceptance is made;. .	The difference lies between the Project Classification according to levels of impacts while WB classifies into 4 categories (High, Substantial, Moderate and Low Risk), While the MINISTERIAL ORDER No 001/2019 OF 15/04/2019 classifies projects in three categories after screening. (Project that must undergo full EIA, Partial EIA and no EIA for the project not listed in the Annex 1 and 2.Further, ESF classification is risk based while national classification is mainly size based	All sub-projects would be screened as there might be some projects forgotten, but which have adverse environmental impacts
(ii)To adopt a mitigation hierarchy approach	The Rwandan Regulation does not specify the use of hierarchy but it suggests that the mitigation measures should aim at preventing, eliminating or reducing the adverse effects on human health, natural resources and environment.	Although current national legislative framework seeks to avoid and mitigate social risks, there is no explicit directive to minimize impacts or to promote the adoption of a clearly-defined mitigation hierarchy approach to managing social risks. In addition, the current system emphasizes cash compensation as a mitigation measure and hence does not address other losses.	The ESS of the World Bank will be adopted during project implementation.
(iii)To adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are not disadvantaged in sharing development benefits and opportunities resulting from the project.	The Constitution of Rwanda approves that the State has also the duty, within the limits of its means, to undertake special actions aimed at the welfare of the indigent, the elderly and other vulnerable groups.	The National Social Protection Policy defines a v**ulnerable** individual or household who, for whatever reason, is less able to withstand socio-economic shocks and is therefore at an elevated risk of experience declines in welfare and or other forms of social deprivation. In the context of this strategy key vulnerable groups in Rwanda include low income and/or labour-constrained individuals or households such as older people, people with disabilities, female-headed households etc.	The vulnerability will be assessed based on country context and best practices and special attention will be provided to those identified as vulnerable
(iv)To utilize national environmental and social Institutions, systems, laws, regulations and procedures in the assessment, development and implementation of projects, whenever appropriate.	There are various institutions systems, laws and regulations for the Environmental and Social management in the country	The mandated institutions have limited resources for the effective environmental and social implementation and with some exceptions, monitoring and compliance assessment is inadequate or absent.	The ESS1 will be applied during project implementation to address this gap.
(v)To promote improved environmental and social performance, in ways which recognize and enhance Borrower capacity	The Law suggests to train and improve the capacity of the workforce while ensuring the protection of workers' rights in accordance with laws and international conventions ratified by Rwanda;	The law does not clearly define how they should be trained.	The ESS1 will be applied during project implementation to address this gap.

ESF requirements	National Legal requirements	Gaps	Recommended Actions
Standard 2: Labour and Working Conditions			
(i)To promote safety and health at work.	Ministerial order Nº2 of 17/05/2012 determining conditions for occupational and health safety aims to improve health, safety, and general wellbeing of workers and workplaces by promoting occupational health and safe practices in order to eliminate occupational accidents and diseases, hence achieve better productivity in the workplaces.	The similarity is evident.	The ESS shall be given priority during project implementation
(ii)To promote the fair treatment, non-discrimination and equal opportunity of project workers.	The working conditions in Rwanda are governed by the Law N° 66/2018 of 30/08/2018 regulating Labour and its implementing orders. This Law applies all aspect of labour be it formal and informal sectors and provides guidelines related to relationship between an employee and his/her employer in regard to: contract, wages and others benefits, working environment, working hours and different types of allowed leaves which the employee is entitled to. This law also sets standards in terms of employment age and prohibits all form of forced labour, discrimination, and sexual harassment.	The similarity is evident.	The implementation of the project will apply the ESS2
(iii) To protect project workers, including vulnerable workers.	The law requires the protection of workers during employment	The enforcement is lacking, in part due to lack of budgeting and staffing, as well as the high unemployment in the country, which facilitates the exploitation of workers.	With the budgeting allocated for this project, harmony will be sought for both the ESS and the national requirements
(iv) To prevent the use of all forms of forced labour and child labour.	As (ii) in this section 2	As (ii) in this section 2	The ESS shall be given priority during project implementation
(v)To support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law.	Article 39 of Rwandan Constitution as revised in 2015 suggests that the right to freedom of association is guaranteed and does not require prior authorization. This right is exercised under conditions determined by law.	The casual nature of employment affects unionization, as employees paid per day are unable to make the monthly check off in support of union activities.	The World Bank ESS2 that is stronger in terms of supporting the freedom of association will be adopted
Standard 3: Resource Efficiency and Pollution Prevention and Management			
(i)To promote the sustainable use of resources, including energy, water and raw materials.	The Law on the environment promote the sustainable use of the resources where in its Article 4 of Principle of environmental sustainability emphasizes that present and future generations enjoy equal opportunities.	The similarities are evident.	National regulations will be employed and any gaps with ESS3 will be filled with appropriate mitigation measures.

ESF requirements	National Legal requirements	Gaps	Recommended Actions
	The right to development must be achieved in consideration of the needs of present and future generations.		
(ii)To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities.	The Law on Environment in its Article 15 of Protection and conservation of the atmosphere suggests that any installation likely to create risks or cause pollution, vehicles and engine driven machines, commercial, craft or agricultural activities must be conducted in accordance with technical principles established by competent authorities in order to protect and preserve the atmosphere.	The National requirements are reinforced by the Law	The World Bank ESS3 will be employed as with most Bank funded projects for effectiveness of ESS 3.
(iii)To avoid or minimize project-related emissions of short and long-lived climate pollutants.	The article 26 of the Law on Environment orders to take necessary measures to protect and respect the obligations stipulated in international agreements which it signed; to prohibit any activity carried out on its behalf or in its capacity that may degrade the environment in another country or in regions beyond its national jurisdiction; to co-operate with other states in taking decisions to fight trans-boundary pollution; to protect, conserve and manage properly the environment using appropriate measures; while in its Article 50 establishes punishments.	The National requirements are reinforced by the Law	National regulations will be employed and any gaps with ESS3 will be filled with appropriate mitigation measures.
(iv) To avoid or minimize generation of hazardous and non-hazardous waste.	Article 19: Management of hazardous and toxic waste Any waste, especially from hospitals, health centres and clinics, research centres equipped with laboratories, industries and any other hazardous or toxic waste must be collected, treated and changed in a manner that does not degrade the environment in order to prevent, eliminate or reduce their adverse effects on human health, natural resources and environment. Management, disposal and trans-boundary movements of hazardous or toxic waste are governed by an order of the Minister.	The Law is enforced and the management to oversee that all kind of waste are well managed falls under RURA's responsibility while the management to restrict their entry fraudulently is taken care of by RSB (Rwanda Standards Board)	National regulations will be employed and any gaps with ESS3 will be filled with appropriate mitigation measures.
Standard 4: Community Health and Safety			
(i)To anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project life cycle from both routine and non-routine circumstances.	In Rwanda there is no specific law on community health and safety. Some provisions are included in environment law(2018) and Expropriation law(2015)	Project impacts on hosting community is not well articulated in national regulations. Only impacts on properties is granted .	The ESS4 that is more comprehensive standard will be applied regarding the anticipation and avoidance of adverse impacts on the

ESF requirements	National Legal requirements	Gaps	Recommended Actions
			health and safety of project-affected communities
Standard 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement			
Compensation should be provided to all Affected persons who: a) Have formal legal rights to land or assets; b) Do not have formal legal rights to land or assets, but have a claim to land or assets that is recognized or recognizable under national law; or c) Have no recognizable legal right or claim to the land or assets they occupy or use.	National regulations recognize Affected people who have land titles and documentary evidence that he/she is the owner of property incorporated on land. A person dispossessed of land or unlawfully occupying land or having developed activities on land on which such activities are prohibited after the enactment of relevant laws shall receive no compensation.	The Bank diverges with the Rwanda Law whereas the law in Rwanda refuses to recognize illegal land owners and does not provide any Compensation	ESS5 will apply and the compensation and resettlement measures should be provided to all affected person including those with no land title and tenants. Those who don't have legal right on the land will be compensated for assets and properties established on the land
The ESS5 requires the borrower to consider feasible alternative project designs to avoid or minimize land acquisition or restrictions on land use,	The national law on environment and ESIA procedures requires the developer to explore project alternatives but is silent about avoiding or minimizing involuntary resettlement.	While ESS5 requires the borrower to explore alternatives that avoid or minimize resettlement impacts, the national regulations only requires the provision of compensation	ESS5 will apply
When land acquisition or restrictions on land use (whether permanent or temporary) cannot be avoided, the ESS5 requires Borrower to offer affected persons compensation at replacement cost, and other assistance as may be necessary to help them improve or at least restore their standards of living or livelihoods.	The national Regulations (expropriation law, art 27) defines properties subject to valuation for the payment of fair compensation due to expropriation in the public interest are land, activities carried out on land for its efficient management or rational use and compensations for disruption caused by expropriation.	Loss of income is not covered under national regulations and regulations are silent on livelihood measures or assistance to vulnerable people	ESS5 will apply
ESS5 requires that the Borrower takes possession of acquired land and related assets only after compensation in accordance with this ESS has been made available and, where applicable, displaced people have been resettled and moving allowances have been provided to the displaced persons in addition to compensation. In addition, livelihood restoration and improvement programs will commence in a timely fashion in order to ensure that affected persons are sufficiently prepared to take advantage of alternative livelihood opportunities as the need to do so arises.	Article 36 of the Expropriation law (2015) state that approved fair compensation shall be paid within a period not exceeding one hundred and twenty (120) days from the day of its approval. Subsequent to receiving fair compensation, the expropriated person shall have a period not exceeding one hundred and twenty (120) days to relocate.	The ESS5 requires providing compensation measures before land take while the national Regulations allows the project developer to take the land even before the compensation as long as the compensation is made in 120 days.	Compensation and provision of resettlement measures will be given prior land take and any construction works.
ESS5 requires the Borrower to engage with affected communities, including host communities, through the process of stakeholder	Article 24 of expropriation law requires the District or City of Kigali administration or the relevant Ministry to inform the persons to be expropriated in	While the ESS5 requires consultation with affected communities and other stakeholders,	ESS5 will apply and the RPF and RAP, if needed, will include requirements for

ESF requirements	National Legal requirements	Gaps	Recommended Actions
engagement described in ESS10. Decision-making processes related to resettlement and livelihood restoration will include options and alternatives from which affected persons may choose.	the public interest of the expected start date of measurement of land and inventory of property incorporated thereon.	the national regulations requires only communication to the affected people.	stakeholder consultation and engagement
ESS5 requires borrowers to ensure that a grievance mechanism for the project is in place, in accordance with ESS10 as early as possible in project development to address specific concerns about compensation, relocation or livelihood restoration measures raised by displaced persons (or others) in a timely fashion.	Article 33 of expropriation law state that Within seven (7) days after the approval of the valuation report by the expropriator, any person to be expropriated who is not satisfied with the assessed value of his/her land and property incorporated thereon shall indicate in writing grounds for his/her dissatisfaction with the valuation report. Any person contesting the assessed value shall, at his/her own expense, engage the services of a valuer or a valuation firm recognized by the Institute of Real Property Valuers in Rwanda to carry out a counter-assessment of the value.	While ESS5 requires the establishment of Grievance Redress mechanism for the proposed project , National regulations provides only steps and timeframe for contesting valuation report	Grievance redress mechanism will be established at project level, district level and site level
Where land acquisition or restrictions on land use are unavoidable, the Borrower will, as part of the environmental and social assessment, conduct a census to identify the persons who will be affected by the project, to establish an inventory of land and assets to be affected, to determine who will be eligible for compensation and assistance, and to discourage ineligible persons, such as opportunistic settlers, from claiming benefits.	Article 10 of expropriation law requires the project developer to only prepare application that shall indicate: **1**° the nature of the project; **2°** the indication that the project aims at the public interest; **3°** the master plan of land where the project will be carried out; **4°** the document indicating that the project has no detrimental effect on the environment; **5°** the document confirming the availability of funds for fair compensation; **6°** the explanatory note detailing that such land or place suits the project; **7°** the minutes indicating that the concerned population was sensitized about the project and its importance;	The measure gap in terms of planning and implementation is the absence of socio-economic assessment of project affected people and inventory of affected assets in the application report.	The socio-economic assessment of project affected people and inventory of affected assets will be part of the Resettlement Plan.
The social assessment will also address the claims of communities or groups who, for valid reasons, may not be present in the project area during the time of the census, such as seasonal resource users.	The social assessment is part of Environmental Impact assessment.	Regulations on land acquisition does not require social assessment.	Social assessment will be part of Resettlement Plan..
The Borrower will establish a cut-off date for eligibility.	The District or City of Kigali administration or the relevant Ministry must inform the persons to be expropriated in the public interest of the expected	The only gap identified is that the national regulations does not include warnings to the persons settling in the project area after the cut-off date may be subject to removal.	The cut-off date will be established and communicated to all affected people.

ESF requirements	National Legal requirements	Gaps	Recommended Actions
	start date of measurement of land and inventory of property incorporated thereon.		
In the case of projects affecting livelihoods or income generation, the Borrower's plan will include measures to allow affected persons to improve, or at least restore, their incomes or livelihoods.	National Regulation are silent about economic displacement and does not provide any livelihood restoration program	Livelihood restoration and economic displacement are not considered under national regulations	Both physical and economic displacement will be considered and livelihood plan prepared as appropriate.
The Borrower will establish means of collaboration between the agency or entity responsible for project implementation and any other governmental agencies, subnational jurisdictions or entities that are responsible for any aspects of land acquisition, resettlement planning, or provision of necessary assistance.	Section one of the expropriation law provides the implementation arrangements for land acquisition from approving, implementation and implementation of decisions. Further, the land law of 2013 defines roles and responsibility of various stakeholders involved in land administration and expropriation.	No major gap identified apart from technical capacity of local entities that needs to be enhanced	RPF under preparation has provided implementation arrangement from national level to local level and the Resettlement plan will include a section on implementation arrangement
Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources			
(i)To protect and conserve biodiversity and habitats.	The article 28 on the Biodiversity conservation of the Law 48/2018 of 13/8/2018 on Environment emphasizes that the state has the responsibility to establish the list of species of animals and plants that must be protected depending on their role in ecosystems, their scarcity, their aesthetic value, their threat to extinction and their economic, cultural and scientific role; and to identify areas to be protected for conservation or rehabilitation of ecosystems, forests, woodlands, species of biodiversity and protected zones, monuments, historical sites and landscapes.	No major gap	National regulations will be employed and any gaps with ESS6 will be filled with appropriate mitigation measures.
(ii) Where biodiversity impacts are likely, apply mitigation hierarchy and precautionary approach in project design & implementation	The National Regulations do not emphasize the hierarchy.	Though the laws do not emphasize on the hierarchy, they agree on the principle of preventing any harm to biodiversity by all means.	The ESS6 will be adopted for Rwanda Digital Acceleration project being a bank funded project so as to achieve good compliance
(iii) To promote the sustainable management of living natural resources.	The chapter III regarding the conservation and protection of the environment of the Law on the environment above emphasizes that all natural resources should be protected from all kinds of degradation and they must be used in a sustainable manner in accordance with relevant laws.	The implementation is highly variable as some implementers do not involve a multidisciplinary team to assess and adequately manage impacts.	National Regulations will be complemented by ESS6 will be adopted
(iv)To support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of	National Regulation are silent about economic displacement and does not provide any livelihood restoration program	Livelihood restoration and economic displacement are not considered under national regulations	The ESS6 will be applied

ESF requirements	National Legal requirements	Gaps	Recommended Actions
practices that integrate conservation needs and development priorities			
Standard 8: Cultural Heritage			
(i)To protect cultural heritage from the adverse impacts of project activities and support its preservation.	The protection and preservation of culture heritage is governed by the Law Nº 28/2016 of 22/7/2016 on The Preservation of Cultural Heritage and Traditional Knowledge The Article 15 of this law on Restrictions on classified heritage requires that, apart from routine tasks of maintaining cultural heritage, no person shall destroy, move, repair or modify in any way classified cultural heritage without prior written approval of the Minister within sixty (60) days from the date of receipt of the complete file. In case the Minister fails to reply within the prescribed period, the application is deemed accepted. No person shall affix texts, images or install advertising signs on a historical monument or in its neighbouring area.	Chance finds procedures are not included in national regulations	ESS8 will apply
Standard 9: Financial Intermediaries			
To set out how the FI will assess and manage environmental and social risks and impacts associated with the subprojects it finances.	The financial institutions are governed by the regulation no2100 /2018 -00011[614] of 12/12/2018 of the National Bank of Rwanda governing non deposit taking lending financial institution. This regulation is silent about the financial intermediaries.	There is no law that compels FI to assess and manage E&S risks and impacts associated with projects	The WB ESS9 will be adopted including the preparation and implementation of ESMS for FIs.
Standard 10: Stakeholder Engagement and Information Disclosure Consultants			
To establish a systematic approach to stakeholder engagement that will help Borrowers identify stakeholders and build and maintain a constructive relationship with them, in particular project-affected parties.	The Law 48/2018 of 13/08/2018 on environment requires public hearings and consultation during Environmental studies.	The lack of legislation to guide the consultation of people on matters that affect them remains a big loophole in ensuring planning and budgeting of meaningful consultations. The Consultations required would be insufficient for the effective management of social risks on a project with significant impacts since it considers mainly environmental risks.	The ESS10 will be employed during project implementation.
To assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be taken into account in project design and environmental and social performance.	**MO 001 of 15/04/2019 in its article 10 on public participation to express views on the environmental impact assessment report requires that t**he stakeholders may comment on the environmental impact assessment report and	The similarities are evident though the ESS10 provide more clarity.	National regulations will be employed and any gaps with ESS10 will be filled with appropriate mitigation measures.

ESF requirements	National Legal requirements	Gaps	Recommended Actions
	express views on the impacts of the proposed project. The authorised organ covers all costs of the public hearing process. The stakeholders views are considered when selecting the best alternative of the project to be implemented.		
(iii) To promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life cycle on issues that could potentially affect them.	The Expropriation law in public interest of 2015 in its article 6 requires that the initiator of an act aimed at the implementation of land use and development master plans shall first negotiate with owners of assets that are affected by the project. In case negotiations fail, formalities related to expropriation in the public interest shall be followed upon request of the expropriator and the initiator of the project, taking into account the interests of the person to be expropriated. The price or value of assets affected by the project shall be paid by the initiator of the project before any commencement of activities.	During the project implementation Project affected People are engaged and the Grievance Redress Mechanism is established together with the committees at cell, sector, and district level. However, the implementation is hampered by the poor training and lack of means to help the committees to carry out the regular meetings and visits.	The ESS10 will be applied to promote effective inclusion of project affected parties in the implementation
(iv) To ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format.	Though the studies are disclosed, the law is silent about the disclosure of the Safeguards document.	No clear information disclosure in national environmental and Social regulations	ESS10 will apply

Source: WB ESF and National Regulations

2.4. World Bank Group Environmental, Health and Safety Guidelines

2.4.1. Environmental, Health, and Safety General Guidelines

The Environmental, Health, and Safety (EHS) Guidelines[6] are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP) that WB-funded projects should apply. These General EHS Guidelines are designed to be used together with the relevant Industry Sector EHS Guidelines which provide guidance to users on EHS issues in specific industry sectors. The applicability of the EHS Guidelines should be tailored to the hazards and risks established for each project on the basis of the results of an environmental assessment in which site-specific variables, such as host country context, absorptive capacity of the environment, and other project factors, are taken into account. When host country regulations differ from the levels and measures presented in the EHS Guidelines, projects are expected to achieve whichever is more stringent. If less stringent levels or measures than those provided in these EHS Guidelines are appropriate, in view of specific project circumstances, a full and detailed justification for any proposed alternatives is needed as part of the site-specific environmental assessment. This justification should demonstrate that the choice for any alternate performance levels is protective of human health and the environment.

2.4.2. General Approach to the Management of EHS Issues at the Facility or subproject Level

Effective management of environmental, health, and safety (EHS) issues entails the inclusion of EHS considerations into corporate-and facility-level business processes in an organized, hierarchical approach that includes the following steps:

- Identifying EHS project hazards and associated risks as early as possible in the facility development or project cycle, including the incorporation of EHS considerations into the site selection process, product design process, engineering planning process for capital requests, engineering work orders, facility modification authorizations, or layout and process change plans.
- Involving EHS professionals, who have the experience, competence, and training necessary to assess and manage EHS impacts and risks and carry out specialized environmental management functions including the preparation of project or activity-specific plans and procedures that incorporate the technical recommendations that are relevant to the project.
- Understanding the likelihood and magnitude of EHS risks, based on: the nature of the project activities, such as whether the project will generate significant quantities of emissions or effluents, or involve hazardous materials or processes; and the potential consequences to workers, communities, or the environment if hazards are not adequately managed, which may depend on the proximity of project activities to people or to the environmental resources on which they depend.
- Prioritizing risk management strategies with the objective of achieving an overall reduction of risk to human health and the environment, focusing on the prevention of irreversible and/or significant impacts.
- Favouring strategies that eliminate the cause of the hazard at its source, for example, by selecting less hazardous materials or processes that avoid the need for EHS controls.
- When impact avoidance is not feasible, incorporating engineering and management controls to reduce or minimize the possibility and magnitude of undesired consequences, for example, with the application of pollution controls to reduce the levels of emitted contaminants to workers or environments.

[6] http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/our+approach/risk+management/ehsguidelines

- Preparing workers and nearby communities to respond to accidents, including providing technical and financial resources to effectively and safely control such events, and restoring workplace and community environments to a safe and healthy condition.
- Improving EHS performance through a combination of ongoing monitoring of facility performance and effective accountability.

Table 4: Environmental Health and Safety Procedures for project implementation

Effect	Description	Management
Environment		
Greenhouse Gases (GHGs)	GHGs may be generated from direct emissions. Green House gases are gases responsible for Global Warming and include carbon dioxide (C02); methane (CH4); nitrous oxide (N2O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); and sulphur hexafluoride (SF6).	Promote, develop and increase use of renewable forms of energy which include hydroelectric power and solar energy which means that the impact of project is positive to the environment as it contributes to GHGs emissions reduction through reduction of unnecessarily movement and deforestation by reducing the dependency on paper use.
Hazardous Materials	Hazards material can be classified according to the hazard as explosives; compressed gases, including toxic or flammable gases; flammable liquids; flammable solids; oxidizing substances; toxic materials; radioactive material; and corrosive substances.	- The overall objective of hazardous materials management is to avoid or, when avoidance is not feasible, minimize uncontrolled releases of hazardous materials or accidents (including explosion and fire) during their production, handling, storage and use. - Where practicable, avoiding or minimizing the use of hazardous materials. For example, non-hazardous materials have been found to substitute asbestos in building materials, PCBs in electrical equipment, persistent organic pollutants (POPs) in pesticides formulations, and ozone depleting substances in refrigeration systems; - Preventing uncontrolled releases of hazardous materials to the environment or uncontrolled reactions that might result in fire or explosion; - Using engineering controls (containment, automatic alarms, and shut-off systems) commensurate with the nature of hazard; - Implementing management controls (procedures, inspections, communications, training, and drills) to address residual risks that have not been prevented or controlled through engineering measures. - Job safety analysis to identify specific potential occupational hazards and industrial hygiene surveys, as appropriate, to monitor and verify chemical exposure levels, and compare with applicable occupational exposure standards; - Hazard communication and training programs to prepare workers to recognize and respond to workplace chemical hazards.
	Reactive, flammable, and explosive materials should also be managed to avoid uncontrolled reactions or conditions resulting in fire or explosion.	- Storage of incompatible materials (acids, bases, flammables, oxidizers, reactive chemicals) in separate areas, and with containment facilities separating material storage areas; - Provision of material-specific storage for extremely hazardous or reactive materials; - Use of flame arresting devices on vents from flammable storage containers; - Provision of grounding and lightning protection for tank farms, transfer stations, and other equipment that handles flammable materials; - Selection of materials of construction compatible with products stored for all parts of storage and delivery systems, and avoiding reuse of tanks for different products without checking material compatibility;
Waste	Any solid, liquid, or contained gaseous material that is being discarded by disposal, recycling, burning or incineration. It can be by-product of a manufacturing process or an obsolete	- Establishing waste management priorities at the outset of activities based on an understanding of potential Environmental, Health, and Safety (EHS) risks and impacts and considering waste generation and its consequences - Establishing a waste management hierarchy that considers prevention, reduction, reuse, recovery, recycling, removal and finally disposal of wastes. - Avoiding or minimizing the generation waste materials, as far as practicable - Where waste generation cannot be avoided but has been minimized, recovering and reusing waste;

Effect	Description	Management
	commercial product that can no longer be used for intended purpose and requires disposal.	- Where waste cannot be recovered or reused, treating, destroying, and disposing of it in an environmentally sound manner
Occupational Health and Safety (OHS)		
Approach	Employers and supervisors are obliged to implement all reasonable precautions to protect the health and safety of workers. Companies should hire contractors that have the technical capability to manage the occupational health and safety issues of their employees, extending the application of the hazard management activities through formal procurement agreements.	- Eliminating the hazard by removing the activity from the work process. Examples include substitution with less hazardous chemicals, using different manufacturing processes, etc. - Controlling the hazard at its source through use of engineering controls. Examples include local exhaust ventilation, isolation rooms, machine guarding, acoustic insulating, etc. - Minimizing the hazard through design of safe work systems and administrative or institutional control measures. Examples include job rotation, training safe work procedures, lock-out and tag-out, workplace monitoring, limiting exposure or work duration, etc. - Providing appropriate personal protective equipment (PPE) in conjunction with training, use, and maintenance of the PPE. - The application of prevention and control measures to occupational hazards should be based on comprehensive job safety or job hazard analyses. The results of these analyses should be prioritized as part of an action plan based on the likelihood and severity of the consequence of exposure to the identified hazards.
The workplace and Exit	The workplace should be conducive to work, and the exit way should be well indicated and safely reachable.	- The space provided for each worker, and in total, should be adequate for safe execution of all activities, including transport and interim storage of materials and products. - Passages to emergency exits should be unobstructed at all times. Exits should be clearly marked to be visible in total darkness. The number and capacity of emergency exits should be sufficient for safe and orderly evacuation of the greatest number of people present at any time, and there should be a minimum two exits from any work area. - The workplace should be designed to prevent the start of fires through the implementation of fire codes applicable to industrial settings. - The employer should ensure that qualified first-aid can be provided at all times. Appropriately equipped first-aid stations should be easily accessible throughout the place of work. - Training about OHS should be provided to all workers and should consist of basic hazard awareness, site-specific hazards, safe work practices, and emergency procedures for fire, evacuation, and natural disaster, as appropriate. Any site-specific hazard or colour coding in use should be thoroughly reviewed as part of orientation training. - Vibration exposure levels should be checked based on daily exposure time and data provided by equipment manufacturers.
Fire and Explosions	Fires and or explosions resulting from ignition of flammable materials or gases can lead to loss of property as well as possible injury or fatalities to project workers.	- Storing flammables away from ignition sources and oxidizing materials. - Providing bonding and grounding of, and between, containers and additional mechanical floor level ventilation if materials are being, or could be, dispensed in the storage area - Where the flammable material is mainly comprised of dust, providing electrical grounding, spark detection, and, if needed, quenching systems - Defining and labelling fire hazards areas to warn of special rules (e.g. prohibition in use of smoking materials, cellular phones, or other potential spark generating equipment) - Providing specific worker training in handling of flammable materials, and in fire prevention or suppression
Electrical	Exposed or faulty electrical devices, such as circuit	- Marking all energized electrical devices and lines with warning signs;

Effect	Description	Management
	breakers, panels, cables, cords and hand tools, can pose a serious risk to workers. Overhead wires can be struck by metal devices, such as poles or ladders, and by vehicles with metal booms. Vehicles or grounded metal objects brought into proximity with overhead wires can result in arcing between the wires and the object, without actual contact.	- Locking out (de-charging and leaving open with a controlled locking device) and tagging-out (warning sign placed on the lock) devices during service or maintenance; - Checking all electrical cords, cables, and hand power tools for frayed or exposed cords and following manufacturer recommendations for maximum permitted operating voltage of the portable hand tools; - Protecting power cords and extension cords against damage from traffic by shielding or suspending above traffic areas - Appropriate labelling of service rooms housing high voltage equipment ('electrical hazard') and where entry is controlled or prohibited; - Establishing "No Approach" zones around or under high voltage power lines; - Conducting detailed identification and marking of all buried electrical wiring prior to any excavation work.
Personal Protective Equipment	PPE is considered to be a last resort that is above and beyond the other facility controls and provides the worker with an extra level of personal protection.	- Active use of PPE if alternative technologies, work plans or procedures cannot eliminate, or sufficiently reduce, a hazard or exposure; - Identification and provision of appropriate PPE that offers adequate protection to the worker, co-workers, and occasional visitors, without incurring unnecessary inconvenience to the individual; - Proper maintenance of PPE, including cleaning when dirty and replacement when damaged or worn out. Proper use of PPE should be part of the recurrent training programs for employees; - Selection of PPE should be based on the hazard and risk ranking and selected according to criteria on performance and testing established by recognized organizations
Accidents and Diseases monitoring		- The employer should establish procedures and systems for reporting and recording: Occupational accidents and diseases; Dangerous occurrences and incidents. These systems should enable workers to report immediately to their immediate supervisor any situation they believe presents a serious danger to life or health. - The systems and the employer should further enable and encourage workers to report to management all: Occupational injuries and near misses; Suspected cases of occupational disease; Dangerous occurrences and incidents - All reported occupational incident and diseases should be investigated with the assistance of a person knowledgeable/competent in occupational safety. The investigation should: Establish what happened; Determine the cause of what happened; Identify measures necessary to prevent a recurrence;
Community Health and Safety		
Communicable and Vector-borne Diseases	Health hazards typically associated with large development projects are those relating to poor sanitation and living conditions, sexual transmission and vector-borne infections. Communicable diseases of most concern during the construction phase due to labour mobility are sexually transmitted diseases (STDs), such as HIV/AIDS.	- Providing surveillance and active screening and treatment of workers; - Preventing illness among workers in local communities by: Undertaking health awareness and education initiatives, for example, by implementing an information strategy to reinforce person-to-person counselling addressing systemic factors that can influence individual behaviour as well as promoting individual protection, and protecting others from infection, by encouraging condom use. - Vector borne diseases should be addressed by: - Prevention of larval and adult propagation through sanitary improvements and elimination of breeding habitats close to human settlements; - Elimination of unusable impounded water; - Promoting use of repellents, clothing, netting, and other barriers to prevent insect bites; Use of chemoprophylaxis drugs by non-immune workers and collaborating with public health officials to help eradicate disease reservoirs; - Monitoring and treatment of circulating and migrating populations to prevent disease reservoir spread;

Effect	Description	Management
		- Collaboration and exchange of in-kind services with other control programs in the project area to maximize beneficial effects; - Educating project personnel and area residents on risks, prevention, and available treatment.
Traffic and road safety hazards as a topic.	Some of the projects components such as laying fiber optics will be done in Roads reserve which may disturb traffic and may cause road access	- Contractors will be requested to prepare Road and traffic management Plan - Road helper will be designed when these is disturbance of traffic and congestion to guide drivers - Drivers and workers as well as community around construction site will be trained on traffic and Road safety

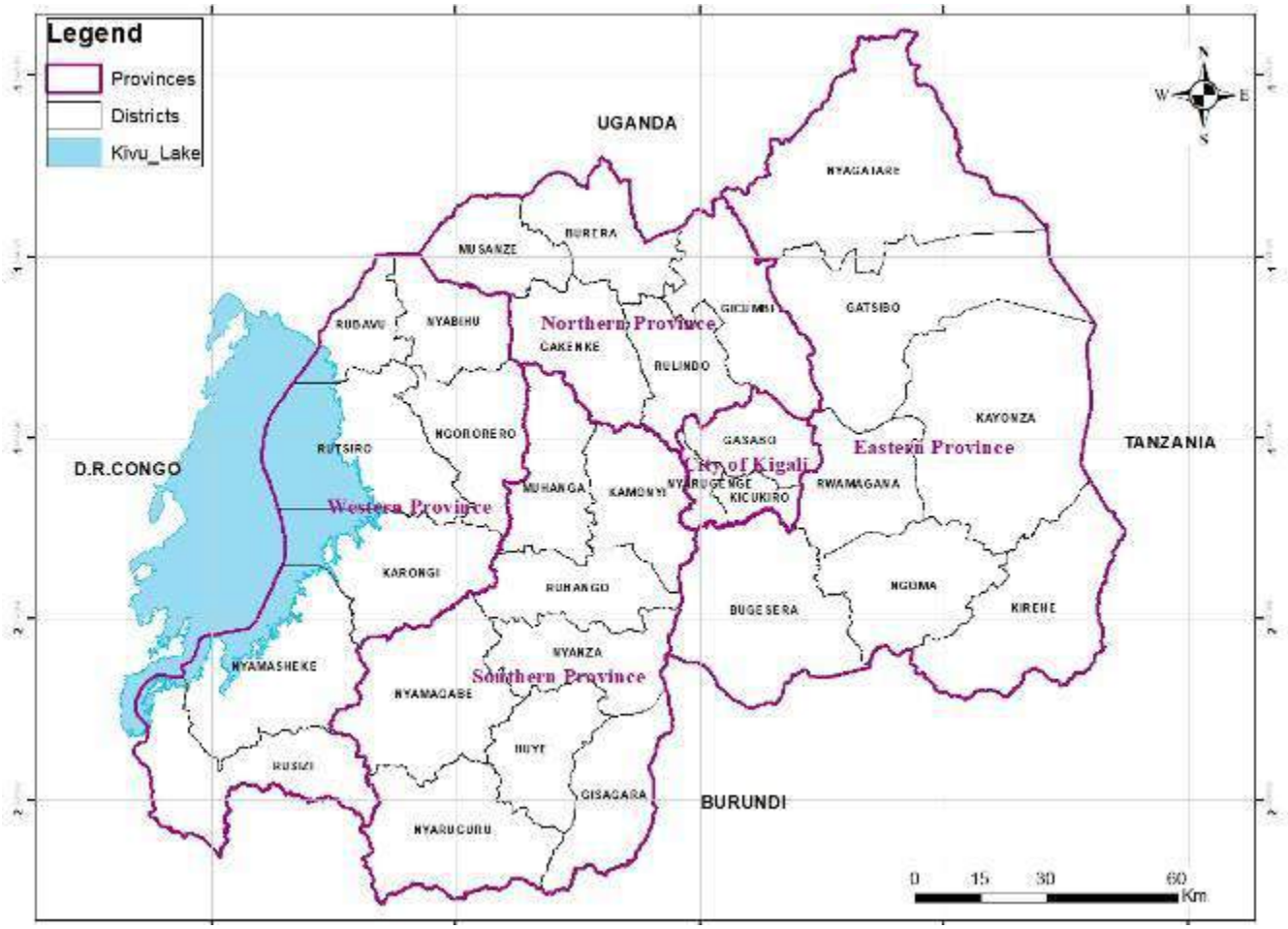
3. ENVIRONMENT AND SOCIAL BASELINE CONDITIONS

This section describes the overall baseline conditions of Rwanda in terms of social and biophysical environment.

3.1. Location and Size

Rwanda is a small mountainous landlocked country, located in Central Africa, at latitude 2.00 S and longitude 30.00 E, bordered to its South by Burundi, Tanzania to its East, Uganda to its North and the Democratic Republic of Congo (DRC) to its West. Rwanda has a total surface area of 26, 338 km^2 of which the total land area is 24,948 km^2 and 1,390 km^2 is surface water.

Figure 1: Administrative map of Rwanda



Source: Adapted from Administrative map of Rwanda, 2021

3.2. Physical Environment

3.2.1. Climate and weather conditions

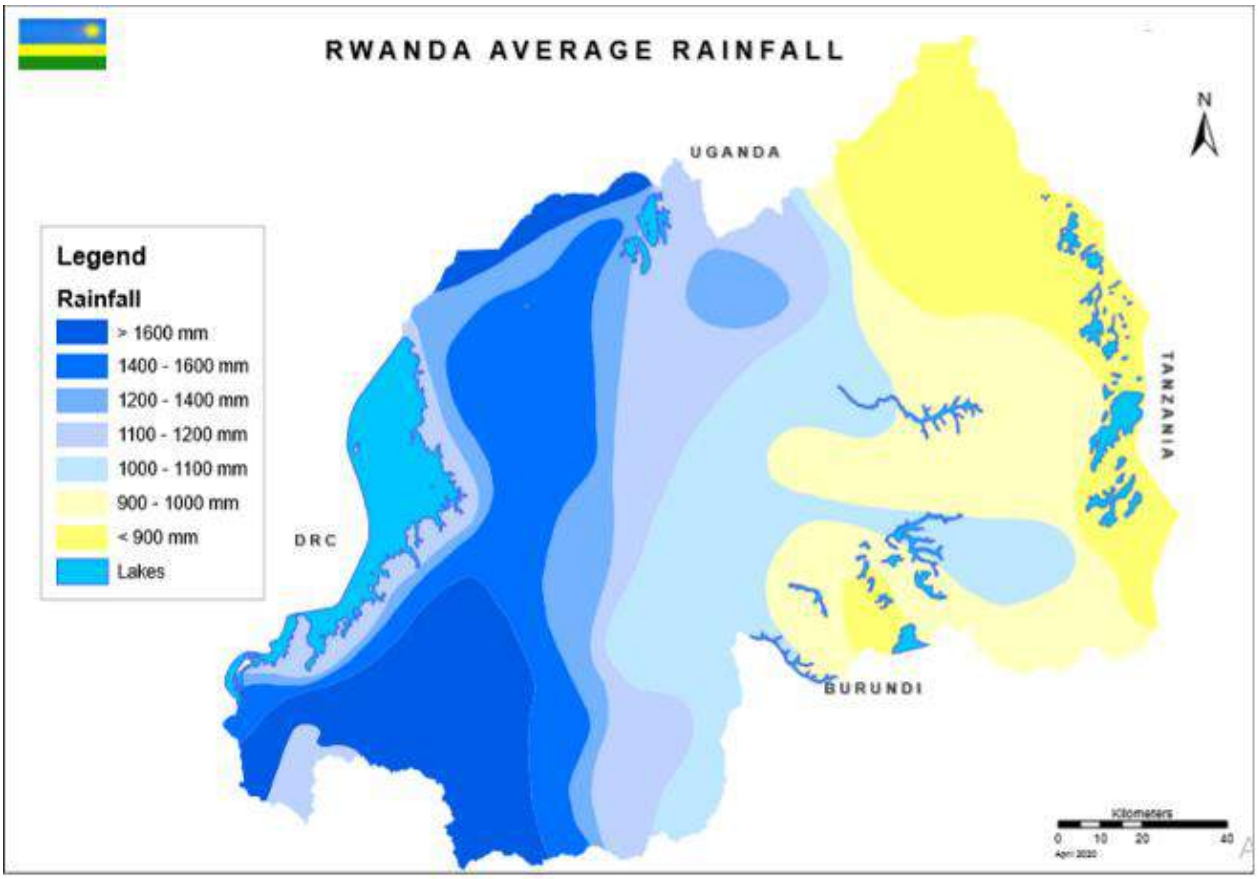
Rwanda enjoys a tropical temperate climate due to its high altitude. The average annual temperature ranges between 16°C and 20°C, without significant variations. Rainfall is abundant although it has some irregularities. Winds are generally around 1-3 m/s. In the high regions of the Congo-Nile ridge, average temperatures range between 15 and 17°C and the rainfall is abundant. The volcanic region has much lower temperatures that can go below 0°C in some places. In areas with intermediary altitude, average temperatures vary between 19 and 21°C and the average rainfall is around 1000 mm /year. Rainfall is

less irregular, and sometimes causes periods of drought. In the lowlands (East and Southeast), temperatures are higher, and the extreme can go beyond 30°C in February and July-August.

The absolute temperature of 32.8°C was recorded in the Southeast by Karama-Plateau station on the 4th of September 1980. Thermic constraints are more considerable there than in the remaining part of the country. Rainfall is less abundant in that region (700 to 970 mm/year). Weather in Rwanda is determined by the rainfall patterns. Thus, the climate of the country is characterized by an alternation of four seasons of which two are wet and the other two are dry. However, one can notice that rainfall is generally well distributed throughout the year, despite some irregularities. Eastern and South-Eastern regions (Umutara, Kibungo, Bugesera, Mayaga) are more affected by prolonged droughts while the northern and western regions (Musanze, Rubavu, Nyamagabe and Gicumbi) experience abundant rainfall that usually causes erosion, flooding, and landslides.

The quantity of total annual rainfall varies between 800 mm in the North-East of Rwanda (Gatsibo and Nyagatare districts) and 1600 mm in the natural forest of Nyungwe and in the high lands of the North-West (Kinigi). The decrease in rainfall is observed in the region of Bugesera (900 mm) and in the Western part of Rubavu district (1200 mm). The increase of rainfall is observed in some regions like Kayonza, Kirehe and Ngoma (Gahororo, 1200 mm); in the South-West (Mibirizi, 1450 mm) and in the natural forest of Gishwati (1350 mm). The region that is characterized by the highest rainfalls (over the average isohyets of 1200 mm) is in the western half of the country, from Kinigi to Mibirizi including the region bordering Lake Kivu.

Figure 2 Annual average rainfall distribution



Source: Meteo Rwanda, 2021

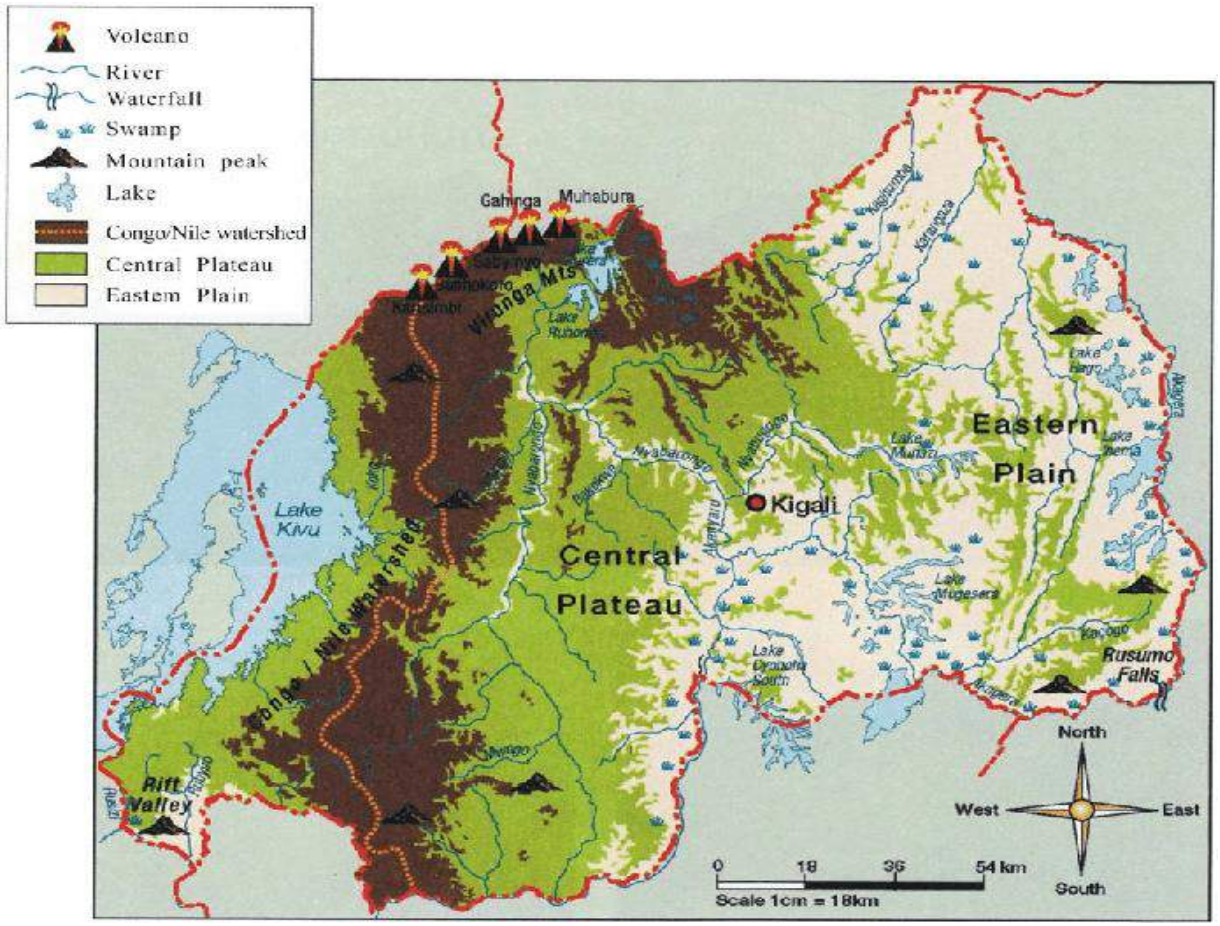
3.2.2. Relief

The Rwandan relief is hilly and mountainous with an altitude varying between 900 m and 4507 m. The components of that relief are:
Congo-Nil Ridge over laying Lake Kivu with an altitude between 2500 m and 3000 m. It is dominated in the North-West by the volcanic ranges consisting of five volcanic massifs of which the highest is Karisimbi with 4507 m. The central plateau presents a relief of hills with an altitude ranging between 1500 m and 2000 m. The lowlands of the East are dominated by a depression characterized by hills with more or less round top and 1000 to 1500 m in altitude. Northern (BUBERUKA) highlands, Located near the border with Uganda, include parts of the Northern and Eastern provinces. The lowlands of the South-West in Bugarama plain with an altitude of 900 m are part of the tectonic depression of the African Rift Valley.

3.2.3. Hydrology and hydrography

Rwanda has a relatively big quantity of water: rivers, lakes and marshes and occupy a surface area of 211,000 ha or about 8% of the national territory (lakes: 128,000 ha, rivers: 7,260 ha and marshes: 77,000 ha).

Figure 3: Rwanda Relief and climate



Source: Rwanda Atlas, 2015

- ✓ **Surface water**

Rwanda has a dense hydrographical network of ± 2 km/km² (length of the superficial flow network by km² of surface). The country is divided into two hydrographical basins with a separating line called Congo-Nile Ridge, moving from the North to the South and ± perpendicular to the volcanic chain, making natural obstacles exchange between the catchment's basins of the Northern Kivu and the Southwest of Uganda and those of Rwanda.

To the West of that line there is the Congolese basin (33% of the surface area of Rwanda) that drains 10% of water resources of the country. It comprises the rivers Sebeya, Koko, Rusizi, Rubyiro, as affluent of Lake Kivu (around 1000 km^2 on the Rwandan side, 490 m of maximum depth), Ruhwa and many other small rivers (around 127 rivers).

To the East of the Congo Nile Ridge there is the Nile basin which covers 67% of Rwanda and drains 90% of Rwandan waters by two main rivers, namely the Nyabarongo and Akagera. The latter is the main affluent of Lake Victoria with an average outflow of 256 m^3/s at Rusumo station and thus is considered the source of the Nile. The basin of the Nile in Rwanda comprises a lot of small lakes (Burera, Ruhondo, Cyohoha South, Mugesera, Muhazi, Rwampanga, Mihindi, Mirayi and many others). Those lakes are not very deep (5 to 7 m) except for Lake Burera and Ruhondo which are 65 to 173 m deep.

- ✓ **Groundwater**

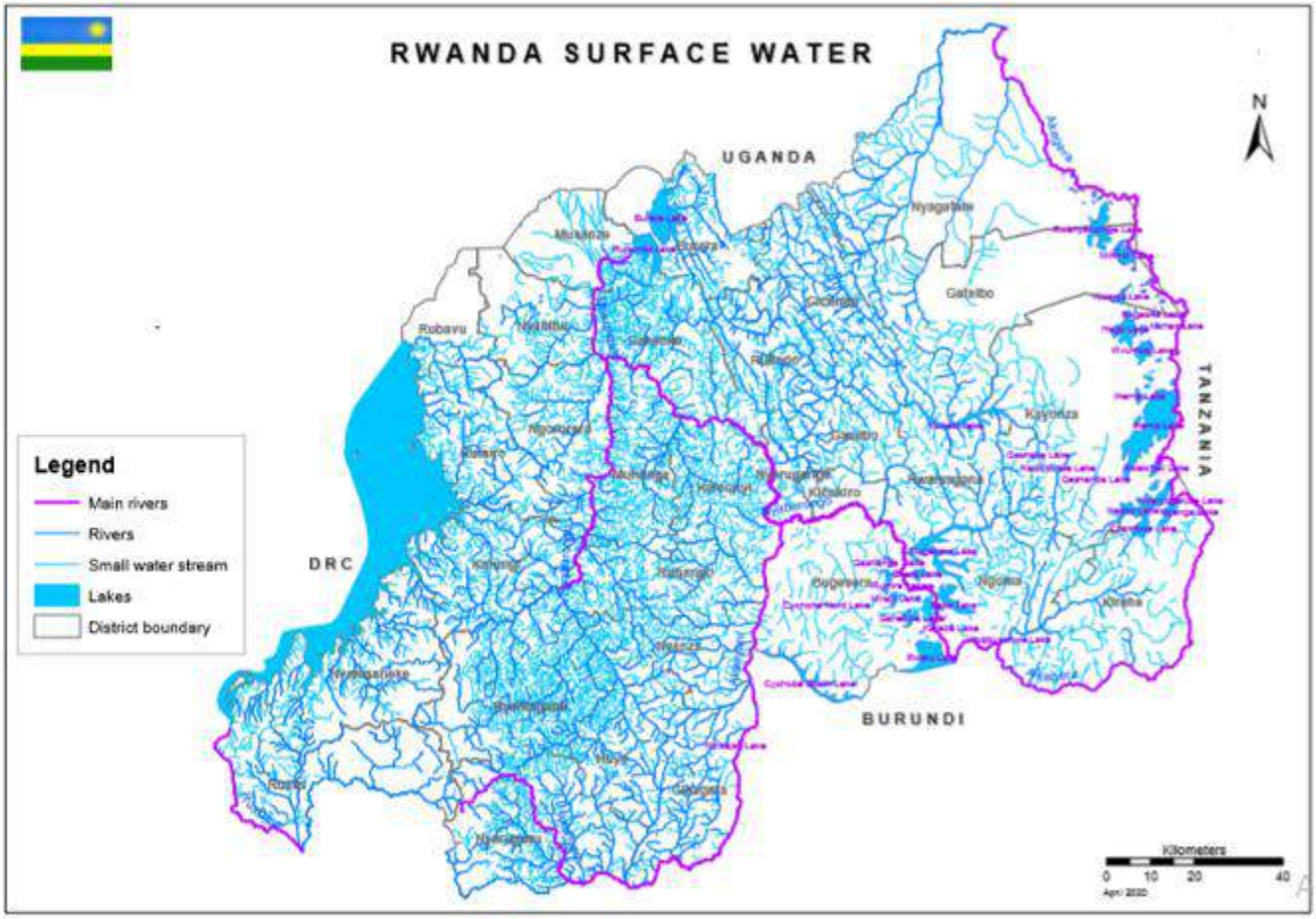
The outflow of the ground renewable water resource is estimated at 66 m^3/s. Out of this, the 22,000 known sources contribute an output of 9 m^3/s. In general, little information is available on ground water resources.

- ✓ **Lakes**

Rwanda has some 28 lakes of significant size. Six among the largest are entirely within the national territory: Ruhondo, Muhazi, Mugesera, Ihema, Rwanyakizinga and Burera. Three others, Rweru, Cyohoha and Kivu, are shared with neighbouring countries. The largest and most spectacular is Lake Kivu, so large as to seem almost like a sea to the landlocked inhabitants.

Lake Kivu lies at 1, 460m above sea level and is 90 km long (north-south) and 49 km wide (east-west). From an average depth of 240 m, it plunges to a maximum depth of 490 m. Lake Kivu has a rough, jagged coast and contains numerous islands, including Nkombo and Iwawa. Lake Kivu lies on the border with DR Congo in Western Rwanda at the foot of the Virunga Volcanoes. Kivu's shores are densely populated and the principal town on the Rwandan side is Rubavu. Although it is supplied with fish, the lake is poor in fauna but rich in volcanic substance. Great volumes of dissolved methane gases ((~60 km3 STP) that may be developed as energy sources exist in its deep waters. Lake Kivu drains to the south into Lake Tanganyika by the swiftly descending Ruzizi River.

Figure 4: Surface water



Source: Rwanda Water Resource Board, 2020

Some lakes like Cyambwe, Rwampanga and Rweru are particularly rich in hippopotamuses and crocodiles. One can also find many other lakes such as Nasho, lakes of Gisaka and Bugesera that contains phytoplankton that is very rich in biodiversity and flora that is mainly dominated by papyrus with Cyperus papyrus mixed with *Miscandium violaceum* and *Nymphea nouchallii*. All these lakes are associated with gallery forests onshore or on small islands. Concerning the Northern lakes (Bulera and Ruhondo), the aquatic flora and fauna are poor due to the physical-chemical situation unfavourable to their development and the isolation of the two lakes. The concentration of the plankton is less important in Lake Bulera than in Ruhondo. They have 48 species grouped in 4 families (*chlorophyceous*, *Cyanophyceous, pyraphytes* and *bacillariophyceous*). Lake Muhazi is land locked, isolated, and its ichthyologic fauna is very limited. One can find three endemic species and other nine introduced from outside. The lake is very rich in phytoplankton. The macroflora of the marshes is mostly composed of wide spaces of papyrus with some zones of *Miscanthidium*. The low layer is covered with *Cyclosorus* stratus. The fauna of big rivers and associated marshes comprises ungulates, carnivores, primates, rodents*, lagomorphous, insectivorous* and birds.

- ✓ **Quality of water**

In Rwanda surface water often carries sediments and in mining and volcanic regions, the water can contain arsenic, lead, mercury, fluoride, iodide and other toxic metalloids and heavy metals. The physio-chemical pollution of water is not frequent due to the small level of industrialization and use of agricultural chemical inputs. The microbiological pollution is often observed, and it comes from various domestic wastes and debris carried by rain water towards the natural environment. The pollution of

water courses and lakes by the water hyacinth and other harmful (invasive) aquatic plants is a phenomenon that is very recent and alarming in Rwanda.

3.2.4. Wetlands

Wetlands cover a total area of 164,000 ha or about 6% of Rwanda. The wetlands include a variety of ecosystems, ranging from large, permanently flooded swampy peat-lands to smaller, seasonally flooded wetlands with a more mineral soil. The main swamps are Akanyaru (30,000 ha) on the border with Burundi, Mugesera-Rweru in the southeast, Kagera along the Tanzania border in the east, Nyabarongo (10,000 ha) and the Rugezi wetlands (5,000 ha) in the north. The wetlands serve as troughs for sediment particles and play an important role in the national water balances by acting as a buffer, thus reducing the maximal flow rates during the rainy season and maintaining a relatively high flow rate during the dry season.

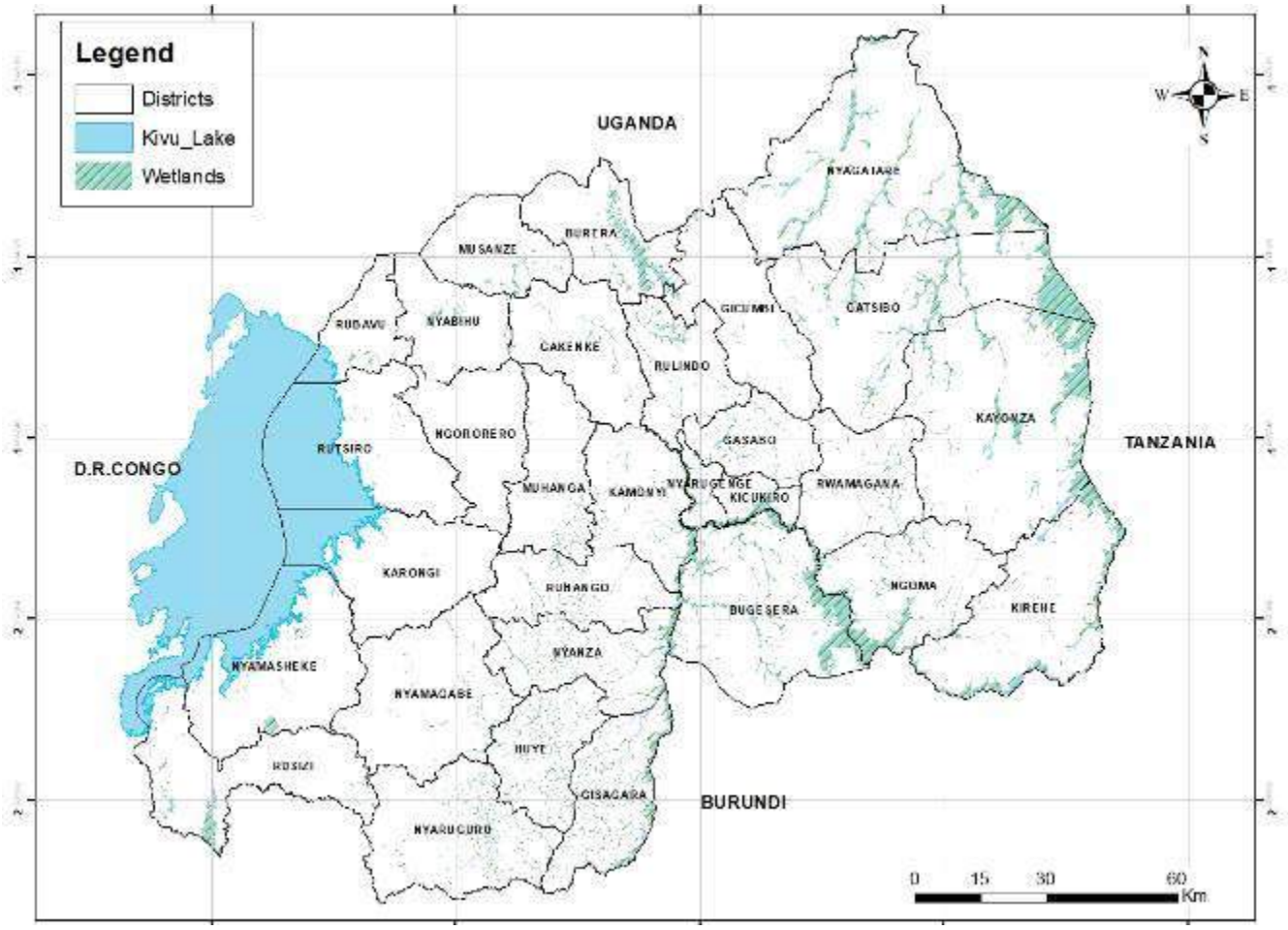
Currently, an estimated 94,000 ha have been brought under agriculture, the large majority of this being spontaneous agriculture with maize, sweet potatoes and beans. In addition, the wetlands are used for a variety of traditional activities including the collection of leaves to make handicrafts, extensive grazing and making of bricks. Wetlands also provide a spawning habitat for fish, and are of great significance for biodiversity conservation. The wetlands are composed of marshes, lakes, rivers and brooks representing around 14.9% of the national territory of which 6.3% consist of marshes and 8.6% of lakes, water courses and pools of permanent or seasonal fresh water. In the highlands of the North-West, there are: lakes Burera and Ruhondo as well as the marshes of Rugezi.

In the center and east of the country, wide marshes are those of Nyabarongo, Akanyaru and Akagera rivers. Many cuvette lakes connect with rivers and most of them are located in the Akagera National Park. From the southeast to the northwest, there are lakes like Cyohoha in the south, Mugesera, Rweru, Sake, Cyambwe, Ihema, Milindi, Rwanyakizinga, Kivumba, etc.

Given the importance that the Government of Rwanda attaches to wetlands, in 2003 Rwanda ratified the Ramsar Convention or convention on wetlands and has already registered on the Ramsar list the site of Rugezi and identified other potential sites that will be registered in the future, like the complex of Mugesera-Rweru, Kamiranzovu marshes and the wet zones of the Akagera National Park. In addition, an action plan for the implementation of the Ramsar Convention was developed in June 2004. The wetlands ensure several functions and provide numerous services to people. For instance, they ensure control of floods and the recharge of underground waters. They play the role of alleviating the erosive force of water and thus facilitate the deposit of sediments in suspension that could block water courses downstream.

The ecosystems of the Rwandan wetlands inhabit a rich biological diversity in terms of vegetation and animal species (more than 104 plant species have been identified), except for Lake Kivu, Bulera and Ruhondo that have some limnologic problems. The Lake Kivu contains a very poor aquatic flora and the density of the phytoplankton is relatively low due to the lack of mixture of layers with a biozone limited at 60 m to 70 m (the nutrients are found at the bottom of the lake). The ichthyologic fauna is also poor with 31 fish species due the volcanic origin of the lake. Most lakes of the Akagera National Park are very rich in biodiversity with phytoplankton, fish species and ornithological fauna. The flora is dominated by the Cyperus, Phragmithes, Phinix, etc. The Water Hyacinth (*Eichornia crassipes*) is present and has started spreading covering more important surfaces of the lakes, thus posing a threat to their biological diversity.

Figure 5: Major wetlands in Rwanda



3.3. Geology and soils

3.3.1. Soils and land use

According to the Geological Map of Rwanda, the regional geology consists of pelitic rocks and Quartz Phyllites (Cyurugeyu Superformation), Granites to Granite-Gneisses, Quarzites and Mica-Schists, Amphibolites and Mylonites (Huye Complex) as well as Quartz-Phyllites and Meta-Volcanics (Nyungwe Formation). The greater part of the geological structure is occupied by such lithological varieties of Rocks. Rwanda shows well developed drainage pattern that belongs to dendritic and trellis types. Metamorphic rocks form the major part of the rock mass and some magmatic rocks are also present. Major rock types observed in the area are granitic gneiss, quartzite, schists and amphibolites. The dominant soils are the result of alteration of the granite and the gneiss. Disruption of drainage due to tectonic movements of the Pleistocene caused the formation of alluvial valleys. They consist of alluvium and colluvium in the basin as result of the erosion. They have generally colluvial and alluvial in the valleys around the rivers. The soils of the top of the mountains are products of granite and gneiss and have resisted erosion.

Soils derived from schistose, sandstone and quartzite formations found in the Congo-Nile Ridge and Soils derived from old volcanic materials found in the plateau of the south west of the country. Over the RDAP subproject area, most of the valley slopes extending from river banks to the top of the ridges are cleared for cultivation of various crops of a seasonal nature. As a result, soil cover is well exposed for potential erosion. A few patches of new forest plantations of eucalyptus and pines can also be seen on the valley slopes.

- **Highland soils**

The highland soils are particularly prone to erosion and landslides especially regions of the Congo-Nile ridge, valleys and lowlands (peat lands) as well as highland meadows. Soils of foothills of the Congo-Nile Ridge and of other transition regions between the central plateau and highlands are fertile but, due to deforestation and inappropriate agricultural practices, they are vulnerable to erosion.

- **Soils of the central plateau**

The central plateau covers the regions of South and South-East. The soil types are hill Ferro soils and valley histosoils. The slopes of hills are exposed to erosion notably in the case of clay-sandy or gravely soils.

- **Soils of the lowlands**

They cover the Eastern and South-eastern regions and are Ferro soils with savannah vegetation. Similar to the region of Bugesera, the river-lake complex along Nyabarongo and Akanyaru rivers underwent serious leaching. In addition, the geological structure of soils in those regions allows rain waters to infiltrate deeply into soils, and that can partly explain the lack of runoff waters and shallow brooks.

- **Soils of valleys**

These are soils of histosoil and peat soil types that constitute potential agricultural and energy wealth (case of intermountain basins of Kamiranzovu and Rugezi). In the wide water surfaces of eastern regions like Umutara and Bugesera, as well as the Rusizi region (Bugarama), the valleys are of vertisoil and alluvial types are fertile. The slope slight as they may be, are threatened by erosion due to the weak permeability of soils. The exploitation of peat for fuel production purposes would require a preliminary development plan for swampy areas. In fact, any extraction of peat is associated with drainage and exudation, two factors likely to impact negatively on the crucial role of wet ecosystems and swamps in regulating the hydrology. Moreover, the exploitation of mines and quarries spoils the landscape and more often constitutes a source of soil erosion, water pollution and pose a danger to human health. A good number of queries are not rehabilitated and always left open.

- **Land use**

The exploitation of land employs around 70% of the active population. Land resources are thus limited and coveted resulting in overexploitation and inappropriate use of lands with disastrous consequences on land resources and on environment in general. In mountainous area, steep slope lands are deforested and used for staple crops under high rainfall precipitation, with often accelerated land degradation through water erosion, poorer soil fertility, increased floods and landslides, and overall, food insecurity and poverty. Appropriate land uses combined with soil and water conservation measures then become a must; in some sites, active erosion mainly caused landslide hazards which increase sediments in rivers. Other than that, erosion has also formed gully bodies through the slopes of mountainous areas.

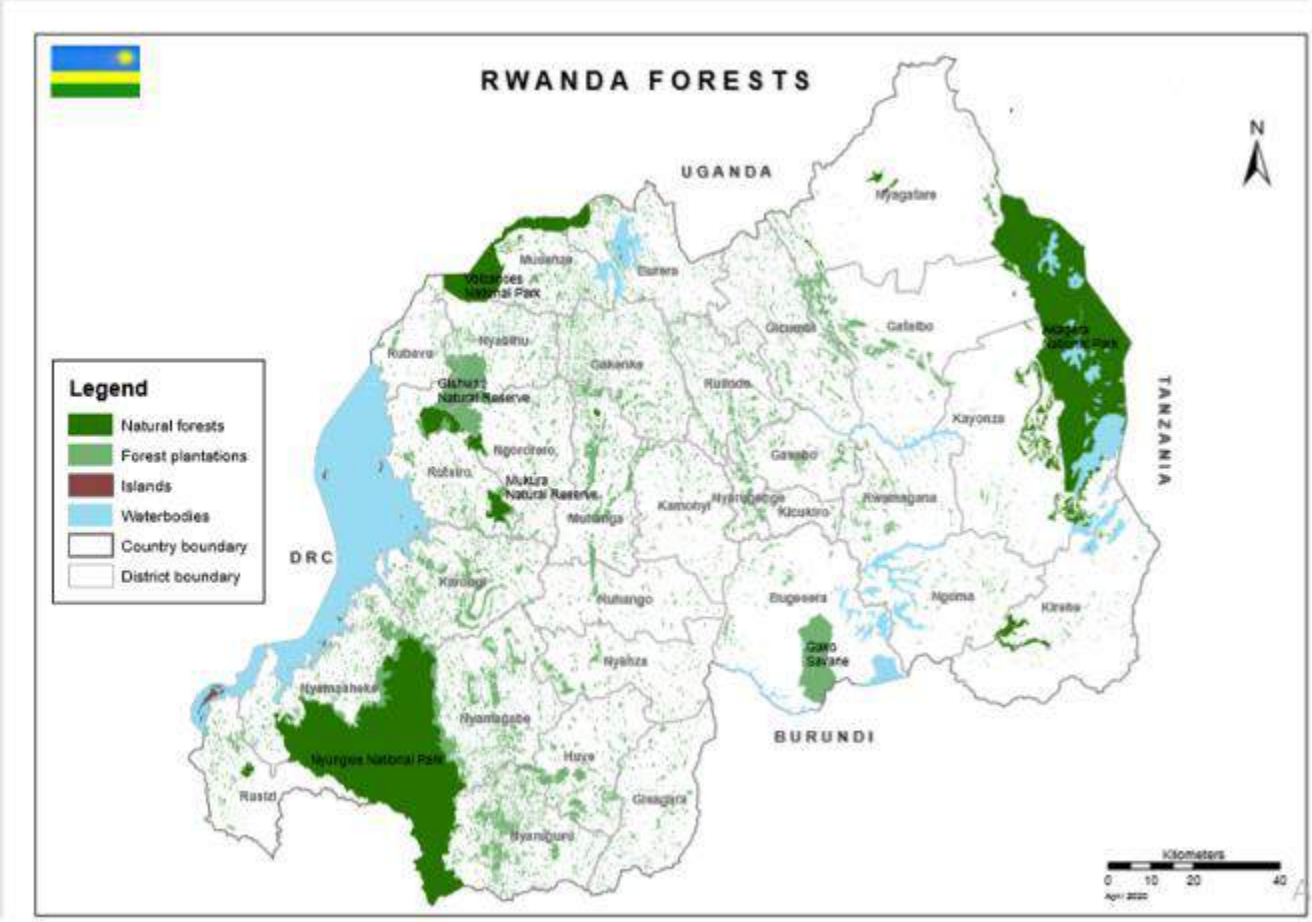
Land use activities including infrastructure development may increase the potential of occurrence of landslides and erosion in various ways, which include destabilization of rock masses by cuts in slopes, improper stockpiling of materials, destruction of vegetative cover during site clearing and uncontrolled surface run-off during storms may increase the erosion rate. Riverbanks are composed of alluvial and pluvial loose-fragmental soils. Thus, the activities may increase erosion and landslides rates at various points along the banks of rivers and in some lateral ravines.
Intensive cultivation occurs along the steep slopes predominant in the area without proper soil conservation techniques hence accelerating soil erosion. However, it is worth mentioning that terracing

as a measure for soil erosion control is practiced in some parts of the project area. Extensive deforestation to meet energy demands has further reduced the soils 'ability to withstand the scouring effects of rain in the upland watersheds has had serious downstream implications. When viewed against that background, therefore, it is easy to appreciate that the project would have negligible incremental impact on the rates and overall patterns of erosion. Nevertheless, erosion is of relevance to slope stability, which is in turn relevant to the design of the project and the conduct of operations such as excavation and borrowing. The specific measures will be taken to address these considerations.

3.3.2. Biological Environment

Rwanda is covered with diverse ecosystems that include mountains, ombrophile forests, gallery forests, savannahs, wet and aquatic zones, wood and agro ecosystems. All these ecosystems have a rich flora and fauna.

Figure 6: Forests and Parks in the program area



- ✓ **Protected areas**

The fauna and the flora can be better preserved and protected thanks to the establishment of a system made of protected areas like national parks and forest reserves to which the best management is applied. However, through time and due to human activities, these conservation areas have been reduced considerably.

✓ **Forests**

The forest map of 2019[7] has five main forest categories: Natural forest (mainly mountain rainforests), Forest plantations (all exotic and indigenous species together), Bamboo stand, Shrubs, and Wooded savannah. For each forest category, the forest density was characterised: high density (70% above), medium density (40%- 70%), low density (10%-40%), and very low density (<10%).

Forests of Rwanda occupy now about 724,695 hectares of the total land area (30.4%) of which 387,425 hectares (53.5%) are plantations, 130,850 hectares (18.1%) are natural mountain rainforests, 161,843 hectares are wooded savannah (22.3%) and 43,963 hectares are Shrubs (6.1%). Bamboo stands occupy only 613 hectares. In terms of the forest density and tree cover, about 318,434 hectares are very dense forests (44%), 234,004 are moderately dense (32%), 146,222 hectares are sparse (20%) and only 26,035 hectares are much degraded (4%). Southern and Western Provinces contain 50% of the total forest area of which 174,199 hectares are in Western Province and 177,537 hectares are in Southern Province. Eastern province has 38% of the total forestland (274,630 hectares). Northern Province contains only 85,688 hectares and Kigali city has only with 12,641 hectares.

Rwanda's remaining natural forests—the Nyungwe Forest, the Gishwati Forest and the Mukura Forest—are highland forests around the volcanoes, and have a high degree of biological diversity and rare animal species, such as mountain gorillas, Ruwenzori colobus monkeys and golden chimpanzees. It is estimated that there are 2,150 plant species to be found in Rwanda, with around 700 species of these that have medicinal value. Towards the east of the country lies the Akagera National Park, the Mutara game reserve forests galleries and wooded savannahs. Population pressures have already drastically reduced the land area of the natural forests of Rwanda from about 30% to presently fewer than 10% in less than a century. The deforestation of Rwanda's remaining forests is also the result of high fuel wood consumption. Heavily populated and cultivated areas adjacent to the natural forest, as well as the recent wars, have resulted in massive deforestation and loss of genetic diversity within Rwanda's natural forest.

The 2019 forest cover mapping indicates that out of 387,425 hectares of forest plantations, about 278,656 hectares (72%) are made of large blocks of greater than 2 hectares, only 11,798 hectares (4%) are small woodlots of less than 0.25 hectares. Such forests need to be under forest management plans to ensure the sustainability of forest resources use

3.3.3. National Parks/Forest Reserves

Rwanda has four national parks. They are all protected wildlife reserves and ecosystems and include the Akagera National Park, Nyungwe National Park, Gishwati-Mukura National Park and the Volcanoes National Park. Gishwati-Mukura was created in 2015 and is hence the youngest national park created. The Rwanda Development Board (RDB) is responsible for the overall management of all the national parks, related infrastructure and promoting tourism. The RDB is assisted by other government agencies and ministries. In some cases, like that of the Akagera national park, Nyungwe National Park and Gishwati-Mukura National Park, the government entered into long term agreements with private partners to help run some park activities

These areas are exclusively reserved for the protection of flora and fauna, eco-tourism, biodiversity conservation, and for geological formations of scientific and aesthetic value. The geographical

[7] Rwanda Forest Cover Mapping November 2019, Ministry of Environment

distribution of those parks on the national territory is a guarantee of the conservation of biological diversity representative of the fauna and flora of the country.

- ✓ **Volcanoes National Park**

Spanning on a 160 km^2 area in the Northern part of Rwanda, Volcanoes national park is the oldest national park in Africa, created in 1925. It was initially a small area around Karisimbi, Mikeno and Visoke volcanoes which was gazetted to protect the Mountain gorillas which were facing the threat of extinction as a result of poaching. In 1929, the park was extended into Rwanda and the then Belgian Congo and was named Albert national park managed and run by the Belgian Colonial Authorities. During early 1960s, the park was divided as Rwanda and Congo gained their independence and by the end of that decade, the park was almost half of its original size (340 km^2 to 160 km^2.

Volcanoes National Park is home to Mountain Gorilla (*Gorilla beringei beringei*); golden monkeys (*Cercopithecus mitis kandti*), Spotted Hyena (*Crocuta crocuta*), buffaloes (*Syncerus caffer*), elephants, black-fronted duiker (*Cephalophus niger*), and bushbuck (*Tragelaphus scriptus*). The park also harbors 178 bird species including at least 29 endemics to Rwenzori Mountains and the Virunga. The Volcano National Park (VNP) also hosts 245 species of plants of which 17 are predominant, including 13 orchid internationally protected, 115 species of mammals, 27 species of reptiles and amphibians and 33 species of arthropods. Some of these species are endemic while others are internationally protected.

- ✓ **Nyungwe National Park**

Nyungwe National Park Located in the South West corner of Rwanda, Nyungwe National Park is an untouched natural rainforest that is filled with exciting biodiversity. Nyungwe National Park was established in 2004 and covers an area of approximately 1000 km² of rainforest, bamboo, grassland, swamps, and bogs. The nearest town is Rusizi, 54 km to the west. Mount Bigugu is located within the park borders. Nyungwe is surely one of the world's most beautiful and pristine mountain rainforests. It's believed to be one of Africa's oldest forests, staying green even through the Ice Age, which explains its diversity.

The Nyungwe forest has a wide diversity of animal species, making it a priority for conservation in Africa. The forest is situated in a region in which several large-scale biogeographical zones meet and the variety of terrestrial biomes provides a great span of microhabitats for many different species of plants and animals. The park contains 13 different primate species (25% of Africa's total) with habituated chimpanzees and 12 other primates species (including a 400-strong troop of habituated Ruwenzori Black and White Colobus), 85 mammal species, 275 species of birds of which 26 are endemic in the Albertine Rift and 3 are on the red list of the IUCN (*Bradypterus graueri, Crypto spiza shelleyi* and *Apdis argentea*), 32 amphibian and 38 reptile species and 1,068 plant species of which 140 species of orchids, 260 species of ligneous and herbaceous plants, 24 species of trees. Many of these animals are restricted-range species that are only found in the Albertine Rift montane forests ecoregion in Africa. In fact, the number of endemic species found here is greater than in any other forest in the Albertine Rift Mountains that has been surveyed. The forest, which reaches its maximum altitude of 3000 metres above sea level, is of particular interest for the presence of colonies of chimpanzees (*Pantroglodytes* - Blumenbach, 1775) and Angola colobus (*Colobus angolensis* - Sclater 1860).

- ✓ **Akagera National Park**

The savannah in the North Eastern Rwanda is used as the Akagera National Park; it covers 900 km² situated between 1300-1825 m. This park was created in 1934 to protect animals in three ecoregions: savannah, mountain and swamp. Conserving biodiversity in this ecosystem has been challenging due to increasing pressures, potential loss of habitat and species or lack of up-to date data, etc.

This park has a set of compounds that define its high importance, the Akagera major components are: Forest fringed lakes, papyrus swamps, savannah plains and rolling highlands. Akagera has exceptional levels of biodiversity, partly due to its position at the confluence of different vegetation zones. The extensive systems of freshwater lakes and associated papyrus swamps form the largest protected wetland in central Africa. Its biodiversity has a double origin; both native and introduced species make the Akagera fauna and flora diversity. The wildlife in the Akagera National Park comprises 90 species of mammals of which 47 species of big mammals, 530 bird species, 35 fish species, 9 species of amphibians and 23 species of reptiles. Four animal species are protected by the CITES (Convention on International Trade of Endangered Species) *namely Loxodonta Africana, Sincerus caffer, Panthera leo and Tragelaphus oryx*. The flora of the Akagera National Park is diverse and 6 species of orchids are recorded. The ANP is dominated by the grass savannah and different species of acacia trees; the most found in the forest savannah.

Introduced 'Masai' giraffe, black rhino, elephant, buffalo, zebra and duikers are major herbivorous of the Akagera National Park. Whereas for the large predators only leopard (*Panthera pardus*) and hyaena (*Crocuta crocuta*) can still be found in the park. In 2017, 18 Eastern black rhinoceros were reintroduced to Akagera bringing the species back to the park, and the country of Rwanda after a 10-year absence. The population was further supplemented by an additional five individuals translocated from European zoos in 2019. Lions were reintroduced in 2015 after they were hunted out in the 1990s, and the population doubled in the first year with the birth of eleven cubs. Two additional males were translocated from South Africa to Akagera in 2017 to increase the population's genetic diversity. Smaller predators are still well represented with healthy populations of several mongoose species, viverrid species, serval (*Leptailurus serval*) and side-striped jackal (*Canis adustus*).

- ✓ **Gishwati-Mukura National Park**

Gishwati-Mukura National Park (GMNP) consists of 35.58 km² in Rutsiro and Ngororero Districts of Western Province.[8] Its hilly landscape gives a wonderful lateral and top view. GMNP is one of the few remaining natural forests and biodiversity hotspots in the Congo-Nile Divide within the Albertine Rift Region. Its biodiversity includes eastern chimpanzees, mountain and golden monkeys, serval, genet, civet, small mammals, amphibians, reptiles, more than 120 species of birds and more than 250 plants species. The two forests have known a long period of degradation due to human encroachment, more significantly Gishwati forest. For instance, from its original size of 700 km² in 1930s the core forest of Gishwati was reduced only to 6 km² in 2002. Thanks to collaborative conservation efforts, Gishwati forest now consists of about 15.70 km.² Furthermore, in February 2016, the Government has decided to uphold the conservation effort of Mukura and Gishwati forests from Forest Reserves to a National Park.

Gishwati-Mukura National Park is a home to important biodiversity including world-wide recognized species namely eastern chimpanzees (*Pan troglodytes schweinfurthii*); golden monkeys (*Cercopithecus mitis kandtii*); mountain monkeys (*Cercopithecus l'hoesti*); and more than 130 species of birds including 14 that are endemic to the Albertine Rift and two endangered species Martial Eagle (*Polemaetus bellicosus*) and Grey Crowned Crane (*Balearica regulorum*). Many of the plant species have been destroyed but some characteristics of mountain forest species including more than 60 indigenous tree species survived in fragmented patches of the remaining forest such as Carapa grandiflora, *Entandrophagrama excelsum, Symphonia globulifera*. Further, Gishwati-Mukura forest reserve is known for a wide range of fauna, including four species of primates: the eastern chimpanzee, the golden

[8] www.cepf.net/sites/default/files/guidebook-gishwati-mukura-national-park.pdf

monkey, the blue monkey, and the l'hoest's monkey (also known as mountain monkey); more than a dozen species of East African chimpanzees; mammals such as red river hog, the black-fronted duiker, the southern tree hyrax, among others. Conservationists have also reported seeing the black and white colobus, another species of primates.

3.4. Biodiversity in agricultural systems

Demographic pressure and intensive agricultural practices in combination with diversified agro-pastoral practices; deforestation, bush fires and urbanization have disrupted the ecosystem functions. These changes caused secondary formation consisting essentially of graminaceous plants, numerous seasonal or perennial species alternating with crops. Agricultural arable land presently covers around 52% of the total surface area of the country and is permanently cultivated (RNRA 2012). The time between two growing seasons is the only period of respite. These areas have various crops that play an essential role in the national economy. These crops are usually grouped in two categories: subsistence and cash crops. Some of the food crops include; sorghum, beans (*Phaseolus vuaris*), eleusine (*Eleusine corocana*), Colocases (*Colocasia antignorum*), maize (*Zea mays*), rice (*Oryza sativa*), wheat (*Triticum sp*), barley (*Hordeum vuare*), peas (*Pisumsativum*), soja bean (*Soja hispada*), peanut (*Arachis hypogea*), sweet potato (*Ipomea durcis*), potato, cassava (*manihot esculanta*) and banana (*Musa*). The importance of each crop varies according to regions. Some crops, like bananas, potatoes, different varieties of wheat, sorghums and beans are subject to high commercial trade. Potatoes, beans, cassava and bananas are present everywhere for the daily diet of the people. The cash crops are very few. They are limited to coffee, tea and pyrethrum.

3.4.1. Pastoral zones

In Rwanda, the essential part of animal husbandry is limited to the family and a small number of animals per household. As agriculture occupies the biggest portion of land, the cows graze in paddock, some parts of marginal lands and limited pasturelands mainly Gishwati national reserve and Umutara. This obliges farmers to adopt the semi-permanent farming and grow fodder crops such as *Tripsacum laxum, Setaria spp, Desmodeum spp, Pennisetum purpureum, Mucuna pruriensis, Cajanus cajan, Calliandra calothyrsis, Leucaena diverifolia, Sesbania sesban*, etc. However, we can notice the development of ranching in Umutara and Gishwati. Other pastoral land is very limited and distributed all over the country. These areas are prone to bush fires, trampling and sometimes overgrazing. The latter is the main cause of reduction of the biological diversity as it exterminates the most precious species along with *pyrophyle* species with small *bromatologic* value such as *Eragrostis spp*, *Sporobalus spp and Digitaria* spp.

3.4.2. Woodlands

Tree planting in Rwanda was limited to some plants around households such as *Ficus thoningii*, Euphorbia *tirucalli, Erythrina abyssinica, Vernonia amygdalena*, Dracaena *afromontana*, etc., but the cultivation of woody perennials for timber, energy generation or other services was not part of the customs. That resulted in a massive exploitation that quickly proved its limits. The first forest plantations were created in 1920 and 1948 and only consisted of Eucalyptus. Later on, other species were introduced. These were namely *Pinus spp, Callistris spp, Grevillea robusta, Cedrella spp, Cupressus.* The Arboretum of Ruhande (RAB Station) has 206 species among which 146 feuillus, 56 resinous and a species of bamboo. Those species proved to be dangerous for the biological patrimony because they used to drain and acidify places that are already acid, what caused the reduction or even the extermination of the undergrowth. Thus, planting those species would lead to erosion. The covered

surface area was estimated at 256,300 hectares in 1998. Despite efforts of diversifying tree species, we estimate that 99% of trees consisted of Eucalyptus spp.

3.5. Socio-economic and Environment

3.5.1. Population and Demographic Characteristics

- ✓ **Gender distribution of the population per Administrative District**

In a bid to promote a sustainable and equitable development as a subsequent impact of any development projects, gender needs to be mainstreamed into the day-to-day development initiatives. This is important for the design and implementation of projects that are responsive to the practical needs of women, households, and to those of communities in general.

Table 5. Gender thematic distribution in project administrative Districts

Administrative District	Number of females per 100 males	Sex of the Household-heads: Male-Headed	Sex of the Household-heads: Female-Headed	Sex of the Household-heads: De facto Female-Headed
Nyanza	108	67	28.1	4.9
Gisagara	114	60.1	33.5	6.4
Nyaruguru	116	68.3	25.3	6.4
Huye	110	59.7	31.6	8.8
Nyamagabe	104	69.5	25.3	5.2
Ruhango	108	63.9	28.2	8
Muhanga	110	65.9	26.9	7.2
Kamonyi	105	68.7	24.6	6.6
Karongi	104	68.4	23.7	7.9
Rutsiro	109	75.5	20.7	3.8
Rubavu	108	70.1	23.1	6.8
Nyabihu	109	66.5	26.7	6.8
Ngororero	120	60.7	27.5	11.9
Rusizi	102	72.1	22.7	5.1
Nyamasheke	115	67	28.7	4.3
Rulindo	105	68.1	27.6	4.3
Gakenke	107	67.7	23.9	8.3
Musanze	120	70	20.5	9.4
Burera	114	61.8	26.3	11.9
Gicumbi	111	73.9	22.5	3.6
Rwamagana	103	66.4	27.4	6.2
Nyagatare	110	71.1	24.1	4.9
Gatsibo	106	71.6	25.1	3.3
Kayonza	110	62.6	26.2	11.2
Kirehe	110	68.5	25.3	6.2
Ngoma	116	66.2	27.8	6
Bugesera	112	70.6	23.7	5.7

Source: EICV5, 2017

The table above shows that in all administrative districts, the female population is greater than the male population which shows that females will have to play the big role in this project implementation and therefore contribute to the development and increment of household income which increase also the role of women in the society. As one of the gender mainstreaming strategies, the project has prepared the gender action plan (GAP) which should be implemented to make sure that women are not left behind by the project but ensures their full involvement in project activities as shown that they represent the majority of the population.

- ✓ **Education**

It has been observed almost everywhere that education can help lift someone out of poverty when well educated. It is also the case that children from poor households tend to get less education than their more-affluent peers. Both effects appear to hold true in Rwanda (EICV5). While 13% of household

heads have a secondary education or higher, the figure is 18% for the non-poor and just 2% for the poor; and while 57% of the non-poor have no school diploma or certificate, the figure is 79% for the heads of poor households. Between 2014 and 2017 the proportion of those with a High school certificate, or bachelor's degree or higher, rose from 6% to 8%, while the fraction of those without a certificate fell by just over two percentage points.

Table 6. Education of the population in the project area by gender and age

Administrative District	population aged 6 and above who have ever attended school	Percentage of the population aged between 6 and 30 who have attended school	Net Attendance Rate (NAR) at primary school Male	Net Attendance Rate (NAR) at primary school Female	Net Attendance Rates (NARs) in secondary school Male	Net Attendance Rates (NARs) in secondary school Female	Literacy rate of the population aged between 15 and 24	Literacy rate of the population aged 15 above	Computer literacy rate of the population aged between 15 and 24	Computer literacy rate of the population aged 15 and above	Population aged between 16 and 30 who attended tertiary education
Nyanza	86.8	64.2	88.6	88.4	20.5	25.1	91.6	72.1	8.8	5.7	2.1
Gisagara	83.5	51.8	79.5	86.8	7.5	16.3	79.7	64.5	6.7	5.0	1.8
Nyaruguru	82.3	63.5	86.0	86.9	15.4	23.2	82.0	63.5	6.6	5.8	3.1
Huye	86.9	56.7	83.7	84.6	17.0	23.5	85.1	68.0	4.9	5.3	2.4
Nyamagabe	85.3	62.6	90.8	91.3	17.1	19.6	86.1	70.4	4.3	3.9	1.0
Ruhango	89.7	65.8	89.2	94.7	20.8	21.1	81.3	70.5	15.4	7.5	3.5
Muhanga	88.4	58.6	89.8	95.4	19.6	24.8	79.5	72.5	11.1	9.4	4.1
Kamonyi	90.5	61.6	88.1	90.5	20.6	25.0	92.3	76.7	5.6	5.2	2.1
Karongi	86.3	64.9	90.5	92.2	18.8	23.4	90.0	71.5	9.2	6.8	2.6
Rutsiro	81.4	58.7	85.5	86.9	22.0	21.5	88.2	64.0	3.6	2.7	0.7
Rubavu	84.1	57.8	88.0	84.2	26.2	25.5	84.7	70.9	13.2	13.1	4.8
Nyabihu	86.5	59.8	87.2	84.8	21.8	24.1	84.6	67.2	7.5	5.1	1.9
Ngororero	84.0	58.6	88.7	89.4	10.9	12.5	87.3	66.2	3.8	2.8	0.4
Rusizi	88.5	59.9	87.6	89.2	21.6	24.6	81.3	67.4	7.1	4.9	0.7
Nyamasheke	87.4	65.7	89.9	91.3	19.8	28.0	92.0	74.7	10.6	6.4	1.8
Rulindo	87.5	57.2	92.1	86.3	20.9	33.6	89.4	74.4	6.9	6.5	2.8
Gakenke	87.2	60.9	90.4	89.4	19.3	24.8	85.2	70.1	9.5	6.2	1.5
Musanze	88.6	59.6	90.5	93.6	24.2	36.9	87.3	74.2	13.2	11.5	3.6
Burera	84.4	58.2	93.3	94.2	20.8	21.1	89.2	68.5	8.3	6.4	1.1
Gicumbi	85.6	59.6	90.1	91.0	20.6	24.9	90.3	72.5	6.4	5.4	2.3
Rwamagana	88.2	55.8	84.9	91.3	22.7	26.4	91.3	78.1	10.3	8.1	1.5
Nyagatare	84.9	55.5	76.9	79.7	15.9	22.6	84.4	71.4	6.1	4.2	1.5
Gatsibo	84.9	59.6	86.4	86.7	11.0	20.8	84.7	67.0	5.4	4.2	1.8
Kayonza	85.8	58.6	79.2	81.6	14.0	22.9	82.4	70.4	7.0	5.4	0.4
Kirehe	87.5	60.9	82.9	87.9	17.3	18.9	82.3	70.2	3.9	2.7	0.9
Ngoma	85.9	60.4	87.1	88.5	21.2	24.1	85.5	71.5	11.7	7.7	4.1
Bugesera	84.8	57.0	85.9	82.0	16.2	16.9	85.7	72.4	8.0	6.7	2.1

Source: EICV5,2017 and Field data collection 2021

As the table above shows, the literacy rates decrease as the ages increases, which shows the efforts of the Government of Rwanda among the population and all children benefiting the free education and fighting children drop out. However the computer literacy is still low and even very low in very rural areas like Rutsiro and Kirehe administrative districts, whereas in urban districts like Rubavu, Musanze and Muhanga administrative districts, the rate is a bit higher except Ruhango with a higher rate though rural administrative districts and Huye with a low rate even though it is an urban administrative district. This exception may be due to chance in the sample.

- ✓ **Poverty distribution per administrative District**

According to EICV5 report, the main poverty line is set at RWF 159,375 per adult equivalent per year in the prices of January 2014. This is the same poverty line that was used to measure poverty in 2014 using the EICV4 data, and a detailed discussion of how the line was chosen may be found in the EICV4 poverty profile report. Extreme poverty is measured using a poverty line of RWF 105,064 per adult equivalent per year, again in the prices of January 2014. This is the cost of buying enough food to provide an adequate number of calories, with a diet that reflects the observed behaviour of poor households, but it does not make any allowance for non-food spending. The key finding from the EICV5 survey is that the headcount poverty rate – which measures the percentage of people who are poor – was 38.2% in 2017. This is slightly lower than the poverty rate of 39.1% observed in 2014, however,

the difference between the poverty rates of 2014 and 2017 is statistically insignificant. The table below shows the poverty and extreme poverty distribution in the project area.

Table 7.Poverty and extreme poverty distribution in project area.

Administrative District	EICV5 Poverty	EICV5 Extreme Poverty
Nyanza	46.5	16.0
Gisagara	55.6	25.6
Nyaruguru	52.4	28.1
Huye	40.2	12.9
Nyamagabe	48.6	17.7
Ruhango	38.0	15.0
Muhanga	32.6	13.8
Kamonyi	22.3	8.7
Karongi	52.7	21.3
Rutsiro	49.5	24.4
Rubavu	35.7	14.6
Nyabihu	46.8	18.0
Ngororero	47.7	20.8
Rusizi	33.5	12.8
Nyamasheke	69.3	41.5
Rulindo	54.2	23.2
Gakenke	34.2	13.1
Musanze	40.7	18.1
Burera	49.8	19.9
Gicumbi	34.7	13.4
Rwamagana	18.9	4.8
Nyagatare	44.8	20.1
Gatsibo	42.1	18.8
Kayonza	26.7	8.5
Kirehe	44.6	18.5
Ngoma	37.8	14.0
Bugesera	40.3	17.8

Source: EICV5, 2017 and Field data collection 2021

The low poverty rates in the city of Rwamagana district are evident, as are the relatively high poverty rates in Nyamasheke administrative district of Western Province and Nyaruguru as well as in Gisagara administrative districts of Southern Province respectively. According to EICV 5 Poverty rates and the distribution of the poor are very important for targeting purposes. A government intervention that helps the rural population would help 93% of the poor; on the other hand, 57% of the benefits would go to the non-poor, since the rural poverty rate is 43%. The national poverty rate of 38.2%, just 2.8 percentage points are attributable to urban poverty, while the remaining 35.4 percentage points are due to rural poverty, which strengthen the need of Rural Electrification as a way to alleviate poverty among the population.

3.5.2. Source of energy

Energy is the essential in the community lives and is taken as a measure of environmentally friendly the community is becoming through the use of energy sources with less CO2 emissions and environmental degradation. The table below summarizes the source of fuel in project area and give a clear picture of which effort is needed for climate resiliency and poverty alleviation in the Rwandan community.

Table 8.Energy sources distribution in 27 administrative Districts

Administrative District	Primary fuel used for lighting: Electricity distributor	Primary fuel used for lighting: Oil Lamp	Primary fuel used for lighting: Fire-wood	Primary fuel used for lighting: Candle	Primary fuel used for lighting: Lantern	Primary fuel used for lighting: Solar panel	Primary fuel used for lighting: Batteries	Others	Primary fuel for cooking: Firewood	Primary fuel for cooking: Charcoal	Primary fuel for cooking: Crop waste	Others
Nyanza	14	0	2	2	5	63	14	0	94	6	0	1
Gisagara	10	0	12	3	2	65	7	1	96	3	0	1
Nyaruguru	9	0	13	5	1	63	7	1	96	4	0	1
Huye	14	2	6	7	5	54	12	1	88	11	0	0
Nyamagabe	9	1	10	5	0	66	10	0	96	3	0	0
Ruhango	20	2	2	3	5	65	3	0	95	3	1	1
Muhanga	20	2	3	4	4	61	7	0	89	10	0	0
Kamonyi	18	4	1	8	5	58	6	1	89	10	1	0
Karongi	14	1	5	2	1	56	21	0	92	7	0	0
Rutsiro	11	2	8	5	0	59	14	1	97	3	0	0
Rubavu	41	2	7	14	3	32	0	1	59	40	0	1
Nyabihu	17	1	7	9	3	60	2	2	88	12	0	0
Ngororero	7	1	13	2	2	67	8	1	97	3	0	0
Rusizi	32	3	4	5	1	43	11	1	86	12	0	1
Nyamasheke	22	4	6	5	2	46	15	1	98	2	0	0
Rulindo	15	1	2	7	0	61	10	4	94	6	0	1
Gakenke	12	1	3	1	2	75	5	1	97	2	0	1
Musanze	32	1	8	13	1	43	2	0	81	19	0	0
Burera	18	1	4	3	3	66	6	0	92	6	2	0
Gicumbi	12	1	2	10	1	71	2	1	96	3	0	0
Rwamagana	28	3	0	8	4	46	9	1	77	18	4	1
Nyagatare	15	0	0	5	1	67	11	0	90	6	2	2
Gatsibo	14	1	1	4	1	62	17	0	92	5	3	0
Kayonza	19	4	1	5	12	48	11	1	92	8	0	0
Kirehe	16	1	1	1	17	57	6	0	95	4	0	1
Ngoma	18	3	2	2	27	39	8	2	86	8	5	1
Bugesera	19	0	1	5	0	70	4	0	91	8	0	1

Source: EICV5,2017 and Field data collection 2021

According to the table above, it is clear that the project area community still relies on the forest felling for fuelwood and this is an indicator of what happens inside their homes. The high depending on firewood increases the risk of indoor air pollution which is a source of many respiratory diseases in the community without forgetting the CO^2 emissions from this burning. The charcoal is also used by many populations in urban like districts mostly secondary cities like Rubavu, Musanze, Huye, Muhanga and Kamonyi with a high rate use of charcoal with Rwamagana also among the big users of charcoal. All these energy sources/fuels are the main cause of deforestation and emit a great deal of CO^2 emissions, hence the need to promote the fuel which is environmentally friendly and make it affordable to the community members. Against this need the clean cooking solutions and LPG constitutes a response to this environmental issue.

3.5.3. Human settlements

The Rwandan settlement pattern has been scattered since time immemorial. It has for long been characterized by the traditional use of land associated with the ancestral lifestyle, but which does not correspond any more to the present environmental and economic constraints. It is in that perspective

that the present policy of the Government of Rwanda regarding settlement consists of encouraging a clustered habitat commonly known as «Imidugudu ».
In most urban areas, Rwanda has not yet developed city master plans. There are only plans of different towns of which some have expired and need updating. Urban centres developed spontaneously without taking environmental aspects into consideration. Sanitary facilities are insufficient and sometimes inadequate in city centres. In suburban zones known as spontaneous quarters, solid wastes are piled in disorder, drinking water is rare, and rainwater draining gutters are insufficient. Thus, diseases are frequent in those areas, the degradation of environment is more pronounced and living conditions are poor.

City development should normally be based on urban planning documents like the “Urban management Master Plan (SDAU)”. Presently, the Kigali Urban Development Master Plan 2050 was approved and Launched in 2020.[9] In order to ease pressure on the City of Kigali and help achieve the urbanization growth rate of 35%, the government of Rwanda selected secondary cities of Muhanga, Rubavu, Huye, Rusizi, Musanze and Nyagatare to be poles of economic growth and development.

3.5.4. Cultural Heritage

As per ESS8, the objective of the Cultural Heritage is to protect it from the adverse impacts of project activities and support its preservation, to address cultural heritage as an integral aspect of sustainable development, to promote meaningful consultation with stakeholders regarding cultural heritage and finally promote the equitable sharing of benefits from the use of cultural heritage. The cultural heritage encompasses tangible and intangible heritage, which may be recognized and valued at a local, regional, national or global level, as follows: Tangible cultural heritage, which includes movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Tangible cultural heritage may be located in urban or rural settings, and may be above or below land or under the water; Intangible cultural heritage, which includes practices, representations, expressions, knowledge, skills as well as the instruments, objects, artefacts and cultural spaces associated with those communities and groups and recognized as part of their cultural heritage, as transmitted from generation to generation and continuously recreated by them in response to their environment, their interaction with nature and their history.

Rwanda’s cultural heritage, seen from a general perspective, is rich and diversified. But it has, for long, been regarded as being a sector of minor importance, and, because of such consideration, failed to play its basic role of developing the nation.

However, there is no doubt cultural heritage is one of the main pillars for sustainable development. Rwanda’s cultural heritage is rich and diversified; it contains sacred hills, forests and trees with legendary history, traditional huts and royal palaces, churches and other colonial buildings and structures, caves and rocks with bas-reliefs marking the legendary or historical events that have occurred on the site, thermal springs and wells used for ritual purposes, genocide against Tutsi memorial sites and designated burial sites which are located in different administrative districts where the project activities will be implemented.

The environmental and social assessment also takes into consideration the significance of intangible cultural heritage that may be materially affected or put at risk as a result of the project. For example, project activities may require cutting of trees or the movement of boulders that are used for cultural or

[9] https://masterplan2020.kigalicity.gov.rw/portal/apps/webappviewer/index.html?id=218a2e3088064fc6b13198b4304f3d35/

religious practices and are considered sacred. If potential risks and impacts are identified, measures and actions to avoid, mitigate, and/or manage them are put into place. For example, it may be possible to arrange for protection in place, or for scheduled visitations, or community-sanctioned movement of such sacred items. Protection and preservation of national cultural heritage consolidate national unity, social cohesion, cultural freedom and recognition of community identity.

Therefore, the Government of Rwanda and its partners have the obligation to preserve and perpetuate this cultural heritage for present and future generations because, on the one hand, it brings in a lot of money as do agriculture, industry, gold or oil and, on the other, it maintains harmony and social balance between peoples. A chance finds procedure is a project-specific procedure which will be followed if previously unknown cultural heritage is encountered during project activities. It will be included in all contracts relating to construction of the project, including excavations, demolition, movement of earth, flooding or other changes in the physical environment. The chance finds procedure will set out how chance finds associated with the project will be managed. The procedure will include a requirement to notify relevant authorities of found objects or sites by cultural heritage experts; to fence-off the area of finds or sites to avoid further disturbance; to conduct an assessment of found objects or sites by cultural heritage experts; to identify and implement actions consistent with the requirements of this ESS and national law; and to train project personnel and project workers on chance find procedures, this have been detailed in Environmental and Social Commitment Plan (ESCP) developed under this Project, a sample of the chance find procedure is attached to this ESMF.

3.5.5. Agriculture

The agriculture production system in all 27 districts is based on small family farms, more than 80% of whose production is consumed by the owners. The systems of crops are complex, based on the diversification of production and the association of crops. Six main crops—namely banana, bean, sweet potato, cassava, sorghum and potatoes—of which the first five are present in 90% of farms and all regions of Rwanda.

Great investments in modern agriculture and research-based agriculture using fertilizers and improved seeds on consolidated lands, pumping irrigation on hillsides, etc., have allowed great production of maize, soya beans, voluble beans, wheat, Irish potatoes and rice. This achievement results in Ministry of Agriculture (MINAGRI)'s decision of putting in place specialized centers for policy implementation and research under Rwanda Agriculture and Animal Resources Development Board (RAB).

The recent survey has proved that the agriculture is the most important sector of the Rwandan economy and contributes considerably to poverty reduction. For instance, from 2011 to 2013 the total production of vegetables increased by 9% and their exports while fruits production increased by 18%. Their exports increased from 15,400 tons in 2012 which generated 5,013,260 USD to 31,900 tons which generated 9,494,442 USD in 2014 (see Rwanda Statistical Yearbook, 2014). However, the extensive agriculture practiced by the majority of Rwandan population contributes to the degradation of environment. Moreover, the agricultural intensification at the level of projects was often realized without taking into account environmental drawbacks accrued from inputs like (mineral fertilizers, pesticides, herbicides and seeds).

3.5.6. Animal husbandry

The pastures consisted mainly of family fallows and marginal lands considered as inappropriate to agriculture such as the undergrowth. The limited subsisting pastoral areas were badly used because farmers did not master the management of pastures. That was showed by the overgrazing and overexploitation caused by trampling, degradation and disappearance of vegetation cover. The

MINAGRI policy of keeping cattle in shed known as “zero grazing” program has significantly limited environmental degradation and crops damage, which was also a source conflicts between neighbours but this program also helps the people to have sufficient fertilizer household-based and many of the farmers are mobilized to make and use organic compost from their cows and other natural vegetation. Moreover, the demographic pressure has progressively led to the semi intensification or intensification of fodder resources used to feed animals. Hence, animal husbandry, essentially made of cattle, was progressively transformed. This resulted in considerable increase of milk production from 257,450 tons in 2008 to 628,266 tons in 2013 and beef meat production increased from 24,889 to 29,807 tons in 2013 (see Rwanda Statistical Yearbook, 2014). Animal husbandry has also contributed to poverty reduction through a RAB-MINAGRI program called “One Cow per Every Poor household in Rwanda”. This program has decreased the number of malnourished children countrywide and has considerably contributed to poor household food security and assisted the poor household to increase the agriculture production due to the availability of the organic manure.

3.5.7. Economic activity

The main activity in the project area is predominantly agriculture which means that most of the rural population in Rwanda depend on farming and the findings from the table above show that the industry sector is still under exploited. People need to shift from agriculture to industry and get more income from non-farm services. Electricity access is anticipated to boost the development where many households are ready to use it to develop the other off farming activities including using mills, hair cutting saloon, welding, and carpentry with machine among many other services. NST1 recognizes access to electricity as one of the main factors which will help in its achievement.

Table 9.Economic activities of the population in 27 Administrative Districts

District	Total number of jobs carried out and job status: Wage farm	Total number of jobs carried out and job status: Wage non-farm	Total number of jobs carried out and job status: Independent farmers	Total number of jobs carried out and job status: Independent Non-farm	Total number of jobs carried out and job status: Unpaid non-farm and other	Distribution of workers and broad economic activity: Agriculture	Distribution of workers and broad economic activity: Industry	Distribution of workers and broad economic activity: Services
Nyanza	63	56	146	28	3	213	32	51
Gisagara	86	47	157	27	4	244	23	54
Nyaruguru	60	44	131	30	4	192	26	51
Huye	73	65	141	32	1	216	29	66
Nyamagabe	88	68	167	48	8	259	40	79
Ruhango	57	43	130	23	1	190	28	36
Muhanga	53	65	146	29	4	204	30	62
Kamonyi	72	69	168	26	4	243	42	54
Karongi	75	62	149	34	4	228	39	59
Rutsiro	72	37	154	25	2	229	23	37
Rubavu	73	78	108	64	8	185	36	110
Nyabihu	81	39	121	26	3	205	23	41
Ngororero	77	68	176	40	8	260	45	65
Rusizi	92	95	199	55	11	297	56	100
Nyamasheke	66	69	168	29	3	243	38	52
Rulindo	68	60	153	27	3	221	41	49
Gakenke	92	66	183	38	2	280	49	51
Musanze	75	71	140	38	4	218	37	73
Nyabihu	80	48	153	43	4	236	26	66
Gicumbi	74	41	185	25	3	264	19	46
Rwamagana	66	85	163	43	9	235	45	85
Nyagatare	159	86	258	59	12	423	41	110
Gatsibo	110	63	207	44	5	320	38	72
Kayonza	77	52	156	37	4	235	23	68
Kirehe	99	42	169	33	4	269	32	46
Ngoma	72	37	151	27	4	228	18	47
Bugesera	88	68	169	41	4	260	48	62

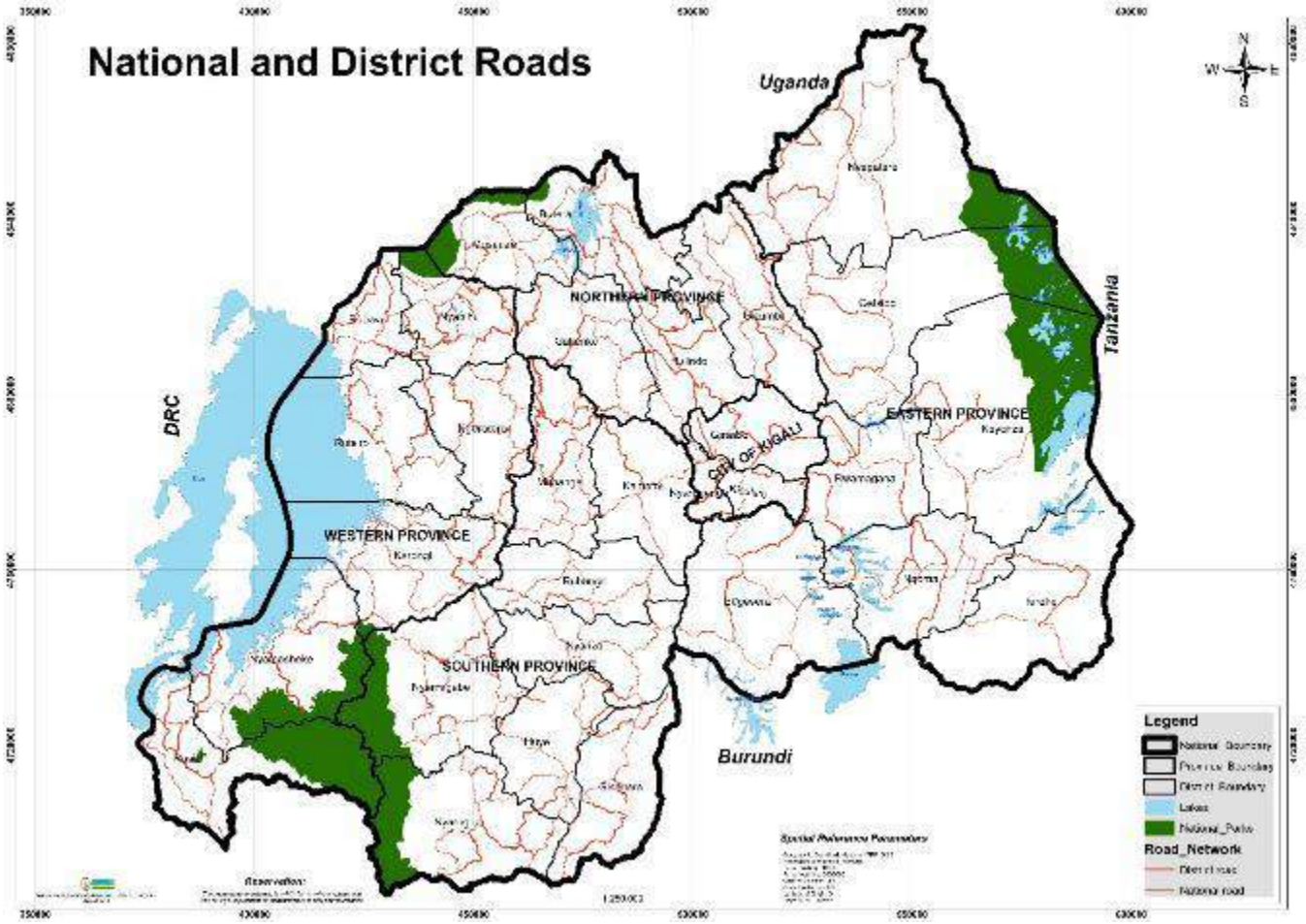
Source: EICV5, 2017 and Field data collection 2021

3.5.8. Transport and Road network

The transport system in Rwanda centres primarily on the road network. Paved roads lie between the capital, Kigali, and most other major cities and towns in the country. Rwanda is also linked by road with other countries in the African Great Lakes regions, via which the majority of the country's imports and exports are made. The country has an international airport at Kigali, serving one domestic and several international destinations and new international Airport, Bugesera International Airport, is under construction.

Rwanda has a total of 12,000 km (7,500 mi) of roads, of which 1,000 km (620 mi) are paved. Under the proposed project it is proposed to have fiber optics in Road reserve. This is the best option to avoid or minimize environmental impacts on ecosystems and it is feasible given the existing road network.

Figure 7: Roads network in Rwanda



Source: Rwanda Land use Master Plan, 2020

3.6. Information, Communication and Technology (ICT) Profile

Rwanda continues to be one of the fastest growing African countries in ICT, from service digitization, mobile technologies, applications development and automation. Much emphasis was put on Broadband as a basic need for all Rwandans and this was achieved through a 4G rollout program where 4G LTE services reached 96.7% of geographic coverage and 96.6% of population coverage, while 3G and 3.5G services remained at the rate of 93.37% of population coverage.

3.6.1. Network coverage and network

As of end 2018, Rwanda enjoys 4G LTE services of 96.7% of geographic coverage and 96.6% of population coverage, while 3G and 3.5G services remained at the rate of 93.37% of population coverage. With the focus on 4G LTE deployment, 4G LTE service now surpassed 3G and 3.5G services. Further, In 2018, following the 4G LTE rollout to all districts, other noticeable broadband access initiatives started such as free WiFi deployment in buses and in public places. As of December 2018, Rwanda's 4G penetration is recorded at 96.6% of population coverage. 47.7% of the total population has access to Internet and 82.6 % of them are subscribed to mobile cellular phone services. Mobile money subscribers have increased from 9,912,735 users in 2017 to 11,067,077 in 2018. Through "irembo" platform (Government's e-service portal), Rwandans can access 88 government services online via mobile devices and/or PCs. Those services include: Government to Citizen (G2C), Government to Business (G2B) and Government to Government (G2G) services.[10]

3.6.2. Mobile cellular and internet penetration

By the end of 2018, almost 4 million people subscribed to the Internet, up from 3.7 million at the end of 2016. Mobile-cellular subscriptions in 2018 saw a 10% increase (9,665,544 from 8,819,217) in the same year but the pace of growth is slowing; indicating the fact that the market may be reaching the saturation point. The Internet penetration, on the other hand, remains bullish as the fastest growing market segment. It has garnered continuous double-digit growth rates in 2018 which pushed the national penetration rate to 52 per cent. The figure indicates that more than three times increase in the penetration rate in mere five years.[11]

3.6.3. Barriers for ICT development

Building on investments made to date, the GoR is therefore committed to tackling the lingering digital adoption and inclusion gap by actively addressing key barriers (see figure 1), boosting its capability for offering more innovative digital public services, and crowding in the private sector, preparing the country for a data-driven and e-service based economy capable of supporting sustainable recovery in a post-COVID context.

Figure 8 : Barriers to Digital Adoption

Existing 3G and 4G networks remain underutilized, pointing to slow growth on the demand-side, which in turn stifles further investments in infrastructure and e-services expansion. Roll-out of a 6,000 km national fiber optic backbone, facilitated by public funding, has extended network coverage. Current 3G

[10] ICT sector profile, 2018
[11] ICT sector profile, 2018

coverage[12] stands at 93 percent and 4G coverage (supported through a public co-investment by Korea Telecom Rwanda Network - KTRN[13]) stands at 97 percent, compared with a regional average of just 76 percent. However, uptake of broadband on the demand side has not kept pace with gains on the supply side. Official figures put internet penetration at 60.4 percent. Yet, most existing internet users (43.2 percent) are still using low-quality 2G services, yielding a modest 3G (13.7 percent) and 4G (3.4 percent) mobile broadband user-base. Rwanda's fixed broadband market remains nascent with penetration at just 0.1 percent, based on unique subscriptions. Existing broadband users are predominately urban, pointing to a marked divide.[14]

Device affordability and weak basic digital literacy[26] represents a major bottleneck to digital adoption and e-service delivery. While a majority (67 percent) of households own mobile phones, these are predominately basic feature phones that subsequently prevent usage of mobile broadband (3G and above).[15] Facebook Connectivity research suggests that close to 80 percent of the Rwandan adult population (6 million, aged 16-64) are unable to purchase a $30 smartphone. Meanwhile, high credit risk prevents a private sector-driven solution to the affordability challenge, in the absence of sponsored de-risking and subsidies schemes.[16] National digital literacy stands at only 20 percent,[17] whereas reported computer literacy is a mere 9 percent. The GoR has sought to address this issue by piloting flagship digital literacy schemes such as the Digital Ambassadors Program (DAP), and digital education initiatives such as Smart Classrooms,[18] and the Smart Education Network,[19] However, gaps remain as these schemes lack national coverage.[29] Moreover, stark rural, gendered, disability-based, and income-based gaps exist in both device ownership and literacy.

Network service quality and data affordability also remain issues that constrain access and usage. While reported mobile network coverage rates are high, Rwanda's hilly terrain and dispersed rural communities make investment in high-quality access networks an unattractive commercial prospect, given weak demand. The KTRN 4G wholesale monopoly arrangement has resulted in sub-optimal development of the 4G market segment, with limited resale by mobile network operators (MNOs), and subsequently weak reinvestment in the network upgrades and maintenance. Moreover, data usage is limited owing to average monthly price of 1GB of data at US$0.56 in 2018[20] exceeding the global affordability targets[21], and internet speeds in Rwanda being lower than regional peers at 2 Mbps.[22]

Subsequently, last-mile connectivity access remains limited, with low usage among key user groups that could begin to stimulate reliable and growing demand and would greatly benefit for increased connectivity. GoR schemes such as the One Government Network (OGN)[23] have thus aimed to expand last mile access on the public sector side, but larger gaps remain, hindering scaled delivery of key public services in key sectors such as education and health, especially in rural and underserved areas. 62 percent of all public offices remain unconnected, particularly local offices at district- and cell-level[24] and

[12] REU, 2019, World Bank
[13] KTRN is a joint venture between the government of Rwanda and Korea Telecom, it is managed by Korea Telecom (KT). Access is open to all operators at cost-based prices.
[14] 38 percent of urban households vs 12 percent of rural households have access to the internet, EICV 5, 2016-17
[15] EICV 5, 2016-17. Although the household survey did not collect information on types of devices, an After Access survey (2017) found that 66 percent used basic phones, 25 percent used feature phones and only 9 percent used smartphones.
[16] Facebook Connectivity Research, 2020, based on EICV 5 data.
[17] Referenced in NISR/NFL Report 2019. Digital literacy here includes use of smartphones, tablets and computers
[18] See: https://www.smartclassroom.nl/wp-content/uploads/2017/08/Brochure-Smart-Classrooms-Rwanda.pdf
[19] See: https://ubuntunet.net/members/nren/rwednet/
[20] Rwanda Economic Update, 2019, World Bank
[21] Alliance for Affordable Internet (AFAI). 2018. UN Broadband Commission Adopts A4AI '1 for 2' Affordability Target. News, January 23, 2018. Set at 2 percent of monthly median income.
[22] Average internet speed in Kenya is10.1 mbps, Madagascar 24.9mbps, South Africa6.4 mbps, Zimbabwe 2.9mbps, Atlas, Data Cable, 2018
[23] OGN is a tripartite arrangement between KTRN, GoR and BSC (Broadband System Corporation), aimed at connecting public institutions with 4G wireless connection throughout the country
[24] MINICT, 2019

43 percent of all schools (1,796 in total) lack internet access, preventing the use of enabling digital tools in education and expanded digital skills training in basic and secondary education. Only 17 percent of households have internet access at home, with a pronounced gender gap and very few of Rwanda's micro, small and medium sized (MSMEs) businesses are online, according to surveys.[25] Public access points could bridge the last-mile connectivity access gap, but do not exist at scale. Government is thus looking to explore innovative and least-cost models for expanding access, targeting key user-groups, while crowding in more private sector participation in related schemes.

3.6.4. E-waste status and management in Rwanda

One of the anticipated environmental impacts associated with the proposed project is the E-waste. The project is expected to significantly increase the circulation of smart devices, and purchase a substantial amount of IT equipment (e.g., computers, servers). Mobile phones, end-of-life backup power batteries, and old IT equipment will need to be safely disposed of. The country has already made a step ahead in Managing e-waste includin the adoption of e-waste mangment Policy and strategy, e-waste regulations and establishoment of Rwanda E-waste Recycling Facilty as well as e-waste collection under establishment in all 30 districts.

3.6.4.1. Classification of E-waste and Sources

E-waste refers to all EEE that holder cannot be used any longer or reaches its end of life, including cell phones, laptops, and others [7]. Otherwise, E-waste applies to any electrical and electronic equipment discarded by its users, since it is no longer recognized as being valuable unless it is reused and recycled. However, according to Rwanda National E-Waste Management Policy, e-waste encompasses all discarded and disposed electrical and electronic equipment (EEE). Some of the major categories of electrical and electronic equipment observed in shops for Rwanda are Television and accessories (Include Television, DVD player, Decoder, Satellite dish, Receiver cables); Computer and accessories (Such as Laptops, Desktop computers, CD-R, CD-RW & DVD, computer speakers, Hard drives, USB sticks, CDMA sticks, Printers, Notebooks, Computer, keyboards & mouse); Mobile devices and accessories (For instance Mobile phones, Mobile chargers (separate), Mobile phone batteries, Headsets) and Other electronic items (Like Radios, Tape recorders, Stoves, Ironing machine, Power adaptor, Power dividers, Rechargeable batteries, Men and women beauty equipment, Power cables, Different types of lamps, Refrigerators, Air conditioner, Dry cell batteries, Washing machines, Coffee grinder, Juice maker, Kettles and Vacuum cleaners).

3.6.4.2. Status and trends in E-waste generation

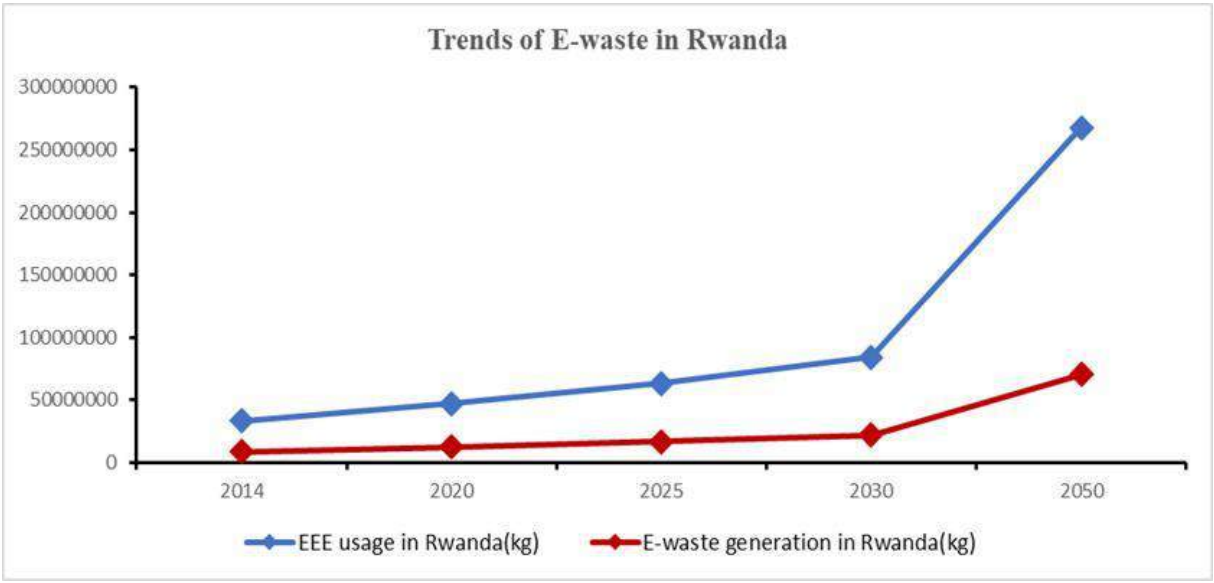
Recognizing the ICT's relevance to socio-economic growth as a key engine in Rwanda. Project implementation like one laptop per child, fiber optic coverage whole country, increasing electricity access and other the non-aligned movement of EEE consistently emphasizes the boosting of EEE. Unfortunately, in Rwanda there is a massively increasing number of EEE in institutions, families, and companies, etc. In addition, the solid waste dealers collect wastes from various sites and dispose them at assigned waste sites without a distinct distinction of e-waste. Also, in some areas valuable and non-valuable components of e-waste are assorted with other waste types, most of them are environmentally harmful. These lead to alarming rates of e-waste generation in Rwanda. For instance, Mobile phone penetration rose from 0.0046% in 2000 to 56.8% in 2013 and Rwanda had ranked as second by the growth rate of annual mobile telephone penetration in Africa for 2010. Moreover, from November 2014 to January 2015 in Rwanda has surveyed to establish the condition of E-Waste, it contemplated that

[25]Just over half (55 percent) of formal sector enterprises reported having internet access in 2016, Rwanda Economic Update, 2019

the import of ICT equipment has risen by five times between 2010 and 2014. Generally, Rwanda's annual E-Waste production capacity was 9,417 tons, of which 7,677 tons (81.52%) are imparted by persons, 1,143 tons (12.14%) by the public organization, and 597 tons (6.34%) of a private organization, this work revealed that Rwanda has the potential to produce e-Waste annually.

Additionally, in terms of engendering and handling e-waste is conspicuously trending at a higher level and the annual increase rate in EEE imports into Rwanda was estimated to be approximately 5.95%. Distinctly, in 2014 and 2020, 8,790,255.66 kg, 12,432,416.6kg of e-waste was generated from 33,449,623.04 kg and 47,309,164.3 kg of EEE, which estimate the generation of 16,596,528.74 kg, 22,155,368.07 kg, 70,359,994.68 kg for e-waste, which will be produced by 63,154,890.07 kg, 84,307,981.33 kg, and 267741393.3 kg of EEE in 2025, 2030 and 2050, respectively, as evinced in Fig. 9.

Figure 9: Trends of E-waste in Rwanda



Source: Energy and Environmental Engineering, 2021

3.6.4.3. E-waste Management arrangement in Rwanda

As efforts to boost ICT are gaining momentum, the handling of e-waste is becoming significant to sustainability policies. Rwanda is a country that is increasingly boosting technology, electronic devices such as laptops, TVs, computers and smartphones, etc. These have driven to substantial increases in e-waste combined with strong demand from customers for the new smartphones. These indicated that there is a need of e-waste management in Rwanda. Through the Ministry of Trade, the government of Rwanda has in partnership with the Rwanda Green Fund, worked to solve this issue even if it's not all due to population's awareness. The denouement is the installation of recycling and dismantling plant in Rwanda, which is formalized an e-waste processing and recycling facility of world-class capable of handling more than 7,000 tons of EEE waste per year. This facility is Africa's second-largest and reflects the clear commitment of Rwanda to green growth and sustainability.

In terms of roles and responsibility in E-waste management and ICT regulations, different institutions implement their functions as shown in the table 10.

Table 10: Roles and Responsibilities in E-Waste Management

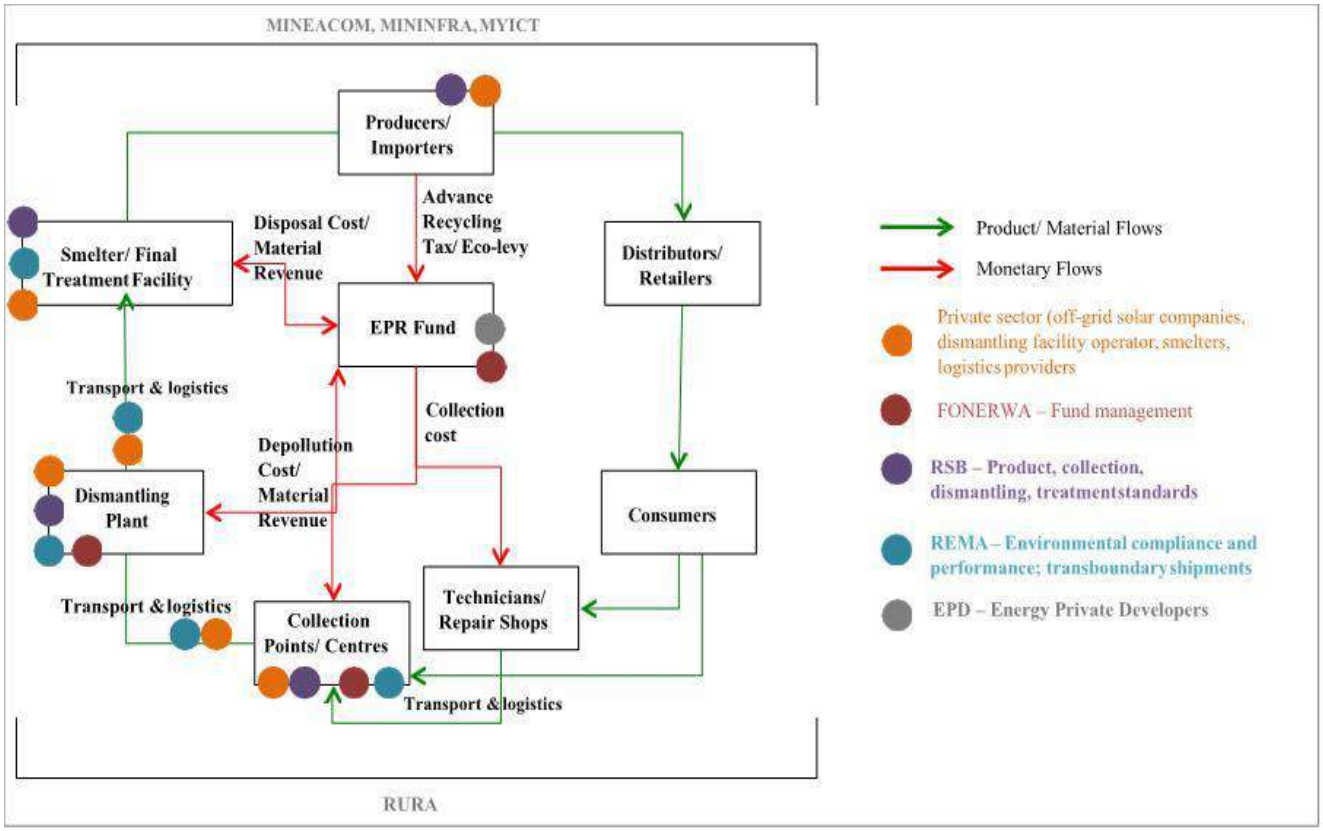
Ministry of Information and Communications Technology (ICT)	- Lead e-waste policy and strategic plan development for e-waste management. - Monitor the implementation of the E-waste strategic plan in coordination with the Ministry in charge of Trade and Industry
Ministry of Trade, Industry and East African Community Affairs (MINEACOM)	- Management of e-waste facilities, processes, and sustainable consulting framework. - E-waste management funding system, such as advanced recycling fee, e-waste operating and management procedures.
Ministry of Health (MoH)	- The Health Ministry will establish health and safety standards related to e-waste management policies.
Ministry of Education (MINEDUC)	- The Ministry responsible for education establish and incorporate e-waste management processes within curricula. - The Ministry concentrates efforts on developing the requisite skills for the proper management of waste, including recycling, at local and national level.
Rwanda Environment Management Authority(REMA)	- vanguard e-waste mainstreaming in current environmental policy, strategy, regulatory and legal tools. - be involved in the informative contemplation on e-waste as baseline surveys, etc. - Control implementation of e-waste-management environmental programs.
Rwanda Utilities Regulatory Authority(RURA)	- Provide regulations guiding e-waste management in Rwanda. - Providing e-waste management and disposal technical guidance. - Establish licensing scheme for the organization's deals with EEE collection, transport, removal, restoration and recycling.
Rwanda Standards Board	- inform member states of the World trade organization on instigated EEE standards, regulations, and policies that harm the imported quality into the country. - Developing standards for e-waste management. - Develop an E-Waste Management Standards Auditing and Monitoring mechanism.
Authority in charge of Imports Inspection(RRA) Authority in charge of Customs and Revenues	- The import inspection authority shall ensure that all electrical and electronic equipment imported are complied with by specified specifications at the time of entry. - Both EEE produced in Rwanda and imports will remain registered with the customs and revenue authority.
Private sector	- The private sector shall introduce E-waste management policies and strategic plans Via planning and establishment of e-waste collection, transport, disposal, and recycling facilities. - In addition, the private sector shall also be in charge of developing, maintaining, and funding the entire E-waste chain.
EEE Users	- Distinct e-waste from others to enable the collection, recycling, and treatment. - Emplace generated e-waste to licensed centers and drop-off points. - Implement suggested methods or procedures for disposal, particularly the expiry or end of the product usage period.

Other institutions involved in E-waste management are National Fund for Environment and Climate Change (FONERWA) in charge of Fund management and Energy Private Developers(EPD) in charge of regathering all private companies wielding in the energy sector and Extended Producer Responsibility (EPR) in charge of the product life cycle.

FONERWA funded e-waste recycling facility is a part of its e-waste involving inventory, creation of policies, and private investment. And there are management systems and processes to raise and disburse funds that can be easily tailored to the specifications of a particular EPR fund. At present, without the need for compensation from EPR assets, the private partner running the facility plans to be profitable. However, this is supposed to be free to access waste, highly dependent on high-value IT waste and reasonably high metal prices. If access to waste costs and the costs of proper disposal of

hazardous fractions rises, therefore economic viability needs to be rebalanced by additional funding, which normally comes from EPR funds. The role of the EPR fund manager can also be performed by industry-led private or not-for-profit organizations similar to the European producers' accountability organizations. EPD, along with other industrial organizations under the Private Sector Federation, which also includes the Rwandan ICT Chamber, representing resellers of IT equipment and telecoms firms, may be able to play this role in the off-grid solar industry. Other governments such as RURA, REMA, and RSB are well-positioned to provide licensing, supervision, and aid on various issues, such as cross-border deliveries and monitoring, set standards, etc. Their ability to and interest in accepting such a mandate should however be assessed. The figure 10 presents the current government-Private sector hybrid scheme in E-waste management.

Figure 10: Government-Private Recycling Scheme Hybrid



Source: Energy and Environmental Engineering, 2021

3.6.4.4. E-waste Recycling Facility and collection centers

- ✓ **Rwanda E-waste Recycling Facility**

This e-waste recycling facility is built in the eastern part of the country, in Bugesera District and is currently managed and operated by the private sector company EnviroServe Rwanda Green Park through a public-private partnership agreement with the Government of Rwanda. According to the EnviroServe management, in 2020, 3,000 tonnes of e-waste, were collected which is 30% of the capacity of the facility. The plant has the capacity of receiving between 10,000 and 15,000 tones every year. Key services offered by the facility include:

- **Repair and Refurbishment of Electrical Products**: This include refurbishment, repair or reworks more than 600,000 items annually and have the capacity to process tens of thousands of products every month.
- **Battery Collection and Recycling:** This include collection and recycling different types of batteries to extend their lifespan and prevent pollution from dangerous chemicals;
- **Electronic Waste Dismantling and Recycling**: Electrical and Electronic devices are dismantled in the facility and different devices are either, recycled, sold to different operators or disposed of in an environmentally acceptable manner
- **Electronic Waste Collection Service:** the facility collects all E-waste from both public and private operators and the transport is offered free of charge for E-waste above 2 tones.

Figure 11: Rwanda E-waste Recycling Facility

- ✓ **E-waste Collection Centres**

EnviroServe Rwanda currently has six collection points where members of the public can drop off their unwanted electronic goods, and is aiming for 30 by the end of the year – one in each district of Rwanda and at border posts. So far 15 collection centres are operational and the target is to have 30 collection centres across all 30 districts.

Figure 12: E-waste Collection point in Muhanga District

Given that Rwanda Digital Acceleration Project will contribute to the acquisition of ICT devices and hence generation of E-waste, the project will work closely with these institutions to manage E-waste generated under the Projects. It is proposed to establish a working agreement with E-waste Recycling facility where by the Facility will provide services in terms of E-waste collection, transport, recycling and final disposal. Other institutions like REMA, RURA and MEACOM will contribute in terms of public awareness, licensing of service providers and guidance on technical handling of E-waste.

4. PUBLIC CONSULTATION AND PARTICIPATION

4.1. Overview

Community engagement and stakeholder engagement is a major component of the proposed project and a requirement for both World Bank and national environmental and social policies. The consultation and engagement process focuses on providing information on the proposed project in a manner that can be understood and interpreted by the relevant audience, seeking comment on key issues and concerns, sourcing accurate information, identifying potential impacts and offering the opportunity for alternatives or objections to be raised by the potentially affected parties, non-governmental organizations, members of the public and other stakeholders. Consultation has also been found to develop a sense of stakeholder ownership of the project and the realization that their concerns are taken seriously, and that the issues they raise, if relevant, are addressed in the environment and Social management process and will be considered during project design refinement.

Given that project affected people and communities are not yet identified, initial consultations were held with stakeholders at the central level and district level with representatives of administration, the private sector, women, youth and vulnerable people. Further, consultations are recommended during identification of beneficiaries, activities and during the preparation of site-specific instruments.

4.2. Objectives and purpose of community engagement and stakeholder consultation

Public consultation and stakeholder engagement are the basis for building strong, constructive, and responsive relationships that are essential for the successful management of a project's environmental and social impacts. Stakeholder engagement is an on-going process that involves the following elements; stakeholder analysis and planning, disclosure and dissemination of information, consultation and participation, grievance mechanism and on-going reporting to affected communities.

4.2.1. Purpose

- To prepare communities on potential emergency scenarios that could be caused by the project and can affect the community.
- To build a trusting relationship with the affected communities and other interested stakeholders based on a transparent and timely supply of information and open dialogue.
- To ensure effective engagement with local communities and other key stakeholders throughout all phases of the project.
- To actively build and maintain productive working relationships based on principles of transparency, accountability, accuracy, trust, respect and mutual interests with affected communities and other stakeholders.
- To collect input on impacts and mitigation design.

4.2.2. Public consultations and participation

Public participation and community consultation has been taken up and should continue to be an integral part of project implementation as well as the social and environmental assessment process of the project. Consultation is used as a tool to inform project affected people, beneficiaries and stakeholders about the proposed activities both before and after the development decisions are made. It assisted in identification of the problems associated with the project as well as the needs of the population likely to be impacted. This participatory process helps in reducing the public resistance to change and enabled the participation of the local people in the decision-making process.

4.2.3. Stakeholders

Key stakeholders have been identified and initial discussions held with decision making bodies, key stakeholders, sector institutions and specialist experts were made on the very concepts and nature of the proposed project, giving emphasis on levels of public participation, role of key stakeholders and joint contributions of these actors to the success of the project. In addition, the scope of the proposed project and possible means of maximizing local communities' social, economic and environmental benefits from the project implementation were underlined.

4.2.4. Consultation and engagement methods and process

Consultation method—including focus group discussions (FGD), community meetings and official meetings with stakeholders—will be considered during project implementation and if the COVID-19 pandemic restrictions allow. Focus groups meetings should bring together opinion leaders in the village (i.e., teachers, shops keepers, church leaders, etc.), youth group and gender/women representatives. The community meetings will include all categories of society. However, in line with COVID-19 restrictions, community members will be split into small groups which will be convened for the community meetings. Official meetings will include village leaders, cell and Sector and District authorities. The meetings will be organized by Project staff and can be individual contact or done at every administrative level depending upon their locations, staff availability and local Covid-19 restrictions.

4.3. Consultation and stakeholders' engagement conducted

Consultation and stakeholder engagement started with project preparation and continues during the preparation of safeguards instruments.

4.3.1. Initial consultation during project preparation

Initial consultation was conducted by RISA and involved different stakeholders including the Rwanda Development Board (RDB), MINICT, the Rwanda Environment Management Authority (REMA), MINALOC, IT companies, Telecommunication companies and phone trading companies and vendors. At district level, consulted people included the district Vice Mayor in charge of Economic Development, District Environmental Officer, IT officer, the Director of Planning, Monitoring and Evaluation, and Director of the One Stop Center. All consultations were done by respecting all instructions set by the Government of Rwanda to fight against the spread of the COVID-19 pandemic. Further phone calls were used to consult with RISA, RDB's Environmental Expert, the Director of the Social Affairs Unit of MINALOC, the Environmental Safeguards Specialist of SPIU World Bank funded projects, and the Ag Director of Environmental Regulation and Pollution Control Unit of REMA and in other ministries consulted.

Under the current restrictions imposed by COVID-19, most of these consultations were organized virtually. Tables 12 and 13 summarize initial consultations held with various stakeholders and key outcomes.

Table 11: Initial stakeholder engagement activities

Date & Location	Stakeholders	Format and Objectives	Outcomes
February 11, 2021	Rwanda ecosystem (multiple actors)	Share project overview and Component 3 details; collect feedback	Feedback received on early-stage finance, hardware/robotics, key additional for international accelerators, and addressing disability issues
February 5, 2021	MORINGA SCHOOL	Virtual meeting	Moringa's work would fit into the Digital Acceleration Project There are more opportunities to collaborate. Moringa is willing/able to provide training in other areas, such as basic digital literacy.
February 4, 2021	Techstars (intl. accelerator)	Introduction to scope/approach of Techstars ecosystem development programs	Overview deck received; key programs highlighted (Founder Catalyst + Community Catalyst); follow-up on conversation intended for more detailed discussion
February 3, 2021	500 Start-ups (intl. accelerator)	Review 500 Start-ups approach to M&E to help inform GoR input to WB RDAP M&E indicators	Feedback received on ecosystem measurement; prior conversations covered scope/approach of 500 Start-ups for ecosystem development programs
February 2, 2021	F6S (intl. platform)	Introduction to scope/approach of F6S community/acceleration programs	Overview shared; follow-up on conversation intended for more detailed discussions
January 21, 2021	Ericsson ONE	Review of Ericsson ONE corporate innovation/incubation approach and potential fit for Rwanda	Discussed priorities and needs for Ericsson ONE to set up an Africa "test-bed"
January 11, 2021	BPI France / EuroQuity	Introduction to EuroQuity start up/funding digital community	Reviewed functions of EuroQuity platform and explored potential ideas for expanding it to Rwanda ecosystem
December 4, 2020	Ministry of ICT and Innovation (MINICT) Sector working group - 165 email addresses	Official virtual meeting	The key concerns that were pointed out by the stakeholders included the following: a) There should be participation and incentives for the private sector b) cyber-security is key and important to be included
October 26, 2020	RDB	Virtual meeting	Supportive of the project Interest in Smartphone Device Affordability Model
October 14, 2020 Kigali	BRD	Virtual meeting	Supportive of the project, opportunity in smartphone distribution scheme alongside SHS connections

Table 12: Consultations with different groups of stakeholders

Stakeholders	Engagement method	Engagement summary	Key outcomes
ICT chamber, Norrsken Foundation, UNCDF, MINICT, RISA, KIC, Girls in ICT, Local start-ups (Iris Hub,	Virtual meeting (WebEx)	The stakeholders were consulted on February 12, 2021. Stakeholders were invited to say what they think about the project, its possible impacts, subprojects that	○ Participants were very happy with the project. They however expressed the following: ○ Make selection of international accelerator competitive enough to get the best quality there is. ○ Clearly define financing instruments to be applied. ○ Boot camps are short-term and great but need to invest a lot more effort in 3.2 as the long-term solution. ○ Clearly bring out how this component will strengthen R&D and innovation.

Stakeholders	Engagement method	Engagement summary	Key outcomes
BAG, 250startups)		should be funded; channels of communication, conflicts and grievance handling, etc.	○ A great value point for local start-ups has been the regular and maintained exchanges with mentors beyond the incubation period; there is a need to see how to incorporate this in the design. ○ Develop attractive packages to entice international accelerators to Rwanda. ○ Ensure PWDs are catered for as co-creators.
Mara Phones, MTN, Transsion (itel, Tecno, etc.), Shreecom (Samsung, Nokia, iPhone), Oppo, MINICT, RISA	Virtual meeting (WebEx)	The stakeholders were consulted on February 11, 2021. Stakeholders were invited to mention what they think about the project, its possible impacts, subprojects that should be funded; channels of communication, conflicts and grievance handling, etc.	○ Device financing models are key to the success of extending affordable devices to citizens. Develop varying models/options for citizens to choose from: - Instalment payment plans - Cash loans, etc. - Build sustainability in the model of acquiring these devices - Need affordable but also quality smart devices ○ Relevant and valuable local content is an equally important factor ○ Integrating with the banks holding funds toward serving eligible customers in service provider distribution channel (Customer=>MoMo=Bank A/C) ○ Fund recollection back to specific bank Accounts + understanding if any interest rate is to be considered or not. ○ When it comes to cost, look at the whole smart device value chain/ecosystem: - Define what a smartphone is - How can device affordability be spread across the value chain? - Support services such as device maintenance and replacement easily accessible and affordable - Affordability is not on devices alone but on voice and data too, those touch points need to be considered too ○ Define target number of people to reach through this project to achieve significant smartphone penetration ○ Members would like to participate in developing requirements for the study or survey ○ Benchmark on new models of last mile connectivity
DOT Rwanda (Violette, Jane, Tony), MINICT, RISA	Virtual meeting (WebEx)	The stakeholders were consulted on February 11, 2021. Stakeholders were invited to say what they think about the project, its possible impacts, subprojects that should be funded; channels of communication, conflicts and grievance handling, etc.	○ Ready to support the project. The following was expressed: ○ It's fundamental to crowd in the private sector to effectively drive this ○ Clearly define the benefits and importance of digital skills, what will they help with? ○ Classify the audience types, levels and categories: - Use human cantered design; develop different personas for customization of content - Audit the target audience to understand them and their needs - Maintain feedback loops on their experiences throughout the project lifecycle ○ Localization of content is critical, Kinyarwanda content even more important ○ Personalization of delivery is also critical to the success of this agenda ○ Capitalize on the youth in implementation as they are the key drivers and largest pool of consumers of digital technologies ○ Need to effectively do partnership ecosystem mapping and Develop a partnership strategy

Stakeholders	Engagement method	Engagement summary	Key outcomes
MINICT, RISA, CDOs and BAs; MINALOC, MININFRA, MINEMA, MINEDUC, MIGEPROF, MINICOM, MIFOTRA, MINISPORTS, MINIJUST, MoE, MINAGRI	Virtual meeting (WebEx)	The stakeholders were consulted on February 11, 2021. Stakeholders were invited to say what they think about the project, its possible impacts, subprojects that should be funded; channels of communication, conflicts and grievance handling, etc.	○ Ready to support the project. The following was expressed: ○ Ensure development of local content and in Kinyarwanda is prioritized ○ Capitalize on existing platforms like YouTube to provide content relevant to Rwandans and in Kinyarwanda ○ Need sustainable (current ones have short life span) and affordable devices ○ Consider curriculum revisions to boost skills (industry-academia linkages) ○ Need to highlight the benefits of the population having access to smart devices and digital skills ○ Need to heavily focus on how to help local start-ups to compete locally and internationally: ▪ They currently do not have sufficient skills to even compete locally ▪ Digital skills alone are not enough, they also need critical thinking skills, etc. ○ Put citizens and locals first all through the design ○ Work with universities to drive this vision and dream for digitally transformed Rwanda ○ Highlight how both the private sector employees and pubic servants' skills will be enhanced through this project ○ Highlight how the project will help to boost local R&D and innovation ○ Ensure to develop targeted approaches for teachers as critical pillars of society
MINALOC (Executive Secretaries of all 30 Districts in Rwanda)	Virtual meeting WebEx)	The stakeholders were consulted on February 11, 2021. They were invited to provide ideas on what they think about the project, its possible impacts, subprojects that should be funded; channels of communication, conflicts and grievance handling, etc.	○ The executive secretaries of Districts said that they are happy with the project which is in line with Rwanda's Vision 2050 ○ They said that they do not foresee any strong adverse impacts apart from e-waste management but rather expressed that the project will have many positive impacts ○ They emphasized that the project should go beyond providing digital devices like smart phones. They said that many cells do not have electricity and that this might compromise provision, access and use of internet. ○ They said that digital skills development should be given more emphasis and that it should especially target rural areas. ○ They expressed that in addition to traditional ways of communicating (when measures against COVID 19 allow) the project should empower communities to use technology-enabled communication which can even better fit the situation of COVID19 that the country is facing. ○ With regard to grievance handling, these stakeholders said that there are existing and functional mechanisms of filing and resoling grievances, mainly linked to the administrative levels. However, they said that some of the existing mechanisms consist in physical or face-to-face interactions. They expressed the need for complementing or supplementing mechanisms such as call centres and internet and web-based mechanisms that can allow communities to get their grievances received and handled without moving from their places.

Stakeholders	Engagement method	Engagement summary	Key outcomes
District IT Specialists (Huye, Kicukiro, Nyamasheke, Burera, Gisagara, Rulindo, City of Kigali, Musanze, Kamonyi, Nyaruguru	Virtual meeting (WebEx)	The stakeholders were consulted on February 16, 2021. They were invited contribute ideas on what they think about the project, its possible impacts, subprojects that should be funded; channels of communication, conflicts and grievance handling, etc.	○ Very happy with the project. It is in line with nowadays needs ○ More emphasis should be on enabling and empowering IREMBO portal so that all government services can be delivered through IREMBO. ○ ICT literacy skills need to be enhanced ○ Internet is still very expensive, especially the broadband that is still not accessible because it is very expensive ○ Stakeholders wanted to know whether there is a baseline for example about the number vulnerable people, marginalized people, etc., and a strategy about how long it might take to reach all those people. They were given a brief description of the baseline information ○ Stakeholders wanted to know whether there is a sustainability plan so that these initiatives do not stop after the end of the project and they got an answer about the plan ○ Devices are still a problem ○ There is a need to increase and empower digital ambassadors so that they can reach a good number of people ○ Local leaders should have special training and support in ICT ○ Initiatives put in place in cities should also be cascaded to other areas (e.g., internet in buses)

4.3.2. Additional consultation during ESMF and LMP preparation

Additional consultation were organized May 6-25, 2021, at both the central and local level. Consulted people were provided with more details on the project and discussions focused on potential environmental and social impacts that are associated with the project, existing legal and regulatory framework, roles and responsibilities, E-waste regulations and management, etc. At the central level, consultation were held with:

a) regulatory and policy institutions including:

- Ministry of Environment
- Rwanda Environment Management Authority
- Rwanda utilities Regulatory agency
- Ministry of ICT
- RISA
- Rwanda land Management and use authority
- BDF
- Development Bank of Rwanda
- Rwanda Energy Group
- Rwanda development Board

Private operators in ICT, telecommunication and environmental management including:

- Telecommunication company(Airtel , MTN, canal box etc)
- Mara Phones,
- Enviroserve
- IHS Rwanda
- Rwanda Association of Professional Environmental Practitioners

At the local level, Consultation were held in all districts (28districts+Kigali City) with districts official and representative of special groups including:

- Good governance and Local administration officer
- Information and technology specialist
- District education officer
- District Health officer
- District environment Management officer
- District labour officer
- Representative of Women Council
- Representative of Youth Council
- Representative of people with disability
- Representative of Private Sector Federations

The list of all people consulted in Presented in Annex 1

4.3.3. Key outcomes of Consultation and Stakeholder Engagement at district level

A register containing all comments and observations made during stakeholder engagements was developed. Table 13 below provides a summary of the issues and concerns raised in these processes in each of the districts. For details, a list of participants by position in each district with their contacts.

Table 13: Stakeholder Engagement Comments Register in the districts

Key Comments and Comments from the Leadership	Response /Clarification/Comment
Is land acquisition anticipated under this project and if yes who will provide funds for compensation	The proposed project is not expected to cause significant land acquisition because it is planning to use existing facilities and road reserves for laying cables. However, a Resettlement Policy Framework is being developed to manage potential resettlement impacts and the government will provide funds for compensation if needed.
As you recruit labour, make sure you prioritize our people. Our people need jobs and are ready to work for their development.	During the project implementation, priority in recruitment will be given to the local people.
Water is vital for the organism especially when someone is operating on hot air	Clean water will be availed during construction and installation for workers.
We are afraid that you are bringing with you different workers and that may be source of infectious diseases including sexually transmitted diseases like HIV/AIDS. Make sure that you have a clear policy for infectious diseases prevention within the community and your workers are aware of how to behave.	Yes, we have a health and safety policy and this will be emphasized during the project implementation. The contractor will prepare the health and safety management plan to be implemented and the workers will have to sign a code of conduct to show their commitment and adherence. Free condoms will be availed to help workers to prevent sexually transmitted diseases in the community and health education will be a permanent course to all project employees.
In the past, districts have experienced contractors who fail to pay their workers. What are the measures in place to mitigate these issues?	A labour management procedures is being prepared and one of the components is about managing contractors. Further, the project will include payment conditions for workers in all contracts and work with districts to ensure compliance.
Is there any special consideration for vulnerable people including people with disability?	The project activities will pay attention to vulnerable people and support will be provided especially for access to smart phones.
In terms of digital literacy, is there any special training for people living with blind disability to access digital services?	The project design will consider existing training methods and work with education and training institution to address issues related to digital literacy among people with disability?

Key Comments and Comments from the Leadership	Response /Clarification/Comment
Is this internet free or we will have to pay for it?	Even though the internet is not free the community will be facilitated to get the affordable materials to navigate.
Will you train the members of the Grievance Redress Committee?	Yes! The GRC members will be trained on grievance redress mechanism (GRM) before the commencement of project activities.
We thank you for engaging with the leaders first before implementing the project because it has helped highlight our roles. We will support the project- ESS10	This project belongs to all of us. We believe that engaging with you as stakeholders will give the project ownership, your cooperation and support.
Do not worry about security. Should you have any incidents, inform us in time.	We thank you for the commitment and we will be in touch, every incident will be reported immediately.
Is it possible to share with us the ESMP so we can clearly chat out our roles in supervision?	Yes, we will. Give us your email addresses and we will provide it. You can also access it online
Are you giving contracts and medical insurance to your workers?	The contractor will have all risks insurance. Permanent staff will be insured in RSSB while casual labours will have the Mutuelle de santé.
We will not tolerate any hindrance from the local people against the project but we ask for safe working conditions for workers in return.	The Labour Management Procedures (LMP) is being developed and will be used to ensure that the labour policy is respected and that all workers benefit from the project. The Health and Safety Management Plan will be prepared to make sure the work is conducive to health and the working place is safe and materials including PPEs (Personal Protective Equipment) are in good conditions and are taken care of.
If your cable passes through a house or private land, are you paying compensation?	Yes, we will comply with Rwandan Expropriation Law in Public interest. (Law **N° 32/2015 of 11/06/2015)** and WB ESS5. PAPs will be paid before their properties are damaged.
Is there a policy for child abuse and sexual harassment?	The LMP being prepared will categorically restrict and will be given to the contractor to comply to it. The contractor also will comply to the National Labour Policy.
Consider recruiting our youth also for white collar and semi-skilled jobs. We have already trained many of them on HSE and welding-ESS2	The recruitment exercise will provide equal opportunity for all. Given the nature of work, the recruitment criteria will include interest, ability and medical fitness to work among others. Being semi-skilled will be an added advantage. Highly skilled jobs are however, national jobs filled through media advertisement. Encourage your youth to apply whenever they see these advertisements
We want to see a scenario where labour force where all the affected project area (district/sectors/cells represented in your labour force. To ensure this, adverts are pinned in all sub-counties. This will reduce theft of materials, cases sexual harassment and project sabotage that usually, increase when manpower is from other neighbouring sectors	The contractor will as much as possible attempt to recruit manpower representatively from the project area. Some experienced workers may however, be carried from other cells/sectors/districts for transfer of skills and experience to the new recruits. As rightfully listed, we expect to reap the dividends of a localized recruitment approach. For this reason, the contractor will liaise with the District to advertise the jobs available.
You should coordinate with other service providers to minimize disruption of service provision.	RISA and the contractor will liaise with other utility and service providers including for instance MTN, AIRTEL-TIGO and the physical planner to identify utility lines in the district to avoid disruptions
Please share with us a copy of the RDB ESIA Certificate and the project approvals conditions ESS10	The ESIA certificate and conditions of approval will be shared with the district by email
Is it possible to share with us the ESMP so we can clearly chat about our roles in supervision?	Yes, we will. Give us your email addresses and we will provide it. You can also access it online.
Are you giving contracts and medical insurance to your workers?	The contractor will have all risks insurance. Permanent staff will be insured in RSSB while casual labours will have the Mutuelle de santé(Mutual health insurance).

Key Comments and Comments from the Leadership	Response /Clarification/Comment
Local leaders should have special training and support in ICT	There is a component of the project which will provide training and capacity enhancement
What is the baseline for example about the number vulnerable people and what is the strategy about how long it might take to reach all those people?	They were given a brief description of the baseline information.
Internet is still very expensive, especially the broadband that is still not accessible because it is very expensive	Their concern is understandable and will be communicated to the Government of Rwanda and RISA.
Districts staff are already overloaded and do not have sufficient knowledge in terms of E&S management and compliance with international standards. Is there any plan for training and Capacity building?	Capacity building is planned under the projects and district staffs will be needed for only activities that fall under their responsibility. For additional works, RISA will hire contractors and service providers.

Table 14: Outcomes of additional consultations at the central level

Institution	Item	Feedback
Ministry of Environment, REMA	Environment and Social management and E-waste management	Key challenges expressed by expert in both REMA and Ministry is the enforcement of existing regulations both for environmental management and waste management. They highlighted that the proposed project will have both positive and negative impacts urged the implementing entity to comply with environmental and social requirement including requesting EIA certificate before implementing project activities in accordance with ministerial order on project requiring EIA. Both institutions will work and support RISA in Managing project impacts including in awareness especially for E-waste management. Key issues raised is how RISA will work with operators, E-waste facility, district, and community to ensure that the increased access to devices does not increase negative impacts on environment. They reiterated the need for a close collaboration between institutions to ensure a proper e-waste handling.
RDB & Rwanda Association for Environmental Professional Practitioners	EIA procedures and works in Protected areas	Both RDB and RAPEP requested the implementing entity to comply with existing regulations and EIA procedures including the use of certified environmental Practitioners. They also highlighted existing gaps between world bank requirement and national regulations and urged both RISA and other national institutions to think about harmonisation.
RURA	E-waste management	RURA has established E-waste guidelines, guidelines for establishment of telecommunication facilities. Given that these guidelines are new they expressed the need for awareness and training of various stakeholders and operators.
BRD/BDF(FIs)	E&S management in Financial intermediaries	Both BRD and BDF are updating their Environmental and Social Management System (ESMS) for other World Bank funded projects. BRD has already hired an E&S specialist while in BDF these responsibilities are assigned to an existing staff with other duties. Once roles and responsibility under the proposed projects are well defined, both institutions will assess whether or not the ESMS need to be reviewed and updated to accommodate E&S risks associated with this project.
Telecommunication Company (MTN/Airtel, Maraphone, etc.)	Coverage, waste management and client services, deployment of devices,	Telecommunication companies have started programmes of encouraging users to takeback used phones and get new one on discount. This program has been initiated in both MTN and Mara. However, the discount made remain low and the uptake of this product remain low. Mara wants to expend this scheme and encourage users to takeback used devices after one year and users will get new devices on low cost. Devices taken back will be returned to the refreshment process and damaged or old devices replaced. This will

Institution	Item	Feedback
	especially smart phones	ensure that all devices are tracked and those out of services will be brought to e-waste Facility. They are also planning to work with other operators like MTN and Airtel to establish selling and collection centers across the country. They also intend to establish incentives for people who returned used devices and also repairs. The concern raised is the investment cost for these incentives and they requested the project to consider private operators in project design. MTN has also initiated a program aimed at increasing the penetration of smartphones but also encouraging people with used smartphones to return them and get new ones at a discount. In terms of e-waste management, both telecommunications and phones operators have not yet established any mechanism for tracking used devices and bring them back for recycling and safe disposal. It was requested that RISA under this project initiate dialogue among operators, repairs, producers and users to find a better way on handling e-waste especially in using existing facilities.
Enviroserve (E-Waste management)	E-Waste management	Key services offered at the facility include: • **Repair and Refurbishment of Electrical Products**: This include refurbishment, repair or reworks more than 600,000 items annually and have the capacity to process tens of thousands of products every month. • **Battery Collection and Recycling:** This include collection and recycling different types of batteries to extend their lifespan and prevent pollution from dangerous chemicals; • **Electronic Waste Dismantling and Recycling**: Electrical and Electronic devices are dismantled in the facility and different devices are either, recycled, sold to different operators of disposed of in an environmentally acceptable manner • **Electronic Waste Collection Service:** the facility collects all E-waste from both public and private operators and the transport is offered free of charge for E-waste above 2 tones Key issues raised include the awareness among operators, repairs and general public about e-waste management. The plant has the capacity of 10,000 tonnes per year but it's now operating at 30%. The management requested the project to consider a large campaign about e-waste collection, transport and management. The project design can also explore the possibility of incentives for taking back used items. The management also highlighted the need to invest in new technologies for a complete recycling of all material extracted from used devices. They proposed to have a working agreement with implementing entity for e-waste collection, transport and recycling including awareness program

4.4. On-going Stakeholder Engagements

Consultation and stakeholder engagement is an ongoing process and should continue during project implementation. A Stakeholder Engagement Plan (SEP) has been prepared and will be implemented with the project. This is to support and maintain good relations with the community, ensure project ownership, and to obtain feedback to inform the decision-making process. The SEP was developed and is a living document that will be refined and modified throughout the life of the project. All revisions shall be clearly marked, registered and signed off by relevant parties or departments. During this interactive process, the focus and scope of the SEP may shift in response to changing engagement needs and priorities for the project. Accordingly, the SEP will be updated after the ESMP process. Since it is practically difficult to meet every stakeholder public domain will also be used to disseminate information

about the proposed Digital Acceleration Project. The stakeholder engagement process in this stage will also be supported using a Grievance Risk Management and Response System.

4.5. Public Disclosure

The WB disclosure standard requires that safeguards instruments are disclosed in country and through the World Bank external website. These reports should be made available to project affected groups/Beneficiaries and the public at large. Public disclosure of safeguards instruments such ESMF, ESMP is also a requirement of the Rwanda's environmental procedures. RISA will disclose this ESMF, by making copies available at its head office and at District offices. Copies will be made for easy consultations every time it is needed. Further, this ESMF and associated environmental and Social Management Plans will be disclosed at RISA websites. Further, RISA will authorize the World Bank to disclose electronically this ESMF and specific instruments through its external website.

5. POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES

5.1. Introduction

This chapter identifies potential impacts that could arise from the activities proposed under the project. The identified impacts apply to the socio-economic environment as well as the bio-physical environment. These impacts can be positive or negative and direct or indirect.

5.2. Project activities with potential Environmental and Social Impacts

The potential environmental risks identified mainly relate to planned activities under Components 1 and 3.

5.2.1. Expanding last-mile connectivity and access

Deployment of last-mile connectivity solutions, under sub-component 1.3, is one of the activities that is likely to have environmental and social impacts. While the specific technology and approach of this component are yet to be defined, relevant connectivity technologies that will be used to connect hospitals, schools, and other government offices, etc., are likely to include a mix of technical solutions including mobile/wireless (3G, 4G, Point-to-Point WiMax) networks, fiber (either areal or terrestrial cables), or aerial (balloons/drones) solutions. The connectivity technology selected will depend both on commercial and geographic feasibility, as well as consider potential site-specific E&S risks. In weighing connectivity options. The risk mitigation hierarchy will be applied, with consideration paid to the availability of electricity, avoiding construction on hilly terrain, limiting exposure of communities, and avoiding sensitive habitats. Overall, this activity is however not expected to include large-scale physical infrastructure and civil works. It is anticipated that the expansion of fiber optic network will follow existing road network and will only use road reserve which will reduce potential impacts on private properties. Further, with this approach, there is no sensitive ecosystem such as protected areas, wetlands, water bodies, parks and protected areas that will be affected.

5.2.2. Rehabilitation of Existing Facilities

The current project design does not include any new construction or major rehabilitation. However, minor rehabilitation may be required on existing facilities to allow them to be fit-for-purpose. The project plans to rely on existing infrastructure and facilities, which will be upgraded and equipped to accommodate project activities. Examples include the establishment of training facilities, supporting the roll-out of a national digital literacy program (under sub-component 1.2), the establishment of a central data collaborative hub in government (under sub-component 2.1) and the scale-up / establishment of the Rwanda Coding Academy (at the provincial level) and the Center of Excellence for Artificial Intelligence (under sub-component 3.2).Once subprojects are identifid and activity conducted, screening will be conducted and appropriate environmental and social instruments recommended.

5.2.3. Access to affordable smart devices

Sub-component 1.1 will provide financing support to facilitate device purchase by low-income household and key user-groups. Activities financed will target users currently unable to afford upfront smart device purchase, and secure needed credit. Prioritized user-group will include Rwanda's poorest households, as well as teachers and students. Under this sub-component, the project is expected to significantly increase the circulation of smartphones, and purchase a substantial amount of IT equipment (e.g., computers, servers). Mobile phones, end-of-life backup power batteries, and old IT equipment will need to be safely disposed of. This will incease the amount of e-waste generated and this calls for proper handling.

E-waste is often found in large quantities in offices, warehouses and households and contains chemical elements such as lead, mercury, arsenic, cadmium, and selenium that have harmful effects on the environment and human health. An inventory carried out in 2015 indicated that Rwanda has an e-waste generation potential of more than 10,000 tonnes per year, of which 82% is from individuals, 6% from private institutions and 12% from public institutions. The report also showed an annual growth of about 6% in the importation of electronic equipment to Rwanda.

5.3. Anticipated Environmental and Social Impacts for the proposed project

All the potential E&S risks anticipated are expected to be generated predominantly by two project components particularly, component 1: Digital Access and Inclusion. The next table summarizes anticipated Environmental and Social Impacts, proposed mitigation measures and responsibilities associated with Rwanda Digital Acceleration project.

Table 15: Potential impacts and mitigation measures

Impacts	Cause	Overall assessment without mitigation	Proposed Mitigation and Optimization Measures	Responsibility
Positive impacts				
Reduced need for travel thereby minimizing the emission footprint	Use of ICT will reduce the need for movement of people from one location to another which helps increase efficiency as potential time spent on movement is reduced.	Positive and Low	• Meetings (because video/ teleconference is possible) • Bid collection and submission (because electronic submissions are possible) • Collection of examination results from schools (because they can automatically be sent as a short message to a student's cellular phone) • Document pick up (because can be emailed) • Reduced movement minimizes traffic-borne air and noise emissions.	RISA SPIU
Dematerialization and Reduction of resource needs in records storage	This refers to replacement of physical production and distribution of music, video, books, and software, etc., by the delivery of digital information over the network. Dematerialization reduces resource consumption and waste generation.	Positive and Low	• Carry out continuous trainings for teams on utilization of tools that enable dematerialization. • Storage of records in electronic form will reduce paper needs and building space in all beneficially entities, mainly school, hospitals and government agencies.	RISA SPIU
Enhanced education systems including environmental training and the new job categories that come with it	New ways of learning, e.g., interactive multi-media and virtual reality which could mean schools would be able to undertake practical lessons in virtual laboratories, or even share virtual laboratories with training institutions overseas. ICT also provides new job and working opportunities, e.g. flexible and mobile working, virtual offices and jobs in the communications industry. • Improved access to healthcare services: With ICT, a doctor in Rwanda would easily consult a specialist colleague overseas when executing a complex medical procedure/ operation. • New tools, new opportunities: The second big effect of ICT is that it gives access to new tools that did not previously exist. A lot of these are tied into the access to information mentioned above, but there are many examples of stand-alone ICT systems as well: • ICT can and will be used for processes that had previously been out of reach of most individuals,	Positive and Low	• Enhancement of environmental awareness and environmental education in schools shall occur with the successful implementation of the project.	RISA SPIU, District Environmental Officer, MINICT, RISA and Contractor Safeguards Specialist

Impacts	Cause	Overall assessment without mitigation	Proposed Mitigation and Optimization Measures	Responsibility
	e.g. photography, where digital cameras, photo-editing software and high quality printers have enabled people to produce results that previously required a photographic studio. • ICT can be used to help people overcome disabilities. e.g. screen magnification or screen reading software enables partially sighted or blind people to work with ordinary text rather than Braille.			
Market for raw materials	Some of the construction materials will be procured locally and this will provide revenue to the local economy. Some of the materials that will be procured locally will include sand, bricks, and aggregate stones. The proceeds from the sale of the raw materials to the construction activities at the proposed project will boost the local economy in form of increased earnings	Positive and Low	Mapping of potential suppliers of materials and where applicable briefing them on the necessary paperwork like receipts can be a vital addition in these efforts since it eases record keeping	RISA SPIU
Access to information	Possibly the greatest effect of ICT on individuals is the huge increase in access to information and services that has accompanied the growth of the Internet. Some of the positive aspects of this increased access are better, and often cheaper, communications, such as phone and Instant Messaging. In addition, use of ICT to access information has brought new opportunities for leisure and entertainment, make contacts and form relationships with people around the world, and the ability to undertake online transactions and obtain goods and services (e.g. online courses) from a wider range of suppliers outside Rwanda without use of middlemen.	Positive and Low	Where possible all meetings will be held online. Soft copy will be encouraged rather than hard copies.	RISA SPIU
Increased digital literacy serve delivery	Proposed training will enhance the capacity of users especially local community and this will easy E-service	Positive and Medium	Training material need to be designed for different category of users Service providers need to be closer to the community and other users	RISA SPIU/Service providers
Potential Negative impacts during construction/installation Phase				
Increased susceptibility to soil erosion and landslides	Site excavation for fiber optic installation coupled with poor drainage can result in soil erosion and landslides on steep slopes. This may be likely in the Northern Rwanda regions where soils are loosened making them highly susceptible to erosion agents.	Negative and Medium	• Restrict vegetation stripping to project sites to minimize project footprint and soil erosion. • Avoid ground and vegetation stripping in steep sloping areas to minimize soil erosion and risk of landslips.	RISA Environment Health Safety and Social (EHSS) safeguards Team and Project Manager

Impacts	Cause	Overall assessment without mitigation	Proposed Mitigation and Optimization Measures	Responsibility
			• Use above ground/aerial pole to pole transmission in such prone areas	District Local Government Focal Point- District Environment Officers
Impacts on Vegetation	This project will limit construction to existing road reserve using aerial pole erection, thus not impacting wildlife. However, minor clearance are expected in road reserve for the installation of fiber optics.	Negative and Low	• Vegetation clearance for aerial pole erection shall be limited to pole spots, minimizing vegetation loss. • Clearance will be made only for areas needed for constructions	RISA Environment Health Safety and Social (EHSS) safeguards Team and Project Manager District Local Government Focal Point- District Environment Officers REMA
Labour influx	The work that will be done at the site during this phase of the project will largely require labour - both skilled and unskilled workers to undertake the construction work at the site and as such employment opportunities will be created. Most of the labour force will be from local communities within the project districts. No labour influx or workers' camps are expected as most of local labour force will come from the project districts. It should be noted that during this phase the employment opportunities will be temporary given the short-term duration of the construction activities.	Positive and Low Negative if not well managed Low	• Efforts shall be directed to ensuring that teams benefit from the project through fair and prompt payments. All workers should be provided with written contracts, their welfare aspects continuously improved among others. • The project will promote local procurement where technically and commercially reasonable and feasible. • Contractors will provide local communities with information leaflets in their local languages to create awareness about the proposed project activities. • Unskilled labour will be recruited exclusively from local community, and semi-skilled labour will be recruited preferentially from such communities, provided that they have the requisite qualification, competence and desired experience. • Workers and the community will be sensitized about the dangers of child abuse, gender-based violence / SEA/ SH plus their rights to employment. • Contractors will be encouraged to pay a "living wage" to all workers.	MINICT RISA Environment Health Safety and Social (EHSS) safeguards Team and Project Manager District Local Government Focal Point- District Environment Officers

Impacts	Cause	Overall assessment without mitigation	Proposed Mitigation and Optimization Measures	Responsibility
			• For proper handling of workers grievances, a workers' GRM has been developed for operationalization in the project LMP.	
Impacts related to rehabilitation or extensions of facilities	Some of the facilities identified to accommodate IT system are newly constructed facilities but may need minor rehabilitation or extensions. Rehabilitation workers may cause environmental, occupational health and safety and social impacts.	Negative and low	• Environmental and Social Management Plans will be prepared and implemented.	RISA SPIU and contractors
Child labour	During project implementation, opportunities for employment are often announced through local council leaders in villages. Therein are loopholes of child labour if controls are not effectively enforced. There are also scenarios where children are forcefully used during project implementation depriving them of their opportunity to enjoy school, exposing them to occupational hazards associated with the project among others.	Negative and High	• The policy shall work with a no child labour commitment and this shall be communicated to the local leaders and enforced in collaboration with the District Management. To do due diligence to avoid child labour. The minimum work age adopted for this project is 16 years for household led minors upon validation by both District officials and District labour inspector.	RISA SPIU District Local Government Focal Point- District Labour Inspector
Social Order Disruption, Family conflict, promiscuity and Gender Based Violence	The influence of the workers earning better in comparison to the majority of the community members cannot be underestimated in causing gender-based conflicts, sexual exploitation and harassment among the host community causing family break downs. There is also a potential of increased alcohol consumption thus leading to higher chances of confrontations among the host community members thus disrupting their peace. The search and provision of job opportunities by the project can be a source of promiscuity, family conflicts, Gender Based Violence including child abuse and abuse of labour laws by the contractor.	Negative and High	• The Contractor shall develop: (i) Gender Based Violence (GBV) and Child Abuse/Exploitation (CAE) Codes of Conduct; and (ii) an Action Plan to mitigate and respond to GBV and CAE within the company and the community. • The Code of Conduct will outline the responsibilities of: (i) the company to create a positive culture for its workplace and employees; (ii) managers to ensure that culture is implemented; and (iii) individuals to adhere to the principles of that culture and not to engage in GBV and/or CAE. • All employees (including managers) will be required to attend training prior to commencing work to reinforce the understanding of HIV/AIDS, GBV and CAE. Subsequently, employees must attend a mandatory training course at least once a month for the duration of mobilization. • Codes of Conduct for workers and employers will be prepare, signed and complied with. Sample are provided in annex 18 and 19.	RISA SPIU District

Impacts	Cause	Overall assessment without mitigation	Proposed Mitigation and Optimization Measures	Responsibility
Noise and vibrations	Noise and vibration may generate unacceptable disturbance to wildlife and local communities where fiber optic cables are to be laid. Vibration from compacting trenches can crack walls of structures adjoining work sites.	Negative and Medium	• The Project should require contractors to use equipment and vehicles that are in good working order, well maintained. • The construction activities will as much as possible be restricted to daytime only (7.00am-6.00pm) when noise pollution is least felt to avoid disruption to the residents.	RISA and contractor ES safeguards team
Dust and air pollution	Site clearance, raw material extractions and transport, and rehabilitation works may generate dust that affect workers, community and could pollute air.	Negative and Medium	• Water will be spayed regularly-at least twice a day; • Workers will be provided with masks when working in dusty area; • Trucks carrying construction materials such as sand, quarry dust, laterite etc. will be covered with tarpaulin or appropriate polythene material from or to project site.	RISA and Contractor ES Safeguards team
Water Pollution	During site preparation and construction, trenching will create exposed sites. Sediment-laden runoff from cleared areas could impact water quality of downstream watercourses. Poor management of human waste could also lead to water pollution in adjacent water sources	Negative and Medium	• Prompt backfilling shall also be carried out to check run-off and siltation related outcomes. • Toilet facilities and awareness sessions on their use should be provided for construction workers to avoid indiscriminate defecation in nearby bush or shores.	MINICT, RISA and Contractor ES Safeguards team
Improper Waste Management	Trenching in urban areas will create stockpiles, electronic waste and other general waste from the project. Project operation activities of repair and maintenance will generate e-waste.	Negative and High	• Site waste management Plan will be prepared by the contractor • Trenching wastes shall be used for backfilling • Install equipment of high quality and proper standard as guided by Rwanda Standard Board (RSB); • Sort and label waste at site of generation and have all waste transported to place of disposal by a licensed waste handler. • Waste management shall form part of the induction process for all project implementation teams. • E-waste will be collected and temporary stored at district collection centers before transportation to Bugesera e-waste recycling facility. • Waste bins should be provided for construction workers to avoid littering of waste.	RSB REMA RURA MINICT RISA SPIU Enviroserve

Impacts	Cause	Overall assessment without mitigation	Proposed Mitigation and Optimization Measures	Responsibility
Impacts on Cultural Heritage/ Archaeological resources	Construction operations may encounter cultural and archaeological resources or chance finds. Construction can also reveal these buried resources, necessitating "salvage archaeology" for their recovery and protection. Once first stages of earthworks show signs of likely presence of archaeological resources, salvage entails quick excavation to remove artefacts or other traces of human settlement before extensive earthmoving continues. As a general construction principle, any archaeological “chance finds” should be handed to the relevant ministry.	Negative and High	• In case of chance finds, the Contractor shall follow the chance finds procedure developed for this ESMF. This procedure shall form part of the construction contracts. The contractor shall mark, cordon and secure the subject site(s) to avoid damage in the course of road construction and immediately notify the Department responsible for museums and monuments. • “Chance finds” encountered in absence of these official shall be handed over to supervising Engineering Assistant, Environmental Officer or District Engineer who would immediately notify concerned officials.	RISA SPIU Contractors Districts
Occupational health and safety risks like injuries, equipment damage and fatalities	The construction activities on site could pose several occupational health and safety risks including body injuries, Work related upper limb disorders, spread of sexually transmitted diseases and equipment damage.	Negative and High	• Only experienced drivers/operators should be employed to manage project vehicles/trucks • All manual equipment such as pickaxe, Pick Mattock, Cutter Mattock, etc. should be sturdy and firmly fixed • Except for areas secured by fencing, all active construction areas should be marked with high-visibility tape to reduce the risk of accidents involving pedestrians and vehicles. • All open trenches and excavated areas should be backfilled as soon as possible after cable laying and construction has been completed. • Construction workers should be provided with and enforced to wear suitable Personal Protective Equipment (PPE) including hard hats, overalls, high-visibility vests, safety boots, earplugs, gloves etc. • Clear signage should be used near project sites. • First Aid kits will be provided at each site. • Awareness creation and training on health and safety will be integrated all through. • Documentation and record keeping for all accidents will be a must. • Occupational health and safety officer will be appointed by contractor	MINICT, RISA and Contractor Safeguards team

Impacts	Cause	Overall assessment without mitigation	Proposed Mitigation and Optimization Measures	Responsibility
Traffic related accidents and traffic interference	The installation of fiber optics will be done along existing roads and this may affect existing traffic and cause traffic jams and accident.	Negative and High	• Employ safe traffic control measures, including temporary road signs and flag persons to warn of dangerous conditions and children crossings. • Where road use is restricted, signage and alternatives should be provided to the public • Regular sensitization of the public on traffic safety in liaison with traffic department of the Rwanda National Police.	MINICT, RISA and Contractor Safeguards team
Community Livelihood Disruptions	The proposed development may cause some temporal community business disruptions through the need for temporary removal of their business premises such as Kiosks, sign posts, pavements, temporal garage structures possibly due to excavation works to pave way for transmission lines underground as designed within the urban areas. Similarly, the project may cause temporary disruptions in rural areas on open markets where businesses are also done within road reserves.	Negative and High	• Implementation design of the project for sections of open markets will strictly be done on non-open market days after prior consultations with local authorities to avoid any envisaged impacts. • Construction activities within urban areas in such specific sections of potential economic disruptions will be undertaken over the weekend. This will be done in consultation with the respective urban authorities and the business owners. • Arrangements will be made to ensure participation of business owners and representatives of the urban authorities during implementing hours to guarantee security and safety of their businesses. • For proper handling of grievances, a Community GRM has been developed under the SEP	District, MINICT, RISA and Contractor Safeguards and engineers team
Impacts on vulnerable and Marginalized Groups	The constitution of Rwanda does not recognize any marginalized group within the Rwandan community. However, Vulnerable groups exist and profit from VUP (Vision Umurenge Program) and Ubudehe Program. While the contactor is carrying out the construction activities, she/he has to take into consideration of all the vulnerable groups such as the elder and children to avoid causing accidents/harm or inconveniences to them.	Negative and Medium	• All open trenches will be marked with high-visibility tape to reduce the risk of accidents involving children, women, disabled and elderly persons. • There shall be alternative routes provided for vulnerable groups during project implications and these shall be communicated to the community prior and during project implementation. • All open trenches and excavated areas should be backfilled as soon as possible after cable laying and construction has been completed.	District, MINICT, RISA and Contractor Safeguards and engineers team.

Impacts	Cause	Overall assessment without mitigation	Proposed Mitigation and Optimization Measures	Responsibility
			• Access to open trenches and excavated areas will be restricted to prevent falls and entrapments. • Ongoing meaningful dialogue in line with the National COVID-19 SOPs in the World Bank Technical note on Public Consultations and Stakeholder Engagement shall be held with all vulnerable groups throughout the project life cycle • Culturally appropriate stakeholder engagement and or proper handling of Grievances, the community GRM will provide redress mechanisms to address the concerns of Vulnerable group.	
Community health and safety risks/impacts	During project implementation, interaction with communities is inevitable but not uncontrollable. It is important to note that 60% of the workforce will be recruited from host communities /project districts during project implementation. With many workers from the community, there is a risk of transmission of communicable diseases especially, COVID-19 within the workers but also across to the community.	Negative and Medium	• Awareness sessions and meetings with community leadership including the elderly, women and the disabled shall be carried out along the route with. Project HSE teams shall also be inducted on best practices while dealing with communities and aspects of community health captured in a particular location. • The safety guidelines provided shall be applicable to all personnel in the project areas including independent monitors. These shall include aspects of minimum PPE in active areas, attendance of toolbox talks, conduct with fellow project teams and the community, among others. • Excavations in busy community areas shall have to be immediately backfilled after installation of ducts. Unfilled sections shall have to be barricaded off and watch personnel provided during (what? please complete the sentence). Alternative routes shall be created for communities to still utilize their areas. • To mitigate the risk of COVID-19 , the World Bank Technical note on Public consultation and Stakeholder engagement when there are constraints on conducting public meetings and	District, MINICT, RISA and Contractor Safeguards and engineers team

Impacts	Cause	Overall assessment without mitigation	Proposed Mitigation and Optimization Measures	Responsibility
			the MOH COVID-19 SOPs shall be observed in the project construction period by inspecting all staffing quarters for workers for COVID-19 safety and EHS compliance before and during occupation, ensuring that all workers and the community are sensitized on these SOPs including avoiding touching the soft parts (mouth, eye and nose), frequent handwashing with soap (or sanitizing), screening of workers with temperature guns before boarding the truck in the morning and after work daily basis, masking, social distancing, among others measures. • Further, an emergency response system shall be established with COVID-19 treatment facilities for safe evacuation and treatment of those suspected or tested positive for COVID-19.	
Potential negative impacts during operational phase				
Exposure to electromagnetic radiation	The technology for the deployment of last mile connectivity and access may include the installation of relay antennas near schools, hospitals, administrative buildings and housing could expose the population to radio frequencies and constitute a long-term public health risk for the communities targeted by the project	Negative and high	• If this technology is used, operators and contractor will be requested to comply with guidelines established by Rwanda Utilities Regulatory Agency(RURA) including distances between antenna and communities	RISA, REMA, RURA, and districts
Increase of E-waste generated	The project is expected to significantly increase the circulation of smart devices and purchase a substantial amount of IT equipment (e.g. computers, servers). Mobile phones, end-of-life backup power batteries, and old IT equipment will need to be safely disposed of. This will increase the amount of e-waste generated and this calls for proper handling.	Negative and high	• Establish working agreement with e-waste recycling facility for E-waste collection, transport, recycling and dismantling of generated E-waste under the project. • Carrying out sensitisation campaign among local authorities, Operators of electronic devices, repairs for E-Waste collection, and transport to the e-waste collection centres under establishment in all districts.	RISA, REMA, RURA, EnviroServe and districts
Collision of birds	Towers, antenna and aerial cables may have impacts on birds movement and may cause the death if mitigation measures are not taken	Negative and high	• Installation of flashing lights in relay antennas to avoid collision of birds during nights starless; • Installation of deflection objects for birds on the cables of tension of the turns (for example the Firefly Bird Diverter or other similar objects)	RISA, REMA, RURA, Contractor

Impacts	Cause	Overall assessment without mitigation	Proposed Mitigation and Optimization Measures	Responsibility
Community health and safety risks/impacts	Teams carrying out operations and maintenance works often work in small groups and shall still interact with communities.	Negative and Medium	• Carry out routine stakeholder engagements amongst local council leaders and responsible district teams. • Synergize and utilize district teams for monitoring of activities especially the community development officers and labour officers. • Works in busy areas shall only be carried out at low peak hours and after prior communication to other businesses in the area	RISA EHS Team, District Community Development Officer, Local authorities
Occupational health and safety risks like body injuries, equipment damage and fatalities	During this phase, teams shall work at heights, haul cable for repaired sections, and splice cable among others. All these have a potential to pose several occupational health and safety risks including body injuries, Work related upper limb disorders. Workers in the field could also easily be exposed to or spread sexually transmitted diseases and equipment damage.	Negative and High	• Training teams on Work at Heights, proper manual handling techniques, HIV/AIDS and STIs shall be carried out in addition to providing appropriate PPE, • First Aid kits will be provided to each site team • Occupational health and safety officer will be appointed in Contractor team	RISA EHS Team, District Community Development Officer, Local authorities

6. ENVIRONMENTAL AND SOCIAL MANAGEMENT PROCESS

6.1. Introduction

The Rwanda Digital Acceleration Project is composed of a series of subprojects and activities. All these subprojects and activities will undergo environmental and social screening for potential environmental and Social Impacts and to determine required E&S instruments. This chapter of the ESMF describes the process for ensuring that environmental and social concerns are adequately identified, analysed and addressed. Further, it provides process and procedures for mitigation measures, institutional arrangements and procedures used by the Project Implementing entity and other stakeholders for the identification, preparation, approval and implementation of subprojects. It sets out the reporting systems and responsibilities of the institutions in implementing the ESMF including the details to be addressed by the ESMF and the specific steps to be undertaken to ensure adherence to the ESMF.

6.2. Environment and social management process

6.2.1. Project screening and categorisation

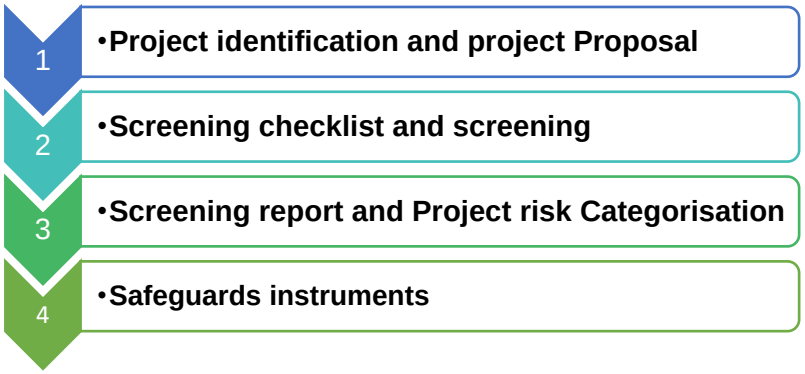
Screening is the first stage of E&S process which results in a key E&S decision, namely to either conduct the assessment (based on the likely significant impacts) or not conduct it (in the anticipated absence of such impacts). Screening needs to follow specific procedures often described in the legislation so all the projects follow the same process. Key contributions of screening process are: (a) Facilitates informed decision making by providing clear, well-structured, factual analysis of the effects and consequences of proposed actions and (b) influences both project selection and policy design by screening out environmentally and/or socially unsound proposals, as well as modifying feasible action.

- ✓ **Screening purpose and timeline**

The screening should be done at the project identification/planning phase to determine whether the project is environmentally feasible or not and if yes, which environmental analysis is required and safeguards instruments to be prepared in compliance with national requirements and World Bank ESSs.

- ✓ **Screening process**

All subproject under the project will be screened by RISA as provided for in the regulations to assess their potential environmental and social impacts. The screening will be carried out by the Environmental and Social Safeguards Specialist under RISA. The proposed screening process is as follow:



- ✓ **Step 1. Project identification and proposal**

The screening is done based on initial baseline data and project proposal. The E&S specialist will be involved from the beginning of project planning and will make sure that information required for Environmental and Social screening are included in project proposal. This may include but not limited

to project location, project components, sensitive areas, land ownership and land tenure in project area, project size etc.

- ✓ **Step 2. Screening checklist and actual screening**

Once the project proposal is available, E&S specialist will screen all subprojects to determine whether or not subprojects need an environmental and Social instruments. Sample screening checklist is provided in annex 2. The E&S may conduct site visit and consultation to collect addition information for a better screening.

- ✓ **Step 3: Screening report and categorization**

The purpose of the screening at this stage is to identify environmental and social risks associated with the proposed development as well as measures to mitigate adverse impacts, if any, assess the quality of the project design, facilitate informed decision making by providing clear and well-structured analysis of the effects and consequences of the proposed actions and to determine whether a full ESIA or partial ESIA (or ESMP) are needed or not. E&S specialist will prepare a screening report with decision made and justification. Further, the screening report will provide project environment and social category based on criteria established under national regulations and World Bank ESSs.

Table 16: Environmental and social safeguards categories

Type of the Project	Rwanda Guideline	WB ESF	Remarks
The project is likely to have significantly adverse impacts on the environment or society.	Cat 1	High Risk	Requires full-scale EIA and detailed RAP
The project may have adverse impacts on the environment or society, but these impacts are less significant than those of High risks projects. These impacts are site-specific; few, if any, of them are irreversible; in most cases, they can be mitigated more readily than High risks projects.	Cat 1	Substantial Risk	Depends on scale of adverse impact full-scale EIA and Detailed RAP may or may not be necessary
The project is likely to have minimal or no adverse impact on the environment or society.	Cat 2	Moderate Risk	Simplified ESMP and abbreviated Resettlement Plan. Only Moderate Risk sub-projects (per the ESF) will be permitted under this project.
Funds are provided to a Financial Intermediary, which in turn implements sub-projects that may have adverse impacts on the environment or society, but these impacts cannot be identified in detail prior approval. If there is a sub-project that can be categorized as High risks, it needs to go through the same procedure as a High risk project including environmental review and information disclosure prior to its implementation.	N/A	Category FI	BRD has already prepared an ESMS under other World Bank funded projects. This ESMS include provisions for screening any proposed investments it may finance, determining the required ES instruments, and having them prepared. So it will be used for RDAP.

Based on the current project design, it is anticipated that most of subprojects will fall under moderate risks but this will be confirmed through the screening process.

- ✓ **Step 4: Determination of safeguards instruments**

At screening stage, RISA in consultation with WB will identify appropriate instruments to be prepared including but not limited to:

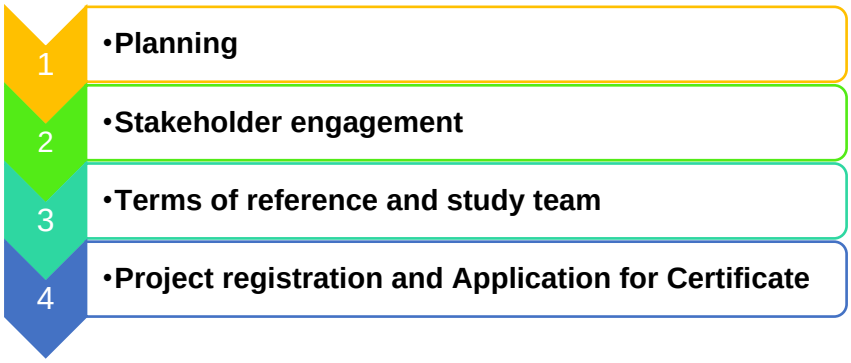
- Site specific instruments (ESIA/ESMP, RAP/A-RAP, LRP, SEP/SEA, EA)
- Contractor Environmental and Social Plans (C-ESMPs)

6.2.2. Scoping

The second step in Environmental and Social Management is Scoping. Scoping is a systematic exercise that establishes the boundaries and Terms of Reference (ToR) for the E&S assessment. The scoping stage determines significant issues that the E&S assessment will address. The scoping begins after the completion of the screening stage. However, there may also be some overlaps. Essentially, scoping takes forward the preliminary determination of significance made in screening to the next stage of resolution (i.e. determining what issues and impacts require further study).

✓ **Process of the scoping**

The next figure present Scoping steps include planning, stakeholders consultation, Preparation of terms of reference and Project registration of ESIA certificate. The process for scoping is as follow:



✓ **Planning the scoping**

Through a planning session, RISA must start with the following:

- Identification of all parties that should be involved in the process (authorities, beneficiaries, parties likely to be affected and other stakeholders);
- Definition of the roles and responsibilities of the identified parties,
- Compilation of background information to enable effective involvement by authorities and selected parties;
- Identification of the most effective strategies for communicating with all parties;
- Preparation of background information document (including objectives and description of the activity, legal aspects and setting of the project, environmental opportunities and constraints, predicted environmental and social impacts, public involvement and timetable of the process) to enable concerned parties to understand the nature of the proposed activity and identify key issues;
- Identification of key decision points and the type of information required from each stakeholder;
- Legislative requirements relevant to the project also need to be clarified.

✓ **Stakeholder engagement**

Once the office work is completed, RISA will organize consultations with all groups and institutions concerned by the subproject project to identify key issues. A range of techniques can be used to facilitate participation for all. These include workshops, focus group meetings with specific stakeholders, media releases, telephone/emails and meetings with key individuals. The predicted impacts/ risks will also be prioritized by evaluating the potential significance of concerns raised from both a technical and a subjective perspective, taking into account the needs, values and importance of the affected environment to stakeholders.

✓ **Terms of reference and study team**

At this stage draft ToRs are prepared and submitted together with the brief project for review and approval by RDB and World Bank. RISA will ensure that: (i) all issues to be addressed in the environmental and social assessment and in any special study to be undertaken is included in terms of reference and, (ii) feedback from consulted stakeholders are incorporated in the terms of reference and will be incorporated into the environmental assessment process.

At this stage, E&S Specialist will be able to determine the study team based on key risks and issues to be assessed during Environmental and social study. The type of expertise needed in the ESIA team for roads project will vary with the location and magnitude of the project but should in any case include:

- Team leader with extensive experience in environmental impact assessment, environmental legislation and hands-on knowledge of biodiversity, land management and aquatic ecosystems;
- Electrical and Communication Engineer, preferably with specialization in telecommunication design, traffic management;
- Sociologist or Social Anthropologist.
- Ecologist

The selection of ESIA experts should be guided by the team's overall experience and/ or reputation in ESIA or related assignments; the appropriateness of the team (including balance of professionals/ expertise, allocation of responsibilities), as well as the formal/ academic qualifications including professional affiliation. For Environmental experts, Engineers, Surveyors/valuers professional certification or affiliation should be strongly considered for ethical concerns.

✓ **Project registration and Application for Certificate**

According to the new environmental law, only certified Environmental Practitioners are allowed to register a project for Environment and Social clearance. The process is done online, and RISA will include this task in terms of reference for the E&S consultant. Further, the consultant will be responsible for finalizing terms of reference.

It is worth to note that Terms of reference are cleared by both RDB and World Bank and it is recommended that RISA seeks clearance from World Bank and send cleared ToRs to RDB for clearance given that WB requirements are higher than national requirements.

6.2.3. Alternative analysis

Project alternative analysis will be conducted during the preparation of site specific instruments (ESMPs and RAPs as appropriate) when more project details, activities and technologies are known. Therefore, this section provides general alternative analysis based on project components with potential negative Environment and Social Impacts.

6.2.3.1. Routing Alternatives

a) Utilizing Existing Road Reserves for fiber optic cables

Fiber optic cables will be laid along the existing road reserves and government owned facilities. The rationale lies in the ease of obtaining Rights of Way from the National Road Development Agency (RTDA) and districts authorities. This was done during the installation of existing fiber optics and is feasible given that most of targeted areas and offices are connected by road network and the road development law has provided sufficient road reserves to accommodate socio-economic infrastructure such as water supply, electricity and communication cables. Further, this option mitigates risks of impacts such as loss of assets and resettlement. Roads without adequate reserves or where involuntary displacements are high will be excluded from the project.

b) Utilizing Private Land and Property

The second option involves new route designs that utilize private land and property. However, it is not supported because it would cost more in terms of land and property compensations and time wastage on securing individual agreements PAPs.

The preferred and recommended alternative solution on the installation of optic fiber cables is option A (utilising existing road reserves and government facilities).

6.2.3.2. Technology alternatives

The use of optical fiber cables networks has greater advantages over satellite, microwave and radio transmissions. Radio has largely been phased out due to restricted bandwidth and poor data transmission. Compared to ground-based communication (optical fiber cables), all geostationary satellite communications experience high latency due to the signal having to travel 35,786 km (22,236 mi) to a satellite in geostationary orbit and back to Earth again. In addition, Satellite communications are affected by moisture and various forms of precipitation (such as rain or snow) in the signal path between end users or ground stations and the satellite being utilized. Modern optical fiber networks transmit high volumes of voice and data traffic with higher security and reliability and at a lower cost than satellite systems. Besides fiber optic networks offering a number of security advantages over satellite communications, they are thought to be much harder to "eavesdrop" on than satellites and have more dependable installation and repair practices. Furthermore, over the past decade there is increased demand for bandwidth driven by the use of Internet, as well as continuing international trend of privatization of national telecommunications industries, that have outstripped by far the resources offered by satellite transmission of voice and data.

6.2.3.3. Buried and overhead cable installation

Optical fiber cables are an alternative for national backbone infrastructure and to be linked to the submarine system. In this alternative, the cable would be routed underground, generally along the roads and electricity transmission lines where there is existing Right-of-Way (ROW) and also where telecommunications use is concentrated. The cable would need to be installed below ground and given the lack of existing infrastructure; this would require extensive trenching. In practice it has been found that underground/ buried cable installation costs are higher than overhead cable due to trenching, land ownership and land use issues however, it presents less repair and maintenance requirements compared to overhead cable systems where, besides effects of weather conditions, cable or pole damages are known to be frequent. There are other practical and security/safety issues as well as greater potential for environmental and social impacts associated with overhead cable for a system of several kilometers.

Table 17: Comparison between buried and overhead cable installation

Buried cable	Overhead cable
Requires trenching which is tedious and may trigger land ownership and land use issues, poses health risk to some vulnerable groups.	May require wood poles, in addition to existing electricity transmission lines, would cause cable crowding along and across roads, and deplete forest resources.
Requires longer time and more labour to excavate a continuous trench for several kilometers over the project area.	It requires less time and labour to erect poles at intervals over the project area.
Cable fault/ damage is not common and protected against weather conditions.	Cable fault/damage due to harsh weather conditions, pole fall, etc.

Buried cable	Overhead cable
Cable has passive influence on the environment.	Cable crowding would cause visual blight.
Repair/ maintenance is occasional, usually due to aging of cable and accessories.	Repair/ maintenance is frequent due to cable damage pole, fall or cable or pole aging

For cost effectiveness, coupled with environmental impacts posed by buried cable system and overhead cable system, a buried cable system currently offers the better option. Placing project infrastructure in road reserves along highways or existing power lines avoids the need to acquire new land/ corridors. For this option there is no logical, socio-environmentally more amenable alternative.

6.2.3.4. No Project Scenario

If the proposed project is not implemented, the barriers identified earlier will not be removed and the country will not achieve its targets. Further, the country can be constrained by lack of fast internet and telecommunications capacity, especially in the sectors of data transfer, banking and education as well as devices affordability and access. The demand for capacity will continue to grow along with economic growth. Though Environmental and social impacts associated with the proposed project will not arise, its significance remain low. ***Therefore, it is recommended to implement the project with proposed measures and preparation of site-specific instruments.***

6.2.4. Environment and Social Assessment process

After screening, scoping, approval of terms of reference and hiring study team, actual environmental and social assessment starts. This stage is undertaken when the draft feasibility study and key information on proposed project are available. The Environmental and Social Assessment under proposed project will primarily be the responsibility of RISA with its service providers. However, at certain stages in the project cycle, WB may intervene in order to ensure that ESSs are adequately applied. Key steps in environmental and social assessment are:

- ✓ **Project description**

Impact is defined as a positive or negative effect that the project is likely to have on any aspect of the biophysical and/ or socio-economic environment. Therefore, it's important that the study team make a detailed description of proposed project. At this stage, the consultant team concisely describes the proposed project and its geographic, environmental, social, and temporal context, including any offsite investments that may be required (e.g., access roads, power supply, water supply, housing, and raw material and product storage facilities), as well as the project's primary suppliers. This also includes a map of sufficient details, showing the project site and the area that may be affected by the project's direct, indirect, and cumulative impacts. This information is drawn from feasibility study and can be obtained from project design team.

- ✓ **Policy and legal framework**

At this stage, the consultant team analyses the legal and institutional framework for the project, within which the environmental and social assessment is carried out, compares national environmental with international policies and standards especially those developed by WB to identify gaps between them and bridging measures. The consultant team takes into account in an appropriate manner all issues relevant to the project, including: (a) the country's applicable policy framework, national laws and regulations, and institutional capabilities (including implementation) relating to environment and social issues; variations in country conditions and project context; country environmental or social studies; national environmental or social action plans; and obligations of the country directly applicable to the project under relevant international treaties and agreements and triggered policies.

✓ **Baseline information**

At this stage, the study team sets out in detail the baseline data that is relevant to decisions about project location, design, operation, or mitigation measures. This should include:

- Discussion of the accuracy, reliability, and sources of the data as well as information about dates surrounding project identification, planning and implementation.
- Identification and estimation of the extent and quality of available data, key data gaps, and uncertainties associated with predictions.
- Based on current information, assesses the scope of the area to be studied and describes relevant physical, biological, and socioeconomic conditions, including any changes anticipated before the project commences.
- Taking into account current and proposed development activities within the project area but not directly connected to the project.

The consultants will gather relevant information on the current status of the environment in the project area against which change due to project activity can be measured. The analysis of the initial state should include a record of baseline environmental conditions (soil/ erosion, water quality and quantity, wetlands, national parks/ protected areas, forests, land use, agriculture, livestock, air, fauna and flora, socio-economy including health and safety aspects, loss of land, settlement patterns, income, gender, etc) considered to be threatened by the project. It may utilise scientific data, photographs of the area, meeting with various groups or any other geophysical recordings. This is important as it facilitates the identification of impacts.

✓ **Impact identification and analysis**

This stage focuses on identification, evaluation, and determination of significance of potential environmental and social impacts both positive and negative.

- **Identification:**

The identification specifies the impacts associated with each phase of the project and the activities undertaken while the prediction tries to forecast the nature, magnitude, extent and duration of the main impacts. The impact identification should look at both direct and indirect impacts as well as the interactions between them.

- **Evaluation**

The evaluation should determine the significance of the residual impacts, i.e., after taking into account how mitigation will reduce a predicted impact. Through consultations with beneficiaries and stakeholders and sites observations during the scoping, all possible impacts associated with the intended project will be listed and justified.

RISA E&S specialist or its consultant) will analyse identified impacts by conducting risk assessment, risk evaluation and risk management.

- **Determination of impacts significance**

After assessment of an impact in accordance to the criteria described above, the significance of an impact can be determined. The various ratings as indicated above are accorded to these criteria. These ratings are then used to calculate a significance (S) rating and are formulated by adding the sum of ratings given to the extent (E), duration (D), Reversibility (R) and intensity (I) and then multiplying the sum with the probability (P) of an impact as follows:

Significance (S) = (E+D+R+I) x P

6.2.5. Impact Mitigation and Management Procedures

The main objective of the impact mitigation and management is to design appropriate measures and put in place a series of plans for preventing, minimizing or compensating for adverse environmental impacts caused by the proposed transport project. Some of the plans are compulsory, such as an

environmental and social management plan (ESMP) and environmental and social monitoring plan (ESMP) which are required as part of an ESIA report. Other plans are project specific, like biodiversity management plan, cultural heritage management plans, Waste Management Plan, etc.

- ✓ **Elements of mitigation**

The elements of impact mitigation are organised into a hierarchy of actions including:

- First, avoid adverse impacts as far as possible by use of preventative measures;
- Second, minimize or reduce adverse impacts to as low as practicable levels;
- And lastly, remedy or compensate for adverse residual impacts which are unavoidable and cannot be reduced further.

This implies that RISA shall follow the above hierarchy of actions for the implementation of any transport project with adverse impacts. The preventive measures will be given first priority over minimizing or compensation measures.

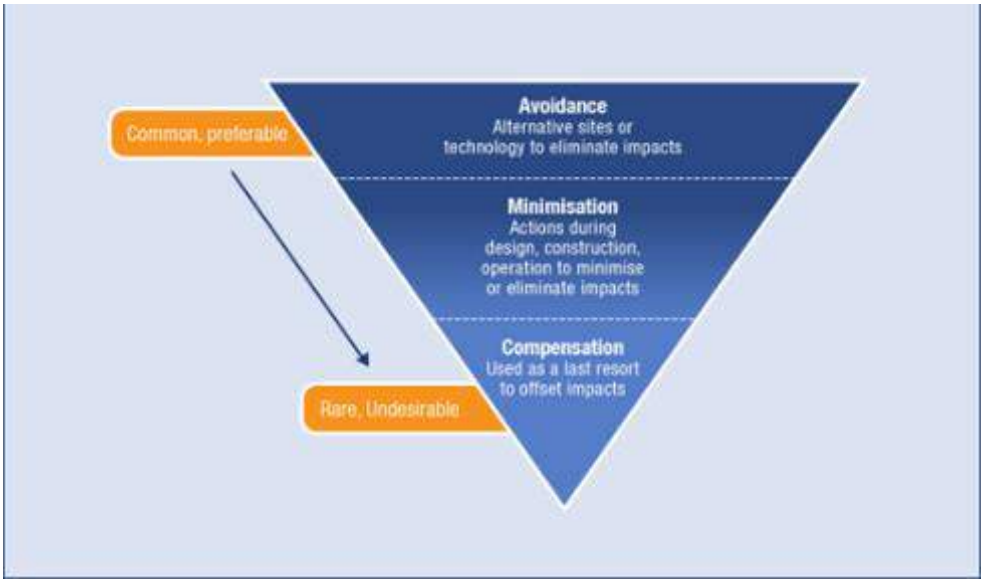


Figure 13: Elements of impact mitigation

The above impact mitigations are detailed below.

- ✓ ***Impact avoidance***

While preparing the project and designing the impact mitigation measures, RISA will put much more focus on measures to avoid the occurrence of adverse impacts. This can be achieved by:

1) not undertaking certain projects or elements that could result in adverse impacts;
2) avoiding areas that are environmentally sensitive and look for alternative sites;
3) or putting in place preventative measures to stop adverse impacts from occurring such as adopting technologies to eliminate the impact.

- ✓ ***Impact minimization***

In case impact avoidance is not possible, RISA shall focus on impact minimization to limit or reduce the degree, extent, magnitude, or duration of adverse impacts. It can be achieved through:

1) scaling down or relocating the proposal;
2) redesigning elements of the project;
3) or taking supplementary measures to manage the impacts.

- ✓ ***Impact compensation***

This shall be used as the last resort to remedy unavoidable residual adverse impacts. It can be achieved by:

1) rehabilitation of the affected site or environment, for example, by habitat enhancement and restocking fish;

2) restoration of the affected site or environment to its previous state or better, as typically required for mine sites, forestry roads and seismic lines;
3) and replacement of the same resource values at another location,

6.2.6. Environmental and Social Management Plan

The ESMP of any project is a site-specific plan prepared to ensure that the project is implemented in environmentally sound manner where all contractors (or subcontractors if any), supervising firms and stakeholders, understand the potential environmental and social risks associated with the proposed project and take appropriate actions to adequately manage those risks. It consists of the set of mitigation, monitoring, and institutional measures to be taken during implementation and operation phases to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels. The plan also includes the actions needed to implement these measures. For the preparation of a management plan, the implementing agency will (i) identify the set of responses to potentially adverse impacts; (ii) determine requirements for ensuring that those responses are made effectively and in a timely manner; and (iii) describe the means for meeting those requirements.

The ESMP identifies feasible and cost-effective measures that may reduce potentially significant adverse environmental impacts to acceptable levels. The plan includes compensatory measures if mitigation measures are not feasible, cost-effective, or sufficient. For each activity, the plan outlines the potential problems that may adversely impact the environment, and recommends corrective measures where required, implementation schedule, role and responsibility of the key stakeholders, occurrence and estimated cost.

6.2.7. Environmental and Social Monitoring Plan

The environmental monitoring during the project implementation provides information about key environmental aspects of the project, particularly the environmental impacts of the project and the effectiveness of mitigation measures. Such information enables RISA and the World Bank to evaluate the success of mitigation as part of project supervision, and allows corrective action to be taken when needed. Therefore, the ESMP identifies monitoring objectives and specifies the type of monitoring, with linkages to the impacts assessed in the ESIA report and the mitigation measures described in the ESMP. The purpose of monitoring is to (i) track the progress and assess the appropriateness and effectiveness of the management measures, (ii) assess the actual project impacts against the potential impacts and social indicators identified, (iii) capture information with which to advise potentially impacted communities and government on progress and achievements, and (iv) facilitate engagement, consultation and collaboration with stakeholders.
The key components of a monitoring program for every activity are:

- Identified adverse impacts,
- Mitigation/ enhancement measure,
- Monitoring indicator (key performance indicators),
- Means of verification,
- party responsible for monitoring,
- timing and frequency of monitoring,
- Mechanisms to update management measures, if required.

6.2.8. Training, awareness, and competencies

RISA assumes overall responsibility for implementation of the ESIA/ESMP and Resettlement Plan but actual implementation of mitigation measures will be the role of contractors. Therefore, it is important that all contractors and personnel responsible for the implementation of the tasks and requirements

contained in the ESMP are competent on the basis of education, training and experience. RISA shall undertake internal training and education activities to ensure that Project expectations regarding environmental and social performance are achieved. In addition, the Project will provide guidance to contractors regarding expectations for environmental and social impact management training, education, and competencies.

Environmental and social competencies will be appropriate to the respective parties' scope of activity and level of responsibility. Project will undertake an initial evaluation of training needs associated with overall Environmental and Social management and, on this basis, develop and maintain an ESMS training matrix. RISA environmental and social training programmes will include several levels of competency, depending on each individual's level of involvement and responsibility:

- ✓ ***ESHS induction training and awareness****:* this training will be for visitors or individuals who do not have direct roles or responsibilities for implementing the ESMP, and will cover basic Project environmental and social commitments.
- ✓ ***ESHS Management Training and Awareness***: this training focuses attention on management, covering key aspects of the ESMP and providing an overview of the Project's environmental and social impact management expectations and the supporting processes and procedures prescribed in the ESMS to meet performance expectations.
- ✓ ***ESHS Job-specific training and awareness***: job-specific training will be provided to all personnel who have direct roles and responsibilities for implementing or managing components of the ESMP including EPC contractor workers. This training will also include all people whose specific work activities may have an environmental or social impact.
- ✓ ***Onsite,*** these provisions and responsibilities will apply to all contractors and subcontractors. Those responsible for performing site inspections will receive training by drawing on external resources as necessary. Upon completion of training and once deemed competent by management, staff will be ready to train other people. The Project will require each contractor to institute training programmes for their personnel. All contractors and their subcontractors will be responsible for implementing relevant and adequate training programmes to maintain the required competency levels.

Contractors training programmes will be subject to approval by Supervising engineer and RISA Management and will be assessed to confirm that:

- training programmes are adequate;
- all relevant personnel have been trained; and
- Competency is achieved.

Contractors will be required to report on their training activities, and the Project will maintain records of all training delivered.

6.2.9. ESIA report and decision making

- ✓ **ESIA report**

An environmental and social impact study culminates into preparation of a report by the ESIA experts. An ESIA report should provide clear information to the decision-maker on the different environmental scenarios without the project, with the project and with project alternatives. The developer is also required to produce an environment and social management plan (ESMP). Any modifications made by a developer to the ESIA report should be presented in form of an Environmental and Social Impact Report Addendum. All these three documents should then be submitted to the RDB and WB.

- ✓ **Public hearing**

After completion of ESIA report the Environmental Law requires that the public must be informed and consulted on a proposed development. RDB may, if it deems necessary, conduct a public hearing

before ESIA reports are appraised by its Technical Committee. Any stakeholders likely to be affected by the proposed project are entitled to have access to unclassified sections of the ESIA report and make oral or written comments to RDB. Rwanda Development Board shall consider public views when deciding whether or not to approve a proposed project.

- ✓ **Decision-making**

During the decision-making and authorization phase, ESIA documents submitted to the Authority shall be reviewed by two decision-making committees: a Technical Committee and an Executive Committee constituted by RDB. If the project is approved, the developer will be issued with an ESIA Certificate of Authorization, which permits implementation of the project in accordance with the mitigation measures in the ESIA Report and any additional approval conditions.

6.2.10. Environmental and Social Monitoring

Monitoring should be done during both construction and operation phases of a project. It is done not just to ensure that approval conditions are complied with but also to observe whether the predictions made in the ESIA reports are correct or not. Where impacts exceed levels predicted in the environmental impact study, corrective action should be taken. Monitoring also enables RDB to review validity of predictions and conditions of implementation of the Environmental and Social Management Plan (ESMP). During implementation and operation of a project, monitoring is a responsibility of the RISA, Contractors and REMA.

6.2.11. Review, clearance, and disclosure of E&S instruments

All E&S instruments to be prepared under the projects will be reviewed by the project safeguards team, the World Bank and finally be submitted to RDB for review and approval. However, some documents like RAP and other documents that may be required by the Bank but not Required at national level will only be submitted to and cleared by the Bank only. All ESIAs and ESMPs will be subject to RDB approval and clearance.

7. GRIEVANCE REDRESS MECHANISM (GRM)

7.1. Overview

The grievance mechanism ensures that complaints and grievances are addressed in good faith and through a transparent and impartial process, which is culturally acceptable. It does not deal with 'concerns' which are defined as questions, requests for information, or perceptions not necessarily related to a specific impact or incident caused by a project activity. If not addressed to the satisfaction of the person or group raising the concern, then a concern may become a complaint. Concerns are not registered as a grievance but will be managed via the project external communications plan.

- Complaint: An expression of dissatisfaction that is related to an impact caused by a project activity, which has affected an individual or group. Adversely, the interests of an individual or group and the individual or group wants a proponent or operator (or contractor) to address and resolve it (e. g. problems related to dust deposition, noise or vibration). A complaint is normally of a less serious nature than a grievance.

- Grievance: A claim raised by an individual or group whose livelihood, health and safety, cultural norms and heritage are considered to have been adversely affected (harmed) by a project activity which, if not addressed effectively, may pose a risk to the project's operations (through stakeholder actions such as access road blockages) and the livelihood, well-being or quality of life of the claimant(s).

The grievance mechanism described in this section includes both complaints and grievances (hereinafter referred to only as 'grievances').

Grievances raised by stakeholders need to be managed through a transparent process, readily acceptable to all segments of affected communities and other stakeholders, at no cost and without retribution. The grievance mechanism should be appropriate to the scale of impacts and risks presented by a project and beneficial for both a proponent/operator and external stakeholders. The mechanism must not impede access to other judicial or administrative remedies.

The GRM will enable the Project Authorities to address any grievances against the Project. The establishment of project level Grievance Redress (GR) will integrate with existing GR structures in the respective communities and the implementing agencies; and maintained and strengthened throughout the project lifecycle. The GRM will be closely monitored and reported throughout the project life cycle. While measures are taken to minimize and mitigate potential social and environmental risks and impacts, it is possible that the project may affect communities, individuals and firms that need to be addressed during project implementation. Grievances that relate to project workers will be handled by a separate mechanism which is included as part of the project's LMP.

7.2. Objectives of the Grievance Redress Mechanism

The objectives of the Grievance Redress Mechanism are as follows:

- Ensure that the World Bank Environmental and Social Standards are adhered to in all subprojects and activities;
- Address any negative environmental and social impacts of all sub-projects and activities;
- Resolve all grievances emanating from the project activities in a timely manner;
- Establish relationships of trust between project staff and stakeholders;
- Create transparency among stakeholders including affected persons through an established communication system;

- Bolster the relationship of trust amongst the project staff and the affected parties.

7.3. Proposed GRM levels

7.3.1. Community and Lower-Level Grievance Redress Mechanism

Local communities have existing traditional and cultural grievance redress mechanisms which can be used to resolve some project related disputes at the community level, of course with some degree of involvement of and support from local leaders, the contractor(s), and project representatives at local level.

Concerning the Rwanda Digital Acceleration Project, the concerned communities have been having mechanisms to resolve any conflict and misunderstanding. Conflicts that concern communities are addressed in the normal existing system in Rwanda, starting from Village leaders, Cell level mediators, Sector level mediators, and when necessary the ordinary courts. There will also be committees in the communities (a committee at Village level that include affected/beneficiary people, a woman, vulnerable person, and the Village leader; a committee at the Cell level but including Village leaders; the committee at the Sector level but including Executive Secretaries of Cells, and a committee at District level but including Executive Secretaries of Sectors). Each committee will involve project affected people or concerned community members, the project representative (from the District and/or RISA), the representative from BRD (if BRD is among the implementing agencies), representative of the contracted company and one representative of the supervising firm. Communities will elect Village committees. Village committees will gather to elect Cell committees. Cell committees will gather to elect Sector committees. Sector committees will gather to elect District committees.

Potential members of the GRC includes but is not limited to:

- The President of the committee, a community member residing in the concerned area and preferably, affected by the project,
- The Vice President, also a community member residing in the concerned area and preferably, affected by the project,
- A woman representative, also a community member residing in the concerned area and preferably, affected by the project,
- Vulnerable group representative (if any)
- A village leader (if it is a Village level)
- A representative of Village leaders (if it is at Cell level) and the Executive Secretary of the Cell
- A representative of the Executive Secretaries of Cells (if it is at Sector level) and the Executive Secretary of the Sector of the Cell (if it is at the Cell)
- A representative of Executive Secretaries of Sectors (if it is a District level) and one District official. Cell leaders and the Executive Secretary of the Sector (if it is at the Sector)

It is expected that all grievance or dispute issues pertaining to the Project will be resolved at District level. Issues that will not be resolved at the level of these committees will be taken to the higher Project Coordination Unit. However, the mechanism will not prevent unsatisfied complainants to resort to the Rwandan judiciary (mediators and courts).

The grievance redress committees will be recording all the grievances. They will be recording when and how they were resolved including cases that got referred to other levels (see in annexes, an example of grievance log that will be used in recording grievances). They will be including these in their regular reporting. The project coordination unit will lead and record all complaints and how they were addressed.

7.3.2. Advanced Project Level Grievance Redress Mechanism

Many project-related grievances are expected to be minor and site-specific. They will revolve around nuisances generated during construction such as noise, dust, vibration, workers' disputes, etc. These are expected to be resolved easily on site. Difficult grievances might be especially about land acquisition, land boundaries, compensation, income or livelihood loss, misunderstandings between affected households and the Contractor regarding access arrangements or possible severe risks. Most of these might not be resolved immediately and/or on site.

If the complainant is not satisfied with the resolutions at the District project management level, the complaint is taken to the higher Project Coordination Unit (PCU) at RISA. The PCU will then endeavor to resolve the complaint as soon as possible. Reporting back to the complainant will be undertaken within a period of one month from the date that the complaint was received. Should measures taken by the Project Coordination Unit fail to satisfy the complainant, the aggrieved party will be free to take his/her grievance to the existing Courts. However, grievances should be resolved at the lowest level possible.

It is vital that appropriate signage is erected at the sites of all works providing the public with updated project information and summarizing the GRM process, including contact details of the relevant Project Contact Person. Anyone shall be able to lodge a complaint and different methods (in person, telephone, email, social media, website, forms written in local language, suggestion boxes, etc.) will be used. Anonymous mechanism of lodging complaints will also be allowed. The Complaints Register will be maintained by the committees and Project Contact Persons, who will log the: i) details and nature of the complaint; ii) the complainant's name and their contact details; iii) date; iv) corrective actions taken in response to the complaint. This information will be included in the project's progress reports to the Bank. The project level process will only act within its appropriate level of authority and where necessary, complaints will be referred on to the relevant authority such as those indicated.

7.3.3. Workers Grievance Redress Mechanism

Provisions in law N° 66/2018 of 30/08/2018 regulating labour in Rwanda will be applied for Grievance Redress Mechanism (GRM) for workers. A GRM shall be established under the SPIU to address complaints arising during the project implementation of all sub-components. Project direct workers will be informed about the grievance redress mechanism during meetings at the time of the induction and training will be provided where required, this will follow the same procedure as described in the approved RISA manual of procedure for grievance management. Contracted workers will be informed about grievance redress mechanism through meetings at workplaces as well as notices to be made available at the workplace. The Grievance Redress Committees (GRCs) to be established as mentioned earlier will also handle the arising grievances. The process pertaining to how to go about grievances handling are documented for further reference.

The workers GRC shall be composed at Site level by the contractor representative, the supervising firm representative, and the workers representative at site level while the GRM at District level shall be composed of Labour inspector at District level as advisor, Workers representative, contractor representative, the supervising firm representative, and at SPIU Level, the committee will be composed of the Social and Environmental safeguards Specialists, Project Coordinator, Human Resource Specialist under SPIU, and contractor representative, the supervising firm representative and workers representative. The SPIU will require contractors to develop and implement a grievance mechanism for their workforce including sub-contractors, prior to the start of design stage. The construction

contractors will prepare their labour management procedure before the start of civil works, which will also include detailed description of the workers grievance mechanism.

The workers grievance mechanism will include:

- A procedure to receive grievances such as a comment/complaint form, suggestion boxes, email, a telephone hotline;
- stipulated timeframes to respond to grievances;
- A register to record and track the timely resolution of grievances;
- A responsible department to receive, record and track resolution of grievances.

The Supervision firm's safeguards staff will monitor the contractors' recording and resolution of grievances, and report these to the project in their monthly progress reports. The process will be monitored by the GRM Focal Point, the safeguards specialists will be responsible for the project GRM. The direct workers grievance mechanism will be described in staff induction trainings, which will be provided to the new recruited project workers. The mechanism will be based on the following principles:

- The process will be transparent and allow workers to express their concerns and file grievances;
- There will be no discrimination against those who express grievances, and any grievances will be treated confidentially;
- Anonymous grievances will be treated equally as other grievances, whose origin is known;
- Management will treat grievances seriously and take timely and appropriate action in response.

Information about the existence of the grievance mechanism will be readily available to all project workers (direct and contracted) through notice displaying boards, the presence of "suggestion boxes", and other means of communication as required.

7.3.4. Grievance Channel for Gender-Based Violence

When GBV related complaint is received at the first or second tier of GRM, the complaint should be kept confidential by the person/persons receiving the complaint, and the complaint will be immediately reported to Isange One Stop Center (IOSC), a national police-led center established to provide comprehensive support to victims of GBV. The complaint should be reported to the relevant committee and immediate actions should be taken that is consistent with the wishes and choices, rights and dignity of the complainant. The complainant should be given information in simple and clear terms on the steps for filing complaints and the possible outcomes, the timelines and the types of supports available to be able to make informed decision.

For GBV cases, it is important to ensure that access to the complaints processes is as easy and as safe as possible for the complainant survivor. The recording of incidence should be limited to the nature of complaint put exactly in the words of the complainant, the age of the survivor and if to the best of their knowledge, the perpetrator was associated with the project. The complainant should decide on whether they would like to be referred to the grievance committee and the complainant should give consent to share basic monitoring data.

Safety & Well-Being: The safety of the survivor shall be always ensured, including during reporting, investigation, and the provision of victim assistance. Those involved in the management of complaints will need to consider potential dangers and risks to all parties (including the survivor, the complainant if different, the subject of the complaint, and the organizations involved), and streamline ways to prevent additional harm in all the complaint handling process. The survivor is never to blame for reporting an act of GBV and should never be made to feel investigated. On the contrary, it is important that she/he feels that her/his story is heard, believed and valued. The actions and responses of the complaint mechanism will be guided by respect for the choices, needs, rights, and the dignity of the survivor.

Confidentiality: The confidentiality of complainants, survivors, and other relevant parties must be always respected. All GBV-related information must be kept confidential, identities must be protected, and the personal information on survivors should be collected and shared only with the informed consent of the person concerned and on a strict need-to-know basis.

Survivor-Cantered Approach: All prevention and responses action will need to balance the respect for due process with the requirements of a survivor-centred approach in which the survivor's choices, needs, safety, and wellbeing remain at the centre in all matters and procedures. As such, all actions taken should be guided by respect for choices, needs, rights and dignity of the survivor, whose agency and resilience must be fostered through the complaint process.

Accessibility and non-discrimination: The mechanism must be accessible to all potential complainants and sufficient information must be given on how to access it, making the complaints process accessible to the largest possible number of people. This includes identifying and instituting various entry points that are both gender and context sensitive. To facilitate incidents reporting and avoid stigmatization, reports from third parties (witnesses, people suspicious or aware of an incident, etc.) must also follow accountability protocols.

7.3.5. Grievance Channel for Primary supply workers

Where a significant risk of child labour or serious safety issues in relation to primary suppliers has been identified, the procedure for monitoring and reporting on primary supply workers will involve various measures that have been put in place to prevent and control them such as establishment of child labour prevention committees from District to Cell level. In the event of identification of child labour cases, it will be reported to concerned authorities (The labour law also provides for penal and administrative penalties in case of non-compliance with labour law provisions.

In instances where local suppliers would be engaged, contractors shall be required to carry out due diligence procedure to identify if there are significant risks that the suppliers are exploiting child or forced labour or exposing worker to serious safety issues. In other hand where foreign suppliers would be contracted, contractors will be required to inquire during their procurement process whether the supplier has been accused or sanctioned for any of these issues and their corporate requirements related to child labour, forced labour, and safety. If there are any risks related to child and forced labour, and safety identified, in case of occurrence, the sanctions stipulated by Rwanda labour law will be applied.

7.3.6. Grievance Channel for Contractor management

RISA will use the Bank's Standard Procurement Documents for solicitations and contracts, and these include labour and occupational, health and safety requirements.

As part of the process to select design and build contractors who will engage contracted workers, the RISA and/or the supervision consultant may review the following information:

- Information in public records, for example, corporate registers and public documents relating to violations of applicable labour law, including reports from labour inspectorates and other enforcement bodies in the Districts where the project will be being implemented;
- Business licenses, registrations, permits, and approvals;
- Documents relating to a labour management system, including OHS issues, for example, labour the prepared management procedures;

- Identification of labour management, safety, and health personnel, their qualifications, and certifications;
- Workers' certifications/permits/training to perform contracted work;
- Records of safety and health violations, and responses;
- Accident and fatality records and notifications to hierarchical authorities;
- Records of legally required worker benefits and proof of workers' enrolment in the related programs;
- Worker payroll records, including hours worked and pay received;
- Identification of safety committee members and records of meetings; and
- Copies of previous contracts with contractors and suppliers, showing inclusion of provisions and terms reflecting ESS2.

The contracts with selected contractors will include provisions related to labour and occupational health and safety, as provided in the World Bank Standards Procurement Documents 2018 and law N°62/2018 of 25/08/2018 governing Public Procurement in Rwanda. The Supervision Consultant will manage and monitor the performance of Contractors in relation to contracted workers, focusing on compliance by contractors with their contractual agreements (obligations, representations, and warranties). This may include periodic audits, inspections, and/or spot checks of project locations or work sites and/or of labour management records and reports compiled by contractors. Contractors' labour management records and reports may include: (a) a representative sample of employment contracts or arrangements between third parties and contracted workers; (b) records relating to grievances received and their resolution; (c) reports relating to safety inspections, including fatalities and incidents and implementation of corrective actions; (d) records relating to incidents of noncompliance with national law; and (e) records of training provided for contracted workers to explain labour and working conditions and OHS for the project.

7.3.7. Mediation committee (Abunzi)

The project level process will not impede PAPs access to the legal system. Local communities have existing traditional and cultural grievance redress mechanisms (Abunzi committees) established and regulated by law no. 37/2016 of 08/09/2016 determining organization, jurisdiction, and competence and functioning of Abunzi committee. These are established at cell and Sector level to solve community-based conflicts and grievances, their regulatory body being the Ministry of Justice. This mechanism cannot be overlooked by the project. The population can choose to use this channel instead of the project GRC.

7.3.8. Court of law

If the case does not fall under mediation committee (Abunzi) and other Previous GRM mechanism failed to resolve the complaints, the Complainant will have the right to take the matter to the appropriate legal or judicial authority as per Rwanda National Legal procedure. The following is the proposed GRM Structure and the Grievance Redress Process for RDAP.

Figure 14: GRM Structure

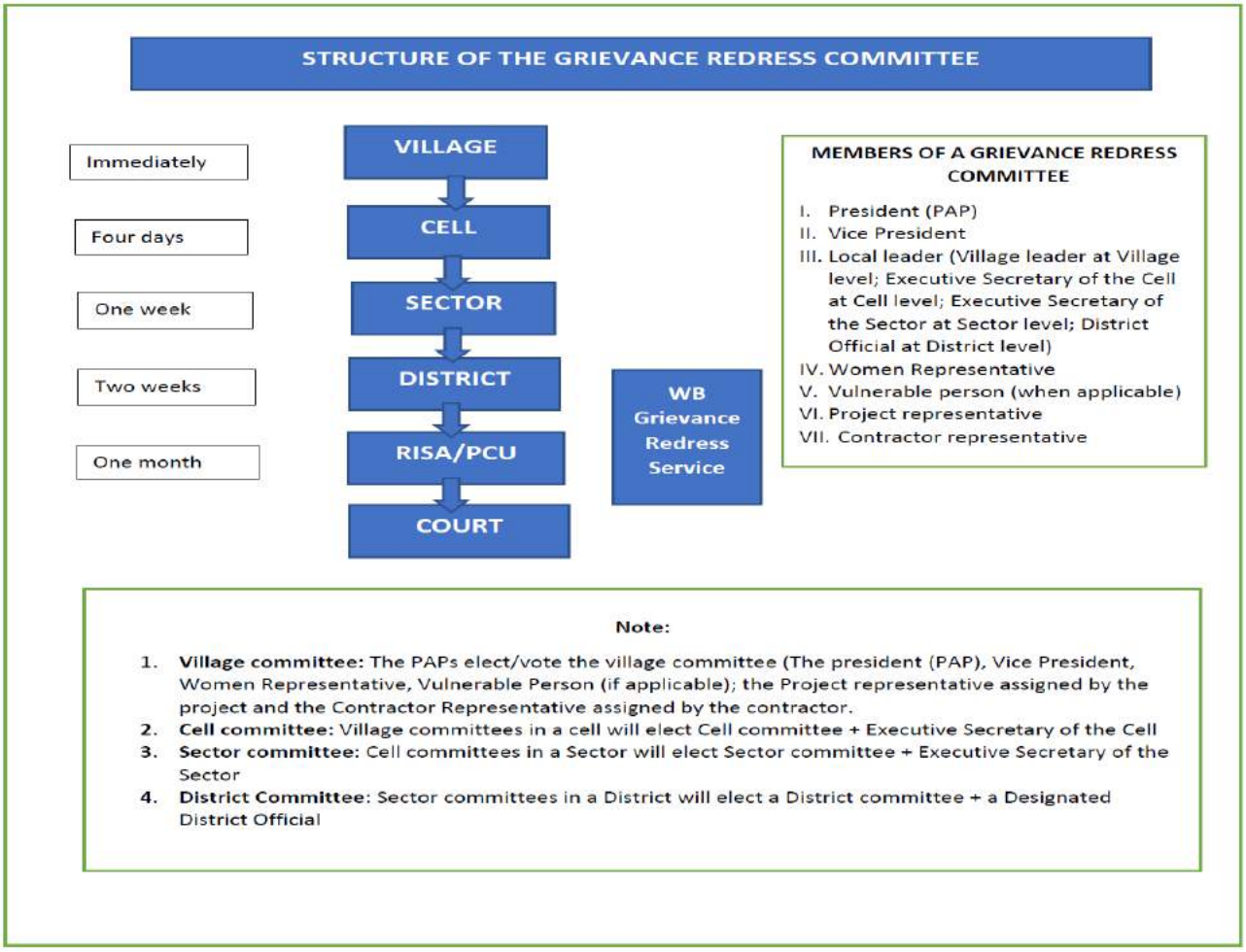


Table 18: Grievance Redress Process at the Project Level

Stage	Process	Duration
1	The Aggrieved Party (AP) will take his/her grievance to Village Grievance Committee which will endeavour to resolve it immediately. Where the AP is not satisfied, the Village Grievance Committee will refer the AP to the Cell Grievance Committee. For complaints that were satisfactorily resolved by the Village Committee, the committee will inform the higher level of project management and they will log the grievance and the actions that were taken.	Immediately after receiving the complaint
2	The Aggrieved Party (AP) will take his/her grievance to Cell Grievance Committee which will endeavour to resolve it immediately. Where the AP is not satisfied, the Cell Grievance Committee will refer the AP to the Sector Grievance Committee. For complaints that were satisfactorily resolved by the Cell Committee, the committee will inform the higher level of project management and they will log the grievance and the actions that were taken.	As soon as possible but not exceeding four days after receiving the complaint
3	On receipt of the complaint, the Sector Committee will endeavour to resolve it immediately. If unsuccessful, they will then notify the District committee	As soon as possible but not exceeding one week after receiving the complaint
4	The District committee will endeavour to address and resolve the complaint and inform the aggrieved party. They will refer to the higher-level Project Coordination Unit unresolved grievances for their action.	As soon as possible but not exceeding two weeks after receiving the complaint
5	The higher-level Project Coordination Unit will try to resolve the complaint as soon as possible and, if the matter remains unresolved, or the complainant is not satisfied with the outcome at the National Project Coordination Unit, the complainant will be free to take the matter to the existing Courts.	As soon as possible but not exceeding one month after receiving the complaint
6	Unsatisfied complainants after the resolution from the National Project Coordination Unit will be allowed to take their complaints to the existing courts.	Any time after the resolution of the National Project Coordination Unit

Table 19: Proposed Members of GRC and their Roles under the Project

No	Member of GRC	Roles and responsibilities
1	President (PAPs representative)	- Chairing meetings; - Give direction on how received grievances will be processed; - Assign organizational responsibility for proposing a response; - Referring cases to next level; - Speaks on behalf of GRC and s/he is the one to report to the cell or the sector administration level; - Represents the interests of aggrieved parties; - Give feedback on the efficiency of GRM.
3	Village leader	- Represents local government at village level; - Resolves and lead community level grievance redress; - Sends out notices for meetings; - Records all grievance received and report them to next local level
4	Cell executive secretary	- Proposes responses to grievances and lead in resolving community grievance unsolved from village level; - Records and reports all grievances received from village leaders; - Chairs sensitization meeting at the cell level during public consultations meetings; - Assists and guides in identifying vulnerable and disadvantaged groups within the cell; - Signs the valuations sheets for compensation facilitate a proper Resettlement Plan.
5	Women and youth representatives	- Represent the interests of women and youth; - Advocate for equity and equal opportunities; - Help in prevention of sexual harassment and promote wellbeing of the women and youth - Take part in resolution of any grievance related to sexual harassment and any gender domestic violence that may arise; - Mobilize women and youth to be active in income generating activities specifically for opportunities in the project's intervention areas.
6	Contractor representative	- Receive and log complaints/grievances, note date and time, contact details, nature of complaint and inform complainant of when to expect response; - Handle complaints revolved around nuisance resulted from construction and endeavour to handle them satisfactory; - Inform engineer (supervisor) and GRC of received complaints/grievances and outcomes and forward unresolved complaints/grievance to GRC; - Attend community meetings, respond and react to PAPs complaints raised concerning the contractor.
7	Supervising firm representative	- Represent client (RISA); - Ensure that all grievances raised have been responded to, and that the contractor responds to the complaints raised concerning them; - Attend community meetings and respond to all concerns related to project from community; - Report on monthly basis the progress of GRM process.

To communicate with the project stakeholders by sending their recommendations, claims, and observations are summarized in the following table.

Table 20: Other methods of communication with the stakeholders

Methods	Description
Project webpage	The ESF documents will be disclosed in the implementing agencies of the project – a specific webpage will be prepared for project containing project description, implementing arrangements and ESF documents including to communicate with the team, and the email, phone of contact of the concerned SPIU Environmental Specialist or Social Safeguards Specialist.
Community project Display board	In a community selection point or the Administrative District, a Displaying board with project information, timeline, and information of the works, contractor, announcements will be placed and box for comments/suggestions will be placed with a lock so only the environmental or social safeguards can open and respond to any messages. Any complaint from a third party can be filed using this method.
E-mail, Telephone, instant message or other media	All contacts of the environmental and social safeguards of SPIU at National level will be made public to be used by any stakeholder or third party willing to ask for information, provide suggestion or file a complaint.

7.4. Grievance Logbook

The GRM Committee will ensure that each complaint has an individual reference number and is appropriately tracked, and recorded actions are completed. The log will contain record of the person responsible for an individual complaint, and records dates for the following events:

(a) Date the complaint was reported;
(b) Date the Grievance Log was added onto the project database;
(c) Date information on proposed corrective action sent to complainant (if appropriate);
(d) The date the complaint was closed out; and
(e) Date response was sent to complainant.

7.5. World Bank Grievance Redress Service (GRS)

Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, because of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service.
For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

7.6. Monitoring of Complaints

The monitoring of complaints will be done by districts' authorities and SPIU on regular basis. The monitoring team will be responsible for:

a) Providing the sub-project Resettlement and Compensation Committee with a Monthly report detailing the number and status of complaints;
b) Any outstanding issues to be addressed; and
c) Quarterly reports, including analysis of the type of complaints, levels of complaints, actions to reduce complaints and initiator of such action.

8. ESMF IMPLEMENTATION AND MONITORING PLAN

8.1. Monitoring Objectives

The objective of monitoring is twofold:

(a) to alert project authorities by providing timely information about the success or otherwise of the environmental management process outlined in this ESMF in such a manner that changes can be made as required to ensure continuous improvement to RISA environmental management process (even beyond the project's life);

(b) to make a final evaluation to determine whether the mitigation measures incorporated in the technical designs and the ESMP have been successful in such a way that the pre-project environmental and social conditions have been restored, improved upon or, if worse than before, to determine what further mitigation measures may be required.

This section sets out requirements for the monitoring of the environmental and social impacts of the subprojects. The monitoring of environmental and social indicators will be mainstreamed into the overall monitoring and evaluation system for the project. The monitoring of this ESMF implementation will be conducted by RISA/MINICT and the key implementing institutions of this project.

8.2. Monitoring and reporting of Environmental and Social Indicators

Two opportunities will be taken to build a simple system for the monitoring and evaluation of environmental and social impacts:

a) The Environmental and Social Safeguards Specialist and District Environmental Officers will coordinate project trainers in a district and should consider the environmental and social criteria that require measurement (i.e., registered incidents/ accidents, income levels, etc.); a list of initial proposals is given below.

b) Using that list of criteria, a set of indicators can be integrated into the screening forms used in the project approval process in each district. This will ensure flexibility at the subproject design stage, integration of monitoring considerations throughout the subproject cycle, as well as a participatory approach to environmental and social monitoring.

8.2.1. Initial proposals

The key parameters to be considered under subprojects include monitoring of community health and safety risks, noise pollution, greenhouse gases emission and air pollution, income generation and water and soil degradation, etc. The goals of monitoring are to measure the success rate of the project, determine whether interventions have resulted in dealing with negative impacts, whether further interventions are required or monitoring is to be extended in some areas. Monitoring indicators will be very much dependent on specific project contexts.

Monitoring and surveillance of subprojects will take place on a "spot check" basis as it would be impossible to monitor all the subprojects to be financed under the project. The spot checks consist of controlling the establishment of mitigation measures. It is not recommended to collect large amounts of data, but rather to base monitoring on observations by project technicians and stakeholders to determine the trends in indicators.

8.2.2. Monitoring indicators

The main components of the monitoring plan include environmental issue to be monitored and the means of verification; specific areas and locations; parameters to be monitored; frequency; and

institutional responsibilities for monitoring and supervision. Sites specific monitoring checklists will be prepared by the designers for each subproject and be included as an integral part of subproject approval in each village. A monitoring checklist should be prepared using the generic monitoring plan presented within this ESMF document and respecting significant site-specific impacts and proposed mitigation measures elaborated in site-specific ESMPs.

The project staff, in collaboration with the District Environmental Officer (DEO), will prepare their compliance reports with respect to ESCP, which document the implementation of environmental mitigation and protection measures (together with prescribed monitoring activities carried out during the reporting period) on monthly basis and submit them to RISA who will, in turn, share the report with the Bank and REMA. However, in case of any kind of accident or endangerment of protected environments, reporting to Project Management, participating District and the World Bank will be immediate.

RISA will have the authority for immediate suspension of works if its performance is found to be in serious contravention with the environmental standards and regulations. Monitoring and compliance in accordance with the ESMF and ESCP, including monitoring of implementation of subproject screening and the approval process, will be undertaken by the E&S specialists, and reported in writing to RISA and the Bank.

Annual Environmental Health and Safety (AEHS) reports, including monitoring indicators and reporting on the implementation of the requirements set forth in the ESCP, will be prepared by RISA and submitted for the Bank's review. In case of fatalities or major incidents on sites, RISA will immediately report to WB.

In addition to the Project reports required by the World Bank, an Audit on ESMF implementation will be prepared by the Project during the Mid-Term Review and at the project end, and shared with REMA and the World Bank. The table below indicates project indicators to be monitored and reported.

Table 21: Monitoring indicators for Environment and Social Management for the project

Monitoring Parameter/Impacts	Mitigation/Enhancement Measures	Monitoring Indicators	Source of Data	Frequency	Responsibility
Safeguards instruments	Preparation and approval of appropriate instruments	Number and type of instruments prepared and approved	Records review	As needed	RISA, Contractor
Training and Capacity building	Training of staffs, workers and community	Number of RDAP and District staff trained	Training reports	As needed	RISA, Contractor
Land take prior to construction phase	Full implementation of a RAP report prior to commencement of works. Where grievances in the resettlement process emerge, steps will be taken to address the grievance through community GRM	Number of complaints from the property owners affected by land acquisition	RAPs report Grievance logs, incidence investigation reports Annual audit reports	Before project and during implementation (Monthly)	RISA, Contractor, Districts grievance committees, District grievance committees, RISA grievance committee
Impacts related to property acquisition within the road reserve.	Full implementation of a RAP report prior to commencement of works. Stakeholder consultations shall precede project implementation to brief communities on project activities, address their concerns and promote transparency and their participation	Stakeholder consultation site specific attendance registers and minutes	RAPs reports Stakeholder management reports	Before and during project implementation	RISA, Contractor
	Adequate notice should be given to the affected persons within the road reserve	Number complaints from the property owners affected by project activities	Survey and census inventories	Throughout the project lifecycle	RISA and Contractor
Communicable diseases pose a significant public health threat worldwide. Health hazards typically associated with large development projects are those relating to poor sanitation and living conditions, sexual transmission especially amongst women and children and vector-borne infections. Communicable diseases of most concern during the construction phase due to labor mobility are sexually-transmitted diseases (STDs), such as HIV/AIDS	Project workers and communities inducted & sensitized on protection of children and criminal nature of sexual engagement with children in the project sites Providing surveillance and active screening and treatment of workers Utilize GBV Plan Implementation and utilization of the Code of Conduct for each worker, Activate use of GRM throughout the project cycle	% of sites with workers and communities inducted and sensitized on child, gender and criminal effects of sexual engagement with children in the project sites Number of trainings on communicable diseases conducted	Contractor sensitization records, Field visits and observations Training	Monthly	RISA and Contractor
Creation of employment and business (livelihood) opportunities	Vulnerable and disadvantaged groups in the project area such as women, youth, poor, orphans, People with disability e.tc will be the preferred source of unskilled and semi-skilled labour provided they have the requisite	Proportion of the un/skilled women, youth, poor, orphans, People with disability etc. with qualification from the PA employed	Contractor employment records Contractor compliance reports	Weekly	Contractor, RISA

Monitoring Parameter/Impacts	Mitigation/Enhancement Measures	Monitoring Indicators	Source of Data	Frequency	Responsibility
	qualification, competence & experience				
	The project will promote procurement of materials from local suppliers where it is technically, qualitatively, and commercially reasonable and feasible.	Number of local businesses benefiting from construction related procurement	Contractor Procurement records Contractor compliance reports	Monthly	The project will promote procurement of materials from local suppliers where it is technically, qualitatively and commercially reasonable and feasible.
	Ensure that locals benefit from employment opportunities and observe the national labour laws	Proportion of nationals in the project labour force	Contractor employment records	Monthly	RISA and Contractor
Temporary business disruptions due to trenching in urban centers and markets in rural areas	Work should be planned for out of business peak hours (night) and days (weekends) to minimize inconveniences to businesses	Number of community complaints lodged over disruptions	RAPs Report, Field Visits	Monthly	Contractor, Districts, RISA
	Communities should be sensitized on road use during construction.	Number of communities sensitization meeting	Awareness reports	Throughout construction period	RISA and Contractor
Noise, vibration, and air quality	Only equipment and vehicles in good working order will be used	Number of equipment and vehicle with valid technical control certificate	Field consultations with District Engineer, Supervising engineer	Daily	District Engineer, RISA and Contractor
	Regular inspection of vehicles, machinery and equipment used in the operation according to manufacturer inspections to ensure that they are in good working condition	Proportion of vehicles, machinery and equipment inspection and serviced according to manufacturer specifications	Inspection records of vehicles, machinery and equipment field consultations with Traffic Police and District Engineer	Daily	Inspection , District Engineer, RISA and Contractor
	Noise-prone activities will not be implemented between the hours of 6 pm. and 6 am	Complaints of excessive noise from construction areas from between the hours of 6 pm. and 6 am	Community observations Contractor compliance reports Field visits by District Environment Officer	Daily	District Environmental Officer, RISA and Contractor
	Observe the 55 dBA and 45 dBA National regulation limits for day and night time noise levels respectively in residential area	Complaints of noise levels beyond the 55 dBA and 45 dBA REMA regulation limits for day and night time noise levels respectively	Field visit consultations with the district Environmental office	Daily	District Environment Officer RISA, Contractor

Monitoring Parameter/Impacts	Mitigation/Enhancement Measures	Monitoring Indicators	Source of Data	Frequency	Responsibility
HIV/AIDS spreads	As a contractual obligation, contractors should have an HIV/AIDS policy and a framework (responsible staff, action plan, etc.) to implement it during execution of this project.	All construction workers are trained and aware of HIV/AIDS risks and responsible living.	Awareness and outreach reports	Throughout construction	RISA, Contractor
Occupational Health and Safety risks	All manual equipment such as pickaxe, Pick Mattock, Cutter Mattock, etc should be sturdy and firmly fixed	Complaints of workers sheared by falling off pick, mattock, hoe etc.	Occupational health and safety risk incidence inventories	Monthly	REMA Contractor, RISA District labour officer
	Only trained and professional drivers and operators should be allowed to use construction vehicles and machinery.	Proportion of drivers and operators with requisite training and professional certificates	Contractor employment records Contractor compliance reports inventories	Monthly	District Engineer, RISA and Contractor
	All open trenches and excavated areas should be backfilled as soon as possible after cable laying and construction has been completed. Open trenches or ongoing excavation shall be provided with adequate barriers/fences, appropriate signage and should be illuminated at night.	Number of pedestrians and vehicles falling into trenches	Site visits, complaints filed in Police, Reports from safeguards staff	Daily	RISA Districts REMA
	Construction workers should be provided with and enforced to wear suitable Personal Protective Equipment (PPE) including hard hats, overalls, high-visibility vests, safety boots, gloves etc.	Proportion of workers provided with and enforced to wear suitable Personal Protective Equipment (PPE)	Reports from ESS compliance staff	Daily	RISA REMA Contractor District Labour Officer
	Clear signage should be used near project sites	Public & worker complaints on lack of signage	Reports from ESS compliance staff	Daily	RISA Contractor Traffic Police
	Training of workers and community members on safety precautions.	Number of trained workers and member of the community	Training Reports from ESS compliance staff	Quarterly	RISA Contractor Traffic Police
	Community and workers training on potential of disease transmission such as HIV/AIDs, Hepatitis, Gender Based Violence and Child abuse	Number of trained workers and member of the community	Training reports	Quarterly	RISA Contractor REMA
	Documentation of Accidents and actions taken	Evidence of accidents documentation	Reports from ESS compliance staff	Quarterly	RISA, Contractor, REMA District Labour inspector

Monitoring Parameter/Impacts	Mitigation/Enhancement Measures	Monitoring Indicators	Source of Data	Frequency	Responsibility
	Ensure latrine, bathroom and accommodation facilities are separated according to gender	Evidence of separate latrine, bathroom, and accommodation facilities by gender	Reports from ESS compliance staff	Daily	RISA, Contractor, REMA Labour inspector
Construction traffic related accidents and traffic interference	Trenching across roads and project vehicles and trucks movement should be scheduled during general traffic off-peak hours	Evidence of trenching across roads and project trucks moving during traffic peak hours	Reports from traffic wardens and safeguards staff	Daily	RISA, Contractor, REMA Labour inspector
	Employ safe traffic control measures, including temporary road signs and flag persons to warn of dangerous conditions and on-going road construction works or diversions	Evidence of traffic control measures	Reports from ESS compliance staff	Daily	RISA Contractor Traffic Police
	Trucks carrying construction materials will be covered with tarpaulin or appropriate polythene material from or to project site	Complaints of people being hit by objects from moving project truck	Reports from ESS compliance staff	Monthly	RISA Contractor Traffic Police Labour inspector
	Attach speed limits to project vehicles that will use the Road	Complaints of over speeding by project vehicles	Field visit consultations	Monthly	RISA Contractor Traffic Police Labour inspector
Increased susceptibility to soil erosion during rainy seasons	Stripping of vegetation shall be restricted to existing road reserves and areas for poles installations	Evidence of restricted stripping of vegetation to the road reserve and Poles areas	Field visits and consultations with the District Environment Officer	Daily	RISA, Contractor, District Environment Officer
	Use aerial transmission poles in erosion prone spots	Evidence of eroded mass from project sites	Field visits and consultations with the District Environment Officer	Daily	RISA, Contractor, District Environment Officer
	The Contractor will preferably deal with local borrow material suppliers certified by Rwanda Mining Board and REMA	The legal status of local borrow material suppliers	Field visits and consultations, audit of supplier documentation	Daily	RISA, Contractor, District Environment Officer
Construction waste generation	Trenching spoil material should be used for backfill	Evidence backfilled trenches	Field visits and consultations	Daily	RISA, Contractor, District Environment Officer
	All wastes should be collected in gazetted areas and sorted Establishing a waste management hierarchy that considers prevention, reduction, reuse, recovery, recycling, removal and finally disposal of wastes.	Records for wastes generated and disposal practice	Field visits and consultations	Daily	RISA, Contractor, District Environment Officer
	Contractor should seek guidance from local environmental officers to	Reports of illegal waste dumping in non-designated areas	Field visits and consultations	Daily	RISA, Contractor, District Environment Officer

Monitoring Parameter/Impacts	Mitigation/Enhancement Measures	Monitoring Indicators	Source of Data	Frequency	Responsibility
	identify acceptable disposal sites for oily/ fuel waste		Records of waste disposal		
	A RURA certified waste handler should be contracted	Contract with certified Waste management service provider	Field visits and consultations	Daily	RISA, Contractor, District Environment Officer
	Contractors should induct their drivers and sensitize them on safe transportation of the rubble and cut-to-spoil materials to the final disposal site	Number of workers/drivers sensitized on safe transportation of the rubble and cut-to-spoil materials to the final disposal site, Traces of waste spillages along transportation routes	Field visits and consultations Induction and sensitization reports for drivers	Daily	RISA, Contractor, District Environment Officer
	Implementing fuel delivery procedures and spill prevention and control plans applicable to the delivery and storage of fuel for backup electric power systems, preferably providing secondary containment and overfill prevention for fuel storage tanks	Evidence of fuel delivery procedures and spill prevention and control plans Availed spillage contingence plan	Field visits and consultations	Daily	RISA, Contractor, District Environment Officer
E-Waste and hazardous waste	Contractors should undertake waste segregation to separate e-waste from other waste types	Waste segregation practice reports Quantity of e-waste generated	Field visits and consultations	Daily	RISA, Contractor District Environment Officer
	Sign an MoU with national E-waste facility (Enviroserve Green Park Rwanda) for collection, transport Recycling and Disposal of E-Waste	MoU	Observation	Once	RISA
	Ensuring that new support equipment does not contain polychlorinated biphenyls (PCBs) and ozone depleting substances (ODSs) PCBs or ODSs. PCBs from old equipment should be managed as a hazardous waste	Manufacturer equipment specifications	Field visits and consultations	Daily	RISA, Contractor District Environment Officer RURA REMA
	Purchasing electronic equipment that meets international standards Phase out requirements for hazardous materials contents and implementing procedures for the management of waste from existing equipment according to the hazardous waste guidance in the General EHS Guidelines.	Manufacturers' Specification records	Field visits and consultations	Daily	RISA, Contractor District Environment Officer RURA,RSB
	Considering the implementation of a take-back program for consumer equipment such as cellular telephones and their batteries.	Equipment purchase and handover agreements	Field visits and consultations	Daily	RISA, RURA, Operators

Monitoring Parameter/Impacts	Mitigation/Enhancement Measures	Monitoring Indicators	Source of Data	Frequency	Responsibility
Water pollution	Maintenance and cleaning of vehicles, trucks and equipment should take place offsite and away from water sources and conservation areas	Project vehicles cleaning and maintenance records	Field visits and consultations	Daily	RISA, Contractor District Environment Officer RWB
	All the wastes should be collected in areas far from the surface water bodies such as streams, rivers, and lakes.	Distance between location of waste correction points and water body	Field visits and consultations	Daily	RISA, Contractor District Environment Officer RWB
	Recycling or proper disposal of all waste lubricants and oils	Quantity of waste recycled and/or safely disposed	Field visits and consultations	Daily	RISA, Contractor
Availability of latrines for workers	Constructor should provide appropriate latrine facilities for construction workers, with male and female latrines separated	Evidence of latrine facilities on site	Field visits and consultations	Daily	RISA, Contractor District Environment Officer RWB
Visual and Aesthetic Impacts, i.e., Alteration of visual and aesthetic quality of sites	Limiting vegetation clearance to the road reserve	Size of area cleared compared to the project foot prints in square meter	Field visits and measurement consultations	Quarterly	RISA, Contractor District Environment Officer
	Any areas that were cleared of vegetation but are not paved should be planted with vegetation indigenous to those areas.	Size of area cleared and restored with vegetation	Field visits and measurement	Quarterly	RISA, Contractor District Environment Officer
	Restoration of quarry and borrow pit sites opened by the contractor to as far as is possible to their original conditions	Size of the area restored in square meters Presence of an appropriate restoration plan	Field visits and measurement Documents review	Quarterly	RISA, Contractor District Environment Officer
	Proper storing and disposal of all wastes generated to appropriate gazetted areas with the help of REMA certified service providers	Quantity of waste generated and disposal sites	Field visits and consultations Waste storing and disposal records	Daily	RISA, Contractor District Environment Officer
Occupational Health and Safety Risk during installation	Only qualified and certified workers shall be employed to install, maintain, or repair any equipment onsite. Maintenance workers will be provided with adequate PPE to limit their risks to works accidents. Such PPE will include gloves, helmets, safety belts for working in heights, and any other as deemed necessary. A first Aid kit will be kept onsite whenever there are maintenance activities. This will help in administering the first help in an event of injury of any operation staff.	Qualification documents Number of PPE provided Number of First Aid kit on site	Accident log.	Bi-annually	RISA, Contractor

Monitoring Parameter/Impacts	Mitigation/Enhancement Measures	Monitoring Indicators	Source of Data	Frequency	Responsibility
Electric and Magnetic Fields	Evaluating potential exposure to the public against the reference levels developed by the international Commission on Non-Ionizing Radiation Protection (ICNIRP) and RURA guidelines on Guidelines on Minimum Requirements for Building Coverage /Distributed Antennas System Installation. Average and peak exposure levels should remain below the ICNIRP recommendation for General Public Exposure; Limiting public access to antennae tower locations as required by RURA guidelines	Reported cases of health effects associated with exposure to electric and magnetic, i.e., cancer, leukaemia.	ICNIRP recommendation for General Public Exposure; Public consultation and disclosure reports.	Bi-annually	RISA, MINICT, RURA

8.3. Evaluation of Results

The evaluation of results of environmental and social mitigation can be carried out by comparing baseline data collected in the planning phases with targets and post-project situations. Several indicators would be used to determine the status of affected people and their environment. To assess whether these goals are met, the SPIU coordinator will indicate parameters to be monitored, institute monitoring milestones and provide resources necessary to carry out the monitoring activities. The following are some pertinent areas and questions to be used to evaluate the ESMF implementation process, mitigation plans and performance.

- ✓ Were field staff and stakeholders (District staff mostly) trained in safeguards compliance?
- ✓ How many villages' projects were screened and which environmental and social risk categories assigned?
- ✓ How many consultation meetings with project beneficiaries and stakeholders organized in each District; who attended, what was discussed and what were the participants' concerns on the subproject? Were all concerns addressed, what is their current implementation status, if any?
- ✓ How many recorded grievance cases have been settled within one year?
- ✓ How many subprojects were screened?

8.4. Monthly and Quarterly Reviews

Quarterly and Monthly reviews will be undertaken by Project Environmental and Social specialists and are necessary to:

- ✓ Ensure that subprojects are complying with the processes established in the ESMF/ESMP;
- ✓ Ensure that subprojects are compliant with the conditions and requirements stipulated in the ESCP;
- ✓ Identify challenges and opportunities in order to improve programme performance; and
- ✓ Be able to determine the cumulative impacts of the Programme to establish attainment of the ESMF objectives.

The review session will produce quarterly and monthly E&S reports for every project site. It is wise to conduct these workshops every year to make timely improvement in the Programme performance. The quarterly and annual Review reports will be presented to the project steering committee on a quarterly and annual basis to ensure that the project activities are implemented in an environmentally sound manner.

8.5. Environmental and Social Auditing

The purpose of environmental and social safeguards auditing is to establish the level of compliance with World Bank environmental and social framework as well as national policy and regulatory requirements. The RDAP Management Team will be responsible for ensuring that environmental and social audits are carried out at mid-term review and project end. The audit reports will be shared with World Bank, REMA and participating Districts.

8.6. Monitoring Roles and Responsibilities

a) World Bank and AIIB

As stated above, the implementation of this project will be undertaken by RISA. The AIIB and World Bank, as financiers, will advise the client and conduct support missions as part of due diligence. It was agreed that the project will comply with the World Bank ESF, therefore, the Bank will clear all safeguards instruments prepared under the project. AIIB is a co-financer of the project, whereas the WB is a lead co-financier. Their roles will include monitoring and evaluation of the implementation of the ESMF.

The World Bank is the lead co-financier of this project, and its role will include review and conduct due diligence on the implementation of the ESMF within the budget of Project and to ensure that compliance is achieved as per the requirements of the ESMF.

b) RISA

RISA is the implementing agency of the project. It will provide overall coordination and management of the project and will work under a Project Steering Committee comprising the Ministries in charge of ICT, finance and local government. Regarding monitoring, the RISA SPIU will provide overall coordination in monitoring including coordinating training in collection and analysis of monitoring data for data collectors. The Project Monitoring and Evaluation staff will be primarily responsible for ensuring compliance to the monitoring framework. RISA will lead the team of trainers (Sector level trainers) in a district. They will undertake review of the monitoring reports emanating from fields during works implementation and will then submit these monitoring reports upon approval to REMA and the World Bank.

The critical role of RISA will include data analysis as well as maintenance of management information systems and all baseline data. Further, RISA will implement all the necessary modifications in the monitoring framework.

c) Rwanda Environment Management Authority (REMA)

REMA will inspect the compliance with environmental safeguards by the Project. REMA should monitor the reports on a quarterly basis. It will rely on a bottom-up feedback system by going through the monitoring reports and making regular site visits to inspect and verify for themselves the nature and extent of the impacts and the success of the mitigation measures.

d) Rwanda Development Board (RDB)

RDB was created by Law N° 53/2008 of 02/09/2008. It has a mission of improving the well-being of all Rwandans by fast-tracking development, catalyzing sustainable economic growth, and creating prosperity for all. This a one stop institution bringing together several government bodies in Rwanda focused at promoting investment in Rwanda. Initially the responsibility for reviewing and approving EIA reports was entrusted to REMA, this duty has now been transferred to Rwanda Development Board (RDB) where a department of EIA has been created and tasked with review and approvals of all EIA reports for proposed projects and programmes before they are approved for implementation. Under RDAP, RDB will review and clear EIA/ESMP and ensure compliance with conditions of approval.

e) Rwanda Development Bank (BRD)

The BRD SPIU is experienced in the implementation of World Bank-financed projects (e.g., Renewable Energy Fund, Rwanda Housing Finance Project and Social-Economic Inclusion of Refugees and Host Communities in Rwanda Project). BRD will monitor Environment and Social risks under subcomponent 1.1- Access to affordable smart devices Access to affordable smart devices.

f) Districts

Participating Districts will assist in mobilization of local communities in the project intervention areas for the adoption and ownership of the project activities. Through the district environmental officer, the district will monitor on daily basis the implementation of safeguards measures reflected in the safeguards documents.

9. INSTITUTIONAL ASSESSMENT, CAPACITY BUILDING AND TECHNICAL ASSISTANCE

9.1. Introduction

The effective implementation of this ESMF will require technical capacity in the human resource base of implementing institutions as well as logistical facilitation. The implementers need to understand inherent social and environmental issues and values to be able to clearly identify their indicators. While preparing this ESMF, an institutional assessment identified strengthening needs on social and environmental evaluation, screening, mitigation and monitoring.

9.2. Institutional Assessment and Capacity building

The overall project management will be the responsibility of RISA. At the site level, the project will be implemented by contractors and service providers with the support of districts.

RISA is in the process of recruiting staff for the Single Project Implementation Unit (SPIU). The SPIU Structure will include two ESF Staff: an Environmental Safeguards Specialist, already recruited, and a Social Safeguards Specialist to be hired later, both will be responsible for managing all environmental and social safeguards responsibilities. Given the moderate risks associated with the proposed project, two ESF Staff would be enough to manage E&S risks. However, considering the limited safeguards experience of the SPIU, it is recommended that training sessions incorporate aspects proposed in this framework especially on occupational health and safety will be provided. At the local level, Districts have environmental officers (DEO) and for some of them, it will be the first time to participate in a project complying with the ESF. Therefore, RISA will conduct training of District Environmental officers so that they can participate in project monitoring and due diligence at the site level and link with the Project E&S specialists. Depending on subprojects funded under the proposed project, RISA may recruit a short-term consultant to train and assist Project team and communities on environmental and social management during project identification, environmental screening and preparation of safeguards instruments as required.

9.3. Human Resource Capacity Requirements

RISA recently recruited an Environmental Safeguards Specialist with sufficient experience in overall safeguards issues during project implementation; another Social Safeguards Specialist is yet to be recruited. However, his capacity as well as the capacity of other SPIU staff, needs to be strengthened, especially for the new ESF/ESSs. For the purpose of this ESMF, capacity building should also target other actors at various levels. This includes, but is not limited to, District-level Trainers (who support the planning and implementation sub-project), the Proposal Review Committee (which includes Finance officers, Technical advisers, and M&E Officer, who support review and approval of village sub-projects, including through the use of the ESIA screening tool), and the users of the GRM, including M&E staff, and District Trainers. Training will be designed to enhance the skills on environmental and social impacts so that they are able to implement the proposed ESIA screening process, GRM, and mitigation measures appropriately. The proposed trainings should cover:

- ✓ Overview on project design, WB Environmental and Social Framework and Rwanda safeguards regulations;
- ✓ Overview of the screening process and requirements;
- ✓ Rationale for using screening form and Environmental and Social Checklists;
- ✓ Identification of environmental and social impacts and significance levels according to World Bank and the Government of Rwanda;
- ✓ GRM operations and reporting.

The objective of the environmental and social safeguards trainings is to equip these technical staff with the necessary skills to implement the E&S instruments in line with this ESMF and ensure that

the project activities are socially and environmentally sustainable. SPIU staff will conduct these trainings, in consultation with World Bank Environmental and Social Safeguards Specialists.

9.4. Technical Capacity Enhancement

Mobilization meetings, awareness campaigns and trainings on environmental and social safeguards will be required for the following institutions and personnel: SPIU staff, Local Government Authorities (District environment officer, JADF officer, District Social protection officer, Sector Social affairs, Executive Secretary of Cells and SEDO) in Districts covered by the project, Community based facilitators (CBF); Site specific Grievance Redress Committees (GRCs); and Village members.

10. INSTITUTIONAL AND IMPLEMENTATION ARRANGEMENTS AND ESMF BUDGET

The Environmental and Social Management framework implementation and budgeting process presented under this section considers institutional arrangements required to implement the environmental actions and an estimated cost for its implementation.

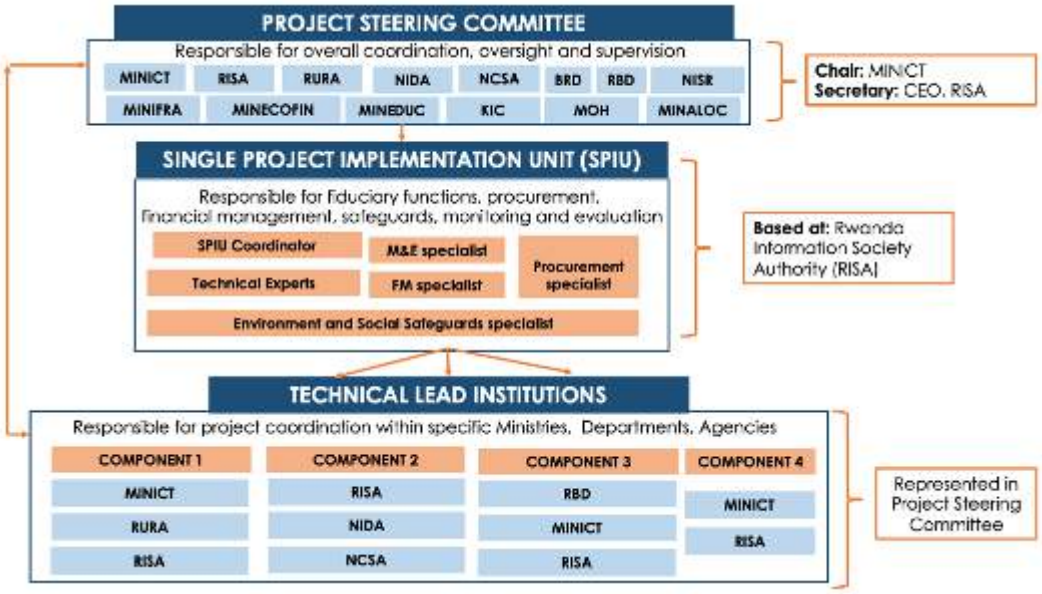
10.1. Institutional and Implementation Arrangements

A Single Project Implementation Unit (SPIU) will be set up and operationalized within the Rwanda Information Society Authority (RISA) through the project preparation advance (PPA). A PPA in the amount of $4.1 million has been approved, which is being leveraged to set up the SPIU, hire the specialists who will conduct a series of preparatory studies. The SPIU (housed within RISA) will oversee all project-related fiduciary functions, including financial management (FM), procurement, M&E, environmental and social commitments, etc. The SPIU will be staffed with requisite experts. The SPIU structure aligns with guidelines provided by the Ministry of Public Service and Labour (MIFOTRA). The project will ensure that technical staff transfer and provides hands on training to ministries staff. This approach would help to ensure sustainability at project close closure.

A series of Ministries/Agencies will support the SPIU at RISA with respect to project sub-components. This includes providing technical inputs, supporting quality assurance, and on-the-ground implementation for various activities financed. A main technical counterpart or lead per sub-component has been identified, which will each chair a sub-component specific technical committee, with one committee established per sub-component, which is also envisioned to include key MDAs critical to the successful delivery of sub-component related activities and deliverables. These arrangements are mapped out in Figure 13. Memorandums of understanding (MoUs) may be established between RISA and participating MDAs, where required, at the start of the project, and roles and responsibilities will be captured in the project implementations manual (PIM). RISA will maintain the role as central coordinator and convener of all committee meetings. The BRD will, however, oversee implementation of sub-component 1.1, related to smart devices affordability, in close collaboration with RISA, based on a subsidiary agreement where it will act as a financial intermediary.

A Project Steering Committee (PSC) will be set up to provide strategic oversight and governance for the project. The PSC will be chaired by MINICT and the Chief Executive Officer (CEO) of RISA will be the Secretary. Its members will include representatives of the main technical lead institutions for each sub-component (RURA, NIDA, NCSA, and BRD), MDAs expect to play a consistent role across project components to provide technical inputs on implementation. In addition, the PSC will also include representatives from the private sector through the Private Sector Federation-ICT Chamber and civil society to facilitate continuous dialogue with the private sector and end beneficiaries (see Figure 8). The mandate of the PSC will include (i) responsibility for review of project progress, (ii) provision of strategic guidance and recommendations over project implementation, and (iii) coordination of the involvement of the relevant Government agencies in the project. The Terms of Reference for the PSC will be added to the PIM as an Annex.

Figure 15: Project implementation arrangements



10.2. Results Monitoring and Evaluation Arrangements

The SPIU will be responsible for monitoring achievement towards the PDO and intermediate indicator, based on the Results Framework detailed in section 8. It will do so by ensuring that the SPIU is staffed with an M&E expert, tasked with coordinating M&E centrally, and by ensuring that an adequate M&E system is established based on the M&E plan detailed in section VIII. The status of project implementation will be documented in progress reports prepared on a semi-annual basis and submitted to the WB for review. These will include updates on results, disbursements, FM, M&E, procurement etc., and social as well as a work plan.

Built-in systems for tracking results and satisfaction surveys will be leveraged to support citizen engagement and solicit beneficiary feedback. Related tools will be embedded directly in project delivery to ensure feedback in real time, using digital tools and systems to register beneficiaries and report their feedback (e.g., using tablet-based or rapid mobile/short message service survey tools). Beneficiary focus groups will also be leveraged to inform design and track progress over time.

Table 22: Role and responsibilities in the ESMF implementation

No	Activity	Responsible institutions
1	Sub-project brief preparation and ToRs (if required)	RISA through its hired consultant
2	Sub-project Screening and screening Checklist	RISA and participating Districts
3	Preparation of terms of reference	RISA, World Bank and RDB
4	Approval of terms of Reference	RDB and the World Bank
5	ESMP study (if relevant)	Consultant hired by RISA
6	Review of ESMP report	RISA Participating Districts Rwanda Development Board (RDB) World Bank
7	Approval of ESMP and Issuing completion Certificate	World Bank Rwanda Development Board.
8	Implementation of the ESMF	RISA and participating Districts
9	Implementation of ESMPs	RISA Participating Districts REMA
10	Monitoring of safeguards implementation	RISA and Participating Districts REMA World Bank

10.3. Disclosure of ESMF

Following its preparation by the RISA/MINICT and clearance by the World Bank, the RDAP ESMF will be disclosed by making copies available at the MINALOC head office, Project website and to local government agencies and other stakeholders. The site specific ESIA or ESMP reports will also be disclosed by making copies available at MINALOC head office, Project website, District headquarters, District websites, local government agencies, REMA, and other stakeholders of the RDAP. The Government of Rwanda will also authorize the World Bank to disclose this ESMF electronically through its external website.

10.4. ESMF Implementation budget

The budget for the implementation of this ESMF will come from project budget and will mainly consist of the preparation of safeguards tools. The cost for mitigation measures will be included in the ESIAs or ESMPs. The table below show the estimated cost for the implementation of the ESMF for the proposed project.

Table 23: Estimated budget for the implementation of ESMF

Item	Unit	Quantity	Unit Cost (US $)	Total Cost (US $)
Preparation of safeguards instruments				
ESMPs (where relevant)	Study	30	5,000	150,000
Subtotal 1				**150,000**
Capacity building				
Training of project beneficiaries and stakeholders and awareness	Training sessions	30	5,000	150,000
Subtotal 2				**150,000**
Project Monitoring				
SPIU salaries[26]	Man-month	240	1200	288,000
SPIU staff mission allowances[27]	Missions	240	50	12,000
Subtotal 3				**300,000**
Environmental and Social Audits				
Consultants	Study	1	50,000	50,000
Subtotal 4				**50,000**
Total				
Contingency (5%)				**21,100**
Grand Total				**671,100**

The total cost for ESMF implementation, including safeguards documents preparation if required, monitoring of ESMPs, capacity building, auditing and workshops for unit performance review is estimated at US $ **647,100**. It assumed that all subprojects environmental studies in a district can be compiled into one report and one overall environmental audit will be conducted.

[26] One Environmental Safeguards and one Social safeguards specialist are planned, Environmental Specialist is already on board
[27] Environmental and social safeguards specialists will conduct monitoring mission at least once a month

11. CONCLUSION AND RECOMMENDATIONS

This Environmental and Social Management Framework (ESMF) has been prepared in order to guide project planners, implementers and other stakeholders to identify and mitigate environmental and social impacts in the context of the Rwanda Digital Acceleration Project. The ESMF provides project implementers with an environmental and social screening process that will enable them to identify, assess and mitigate potential environmental and social sub-projects' impacts, in accordance with Government of Rwanda Environmental law and the World Bank Environmental and Social Framework and EHS guidelines. The implementation of the project will have positive and negative environmental and social impacts.

The negative impacts will be mitigated following the ESMF guidelines. Successful implementation of this ESMF will depend to a large extent on the active participation of different key stakeholders (MINICT, REMA, RDB, RISA, Districts, private operators, academics, researchers and local communities). To be successful it is recommended that:

- Environmental and social awareness and education for the key stakeholders and affected communities be an integral part of the ESMF implementation.
- SPIU staff, District Environmental Officers and Sector land managers should be adequately trained to implement the screening process, and where required to help develop and to implement appropriate Environmental and Social Management and Monitoring Plans. They should be empowered to adequately administer the ESMF and should be given the necessary support and resources to ensure effective implementation.
- This ESMF should be regularly updated to respond to changing local and environmental conditions and should go through the national approval processes, reviewed and approved. It should also incorporate lessons learned from implementing various Components of the project activities.

REFERENCES

1. Ministry of Environment. 2019. Rwanda National Environment and Climate Change Policy, 59p.
2. MINICT, 2017. ICT Sector Strategic Plan (2018-2024).
3. RLMUA, 2019. Rwanda National Land Policy.
4. Rwanda Governance Board's 2018 Governance Scorecard Report
5. Premature. 2018. Law on Environment. Official Gazette no Special of 21/09/2018.
6. FAO. 2017. Livestock Solutions for Climate Change. 8p.
7. World Bank Group. 2017. The World Bank Environmental and Social Framework, 106p.
8. REMA. 2017. Rwanda State of Environment and Outlook Report, Achieving Sustainable Urbanization, 252p.
9. Ministry of Environment. 2013. Law governing on land
10. MoE, 2018. The Law (No. 48/2018 of 13/08/2018) on Environment determining the modalities for protecting, conserving and promoting the environment;
11. GoR, 2017. National Strategy for Transformation (2017-2024) _NST1;
12. National Institute of Statistics of Rwanda, November 2018. EICV5
13. MIFOTRA, 2018. Law N° 66/2018 du 30/08/2018 Regulating Labour in Rwanda;
14. MoE, 2019. Ministerial Order Nº 001/ 2019 of 15/04/2019 establishing the list of projects that must undergo environmental impact assessment, instructions, requirements and procedures to conduct environmental impact assessment
15. REMA, 2006. General guidelines and Procedure for Environmental Impact Assessment.
16. World Bank, 2005. Environmental and Social Framework for World Bank Projects with Multiple Small-scale subprojects. Africa Region.
17. Environmental Agency. 2002. Noise Management at Intensive Livestock Installations, 24p.
18. World Bank, 1999. Manual of Environmental Assessment: Policies, Procedures and Questions Sectorial
19. World Bank, 1998. Pollution Prevention and Abatement Handbook: Towards Cleaner Production. Washington, D.C
20. UNDP 2011 Human Development Report; Sustainability and Equity: A Better Future for All; available at
21. http://www.us.undp.org/content/dam/undp/library/corporate/HDR/2011GlobalHDR/English/HDR_2011_EN_Complete.pdf
22. World Bank environmental and social framework, 2017. Available at http://documents.worldbank.org/curated/en/383011492423734099/pdf/114278-WP-REVISED-PUBLIC-Environmental-and-Social-Framework.pdf
23. T. Origuchi, T. Sawada, and S. Nishi, "Formulation of Guidelines for ICT Eco-efficiency Evaluation at the Japan Forum on Eco-Efficiency," NTT Technical Review, Vol. 5, No. 3, pp. 18–24, 2007. https://www.ntt-review.jp/archive/ntttechnical.php?contents=ntr200703018.pdf
24. Y. Takeshita, T. Origuchi, M. Yuito, T. Maeda, A. Ishikawa, T. Sawada, and S. Nishi, "Environmental Impact Assessment System for ICT Services—Development and Application," NTT Technical Review, Vol. 4, No. 3, pp. 17–21, 2006. https://www.ntt-review.jp/archive/ntttechnical.php?contents=ntr200603017.pdf
25. World Bank HOW-TO NOTES Feedback Matters: Designing Effective Grievance Redress. Mechanisms for Bank-Financed Projects. Part 1: The Theory of Grievance Redress.

ANNEXES

Annex 1: List of Consulted People

#	Name	Gender	Institution	Position	Phone number	Email
1	Habamenshi Didace	M	BRD	E&S Specialist	0788613065	didacehq@yahoo.fr
2	Eddy Sebera K.	M	Maraphone	Director General	788306168	eddys@maraphones.com
3	Murera Eric	M	Enviroserve	Recycling Manager	0787110267	eric@enviroserve.ae
4	**John Kagarama**	M	BDF	Business Development and Advisory Services Manage	0788308599	j.kagarama@bdf.rw
5	**Akimpaye Beatha**	F	REMA	Division Manager-Compliance		bakimpaye@rema.gov.rw
6	Theophile Dusengimana	M	MOE	Environment and Climate change Specialist	0788799280	tdusengimana@environment.gov.rw
7	**Karara Jean De Dieu**	M	RDB	Environmental Review Specialist	0788643982	jdkarara@gmail.com
8	MUKUNZI Emile	M	Bugesera	Environment Mgt Officer	0788513177	emukunzi74@gmail.com
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Annex 2: Environmental and Social Screening Matrix;

Sl. No	Screening Questions	Yes	No	Comments (In the case select "yes", provide detailed information)
1	**Project's siting:** Define project's boundaries and area of influence			
	Is the project site adjacent to or within any of the following sensitive receptors?			
	Natural habitats and/ or legally protected areas (wetlands, forests, estuary, buffer zones, nature reserves); if yes, is there possibility of a critical habitat present?[28]			
	Cultural heritage site			
	Fragmentation of habitat of flora and fauna (Avifauna and mammalian fauna)?			
	Is the proposed site located on agricultural land?			
	Is the proposed site located on area used by vulnerable groups			
	Unique or aesthetically valuable land			
	Is the proposed site located nearby airport			
	Is the proposed site located in migratory route of birds			
2	**Potential Environmental Impacts**			
	Impacts on natural resources that constitute livelihoods of community (e.g. grazing or hunting grounds)?			
	Disfiguration of landscape?			
	Is there potential for landslide and soil erosion impacts?			
	Increase in waste generation?			
	Waste water from camping sites to be directly discharged to the surface water resources or not?			
	Construction waste directly discharged to the surface water?			
	Other potential biodiversity impacts (specify)?			
	Loss or destruction of unique or aesthetically valuable land			
	Disturbance of large areas due to material quarrying			
	Disposal of large quantities of construction spoils			
3	**Potential Community and Occupational Health and Safety Impacts**			
	Will the construction works disturb other commercial/community/residential activities?			
	Will the project create major noise/vibration?			
	Closest residence to the solar panel			
	Will it create dust problem around the sites?			
	Will project's construction cause disturbance to the transportation in the project's site?			
	Will batteries be removed/disposed (lead-acid or nickel-cadmium batteries) from battery-powered or battery-backup items?			
	Will there be social conflict in case of workers hired from other region?			
4	**Potential Social Impacts**			
	Permanent land acquisition			
	Temporary land acquisition			
	Type of land Private land Public land Government land Leasehold land			
	Type of land procurement Voluntary land donation (VLD)29 Involuntary acquisition Negotiation			
	Loss of productive land			

[28] Critical habitat is defined based on global good practice as a subset of both natural and modified habitat that deserves particular attention. Critical habitat includes areas with high biodiversity value that meet the criteria of the World Conservation Union (IUCN) classification, including habitats of significant importance for required for critically endangered or endangered species as defined by the IUCN Red List of Threatened Species; habitats of significant importance for endemic or restricted-range species; habitats supporting globally significant concentrations of migratory species and /or congregator species; areas with unique assemblages of species or which are associated with key evolutionary processes. Primary Forests or forests of High Conservation Value shall be considered Critical Habitats. This includes HCV forests. HCV areas do not directly correspond with definitions for modified, natural, and critical habitat. The HCV Resource Network, an internationally recognized group, provides information and support on the evolving usage of HCV to ensure a consistent approach. https://www.hcvnetwork.org/.

[29] Voluntary land donation is strictly defined in international practice as the ceding of a property by an owner who is: a) fully informed; and b) can exercise free will, i.e., can refuse to sell or to donate. "Fully informed" means that the owner has complete information regarding the proposed activity and its impacts, its land requirements and its alternate activity sites, as well as his or her rights to compensation. The owner has also been provided with sufficient time to consider his or her disposition of the property, and the owner has knowingly rejected the right to renege on his or her initial decision. "Free will" means that the owner can reject the possibility of giving up his or her land.

Sl. No	Screening Questions	Yes	No	Comments (In the case select "yes", provide detailed information)
	Impacts on livelihoods/ economic displacement?			
	Is there any household need to be relocated?			
	Is the resettlement site environmentally and/or culturally sensitive?			
	Project's construction will cause any damage to the existing local roads system?			
	Will soil excavation during project's construction cause soil erosion?			
	Will project need to open new access roads?			
	Will project cause encroachment on historical/cultural/religious areas?			
	Acquisition of private land leading to loss of shelter and livelihood			
	Involuntary land taking resulting in loss of income, livelihood, sources of livelihood, loss of access to common property resources and/or private residential and/or property resources			
	Adverse impact to women including economic and safety concerns			
	Possible conflicts with and/or disruption to local communities			
	Significant issues raised by the stakeholders during consultation			
	Uncontrolled human migration into the area, made possibly by the subproject activities			
	Disproportionate impacts on the poor, children and other vulnerable groups			
	Community health and safety risks due to the transport, storage, and use and/or disposal of materials likely to create physical, chemical and biological hazards			
	Risks to community safety due to both accidental and natural hazards during project construction and operation			

Is the sub-project found in the list of project that require ESIA or partial ESIA as per the Ministerial Order Nº001/2019 of 15/04/2019 establishing the lists of projects that must undergo environmental impact assessment, instructions, requirements and procedures to conduct environmental impact assessment ?

If the answer to any of the questions is "yes", Environmental and Social Assessment) is required

If the answer to any of the questions related to land acquisition is "yes", A resettlement Plan is required

DECISION MAKING:

Refer to Ministerial Order Nº001/2019 of 15/04/2019 and donor classification criteria

- ESIA required :…….(✓Yes)…… (✓No)
- Resettlement Plan required: ……. (✓Yes)…….. (✓No)

CERTIFICATION

We certify that we have thoroughly examined all the potential adverse impacts of this sub-project as described in the sub-project brief. To the best of our knowledge, the associated safeguard instruments (ESIA, ESMPs, RAP) if any, will be adequate to avoid or minimize all adverse environmental and social impacts.

Social & Environmental Specialist

Name:

Phone Number

Signature:

Annex 3: Sample Scoping Matrix

Province:	**District:**	**Date:**
Project Name:	**Location:**	

Issue	Degree*	Comment
Land Resources		
Worksite/Campsite Areas		
Excavation Areas		
Disposal Areas		
Others		
Water Resources & Hydrology		
Sources of Water for Construction		
Drainage Issues		
Others		
Biological Resources		
Special Trees/Vegetation around		
Protected Areas directly affected		
Others		
Air Quality & Noise		
Special issues (e.g. quiet zone for hospital)		
Residential Areas		
Socio-Economic & Cultural		
Involuntary Resettlement**		
Graveyards and Sacred Areas affected		
Cultural Resources		
Population affected/provided access		
Others		

*Degree: N = Negligible or Not Applicable
L = Low
M = Moderate
H = High

**If yes, indicate # of persons likely to be affected and nature of the effect

Annex 4: Sample forms for Alternative comparison and ranking

- **Comparison of alternatives**

	Alternative	Merit(advantages)	- Demerit (disadvantages)
1	Option 1		-
2	Option 2	-	
3	Option 3	-	-
4	No-project option	-	-

- **Ranking of alternatives**

Evaluation criteria	Option 1	Option 2	Option 3	Without Projects	Remark
Achieving Development Goal					
Development technology					
Construction Cost					
Operational Cost					
Operation Requirement					
Climate Change Adaptation					
Environmental Impact					
Social impact					
Overall					

Annex 5: Impact identification checklist

Item	Rating in each phase			Impact predicted and Reason of the rating (A to D) in each phase
	Planning	Construction	Operational	
Pollution control / Public Nuisances				
Air pollution				
Water pollution				
Solid Waste and/or Industrial Discharge				
Soil Contamination				
Noise and vibration				
Ground subsidence				
Odor				
Sediment				
Natural Environment				
Geographical Conditions				
Geological Conditions				
Soil Erosion				
Fauna and Flora				
Groundwater				
Water Body (River, Lakes, etc)				
Natural/Ecological Reserves and Sanctuaries				
Local Climate				
Global warming				
Social Environment				
Involuntary Resettlement				
Poor, indigenous, or ethnic people				
Local economies (employment, livelihood, etc.)				
Land use and utilization of local resources				
Water Use and water users				
Existing social infrastructures and services				
Social institutions and community				
Misdistribution of benefits and damages				
Local conflicts of interest				
Cultural heritage				
Landscape				
Gender and Children's rights				
Infectious diseases such as HIV/AIDS				
Working conditions (including occupational				
Public Hygiene				
Accident and Hazard				

Annex 6: Sample Impact evaluation and significance matrix

Evaluation matrix

Nature or Status of the Impact: The type of effect the activity would have on the environment		
Status		Description
Positive:		a benefit to the holistic environment
Negative:		a cost to the holistic environment
Neutral:		no cost or benefit
Duration of the Impact: The lifetime of the impact		
Score	Duration	Description
1	Short term	Less than 2 years
2	Short to medium term	2 – 5 years
3	Medium term	6 – 25 years
4	Long term	26 – 45 years
5	Permanent	46 years or more
Extent or Scale of the Impact: The distance from source that impacts may be experienced		
Score	Extent	Description
1	Site specific	Within the site boundary
2	Local	Affects immediate surrounding areas
3	Regional	Extends substantially beyond the site boundary
4	National	Affects country
5	International	Across international borders.
Reversibility of the Impact: To what degree its influence on the relevant environment can be negated.		
Score	Reversibility	Description
1	Completely reversible	Reverses with minimal rehabilitation & negligible residual affects
3	Reversible	Requires mitigation and rehabilitation to ensure reversibility
5	Irreversible	Cannot be rehabilitated completely/rehabilitation not viable
Intensity or Magnitude of the Impact: Severity of the negative and magnitude of positive impacts		
Score	Severe/beneficial effect	Description
1	Low	Little effect - negligible disturbance/benefit
2	Low to moderate	Effects observable - environmental impacts reversible with time
3	Moderate	Effects observable - impacts reversible with rehabilitation
4	Moderate to high	Extensive effects - irreversible alteration to the environment
5	High	Extensive permanent effects with irreversible alteration
		The Probability of the Impact: Describes the likelihood of the impact actually occurring
Score	Rating	Description
1	Unlikely	Less than 15% sure of an impact occurring
2	Possible	Between 15% and 40% sure of an impact occurring
3	Probable	Between 40% and 60% sure that the impact will occur
4	Highly Probable	Between 60% and 85% sure that the impact will occur
5	Definite	Over 85% sure that the impact will occur
The Consequence (C)		= Magnitude/Intensity (M/I) + Extent (E) + Duration (D) + Reversibility (R)
The Significance (S)		= Consequence (C) x Probability (P)

Sample Significance Rating

Score out of 100	**Significance**
1 to 20	Low
21 to 39	Moderate to Low
40 to 60	Moderate
61 to 79	Moderate to high
80 to 100	High

Annex 7: Template for Environmental and Social Management Plan

Phase	*Activity*	*Adverse impact*	*Mitigation measure*	*Implementation schedule*	*Responsibility*	*Occurrence*	*Estimated cost*
Planning & Construction	Earthwork for road construction	Soil erosion	Stockpile excavated material and use it in backfilling	Construction phase	Contractor, Supervising firm,	Ongoing	Construction budget
	…….	…….	…….	…….	…….	…….	…….
Operation							

Annex 8: Template for Environment and Social Monitoring Plan

Activities	Parameters	Indicators	Measurement methods	Occurrence / Frequency	Responsible person/ Institution	Estimated Budget

Annex 9: Costing template at ESMP level

Adverse Impact	Proposed mitigation or monitoring measure	Activities	Unit	Quantity	Unit Price	Total price
Impact 1	Measure 1	Activity 1				
		Activity 2				
		Activity 3				
Impact 2	……	……	……	…….	……	…….

Annex 10: E&S Costing template at Project level

SN0	Description of activity/ item	Unit	Quantity	Unit Price (Frw)	Total Price (Frw)
1	Site specific ESMP trainings (including materials, logistics, venue)	Workshop	5	250,000	1,250,000
2	Water quality assessment	Samples	20	100,000	2,000,000
…..	……	…….	…….	…….	…….
Total					**78,800,500**

Annex 11: OHS training Matrix

Training course	Unskilled labour	Skilled labour	Frontline supervisors	Middle management	Senior manager	Drivers	Safety men
Intro to the OHS							
Emergency response							
Hazards& controls							
Foreman responsibilities							
Managing safely							
Managing rule breaking							
Fire prevention							
First aid							
Confined space entry							
Back safety/ lifting safety							
PPE							
Fall protection							
Small/ power tools							
Hand safety							
Scaffold construction							
Fork lift operations							
Hazard recognition							
Excavation safety							
Health& hygiene							
HIV/AIDS and Communicable disease awareness training							
Environmental awareness							
Ladder safety							
Excavation safety							
Risk assessment							
Hazard registers							
Lifting operations							
Safe use of chemicals							
Accident prevention							

Key: x= compulsory

****=selected personnel***

Training will be provided by ESHS manager and any outsourced qualified experts and sub consultant hired by EPC contractor. The number of people to be trained for each topic will be known after recruitment of labours and screen them so as to define the training appropriate for each category depending on the expertise and knowledge.

Annex 12: Sample Terms of Reference for Environmental and Social Impact Assessment

These Terms of Reference (TOR) are applicable to development projects involving Digitization acceleration projects. The ToRs outline the aspects of an Environmental and Social Impact Assessment (ESIA) which when thoroughly addressed will provide a comprehensive evaluation of the sites, in terms of predicted environmental impacts, needed mitigation strategies, potentially viable alternatives to the development proposed and all related legislation.

Planed Areas: Issues such as slope stability, impact on drainage patterns, property etc. should be examined. The path of the corridor cleared of vegetation for transmission lines, substations and Hydro power plants should be the major focus of this exercise.

Rivers/ Riverine Areas: Issues such as erosion and siltation, macro invertebrate habitat destruction, disrupting of regular flow of the river and the possible impact of upstream activities on the area ecosystems e.g. wetlands etc.

Distinct Terrestrial Forest Types: Issues relating to the specific growth form of the vegetation, the carrying capacity, the successional stage of the forest and the projected level of disturbance which the forest can withstand.

Sites located within and adjacent to areas listed as protected or having protected species:

The main issue(s) of concern will be in part determined by the local legislation as well as Government of Rwanda (GoR) responsibilities under applicable international conventions. The impact of the development on the specific sensitivities of the protected area should be highlighted. Mitigation of impacts should assess if the post mitigation status would be acceptable in the protected area context. Alternative sites should be rigorously evaluated. Socio–Economic issues such as land acquisition and impact of these conveyances on commerce in the community should be closely examined.

The Environmental Impact Assessment should:

1) Provide a complete description of the corridor proposed for development. This should include a description of the main elements of the development, highlighting areas to be reserved for construction, the creation of verges and other green areas.
    - Identify the major environmental and social issues of concern through the presentation of baseline data which should include social and cultural considerations. Assess public perception of the proposed development.
    - Outline the Legislations and Regulations relevant to the project.
    - Predict the likely impacts of the development on the described environment, including direct, indirect and cumulative impacts, and indicate their relative importance to the design of the development's facilities.
    - Identify mitigation action to be taken to minimize adverse impacts and quantify associated costs.
    - Design a Monitoring Plan which should ensure that the mitigation plan is adhered to.
    - Describe the alternatives to the project that could be considered at that site

To ensure that a thorough Environmental and Social Impact Assessment is carried out, it is expected that the following tasks be undertaken:

1. Executive summary

    - Concisely discusses significant findings and recommended actions.

2. Legal and institutional framework
    - Analyses the legal and institutional framework for the project, within which the environmental and social assessment is carried out, including the issues set out in ESS1, paragraph 264.
    - Compare the Borrower's existing environmental and social framework and the ESSs and identify the gaps between them.
    - Identifies and assesses the environmental and social requirements of any co-financiers.
    - Outline the pertinent regulations and standards governing environmental quality, safety and health, protection of sensitive areas, protection of endangered species, siting and land use control at the national and local levels. The examination of the legislation should include at minimum, legislation such as the land law, Environmental protection and conservation law, expropriation law, the Public Health Act, the urban Planning Act, Building Codes and Standards, Development Orders and Plans and the appropriate international convention/protocol/treaty where applicable.

3. **Description of the subproject**
    - Concisely describes the proposed subproject and its geographic, environmental, social, and temporal context, including any offsite investments that may be required (e.g., dedicated pipelines, access roads, power supply, water supply, housing, and raw material and product storage facilities), as well as the project's primary suppliers.
    - Through consideration of the details of the project, indicates the need for any plan to meet the requirements of ESS 1 through 10.
    - Includes a map of sufficient detail, showing the project site and the area that may be affected by the project's direct, indirect, and cumulative impacts.

4. **Baseline data**

This task involves the generation of baseline data which is used to describe the study area as follows:

- Physical environment
- Biological environment
- Socio-economic and cultural constraints.

It is expected that methodologies employed to obtain baseline and other data be clearly detailed.

Baseline data should include:

(A) Physical

- A detailed description of the existing **geology** and **hydrology.** Special emphasis should be placed on storm water run-off, and drainage patterns. Any slope stability issues that could arise should be thoroughly explored.

- **Water quality** of any existing rivers, ponds, streams, or coastal waters in the vicinity of the corridor or substation. Quality Indicators should include but not necessarily be limited to suspended solids, turbidity, oil, and grease.
- Climatic conditions and air quality in the area of influence including particulate matter wind speed and direction, precipitation, relative humidity and ambient temperatures,
- Obvious sources of pollution existing and extent of contamination.

(B) Biological

- Present a detailed description of the flora and fauna (aquatic and terrestrial) in the proposed corridor of influence, with special emphasis on rare, endemic, protected or endangered species. Migratory species should also be considered. There may be the need to incorporate microorganisms to obtain an accurate baseline assessment. Generally, species dependence, niche specificity, community structure and diversity ought to be considered.

(C) Socio-economic & cultural

- Present and projected population; present and proposed land use; planned development activities, issues relating to squatting and relocation, community structure, employment, distribution of income, goods and services; recreation; public health and safety;

- Cultural peculiarities, aspirations and attitudes should be explored. The historical importance of the area should also be examined. While this analysis is being conducted, it is expected that an assessment of public perception of the proposed development be conducted. This assessment may vary with community structure and may take multiple forms such as public meetings or questionnaires.

5. Identification of Potential Environmental and Social Impacts

Takes into account all relevant environmental and social risks and impacts of the project. This will include the environmental and social risks and impacts specifically identified in ESS2 – 8, and any other environmental and social risks and impacts arising because of the specific nature and context of the project, including the risks and impacts identified in ESS1, paragraph 28.
Identify potential impacts as they relate to, (but are not restricted by) the following:

- public health and safety, risk assessment, change in drainage pattern flooding potential and aesthetics;
- landscape impacts of excavation and construction
- loss of natural features, habitats and species by construction and operation
- noise, air pollution, pollution of potable, coastal, surface and ground water - Socio-economic and cultural impacts.
- Loss of land and assets due new transmission lines construction and operation
- Distinguish between significant positive and negative impacts, direct and indirect, long term and immediate impacts.
- Identify trigger, avoidable reversible and irreversible impacts.

6. Environmental and Social Management Plan

- Identifies mitigation measures and significant residual negative impacts that cannot be mitigated and, to the extent possible, assesses the acceptability of those residual negative impacts.
- Identifies differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable.
- Assesses the feasibility of mitigating the environmental and social impacts; the capital and recurrent costs of proposed mitigation measures, and their suitability under local conditions; the institutional, training, and monitoring requirements for the proposed mitigation measures.
- Specifies issues that do not require further attention, providing the basis for this determination;
- Design a plan to monitor implementation of mitigation or compensation measures and project impacts during and post construction and decommissioning of the power lines.

7. **An Environmental and Social Monitoring Plan**

An outline **monitoring** program should be included in the ESIA, and a detailed version submitted to RDB's e-portal system for review and approval and prior to the commencement of the development. At the minimum, the monitoring program and report should include:

- The activity being monitored, and the parameters chosen to effectively carry out the exercise.
- The methodology to be employed and the frequency of monitoring.
- The sites and project components being monitored. These may in instances, be predetermined by the RISA and should incorporate a control site where no impact from the development is expected.

8. Appendices

- List of the individuals or organizations that prepared or contributed to the environmental and social assessment.
- References—setting out the written materials both published and unpublished, that have been used.
- Record of meetings, consultations, and surveys with stakeholders, including those with affected people and other interested parties. The record specifies the means of such stakeholder engagement that were used to obtain the views of affected people and other interested parties.
- Tables presenting the relevant data referred to or summarized in the main text.
- List of associated reports or plans.
- Terms of reference.

Annex 13: Sample Grievance Information Form

Date/Time received:	**Date: (dd-mm-yyyy)** **Time:** □ **am** □ **pm**	
Name of Grievant:		□ You can use my name, but do not use it in public. □ You can use my name when talking about this concern in public. □ You cannot use my name at all.
Company (if applicable)		□ You can use my company name, but do not use it in public. □ You can use my company name when talking about this concern in public. □ You cannot use my company name at all
Contact Information:	**Phone:** **Email address:** **Address:** (Kindly indicate the preferred method of communication)	
Details of grievance: (Who, what, when, where)	□ One-time incident/complaint □ Happened more than once (indicate how many times): _____ □ Ongoing (a currently existing problem)	

_____ _____

Grievant/Complainant Signature (if applicable) **Date (dd-mm-yyyy)**

_____

_____

Signature- Project personnel (to confirm receipt only) **Date (dd-mm-yyyy)**

For PIU use only:

Grievance No: _____ **Grievance Category:**

□ Problems during material transport □ Smell

□ Blocked road access □ Problem with project staff

□ Dust □ Other (specify): _____

□ Noise

Grievance Owner/ Department: _____

Annex 14: Sample Grievance Acknowledgement Form (GAF)

The project acknowledges receipt of your complaint and will contact you within 10working days.

Date of grievance/complaint: (dd/mm/yyyy)	
Name of Grievant/Complainant:	
Complainant's Address and Contact Information:	
Summary of Grievance/Complaint: (Who, what, when, where)	
Name of Project Staff Acknowledging Grievance:	
Signature:	
Date: (dd/mm/yyyy)	

Annex 15: Grievance Redress Registration Monitoring Sheet

No	Date	Name	Sex	Contact	Address	Institution/ Organization	Complaint detail	Feedback	Date of closure
1.									
2.									
3.									

Annex 16: Chance find procedures under for the projects

1. INTRODUCTION

Both national regulations and World Bank Environmental and Social Standards especially, ESS8: Cultural Heritage, recognize the importance of cultural heritage for current and future generations. Though site specific location are not yet know, the project design suggest that there will be no impacts on Physical cultural Resources. However, the excavation for laying fiber optics could have an impact on unknown cultural heritage such us grave sites and sacred sites.

Therefore, the purpose of this chance find procedures is to provide RISA, its contractors and subcontractors with the appropriate response guidelines to be applied if previously unknown cultural heritage is encountered. This Chance Find Procedure takes into consideration international best practice such WB ESS8, 1972 UNESCO Convention on the Protection of World Cultural and Natural Heritage (World Heritage Convention) and the Rwandan policy on cultural resources protection. Thus, Chance Find Procedures (CFPs) are part of RISA E&S instruments that may have relevance during Project implementation. The Procedure applies to potential cultural heritage objects, features or sites identified as a result of construction activities in the project area and its surroundings.

2. CHANCE FIND DEFINITION

A chance find procedure is a project-specific procedure that outlines the actions to be taken if previously unknown cultural heritage is encountered. It is also defined as potential cultural heritage (or paleontological) whether movable or immovable objects, sites, structures, group of structures and natural features and landscapes that have archaeological, historical, religious and other cultural significance. Cultural heritage resources may include:

- Artefacts, whole or partial, such as ceramic sherds, stone items, glass fragments, bone, shell, metal, textiles, and plant and animal remains
- Features associated with human occupation such as trash dumps, middens, hearths, structural remains.
- Prehistoric or historic human remains found in formal graves, cemeteries, or as an isolated occurrence.

Non-Cultural Heritage Chance Finds may include modern objects, features, and burials and the decision about whether a Chance Find is a cultural heritage resource requiring additional treatment will be made by Districts in consultation with Ministry of Youth and Culture and the Rwanda Cultural Heritage Academy where necessary.

3. CHANCE FIND PROCEDURES

If any person discovers a physical cultural resource, such as (but not limited to) archaeological sites, historical sites, remains and objects, or a cemetery and/or individual graves during excavation or construction, the following procedures shall be applied:

1. Stop the construction activities in the area of the chance find;
2. Notify the Resident Engineer who in turn will notify RISA and the responsible local authorities immediately (within 24 hours or less);
3. Install temporary site protection measures (warning tape and stakes, avoidance signs), inform all Contractor personnel of the chance find if access along the right-of-way or other work area is restricted and strictly enforce any no-go area needed to protect the site;
4. Document find through photography, notes, and maps (collect spatial data) as appropriate and Prepare and maintain an initial Chance Finds report (for all possible Chance Finds, cultural heritage or not); include spatial data for use in cultural heritage database and GIS system;
5. Responsible District authorities in charge of protecting and preserving the site before deciding on subsequent appropriate procedures would require a preliminary evaluation of the findings The significance and importance of the findings should be assessed according to the various

criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values;

6. If the District confirms the Chance Find is a cultural heritage, RISA will initiate consultation with communities and local authorities on mitigation measures and treatment procedures;
7. Decisions on how to handle the finding shall be taken by the responsible authorities. This could include changes in the layout (such as when finding an irremovable remain of cultural or archaeological importance) conservation, preservation, restoration and salvage;
8. If a Chance Find is a verified cultural heritage site, RISA shall prepare a final Chance Finds report including required treatment plan;
9. Implementation for the authority decision concerning the management of the finding shall be communicated in writing by relevant local authorities; and
10. While the required treatment is on-going, RISA will coordinate with Contractor, sub-contractors and relevant Districts authorities as well as local communities keeping them informed as to status and schedule of investigations, treatment and informing both when the construction may resume.
11. Construction works could resume only after permission is granted from the responsible local authorities concerning safeguard of cultural resource;

4. CHANCE FINDS DOCUMENTATION

The Ministry, District, RISA, contractors and subcontractors staff are required to maintain records of monitoring, Chance Finds, and Chance Find response measures executes. These will include:

- Daily monitoring records indicating areas and activities monitored; reported Chance Finds and the results of any evaluations.
- Weekly reports summarizing reporting period activities including Chance Finds, assessments and evaluations, internal and external communications and instructions and supporting photographic documentation (or other reference materials as appropriate). An additional report aimed at fulfilling any specific Ministry requirements is also anticipated.
- Monthly reports summarizing monitoring and evaluation results, status of any site treatment measures required instructions to Contractor, and other internal and external communications. Additional monthly reporting may be required by the District.

5. CULTURAL HERITAGE TRAINING

All Project personnel are required to receive and comply with the Code of Conduct and receive training and demonstrate competency in (1) the identification of Chance Finds cultural heritage sites, objects, or features and (2) Chance Finds management procedures; that is, those actions that are required in the case of a suspected Chance Find. This training will be incorporated into the overall induction process for Company, Contractor, and Subcontractor personnel and will include a quick reference hand-out. All employees must be aware of the Rwanda Policy and WB ESS 8 related to cultural Heritage that provides illegal and forbidden to disturb or remove cultural heritage objects offsite for personal gain. Disciplinary action should be taken against any personnel who violate this requirement.

6. Reporting and communication

Monitoring, review and reporting will be along with ESIA/ESMP for the project. Contractor; Sub-contractors shall report all records on observational monitoring, protection measures, complaints, and damages to the Resident Engineer on monthly and a quarterly basis. The Resident Engineer shall report their supervision records and the Contractor's records to RISA which in turn inform relevant authorities on case to case basis and on a quarterly basis.

7. Implementation arrangement

The implementation arrangements and responsibilities of the Chance find procedures shall be as follows:

No	Stakeholder	Responsibility	Responsible person
1	RISA	- Overall coordination; - Lead consultation with relevant authorities and local communities; - Implement the treatment plan and provide required funds; - Monitoring the implementation of chance finds procedures; - Prepared required reports;	E&S specialist SPIU Coordinator
2	Contractors and sub-contractors	- Stop the construction activities in the area of the chance find; - Install temporary site protection measures; - Inform the client and document chance finds;	Civil engineer/ Site foreman
3	Local authorities	- Verification of chance finds; - Approval the treatment measures in consultation with stakeholders; - Provide the authorization to resume works in the chance finds area;	In charge of Sport and culture
4	Local communities	- To attend consultation meetings; - To provide required information; - Participate in treatment measures	Local Population

8. BUDGET

The budget will depend on chance finds and the proposed treatment measures.

9. CONCLUSION

The present CFP's serve as international best practice policy for the accidental discovery of heritage resources and provide the framework to handle them. Based on the definitions provided within this document and the proposed procedures of communication and handling chance finds, RISA will be able to deal properly with the accidental discovery of heritage resources throughout the various phases of the project implementation including construction and operation.

Annex 17: Indicative content of contractor waste management plan

1. **Introduction:** Here the contractor should provide the executive summary on waste management and the relevancy to the project Component.
2. **Legal framework:** A review and analysis of national and institutional policy and legislation related to waste
3. **Waste Management Principles**; these principles, with the procedures above, will form the basis of the waste management Plan including the used solar panels and batteries. The contractor should discuss in detail the way to
    - Minimize,
    - Reuse,
    - Recycle,
    - Disposal and recover.
4. **An initial estimate and type** of likely waste to be generated , based upon the final design of the proposed development;
5. **A detailed action plan** for the management of waste, including roles and responsibilities, methods of data collection and reporting procedures;
6. **Proposals for managing** the waste following the Waste Hierarchy to ensure that waste generated are minimised, including 'designing out waste' and waste prevention measures;
7. **Waste management implementation plan and institutional arrangement**: In this section the contractor should discuss in detail how the waste management will be implemented focusing mainly on the way to:
    - Collect waste
    - Storage of waste
    - Waste transportation
    - Waste disposal

The Plan should also discuss an arrangement showing how he will be working with Local Government Officials and Local population to access to produce waste especially waste concerning the used solar home system including used panels and batteries at the end of life.

The implementation arrangement should also show the need to work with certified company for electronic waste management where the contract for collection, transportation and disposal is mandatory and a pre-requisite requirement for being awarded a contract to work in the area of Off Grid intensification in Rwanda for the Project.

Annex 18: Contractor's Code of Conduct

Preventing Gender -Based Violence (GBV) and Violence against Children (VAC)

(Name of contractor) acknowledges that adhering to environmental, social health and safety (ESHS) standards, following the project's occupational health and safety (OHS) requirements, and preventing gender-based violence (GBV) and violence against children (VAC) is important. All forms of GBV or VAC are unacceptable, be it on the work site, the work site surroundings, at worker's camps, or the surrounding communities.

The company considers that failure to follow ESHS and OHS standards, or to partake in GBV or VAC activities, constitute acts of gross misconduct and are therefore grounds for sanctions, penalties or potential termination of employment. Prosecution of those who commit GBV or VAC may be pursued if appropriate.

(Name of contractor) agrees that while working on the project every employee will:

- Attend and actively partake in training courses related to ESHS, OHS, HIV/AIDS, GBV and VAC as requested by employer.
- Shall wear personal protective equipment (PPE), in the correct prescribed manner, at all times when at the work site or engaged in project related activities.
- Take all practical steps to implement the organization's environmental and social management plan (C-ESMP).
- Implement the OHS Management Plan.
- Adhere to a zero-alcohol policy during work activities, and refrain from the use of illegal substances at all times.
- Consent to a police background check.
- Treat women, children (persons under the age of 18), and men with respect regardless of race, colour, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status.
- Not use language or behaviour towards women, children or men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
- Not participate in sexual contact or activity with children—including grooming or contact through digital media. Mistaken belief regarding the age of a child is not a defence. Consent from the child is also not a defence or excuse.
- Not engage in sexual harassment—for instance, making unwelcome sexual advances, requests for sexual favours, and other verbal or physical conduct, of a sexual nature, including subtle acts of such behaviour. Ex. Looking somebody up and down; kissing, howling or smacking sounds; hanging around somebody; whistling and catcalls; giving personal gifts; making comments about somebody's sex life; etc.
- Not engage in sexual favours—for instance, making promises or favourable treatment dependent on sexual acts—or other forms of humiliating, degrading or exploitative behaviour.
- Unless there is the full consent[30] by all parties involved, every worker shall not have sexual interactions with members of the surrounding communities. This includes relationships involving the withholding or promise of actual provision of benefit (monetary

[30] **Consent** is defined as the informed choice underlying an individual's free and voluntary intention, acceptance or agreement to do something. No consent can be found when such acceptance or agreement is obtained through the use of threats, force or other forms of coercion, abduction, fraud, deception, or misrepresentation. In accordance with the United Nations Convention on the Rights of the Child, the World Bank considers that consent cannot be given by children under the age of 18, even in the event that national legislation of the country into which the Code of Conduct is introduced has a lower age. Mistaken belief regarding the age of the child and consent from the child is not a defence.

or non-monetary) to community members in exchange for sex—such sexual activity is considered "non-consensual" within the scope of this Code.

- Consider reporting through the GRM (Grievance Redress Mechanism) or to the manager any suspected or actual GBV or VAC by a fellow worker, whether employed by my employer or not, or any breaches of this Code of Conduct.

Quality of products and services

(Name of the contractor) expects that products and services provided by each sub-Contractor will be of the highest quality and will be fairly and reasonably priced so that ***(Name of the contractor)*** customers are served with the best value. In addition to any specific requirements in the agreement with ***(Name of the contractor)***, products and services will meet or exceed applicable government standards, including environmental and safety standards.

Health and Safety

(Name of the contractor) is dedicated to providing safe, injury-free working conditions and a healthy work environment. Compliance with this commitment is a condition of any sub-Contractor engagement with ***(Name of the contractor)***.

Workplace safety

Each Sub-Contractor is responsible for ensuring that its Representatives complete all necessary safety training and per formwork in conformance with all applicable safety rules, laws, standards and procedures and for complying with and enforcing any additional ***(Name of the contractor)*** safety policies and procedures communicated to Sub-Contractor.

Reporting injuries, damage and unsafe conditions

In addition to any other legal reporting requirements, ***(Name of the contractor)*** and each Contractor must immediately report any occupational injuries, unsafe conditions or practices and damage to property occurring as a result of the ***(Name of the contractor)/Sub-Contractor*** or its Representative's activities to RISA or any deserved entity.

Alcohol and drug use

(Name of the contractor)'s commitment to providing a healthy and safe working environment is compromised by the consumption of alcohol and illegal drugs. While performing work for ***(Name of the contractor)***, Employees, Sub-Contractors and Representatives must not consume, use or be impaired by alcohol or illegal drugs or be under the influence of prescription drugs that impair a person's ability to perform work in a safe and efficient manner.

Workplace violence

Acts or threats of physical violence, intimidation and harassment will not be tolerated. Engaging in violence or threatening or intimidating behaviours may result in termination of the contract with ***(Name of the contractor)*** or removal of the Representative from ***(Name of the contractor)*** property, as deemed appropriate by ***(Name of the contractor)***.

The Environment

RISA is committed to conducting its business in an environmentally responsible manner. ***(Name of Contractor)*** and Representatives will comply with all applicable environmental laws and regulations and operate in a way that minimize the negative environmental impact of the products and services.

Ethics

(Name of Contractor) must operate within the highest standards of ethical conduct when dealing with RISA employees, customers and the public. ***(Name of Contractor)*** will ensure that its actions, and those of its Representatives, comply with the letter and spirit of this Code.

Anti-corruption

(Name of contractor) and Representatives are committed to zero tolerance against corruption and shall not engage in any form of bribery, extortion, embezzlement or other corrupt practices.

Fair competition

When conducting works ***(Name of Contractor)*** and Representatives shall uphold fair standards in recruiting and competition.

Confidentiality

Confidential information includes information that is not known by the public and that may be harmful to the organization, its employees or its customers if disclosed***. (Name of the Contractor)*** is committed to safeguarding and protecting its own confidential information and the personal information of its customers and employees. Sub-Contractor must maintain the confidentiality of information entrusted to it in accordance with its agreements with (***Name of the Company***) and applicable law. The obligation to protect (***Name of the Company***)'s confidential information continues even after the business relationship with (***Name of the Company***) ends.

Updates to Code and Disclaimer

(Name of the Contractor) reserves the right to amend and modify this Contractor Code of Conduct at its discretion. The provisions of the Code are not intended to change any obligations set forth in the Contractor's agreement with RISA and in the event of any conflict, the terms in the agreement with RISA will prevail.

Annex 19: Individual code of conduct in case of contractor

Preventing Gender -Based Violence (GBV) and Violence against Children (VAC)

I, _____, acknowledge that adhering to environmental, social health and safety (ESHS) standards, following the project's occupational health and safety (OHS) requirements, and preventing gender-based violence (GBV) and violence against children (VAC) is important. All forms of GBV or VAC are unacceptable, be it on the work site, the work site surroundings, at worker's camps, or the surrounding communities.

The company considers that failure to follow ESHS and OHS standards, or to partake in GBV or VAC activities, constitute acts of gross misconduct and are therefore grounds for sanctions, penalties or potential termination of employment. Prosecution of those who commit GBV or VAC may be pursued if appropriate.

I agree that while working on the project I will:

- Attend and actively partake in training courses related to ESHS, OHS, HIV/AIDS, GBV and VAC as requested by my employer.
- Shall wear my personal protective equipment (PPE), in the correct prescribed manner, at all times when at the work site or engaged in project related activities.
- Take all practical steps to implement the contractor's environmental and social management plan (CESMP).
- Implement the OHS Management Plan.
- Adhere to a zero-alcohol policy during work activities, and refrain from the use of illegal substances at all times.
- Consent to a police background check.
- Treat women, children (persons under the age of 18), and men with respect regardless of race, colour, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status.
- Not use language or behaviour towards women, children or men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
- Not participate in sexual contact or activity with children—including grooming or contact through digital media. Mistaken belief regarding the age of a child is not a defence. Consent from the child is also not a defence or excuse.
- Not engage in sexual harassment—for instance, making unwelcome sexual advances, requests for sexual favours, and other verbal or physical conduct, of a sexual nature, including subtle acts of such behaviour. Ex. Looking somebody up and down; kissing, howling or smacking sounds; hanging around somebody; whistling and catcalls; giving personal gifts; making comments about somebody's sex life; etc.
- Not engage in sexual favours—for instance, making promises or favourable treatment dependent on sexual acts—or other forms of humiliating, degrading or exploitative behaviour.
- Unless there is the full consent by all parties involved, I shall not have sexual interactions with members of the surrounding communities. This includes relationships involving the withholding or promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex—such sexual activity is considered "non-consensual" within the scope of this Code.
- Consider reporting through the GRM (Grievance Redress Mechanism) or to my manager any suspected or actual GBV or VAC by a fellow worker, whether employed by my employer or not, or any breaches of this Code of Conduct.

With regard to children under the age of 18:

- Wherever possible, ensure that another adult is present when working in the proximity of children.
- Not invite unaccompanied children unrelated to my family into my home, unless they are at immediate risk of injury or in physical danger.
- Not sleep close to unsupervised children unless absolutely necessary, in which case I must obtain my supervisor's permission, and ensure that another adult is present if possible.

- Use any computers, mobile phones, or video and digital cameras appropriately, and never to exploit or harass children or to access child pornography through any medium (see also “Use of children's images for work related purposes” below).
- Refrain from physical punishment or discipline of children.
- Refrain from hiring children for domestic or other labour which is inappropriate given their age or developmental stage, which interferes with their time available for education and recreational activities, or which places them at significant risk of injury.
- Comply with all relevant local legislation, including labour laws in relation to child labour.

Use of children's images for work related purposes

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

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

Sanctions

I understand that if I breach this Individual Code of Conduct, my employer shall take disciplinary action which could include:

- Informal warning.
- Formal warning.
- Additional Training.
- Loss of up to one week’s salary.
- Suspension of employment (without payment of salary), for a minimum period of 1 month up to a maximum of 6 months.
- Termination of employment.
- Report to the police if wanted.

I understand that it is my responsibility to ensure that the environmental, social, health and *safety standards are met. That I shall adhere to the occupational health and safety management plan. That I shall avoid actions or behaviours that could be construed as GBV or VAC. Any such actions shall be a breach this Individual Code of Conduct. I do hereby acknowledge that I have read the foregoing Individual Code of Conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to ESHS, OHS, GBV and VAC issues. I understand that any action inconsistent with this Individual Code of Conduct or failure to take action mandated by this Individual Code of Conduct may result in disciplinary action and may affect my ongoing employment.*

Signature: _____

Printed Name: _____

Title: _____

Date: _____