



REPUBLIC OF RWANDA
RWANDA AGRICULTURE AND ANIMAL RESOURCES
DEVELOPMENT BOARD (RAB)



AND
DEVELOPMENT BANK OF RWANDA (BRD)

COMMERCIALIZATION AND DE-RISKING FOR
AGRICULTURAL TRANSFORMATION (CDAT-AF) PROJECT
(P171462)

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK
(ESMF)

Updated Version

September, 2026

EXECUTIVE SUMMARY

The Government of Rwanda (GoR) through the Ministry of Agriculture and Animal Resources (MINAGRI) with the financial support of World Bank Group (WB) is implementing an agricultural project that promotes productivity, commercialization, resilience and access to financial services in selected agricultural value chains. This project, named Commercialization and De-risking for Agricultural Transformation Project (CDAT), targets farmers' cooperatives, commercial farmers and small medium-sized agri-enterprises (agri-SMEs) operating primarily in the following selected value chains: rice, maize, horticulture, cassava, bean and Irish potatoes.

The project received Additional Financing (AF) of US\$80 million in 2026, restoring funds partially canceled in June 2024, with total project cost now amounting to US\$304 million for a 5-year duration with an extended implementation period through February 28, 2029 to accommodate the expanded scope under the AF. With the AF, the project has four components including Value Chain and Infrastructure Development (Component 1) with 4 subcomponents (Irrigation rehabilitation and development; Land husbandry; Services for Value Chain development and Grants for Value Chain Development). Under the Additional Financing Subcomponent 1.4 has been significantly expanded to include new grant windows for Small-Scale Irrigation Technologies (SSIT) and Farmer-Led Irrigation Development (FLID) to be implemented by RAB-SPIU. These grants support entrepreneurial smallholders in boosting productivity and resilience. Component 2 (Agricultural Finance and Insurance) has two subcomponents (Scaling up agricultural finance and Strengthening agricultural insurance). Component 3 is Project Management, and Component 4 is the Contingency Emergency Response Component.

Effective with the Additional Financing, the original Subcomponent 1.3 (Innovation and Services for Agribusiness) has been divided into two new subcomponents:

- Subcomponent 1.3: Services for Value Chain Development (implemented by RAB-SPIU) - focusing on group development, agronomic training (including CSA), business skills, and market linkage development.
- Subcomponent 1.4: Grants for Value Chain Development (implemented by RAB-SPIU for SSIT/FLID and BRD-SPID for legacy grants) consolidating all grant activities.

The major activities of the ongoing CDAT project include marshlands rehabilitation and construction of irrigation infrastructures, catchment area rehabilitation using land husbandry techniques, construction of post-harvest facilities and access roads, improved availability and use of agricultural inputs, agricultural finance and insurance, and capacity building of institutions and stakeholders. With the Additional Financing (AF), the project will also scale up Small-Scale Irrigation Technologies (SSIT), introduce and expand Farmer-Led Irrigation Development (FLID) through a new matching grant window. Furthermore, the AF will finance compensation for Project-Affected Persons (PAPs) using IDA resources to expedite land acquisition processes. Climate-smart agriculture and resilience investments, including drought-tolerant crops, water-efficient irrigation, climate-informed advisory services, and watershed management, have been integrated across all components to enhance adaptation and mitigation outcomes. Some of these activities are likely to have environmental and social implications.

Given the inclusion of new grant window (SSIT), the Project updated the Environmental and Social Management Framework (ESMF) to examine the risks and impacts of the project, to provide guidance on the principles, rules, guidelines and procedures to assess and manage of environmental and social impacts and risks, contains measures and plans to reduce, mitigate and/or offset adverse risk and impacts. The updated ESMF also includes the provision for estimating and budgeting the costs of such measures, providing the institutional arrangements and environmental and social safeguards instruments to be prepared as part of the implementation in full compliance with Rwanda regulations and World Bank Environmental and Social Framework (ESF).

This instrument was prepared by the Government of Rwanda (GoR) through RAB/SPIU World Bank funded Projects and BRD.

As per the agreement between the Government of Rwanda and the World Bank (WB), the CDAT project triggers all Environmental and Social Standards (ESS) of the WB, except ESS7. This standard, known as Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities, is not triggered because Rwanda 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. The Project continues to comply with safeguards policy on International Waterways (OP/BP 7.50).

During the preparation of the CDAT-AF project, a series of consultation meetings were conducted in targeted districts areas to inform project design and prioritization of investments. These consultations aimed to provide stakeholders with an opportunity to express their views, identify local development priorities, and contribute to the formulation of project objectives and components. Engagements were held with stakeholders at both national and local levels, including government institutions, local authorities, community representatives, and technical agencies, to discuss the CDAT-AF components and identify priority subprojects aligned with national strategies and District Development Plans.

The targeted project areas were given the opportunity to propose subprojects consistent with CDAT-AF objectives, covering interventions in irrigation by incorporating the new grant window of Small-Scale Technologies. A variety of consultation forums were utilized, including community assemblies, sector and district-level meetings, and structured consultative workshops with local leaders and technical staff. These engagements ensured that community needs and local development priorities were adequately reflected in CDAT-AF investment planning.

Based on consultation findings and field observations, issues raised by beneficiaries include low beneficiary capacity areas where they wish project interventions. The assessment revealed positive impacts: increased employment and income generation, capacity building, increased public revenues, increased productivity and farm income, flood control and reduction of weather hazards, and increased access to financial services. However, the updated environmental and social risk profile reflects the expanded scope under the AF, including SSIT/FLID grants, and compensation for PAPs, and climate-smart investments. Main anticipated adverse impacts include water degradation, air and noise pollution, loss of biodiversity, increased pest and crop diseases, strain on water resources from expanded irrigation and social risks related to benefit-sharing and access to grants. Generalized mitigation measures are proposed in this updated ESMF. An Environmental and Social Impact Assessment (ESIA) will be required for sub-projects with substantial or moderate impacts, respectively (procedures in chapter 6).

Implementation of the project will be undertaken by the Rwanda Agriculture and Animal Resources Development Board (RAB) and the Development Bank of Rwanda (BRD) under the overall coordination of RAB.

RAB will carry out the tasks of Component 1 (Value chain and infrastructure development), Subcomponent 2.2 (Strengthening agricultural insurance), Component 3 (Project management), and Component 4 (Contingent Emergency Response) in addition to its coordination role.

Subcomponent 1.4 (Grants for Value Chain Development), which was developed to combine all of the Project's grant facilities under one subcomponent, will be implemented by BRD. Operational responsibility for matching grants (MGs) and Innovation Challenge Fund (ICF) grants (the Project's "legacy grants") has already been approved under this subcomponent. This reflects the recent absorption of the Business Development Fund (BDF), which had been carrying out these grants on behalf of RAB-SPIU, into the Development Bank of Rwanda (BRD), as well as all activities pertaining to Subcomponent 2.1 (Scaling up agricultural finance).

The other stakeholders in CDAT implementation include the Ministry of Environment (MoE) and its agencies (REMA, RWB and NLA), Ministry of Trade and Industry and its agencies (RCA), Ministry of Health and its agency (RBC), RDB, NAEB, Ministry of Local Administration (MINALOC) and participating Districts, participating financial institutions (PFIs), Private Sector Federation (PSF), Supervising firms, Contractors and farmers organizations (Cooperatives and WUA), borrowers and local communities. The monitoring of the implementation of this updated ESMF will be carried out by RAB/SPIU, BRD-SPID, REMA and all key implementing institutions of the project (MoE, MINALOC, NLA, REMA, RWRB, Districts and farmers organizations).

RAB/SPIU and BRD-SPID have sufficient capacity to implement and monitor project activities. Their safeguards teams have been overseeing environmental and social safeguards in WB-financed projects, and they execute the same responsibilities for CDAT. Additionally, each PFI will nominate a focal person to monitor environmental and social aspects in the bank's operations.

Upon World Bank clearance of the updated CDAT ESMF, the GoR, through RAB and BRD, will locally disclose the updated ESMF and authorize the Bank to disclose it on its external websites. The estimated budget for the updated ESMF is US\$ 1,230,016. Given the nature of the project including expanded SSIT/FLID, climate-smart investments, and land acquisition adverse impacts can be managed through the proposed mitigation measures in this updated ESMF and accompanying ESIA/ESMP instruments. This framework applies to all CDAT activities. It should be regularly updated to respond to changing local conditions, reviewed and approved through the national approval process and by the World Bank, and incorporate lessons learned from implementation. Other safeguards instruments to be updated include: Stakeholder Engagement Plan (SEP), Environmental and Social Commitment Plan (ESCP) and Environmental and Social Management System (ESMS).

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GLOSSARY OF TERMS

1. **Cumulative impacts/effects:** This is the impact on the environment which results from the incremental impact of the action when added to other past, current and reasonably foreseeable future actions.
2. **Developer/Proponent/Sponsor:** the entity – person/ company/agency – proposing to develop/implement/install a new project/sub- project or expand an existing project under a given project.
3. **Direct impacts:** These are effects which occur through direct interaction of an activity with an environmental, social, or economic component.
4. **Disclosure:** Information availability to all stakeholders at all stages of the development of projects.
5. **Environment:** this is a diversity of things made up of natural and artificial environments. It includes chemical substances, biodiversity as well as socio-economic activities, cultural, aesthetic, and scientific factors likely to have direct or indirect, immediate or long-term effects on the development of an area, biodiversity and on human activities.
6. **Environmental and Social Impact Assessment (ESIA):** is an instrument to identify and assess the potential environmental and social impacts of a proposed sub-project, evaluate alternatives and design appropriate mitigation, management, and monitoring measures.
7. **Environmental and Social Monitoring:** This is an instrument which provides, during project implementation, information about key environmental and social aspects of the project that enables the borrower and the bank to evaluate the success of mitigation as part of project supervision and allows corrective action to be taken when needed.
8. **Grievance:** An issue, concern, problem, or claim (perceived or actual) that an individual or community group wants a company or contractor to address or resolve.
9. **Grievance Redress Mechanism (GRM)** is a set of process and procedures designed to receive, resolve concerns and grievances of project-affected parties arising in connection with the project using an understandable and transparent process that provides timely feedback to the complainants in a language they understand, without any retribution and monitor the implementation of taken decisions. The grievance mechanism is proportionate to the risks and impacts of the project and operates in an independent and objective manner.
10. **Grievance Redress Committee (GRC)** is a special committee put in place at the project or sub-project management unit to handle grievances associated with the project /subproject throughout its life cycle.
11. **Grievance Redress Service (GRS)** is an avenue for project affected parties (individuals and communities) to submit complaints associated with a Donor-financed project to the Donor (e.g. World Bank) and give him a reasonable opportunity to respond. The GRS enhances the donor's responsiveness and accountability to project-affected communities by ensuring that grievances are promptly reviewed and addressed.
12. **Impact:** A positive or negative effect caused by a project or an activity in the environment.
13. **Indirect impacts:** are effects which are not a direct result of the project, often produced away from or as a result of a complex impact pathway. They are also known as secondary or even third level impacts.
14. **Environmental and Social Risks** are potential negative consequences to an activity that result from its impacts (or perceived impacts) on the bio-physical environment (air, water, soil, biodiversity) or socio-economic environment (e.g. employees, customers, local residents).
15. **Involuntary resettlement:** This is a policy triggered in situations involving (a) involuntary taking of land resulting in (i) relocation or loss of shelter, (ii) loss of assets or access to assets, or (iii) loss of income sources or means of livelihood, whether or not the affected persons must move to another location; or (b) the involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on the livelihoods of the displaced persons. The policy aims at avoiding involuntary resettlement to the extent feasible or minimizing and mitigating its adverse social and economic impacts.
16. **Mitigation measures:** feasible and cost-effective measures that may reduce potentially significant adverse environmental and social impacts to acceptable levels.

17. **Pollution:** is the contamination caused by waste, harmful biochemical products derived from human activities that may alter man's habitat and cause adverse effects on the environment like man's social wellbeing, animals, flora and fauna and the world he or she lives in.
18. **Project and sub-project:** a set of planned activities designed to achieve specific objectives within a given area and time frame.
19. **Scoping:** Scoping is the process of determining the content and extent of matters that should be covered in the environmental and social information to be submitted to a competent authority or other decision-making body.
20. **Screening:** this is the determination of whether or not an ESIA is needed and is a formal requirement under the ESIA Regulations.
21. **Social impact:** is the net effect of an activity, project on a given community and the well-being of individuals and families
22. **Stakeholder:** Any person or group that has an interest in the project; can either affect or be affected by the project and the environmental effects that the project may bring about.

ACRONYMS AND ABBREVIATIONS

BP	: Bank Procedures
BDF	: Business Development Fund
BRD	: Banque Rwandaise de Development (Development Bank of Rwanda)
CERC	: Contingency Emergency Response Component
CSA	: Climate Smart Agriculture
COP	: Conference of parties
DEO	: District Environment Officer
DRC	: Democratic Republic of Congo
EA	: Environmental Assessment
EDPRS	: Economic Development and Poverty Reduction Strategy
ESCP	: Environmental and Social Commitment Plan
ESIA	: Environmental and Social Impact Assessment
ESMP	: Environmental and Social Management Plans
ESMF	: Environment and Social Management Framework
EA	: Environmental Assessment
FAO	: Food and Agricultural Organization
GDP	: Gross Domestic Product
GBV	: Gender Based Violence
GGCRS	: Green Growth and Climate Resilience Strategy
GMO	: Gender Monitoring Office
GoR	: Government of Rwanda
HIV/AIDS	: Human Immune Deficiency Syndrome
IPM	: Integrated Pest Management
KOICA	: Korea International Cooperation Agency
M&E	: Monitoring and Evaluation
MoE	: Ministry of Environment
MINAGRI	: Ministry of Agriculture and Animal Resources
MINALOC	: Ministry of Local Government
MINICOM	: Ministry of Trade and Industry
MINISANTE	: Ministere de la Sante (Ministry of Health)
MTR	: Mid Term Review
NAEB	: National Agricultural Export Development Board
NST2	: National Strategy for Transformation
OSC	: One Stop Center
PFI	: Participating Financial Institution
PHI	: Postharvest Infrastructure
RAB	: Rwanda Agriculture and Animal Resources Development Board
RBC	: Rwanda Biomedical Center
RCA	: Rwanda Cooperative Agency
RDB	: Rwanda Development Board
REMA	: Rwanda Environment Management Authority
NLA	: National Land Authority

RWB : Rwanda Water Resource Board
SAIP : Sustainable Agricultural Intensification and Food Security Project
SEA : Strategic Environmental Assessment
SEA/SH: Sexual Exploitation Abuse/ Sexual Harassment
SPAT : Strategic Plan for Agricultural Transformation
SPIU : Single Project Implementation Unit
UNFCCC : United Nations Framework Convention on Climate Change
WB : World Bank
WBD : Water borne Disease
WUA : Water User's Association

CHAPTER ONE: INTRODUCTION

1.1. General Context

Rwanda is a small landlocked country in Eastern Africa, with arable land estimated at 46.7 per cent of the total area of 26,338 km². Its population stood at approximately 14.3 million in 2024. It continues on its transformation path from a low-income to a middle-income country. Rwanda's economy has grown by an average of 7.58% per year from 2000 to 2025, with GDP expanding by 9.4% in 2025 alone. GDP per capita reached \$1,070 in 2024, up from \$242 in 2000. The poverty rate has fallen from 60.3 % in 2000 to 27.4 % in 2023, reflecting sustained progress in living standards. Life expectancy at birth has risen to 68 years as of 2024, compared to 48.2 years in 2000. On the trade front, total merchandise exports reached over \$3.16 billion in 2024, marking a 27.4 % increase from \$2.48 billion in 2023, while total imports rose by 11.2 % to over \$6.88 billion.

Agriculture remains the backbone for sustained economic growth, providing high quality livelihoods and living standards for the Rwandan population. It remains crucial for Rwanda's economic growth and reduction of poverty. Rwanda's GDP has been growing strongly, reaching 8.9% in 2024 and 9.4% in 2025. The agriculture sector currently represents approximately 27 % of GDP, and accounted for about two-thirds of the poverty reduction between 2001 and 2017. The sector employs 43 % of the workforce. Agricultural exports account for 37 % of total export revenues, though trade remains vulnerable to price fluctuations and regional market integration remains underdeveloped.

Various agricultural projects have been implemented by the Ministry of Agriculture and Animal Resources (MINAGRI) over the last two decades to boost agricultural productivity in marshlands and hillsides and the country's economy in general. These include, among others: The Rural Sector Support Project (RSSP) and Land Husbandry, Water Harvesting and Hillside Irrigation Project (LWH), Strategic Plan for the Agriculture Transformation (PAPSTA), Kirehe Community-based Watershed Management Project (KWAMP), Post-harvest and Agribusiness Support Programme (PASP), and Project for Rural Income through Exports (PRICE). RSSP and LWH projects received funding from the World Bank while the others were IFAD funded.

The agriculture sector grew by 8 % in 2025, contributing 2.0 percentage points to overall GDP growth. Rwanda's agriculture sector has enjoyed an annual average growth of 5 % over the last fifteen years. This upward trend is attributed to continued Government efforts to develop the sector.

Despite substantial growth in agricultural production, food security and nutrition remain a concern, especially regarding vulnerability to shocks at the household level. Stunting among children under 5 has decreased to 30 per cent in 2024, down from 41.2 per cent in 2012, while food insecurity stands at 17 per cent of the population. A large share of the population remains dependent on rain-fed agriculture and auto-consumption, making people's ability to adequately feed themselves vulnerable to shocks such as periodic droughts and floods. Food security and nutrition therefore remain important areas to which agricultural development can contribute.

In addition, agricultural value chains continue to face significant technological and logistical challenges, including insufficient access to quality seeds and poor value chain organization affecting Irish potatoes; low access to quality inputs and equipment and poor post-harvest practices contributing to aflatoxin contamination in maize; and low irrigation uptake limiting the growth of the commercial rice sector and high-value commodities such as horticulture. Agricultural productivity remains constrained by land fragmentation, limited mechanization, post-harvest losses, and climate change impacts.

The Government of Rwanda launched its Fifth Strategic Plan for Agriculture Transformation (PSTA 5) in December 2024,

covering the period 2024–2029, under the theme "Building Resilient and Sustainable Agri-Food Systems." Under PSTA 5, irrigation infrastructure has been expanded to 74,375 hectares, and mechanization operations expanded to 100,357 hectares in FY 2024/25. Agriculture exports are projected to surpass USD 1.5 billion under this strategic plan. Furthermore, fertilizer usage and access to improved seeds continue to be prioritized to boost smallholder productivity.

It is in this regard that the Government of Rwanda through the Ministry of Agriculture and Animal Resources (MINAGRI) with the support of World Bank Group (WB) is preparing the implementation of Commercialization and De-risking for Agricultural Transformation Project (CDAT) to improve commercialization and access to financial services in selected agricultural value chains across the country. The project received an Additional Financing (AF) of US\$ 80 million in 2026, restoring funds partially canceled in 2024, and extending implementation to February 28, 2029. The project promotes land productivity, commercialization, resilience and access to financial services for target beneficiaries (e.g. farmers and their organizations, SMEs, agribusinesses, etc.) in selected agricultural value chains.

The construction of irrigation infrastructures and command area rehabilitation and small scale irrigation and water harvesting for irrigation purposes, land husbandry, on farm infrastructure mechanization, construction of post-harvest infrastructures (storages, drying grounds, cold rooms, agro-processing units, market centers), availability and use of agricultural inputs, scaling up agricultural finance, strengthening agricultural insurance, capacity building for infrastructure and value chain development as well as agricultural finance and insurance are the major activities of the project. Under the AF, new activities include the expansion of large-scale irrigation (Cyohoha Phase 2: 2,600 ha; Gabiro Phase 2: 975 ha), a matching grant window for Small-Scale Irrigation Technologies and Farmer-Led Irrigation Development (SSIT/FLID) covering 2,000 ha, direct compensation of Project-Affected Persons (PAPs) using IDA funds, and a Results-Based Climate Finance (RBCF) pilot for shade-grown coffee. The crops targeted by CDAT are maize, bean, rice, cassava, irish potato and horticulture (vegetables like tomato, onion, sweet pepper, French bean, chili, ginger, etc and fruits such as watermelon, papaya, avocado, passion fruit and tree tomato). The total project cost, including the Additional Financing, is US\$ 304 million, comprising US\$ 300 million in IDA resources, US\$ 4 million from the Compact with Africa (CwA) trust fund for RBCF.

Under the AF, a US\$ 4 million grant from the Compact with Africa (CwA) Green Business Multi-Donor Trust Fund will finance a results-based climate finance (RBCF) pilot for shade-grown coffee. BRD will finance loans and pay principal rebates for verified tree planting alongside coffee-related investments. Final rebates are contingent on evidence of sound forest management, including tree survival, replanting, and related measures verified two years after planting. This requires the 22-month extension of the project closing date to February 28, 2029.

The CDAT project is jointly being implemented by Rwanda Agriculture and Animal Resources Development Board (RAB) of MINAGRI and *Banque Rwandaise de Development* (BRD) (or Rwanda Development Bank). Effective January 1, 2026, the Business Development Fund (BDF) was fully absorbed by BRD. Consequently, fiduciary responsibility for legacy Matching Grants (MGs) and Innovation Challenge Fund (ICF) grants has transferred from RAB-SPIU to BRD-SPID (Special Project Implementation Department). RAB will carry out the tasks of Component 1 (Value chain and infrastructure development), Subcomponent 2.2 (Strengthening agricultural insurance), Component 3 (Project management), and Component 4 (Contingent Emergency Response) in addition to its coordination role. Subcomponent 1.4 (Grants for Value Chain Development), which was developed to combine all of the Project's grant facilities under one subcomponent, will be implemented by BRD. Operational responsibility for matching grants (MGs) and Innovation Challenge Fund (ICF) grants (the Project's "legacy grants") has already been approved under this subcomponent. This reflects the recent absorption of the Business Development Fund (BDF), which had been carrying out these grants on

behalf of RAB-SPIU, into the Development Bank of Rwanda (BRD), as well as all activities pertaining to Subcomponent 2.1 (Scaling up agricultural finance).

All project activities, especially Component 1 activities, are associated with environmental and social (E&S) risks and impacts. For E&S compliance purposes, the CDAT triggers all the Environmental and Social Standards (ESSs) except ESS7. The ESSs that are relevant to the project include : (i) Assessment and Management of Environmental and Social Risks and Impacts (ESS1); (ii) Labour and Working Conditions (ESS2), (iii) Resource Efficiency and Pollution Prevention and Management (ESS3), (iv) Community Health and Safety (ESS4); (v) Land Acquisition, Restrictions on Land Use and Involuntary Resettlement (ESS5); (vi) Biodiversity Conservation and Sustainable Management of Living Natural Resources (ESS6); (vii) Cultural Heritage (ESS8); (viii) Financial Intermediaries (ESS9) and (ix) Stakeholder Engagement and Information Disclosure (ESS10). The project additionally applies the policy on Project on international waterways (OP7.50). The borrower through RAB will notify the riparian countries of the project and request for their No Objection in line with the requirements of OP7.50. The AF does not change the ESS trigger status; ESS7 remains not triggered, and OP 7.50 remains applicable with no additional steps required.

The ESMF has been updated to reflect the additional scope under the AF, including PAP compensation, SSIT/FLID, and the RBCF pilot. This instrument was prepared by the Government of Rwanda (GoR) through RAB/SPIU World Bank funded Projects.

The objectives of the present ESMF include:

- To examine the risks and impacts of the project.
- To establish clear procedures and methodologies for environmental and social impacts assessments, planning, review, approval and implementation of subprojects to be financed by CDAT. This includes specifying how unidentified subprojects whose exact location are unknown will systematically address environmental and social issues in the screening for environmental and social impacts and categorization, site selection criteria, mitigation measures, design, implementation and operational phases as well as maintenance of the subproject lifecycle.
- To prescribe project arrangements for the preparation and implementation of subprojects in order to adequately address World Bank safeguards issues;
- To set out the principles, rules, guidelines and procedures to assess the potential environmental and social impacts of envisaged subprojects and;
- To propose mitigation measures which will effectively address identified negative impacts, and to outline a simple Environmental and Social Management Plan (ESMP);
- To specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to subprojects;
- To define a public consultation and disclosure process;
- To determine the training, capacity building and technical assistance needed to successfully implement the provisions of the updated ESMF; and
- To develop the budgetary needs required to implement the updated ESMF requirements

The CDAT investments associated with environmental and social concerns include irrigation, land husbandry, on-farm infrastructure mechanization (small agri-equipment), post-harvest, processing and market infrastructure and agricultural productivity enhancement. Under the AF, additional investments include large-scale hillside irrigation (Cyohoha Phase 2, Gabiro Phase 2), SSIT/FLID matching grants, and direct PAP compensation. Therefore, the ESMF refers to the Environmental and Social Impacts Assessment (ESIA), Environmental and Social Management Plans (ESMP) when addressing their environmental management requirements.

Other E&S instruments were prepared for the project as standalone documents to address other safeguards aspects not covered under this ESMF. These include Resettlement Policy Framework (RPF), Labour Management Plan (LMP), and Pest Management Plan (PMP). For the AF, the SEP and ESCP have been updated, and BRD has updated ESMS now applies to the entirety of its CDAT-AF portfolio, including the agricultural credit line and the legacy grants. The existing RPF and LMP provide guidance on the management of project related social aspects and workers' issues respectively. The standalone LMP applies to all categories of project workers as defined under ESS2; direct workers of RAB-SPIU and of BRD-SPID (including former BDF staff transitioned to BRD-SPID), contracted workers, community workers and primary supply workers, under both the parent project and the AF. The updated SEP helps to identify key stakeholders and ensure they understand the project and enhance its ownership by them. It sets out the material measures and actions required for the project to meet the environmental and social standards (ESSs) over a specified timeframe while the ESMS is a set of policies, procedures, tools and internal capacity to assess, manage and monitor environmental and social risks and impacts of subprojects, as well as the overall portfolio risk in a responsible manner.

1.2. Project Description updated with AF

1.2.1. Project Development Objective (Revised)

The CDAT Project development objective (PDO) is to increase the use of irrigation and commercialization among producers and agribusiness firms in supported value chains, and to increase access to agricultural finance. The key Project Development Objective-level indicators are the following:

- i. Increase in volume of agricultural produce procured by participating aggregators;
- ii. Increase in the number of cooperatives, commercial farmers, small and medium agri-enterprises obtaining agricultural loans from financial institutions.

Revised PDO-level indicators:

PDO Indicator	Baseline (Apr 2022)	End-of-Project Target (Feb 2029)
Total cultivated area being irrigated in new or rehabilitated schemes and through SSIT/FLID (ha)	0	14,544ha
➤ Of which in new schemes (ha)	0	3,229 ha
➤ Of which rehabilitated schemes (ha)	0	4,925 ha
➤ Of which SSIT/FLID (ha)	0	1,300 ha
Share of agricultural produce sold by participating producers (%)	52%	83%
Value of agricultural production procured by participating aggregators (US\$)	11,508,446	50,050,000
People using insurance services (number)	59,986	170,000
People using debt financing (number)	0	1,357
Businesses using debt financing (number)	0	143
Total number of benefitting households	0	260,000

1.2.2. Project components (Revised)

The CDAT project is now organized into the following components:

Component 1: Value Chain and Infrastructure Development (US\$ 203.99 Million after restructuring, plus AF)

This component will aim to increase marketable volumes in the selected value chains, following a systematic approach. It will have four sub-components:

Subcomponent 1.1: Irrigation rehabilitation and development (US\$ 152.5 Million after AF)

The objective of the subcomponent is to expand the irrigated area and increase marketable output from irrigated

agriculture in a subset of value chains. The crops and related irrigation schemes will be selected based on their commercial potential and will benefit from market linkages supported through the other subcomponents.

Under this subcomponent, the project rehabilitates and improves existing gravity-fed and pressurized irrigation sites and develops new ones. With the Additional Financing, the project will support two new large-scale hillside schemes that were put on hold following partial cancellation: Cyohoha Phase 2 (2,600 ha) and Gabiro Phase 2 (975 ha). The total irrigated area under the project, including AF, will reach approximately 14,544 hectares. The schemes are basically either Hillside, Marshland, or Small-Scale Irrigation Technologies (SSIT). The project promotes technology and best practice for increased availability and efficient use of water for irrigation to increase crop productivity and increase farmers' resilience to climate volatility. And as such, the Project finances pre-feasibility and feasibility studies, preparations of detailed design, construction supervision and quality assurances, construction of irrigation water abstraction, delivery, distribution, and drainage structures, among others. It also finances complementary infrastructure as needed (e.g. development of access roads within the schemes). Infrastructure support will target the selected value chains (such as rice, maize, beans, horticulture).

Land Acquisition and Compensation of PAPs (new under AF): Under the Additional Financing, the project will use IDA resources (up to US\$ 1.61 million) to directly compensate Project-Affected Persons (PAPs) for land acquisition and affected assets, expediting resettlement processes.

Subcomponent 1.2: Land husbandry (US\$ 19.92 Million after AF)

The objective of the subcomponent is to ensure protection of the watershed areas which drain to the sites to be developed for irrigation (command areas), while also increasing the productivity of these areas through preventing soil erosion and restoring soil fertility. Complementary land husbandry measures are necessary to protect and ensure sustainability of the irrigation infrastructure developed through Subcomponent 1.1. Under the AF (allocation of US\$2.92), an additional 1,220 hectares of land husbandry improvements will be financed, comprising 920 hectares of supplemental works around existing irrigation subprojects and 300 hectares of new catchment protection.

Land husbandry studies are being carried out for each site during the feasibility and detail design study stages. Activities include soil conservation measures and infrastructure appropriate to differing slope categories (e.g. bunding, green manuring, progressive and radical terracing, etc). Given the acidity of Rwandan soils, additional activities such as liming may be necessary. The land husbandry work covering 38 sites with a total area of 11,107 ha (totaling 9,887 already completed and 1,220ha for additional financing).

Agricultural productivity will be enhanced in non-irrigated areas due to improvements in soil quality through delivering land husbandry techniques, improvements in soil fertility (through complementary technology such as use of improved seeds, liming and composting), as well as increases in farmers' capacity and knowledge. Beneficiaries will participate in the selection of appropriate practices and technologies. The subcomponent will also finance complementary capacity building activities on the land husbandry technologies.

Subcomponent 1.3: Services for Value Chain Development (US\$ 24.87 Million)

The newly defined Subcomponent 1.3 focuses on group development, agronomic training (including climate-smart agriculture practices), business skills, and market linkage development. It will be implemented by RAB-SPIU. Resources under this subcomponent (US\$ 2.55 million AF allocation) will emphasize farmer business training, including preparation of practical business plans linking established groups and cooperatives with buyers, and introduction of modern technologies that support market-oriented production.

Subcomponent 1.4 (Grants for Value Chain Development):

This consolidates all grant activities. SSIT/FLID grants will be implemented by RAB-SPIU, while legacy Matching Grants (MG) and Innovation Challenge Fund (ICF) grants will be managed by BRD-SPID following the absorption of BDF by BRD. It includes:

- Legacy Matching Grants (MGs) and Innovation Challenge Fund (ICF) grants: Previously implemented by BDF on behalf of RAB-SPIU. Following the absorption of BDF by BRD (January 1, 2026), fiduciary responsibility transfers to BRD-SPID. No new MGs or ICF grants will be issued.
- New SSIT/FLID matching grants: US\$ 5.48 million to finance 2,000 hectares of small-scale, farmer-led irrigation technologies (e.g., solar pumps, drip kits, small-scale water harvesting) will be implemented by RAB-SPIU. Prioritizes smallholder groups with proven links to commercial buyers.

Component 2: Agricultural Finance and Insurance (US\$ 81.41 million after restructuring and AF)

The objective of this component is to expand the supply of financial products and services to farmers, cooperatives, and agribusiness SMEs in the selected value chains. The component will have two subcomponents:

Subcomponent 2.1: Scaling up agricultural finance (US\$ 69.91 million after AF)

The AF allocates US\$ 5.43 million to expand the credit line, plus US\$ 5.98 million reallocated from Matching Grants and Innovation Challenge Fund grants, bringing the total additional credit allocation to US\$11.41million. An additional US\$ 0.5 million is allocated for institutional capacity development of PFIs to appraise and manage loans linked to smallholder-oriented business models

Subcomponent 2.2: Strengthening agricultural insurance (US\$ 11.5 million after AF)

The AF allocates US\$ 1.5 million to scale up agricultural insurance, including premium subsidies (allowing ~15% increase in crop/livestock cover), development of new insurance products, institutional capacity development of NAIS, and a digital database for claims settlement.

Component 3: Project Management (US\$ 18.6 million after AF)

This component ensures the smooth implementation of the project. It supports all aspects of project management, such as: (i) project staffing and their training; (ii) procurement and financial management; (iii) environmental and social safeguards implementation and compliance;

(iv) monitoring and evaluation; (v) equipment and operating costs; (vi) communication and knowledge management. The project also finances technical assistance and analytics to address specific policy and regulatory framework aspects that are critical for unleashing opportunities in areas that fall under the scope of the project, e.g. competitiveness, commercialization, job creation, or attracting greater involvement of private sector, development of an appropriate policy framework for crop and livestock insurance in Rwanda that could provide clarity of subsidy targeting, product approval for subsidies and role and responsibilities of private and public sector players, etc.

Component 4: Contingency Emergency Response Component (CERC) (US\$ 0 Million)

This component will allow for rapid reallocation of credit uncommitted funds in the event of an eligible emergency. For the CERC to be activated, and financing to be provided, the Government will need (i) to submit a request letter for CERC activation, and the evidence required to determine eligibility of the emergency, as defined in the CERC Annex to the Project Operations Manual; (ii) an Emergency Action Plan, including the emergency expenditures to be financed; and (iii) to meet the environmental and social requirements as agreed in the Emergency Action Plan and ESCP.

1.3. Methodology for preparation of ESMF (Updated with AF considerations)

The following approach and methodology were used:

a) Desk review

The preparation of 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 Safeguards Policies and other relevant documents were done. For the AF update, additional review included the CDAT Project Paper (2026), revised ESCP, updated SEP and the Results Framework revisions.

b) Field Visits

For the AF, additional reconnaissance was conducted basically for the potential SSIT/FLID locations nationwide.

a) Public consultations

Various consultation meetings were separately held with District authorities and direct Project beneficiaries (i.e. site users) and other sites stakeholders and relevant staff of the key implementing partners of the ongoing CDAT project. The Stakeholder Engagement Plan (SEP) was updated for the AF to reflect ongoing consultations, grievance redress mechanisms, and inclusive engagement, particularly for PAPs and SSIT/FLID beneficiaries.

b) Preparation of ESMF

The preparation of ESMF for CDAT consisted of:

- Collection of baseline data on social environment of the project areas;
- Identification of positive and negative environment and social impacts
- Identification of environment and social mitigation measures;
- Preparation of screening procedures to be used while screening subproject activities and
- Formulation of environment and social management and monitoring plans

Key updates relevant to this ESMF include:

- Scaling-up of Large-Scale Irrigation: Financing two new hillside schemes (Cyohoha Phase 2: 2,600 ha; Gabiro Phase 2: 975 ha) that were put on hold.
- Introduction of SSIT/FLID Window: A new matching grant facility (US\$ 5.48 million) to finance 2,000 hectares of small-scale, farmer-led irrigation technologies.
- Financing of PAP Compensation: IDA funds (up to US\$ 1.61 million, including contingency estimated to 1.22 million) used directly to compensate Project-Affected Persons. Extension of Project closing date extended by 22 months to February 28, 2029.

Environmental and Social Performance under the Parent Project (Original CDAT)

To inform the assessment of continuity risks under the Additional Financing, particularly in light of the institutional transfer of grant management functions from BDF to BRD-SPID, this section summarizes the environmental and social (E&S) performance of the original CDAT project as of July, 2026. Overall E&S performance of the parent project has been rated by World Bank implementation support missions as satisfactory/moderately satisfactory, with safeguards instruments (ESMF, RPF, LMP, PMP, SEP and ESCP) prepared, disclosed and under implementation, site-specific ESIA/ESMPs cleared prior to commencement of civil works, and functioning site-level Grievance Redress Committees (GRCs). The table below presents the legacy E&S status carried into the AF.

Aspect	Status as of July, 2026	Actions carried into the AF
ESIA/ESMP compliance	3 site-specific ESIA/ESMPs prepared and cleared by RDB and the World Bank and under implementation with no major non-compliance recorded in quarterly E & S reports. Remaining	Continued monitoring and quarterly E&S reporting; under the AF budget

	site- specific ESIA studies are ongoing.	
Resettlement (RAPs)	2 RAPs and 1 LAP prepared; 1 LAP fully implemented and closed; 2 open RAPs with 4 PAPs pending compensation	Open RAPs to be completed using IDA-financed PAP compensation (Category 9) under the AF, with a target of full compensation prior to commencement of works at the affected sites
Grievances	67 grievances received under the parent project; all 67 resolved; of which relate to land/compensation	No Pending grievances to be transferred to the strengthened AF GRM.
SEA/SH incidents	0 SEA/SH incidents reported and referred through OSC pathways; all cases handled per referral protocols	Survivor-centered SEA/SH protocols formalized in Chapter 5 of this updated ESMF. A standalone SEA/SH preventive and action plan has been prepared for AF
BDF-managed grant portfolio (MG/ICF)	E&S screening applied to 189 legacy grants; 27 with outstanding ESMP actions or unresolved grievances at the time of the BDF-BRD merger	Legacy portfolio handover protocol from BDF to BRD-SPID set out in Chapter 8 of this updated ESMF.

CHAPTER TWO: 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 CDAT. Rwanda being a signatory to various international conventions and laws, it is important that national projects are in line with these laws and as such some of the relevant international conventions are reviewed in this chapter.

2.1. National environmental and social management requirements

2.1.1 Policy framework

a) National Environment and Climate change Policy

In the past two decades, Rwanda took a strategic decision to pursue a green growth approach to development and committed to mainstream environment and climate change issues into national development processes. In this regard, a national policy on environment and climate change was put in place in 2019 to replace the 2003 environment policy.

The environment and climate change policy targets to have a clean and healthy environment which is resilient to climate variability and supports a high quality of life for every citizen and a sustainable socio-economic development through a rational management and utilization of resources. The policy is also linked with key global policy considerations including sustainable development goals (SDGs), African Union agenda 2063, East Africa Community (EAC) vision 2050, EAC climate change master plan (2011-2031) and multilateral environmental agreements (MEA). Under this policy, environment and climate change aspects are reflected in all key priority areas of the country, especially critical sectors already identified for strengthening, namely agriculture, urbanization, infrastructure and land use management, energy, water and sanitation.

The smooth implementation of the policy will focus on (i) strengthening monitoring and evaluation, (ii) environmental and social assessments, (iii) biodiversity and ecosystem management, (iv) pollution and waste management and (v) climate change and adaptation.

The CDAT project investments triggered this policy and integrated the Rwanda Environment and climate change 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.

b) Agriculture Policy

The main objective of Rwanda agriculture policy is to intensify and transform subsistence agriculture into a market-oriented agriculture, and this requires the modern inputs, notably improved seeds and fertilizers.

This would be achieved through:

- (i) Promotion of new strategies that will stimulate productivity growth for a broadened nutritional food production, while embarking on new opportunities for farm income diversification, in order to secure further reductions in rural poverty, and transform the dominant subsistence farming sector into a competitive and market-led agriculture sector;
- (ii) Development and promotion of a sustainable agricultural intensification and a resilient agriculture sector to counter environmental degradation and climate change in ways that maintain sustainable agricultural growth;
- (iii) Addressing the knowledge and skills deficits in the agriculture sector to unlock significant additional agricultural as well as labour productivity gains for high quality produce and services;
- (iv) Enhancing policy and institutional coordination and collaboration amongst different relevant stakeholders

operating in the sector through the creation of an effective enabling environment to render institutions more responsive.

The policy focuses on the role of agricultural inputs as drivers of higher yields and subsequent economic transformation through availing agriculture inputs, and to develop the network of agro-dealerships in the project sites. It also intends to strengthen the market linkages and value addition potential for selected value chains. The project emphasizes the rational use and environmentally sustainable exploitation of land for food production and enhances commercialization and access to financial services in selected agricultural value chains.

c) Land policy

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. On the use and management of hillsides and marshlands, the policy stipulates that marshlands meant for agriculture should be cultivated after adequate planning and Environmental Impact Assessment.

The CDAT activities are being implemented based on the suitability of the areas/lands thus distinguishing the different categories of land and their purpose and observing the procedures of the land policy that stipulates that marshlands meant for agriculture should be cultivated after adequate planning and Environmental Impact Assessment. They will also improve irrigation systems, facilitate inputs and mechanization to diversify and enhance the level of productivity in small farms.

d) Health Sector Policy

In accordance with the national Labour law No 66/2018 of 30/08/2018, an employer is responsible to maintain health, safety and welfare of the workers at his workplace and all persons who frequent the enterprise.

In order to prevent and fight occupational accidents and diseases, an employer has to (i) assess risks of occupational accidents and diseases, (ii) develop occupational safety and health plan and monitor its implementation, (iii) prevent risks of occupational accidents and diseases, (iv) fight occupational accidents and diseases and (v) adapt modalities of preserving occupational health and security of employees with new technology. The employer declares to the management of the social security body in Rwanda and the Inspectorate of Labour where the enterprise is located, occupational accident, disease or death in accordance with relevant Laws.

As the irrigation projects have a key role to play in water related diseases and malaria incidences, the policy in the subprojects areas should emphasize more on environmental control of the disease vector especially in marshy areas as opposed to curative services.

The CDAT emphasizes more on community sensitization on waterborne and communicable diseases while reinforcing existing health services and environmental control of the disease vector especially in command areas and irrigation canals.

e) National Biodiversity strategy and action plan, NBSAP (2025-2030)

The Strategy establishes the national vision, objectives, and priorities for the conservation, restoration, and sustainable management of biodiversity. It is structured around key strategic pillars: strengthening the conservation and restoration of protected areas and wetlands; promoting the sustainable use of biodiversity within natural ecosystems and agroecosystems; enhancing the safe and responsible application of biotechnology; reinforcing policy, institutional, legal, and human capacity frameworks; and ensuring the fair and equitable sharing of benefits arising from the use of biological resources.

CDAT AF will support the implementation of this strategy by protecting and restoring natural habitats within and around project areas, promoting sustainable agroecosystem management, supporting responsible irrigation water management, and enhancing climate resilience through the adoption of drought-tolerant crop varieties.

f) National Strategy for Transformation (NST2)

The National Strategy for Transformation (NST2) builds on the achievements and lessons of NST1 and sets out Rwanda's medium-term framework to advance the country's journey toward the Vision 2050 aspirations. It aligns national development priorities with global, regional, and continental commitments, including the Sustainable Development Goals (SDGs), the African Union Agenda 2063 and its First Ten-Year Implementation Plan, the East African Community (EAC) Vision 2050, and the Paris Agreement on Climate Change, among other international frameworks.

NST2 is structured around three core pillars: Economic Transformation, Social Transformation, and Transformational Governance. The CDAT programme is aligned with NST2 targets to further enhance agricultural productivity and strengthen food security through:

- Expansion of developed schemes for high-value crop production
- Scaling up irrigation infrastructure, including support for small-scale irrigation technologies
- Increased adoption of improved seeds
- Promotion of balanced and informed use of organic and inorganic fertilizers
- Strengthening agricultural commodity value chains and supporting agribusiness development

g) National Water Resources Management Policy

The Water and Sanitation Policy seeks to ensure equitable, sustainable, and efficient access to water and sanitation services while promoting integrated water resources management, protection of water catchment areas, and conservation of water-related ecosystems. The policy emphasizes sustainable land and water management practices, including the protection and restoration of watersheds, wetlands, and other critical water resources. To enhance policy coherence and minimize potential conflicts among sectors, it advocates for a coordinated and integrated approach that aligns water resource management with policies and strategies in agriculture, forestry, wetlands, land use, and environmental protection.

This policy is highly relevant to CDAT AF subprojects, as several project activities will be implemented in areas that depend on or influence water resources. Water is also a key input for many project interventions, particularly those related to agricultural production and irrigation. The project will support the adoption of appropriate technologies and best practices that enhance water availability, improve water-use efficiency, and promote the sustainable management of water resources in line with the objectives of the Water and Sanitation Policy.

h) Green Growth and Climate Resilience Strategy

Rwanda adopted the Green Growth and Climate Resilience Strategy (GGCRS) in 2011. The GGCRS Programmes of Action, NDC measures, and SDG targets continue to be integrated into Rwanda's current agricultural and development planning frameworks, notably PSTA 5 and NST2 (2024-2029).

i) Forest Policy

The forest policy is relevant to this project due to the role that forests play in water regulation and soil conservation. The forest policy aims at curbing the continuous wood shortage and but most important to this study the alarming deterioration of soil. Forest management is linked intricately to marshlands existence, soil productivity, and water quality and flooding. The policy provides strategies for reforestation and for environmental protection.

This policy is relevant to CDAT as some of the project activities touch on afforestation and revegetation of degraded

areas especially catchments areas whether protected or non-protected. The agroforestry activities in the hills also have positive impacts on the country's forest stock if successful through supply of firewood and rejuvenating the soil productivity thus intensifying crop production as opposed to encroachment to forested areas.

j) International Conventions

Rwanda being a signatory to some of the international conventions that are relevant to the CDAT, it is imperative that CDAT sub-projects and activities are screened in light of the commitments made under such conventions:

- a) United Nations Convention on Biological Convention
- b) RAMSAR Convention on Wetlands
- c) Convention on the Conservation of Migratory Species
- d) EAC Protocol on Environment
- e) United Nations Framework Convention on Climate Change (UNFCCC)
- f) United Nations Convention to Combat Desertification (UNCCD)

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 CDAT with respect to environmental safeguards compliance.

k) Rwandan Constitution

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 cross-cutting issue is reflected in the National Vision 2050 and the National Policy on Environment of 2017. The Constitutional rights as articulated in Vision 2020 and Vision 2050 and 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 CDAT AF activities will likely have adverse environmental impacts on land, water, biodiversity and air resources. The mitigation measures for environmental protection in CDAT project sites is guided by the law No 48/2018 of 13/08/2018 on Environment and law No 32/2015 of 11/06/2015 relating to expropriation in the public interest.

l) Law on Environment

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) as an authorized organ to approve ESIA where there is a department for ESIA, responsible for review and approval of all ESIA reports.

This project observes the law No 48/2018 of 13/08/2018 on environment by preparing Environmental and Social Impact Assessment (ESIAs) in order to ensure reduction of disastrous consequences on the Environment in its activities. The CDAT monitors the compliance with environmental safeguards in all sites.

m) Ministerial Order determining the length of land on shores of lakes and rivers transferred to public property N° 007/16.01 of 15/07/2010

This law sets the boundary for development and settlement activities next to water bodies. This Order aims at setting aside the length of land on shores of lakes, swamps and rivers affected in the public domain for environmental protection. The land within a distance of fifty (50) meters and twenty (20) meters respectively from the lakeshore and swamps' edge is public property. The land within a distance of ten (10) and five (5) meters from the shore of big rivers and small rivers respectively is also public property. The length set is calculated beginning from the furthest line reached by water depending on successive flooding record; and such land is statutorily regarded as a protected area and not allowed to erect private property on such land. The only activities aimed at protecting the water bodies are permitted in these protected areas.

During CDAT project implementation, a distance of ten (10), five (5) and two (2) meters away from the banks of big rivers, small rivers and streams respectively, 2m along main irrigation and drainage canals, at least 20 meters in the surroundings of the reservoirs is established and respected. The buffer zones around reservoirs or along the water courses and main irrigation and drainage canals will be planted with trees and fodder grasses to benefit the PAPs that use the buffer area for livelihood.

n) Law n° 27/2021 of 10/06/2021 governing land in Rwanda

The law No 27/2021 of 10/06/2021 governing land in Rwanda is the law that 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 the Law, Land in Rwanda is categorized into two: Individual land and Public land. The latter is also subdivided into two categories: the state land in public domain and the state land in private domain. The State land in the public domain consists of all land meant to be used by the general public or land reserved for organs of State services as well as national land reserved for environment conservation. The activities under CDAT shall respect the land use plans of the area where the land is located.

o) Law N° 30/2012 of 01/08/2012 governing on Agrochemicals

The law No 30/2012 of 01/08/2012 governing agrochemicals focuses on both pesticides and mineral fertilizers and aims to regulate manufacturing, importing, distribution, use, storage, sale, disposal and burial of expired agrochemicals for the protection of human and animal health and the environment. The Ministry of Agriculture and Animal Resources (MINAGRI) has the responsibility for its implementation. The Article 3 of the Ministerial Order No 003/2021 of 08/02/2021 determining the list of chemicals and other polluting substances that are not permitted, specifies chemicals and other polluting substances that are not permitted in Rwanda and are annexed to this Order.

E-waste management regulations

The introduction of solar-powered Small-Scale Irrigation Technologies and Farmer-Led Irrigation Development (SSIT/FLID) equipment under the AF (solar panels, batteries, inverters, pumps and control units) brings the project within the scope of Rwanda's regulatory framework for electrical and electronic waste (e-waste). The National E-Waste Management Policy (2016) and the associated REMA guidelines on the environmentally sound management of end-of-life electrical and electronic equipment require that e-waste be segregated from other waste streams, handled by licensed operators, and channeled to certified dismantling and recycling facilities, notably the national e-waste dismantling and

recycling facility at Bugesera. The Law N° 48/2018 of 13/08/2018 determining modalities of protecting, conserving and promoting the environment further prohibits the abandonment or uncontrolled disposal of hazardous waste, which includes lead-acid and lithium batteries and damaged photovoltaic panels.

To comply with these requirements and with the project's commitment to 100% recycling of end-of-life solar equipment (Chapter 7), all SSIT/FLID procurement and supply contracts shall include: (i) supplier take-back or buy-back obligations for batteries, inverters and panels at end-of-life; (ii) an obligation to deliver collected e-waste to a REMA-licensed recycler with documented chain of custody; and (iii) beneficiary sensitization on safe storage and return of spent components. Compliance will be verified through the e-waste monitoring indicator in Chapter 7 and the targeted SSIT/FLID audits budgeted in Chapter 9.

p) Ministerial Order No003/MoE/25 of 19/08/2025 relating to environmental and social impact assessment

The Article 3 and the respective appendices of this Order specify the works, activities and projects that have to undertake a full environmental and social impact assessment (full ESIA) and partial ESIA respectively before being granted permission to commence. The Article 5 of the same Order provides guidance on projects, works or activities not requiring a full ESIA for the compliance with environmental requirements. The present project is classified under Agricultural activities which use chemical fertilizers or pesticides in wetland and infrastructure Development which is considered as a high- risk area.

q) Ministerial Order for Establishing the List of Protected Animals and Plant Species in Rwanda, Order No 007/2008 of 15/08/2008

This Ministerial Order establishes a protected animal and plant species list in Rwanda. The list of animals that include Mammals, Birds and Reptiles is shown under Appendix I while the protected plant species is shown under Appendix II of the Order document. The present project does not involve clearance of natural vegetation or affect any of the listed protected animals and plant species.

r) Ministerial order N°001/2021 of 08/02/2021 establishing the list of projects that must undergo an environmental audit, instructions and procedures to conduct environmental audit

The Environmental audit (or Environmental and social audit, ESA) is conducted on existing projects or facilities and based on project description or design and baseline information gathered during the ESIA study.

However, for activities, projects and facilities for which the ESIA was not conducted prior to their commencement, the environmental audit is based on the description and background information generated in the scoping process.

The Article 3 of the above Ministerial Order (MO) provides the list of works, activities and projects that must undergo environmental audit and is annexed to this Order. The procedures for conducting an ESA are also detailed in Articles 4 to 10.

2.1.3. National Resettlement Regulaions

This part describes the National institutional, legal and policy framework for resettlement requirements in Rwanda, applicable to the project as well as the international provisions that bear relevance to the implementation of this project.

2.1.3.1 Expropriation Law for Public interest

The law No. 32/2015 of 11/06/2015 relating 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 above expropriation law, no person shall hinder the implementation of the program of expropriation on

pretext of self-centered justifications and no landowner 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 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, 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.

Some activities under CDAT acquire private land (development of infrastructures), however the value of assets to be affected by the project is not yet determined and shall be paid before any commencement of any activities.

2.1.3.2. Law establishing and organizing the Real Property Valuation Profession in Rwanda

Law No.17/2010 of 12/05/2010 Establishing and Organizing the Real Property Valuation Profession provides conditions for registration of land valuers in Rwanda, establishes the Institute for real property Valuers and sets conditions to exercise the profession. The law also allows the Government staff to conduct valuation when mandated by their government institutions.

Article 23 of the law explains the appointment of valuers. The law also specifies that the price for the real property shall be equal to the prevailing market value. Where sufficient comparable prices are not available to determine the value of affected assets, the replacement cost approach shall be used to determine the value of improvements to land by taking real property as a reference.

Consequently, the valuation of land and property incorporated thereon shall be conducted by valuers certified by the Institute of Real Property Valuers in Rwanda under the CDAT.

2.1.4. 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.

2.1.4.1 Ministry of Environment (MoE)

This Ministry of Environment (MoE) is the coordinating institution of the Environment and Natural Resources Sector in Rwanda. 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 sectors;
- ✓ 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 climate change adaptation and mitigation.

2.1.4.2 Ministry of Agriculture and Animal Resources (MINAGRI)

The Ministry of Agriculture and Animal Resources (MINAGRI) through RAB/SPIU is the line Ministry for RAB, the executing agency of CDAT project. It seeks to improve agricultural productivity and soil conservation through selected districts across the Country.

2.1.4.3 Rwanda Agriculture and Animal Resources Development Board (RAB)

RAB ensures improved food security and livelihoods of all Rwandans by transforming agriculture from subsistence into

modern farming through generating research and extension innovations that generate sustainable crop, animal husbandry and natural resources management.

Under the CDAT project, RAB/ SPIU is responsible for overall coordination and management of the project as well as implementation of Component 1 (Value Chain and Infrastructure Development), Subcomponent 2.2 (Strengthening agricultural insurance) and 3 (Project Management).

2.1.4.4 Rwanda Development Bank (BRD)

BRD will implement all activities under Subcomponent 2.1 (Scaling up agricultural finance) in Component 2 (Agricultural Finance and Insurance) and subcomponent 1.4 (Grants for Value Chain Development)

2.1.4.5 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.

2.1.4.6 Rwanda Development Board (RDB)

The Rwanda Development Board (RDB) is governed by Law No. 057/2023 of 17/11/2023, which defines its mission, responsibilities, powers, organizational structure, and functioning. Its mission is to accelerate Rwanda's economic development by fostering private sector growth. As part of its mandate, RDB is responsible for reviewing Environmental and Social Impact Assessment (ESIA) reports and authorizing projects to proceed through the issuance of an ESIA Certificate, accompanied by Conditions of Approval.

2.1.4.7. Rwanda Water Resource Board (RWB)

The Rwanda Water Resources Board (RWB) was established to oversee the sustainable management and development of the country's water resources. Its key functions include implementing policies, laws, strategies, and Government decisions related to water resources management; advising the Government and coordinating the implementation of relevant strategies; supporting public and private institutions in water resource management and erosion control initiatives; contributing to the development of standards and regulations governing water resources; reviewing and providing guidance on applications for water use permits and monitoring compliance with permit conditions; advising on the determination of water use fees; coordinating stakeholders across the water sector, including those involved in domestic water supply, irrigation, ecosystem management, financing, transboundary water resources, and infrastructure development; monitoring the implementation of regional and international agreements on water resources management and allocation; and collaborating with national and international institutions engaged in water-related activities.

The CDAT Project complies with all applicable requirements and regulations governing the use, conservation, and management of water resources across its project sites.

2.1.4.8 Local Governments

The CDAT AF will be implemented in different districts of Rwanda. In Rwanda, districts play a critical role in promoting environmental protection, enforcing environmental compliance, implementing social safeguards, and advancing the country's Green Growth and Climate Resilience agenda. As decentralized government entities, Districts are responsible for integrating environmental and social considerations into local development planning and implementation.

2.2. World Bank environmental and social safeguard policies

The World Bank has adopted the Environmental and Social Framework (ESF) in 2018 that replaced the environmental and social safeguard policies 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. The ESF also emphasizes social inclusion and Borrower capacity enhancement. Further, ESF provides guidelines for Bank and borrowers in the identification, preparation, implementation and monitoring of programs and projects.

This ESMF has been designed so that all CADT activities funded under the World Bank 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) and their applicability to the agriculture sector are presented below:

1. Assessment and Management of Environmental and Social Risks and Impacts (ESS1);
2. Labour and Working Conditions (ESS2),
3. Resource Efficiency and Pollution Prevention and Management (ESS3),
4. Community Health and Safety (ESS4);
5. Land Acquisition, Restrictions on Land Use and Involuntary Resettlement (ESS5);
6. Biodiversity Conservation and Sustainable Management of Living Natural Resources (ESS6);
7. Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities
8. Cultural Heritage (ESS8);
9. Financial Intermediaries (ESS9)
10. Stakeholder Engagement and Information Disclosure (ESS10).

The World Bank (WB) and GoR agreed that CDAT will trigger all environmental and social Standards of the WB, except ESS7. This standard is not triggered 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.

The following link provides the requirements of the 10 World Bank ESSs that apply to Borrowers:

<https://www.worldbank.org/en/projects-operations/environmental-and-socialframework/brief/environmental-and-social-framework-resources>

The following text presents a summary of the ESSs.

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

The Environmental and Social Standards ESS1 is relevant to all projects for which the bank investment project financing is sought. The ESS1 establishes the importance of (i) the borrower's existing environmental and social framework in addressing the risks and impacts of the project; (ii) an integrated environmental and social assessment to identify the risks and impacts of a project; (iii) effective community engagement through disclosure of project related information, consultation and effective feedback; and (iv) management of environmental and social risks and impacts by the borrower throughout the project life cycle. The bank requires that all environmental and social risks and impacts of the project be addressed as part of the environmental and social assessment conducted in accordance with ESS1.

Comparison between Rwandan and World Bank ES System

This section compares the similarities and differences between the National requirements and the World Bank environmental safeguards policies.

Basically, there is no big difference regarding 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 Standards (ESS1) are presented below:

Table 1: Differences between Rwanda Regulations and World Bank ESS1

Item	National Standards	World Bank ESS1	Gap	Bridging Measures
Project risk categorization/ classification	National Regulations classify projects under three categories 1, 2 and 3 (Impact level IL1, IL2, IL3)	Depending on the type, location, sensitivity and scale of the project and nature and magnitude of its potential impacts, the WB classifies the proposed projects into High, Substantial, Moderate or Low risk.	While the WB categorization of projects is mainly based on potential impacts and sensitivity of hosting environment, the national categorization is mainly based on the size of the project.	CDAT subprojects are categorized based on WB ESF and will follow the most equivalent category in national Regulations.
Environmental and Social instruments	In Rwanda only full ESIA, partial ESIA, SEA and Environment Audit are regulated instruments	Recognizes various EA instruments including SEA, ESIA and ESMF, etc depending on the project.	Though national regulations recognize environmental safeguards aspects, but there is no provision to prepare ESMF, ESMS and ESCP	For investments with significant impacts/ risks, all E&S safeguards tools (ESMS, ESMF, SEP, LMP, RPF, ESCP,) and required site specific tools (ESIA, RAP, etc) are being prepared and implemented based on WB ESF requirements.
Assessment of alternatives	The national law on environment and ESIA procedures requires lead agency to explore project alternatives but is silent about avoiding, minimizing involuntary resettlement.	Requires borrower to consider feasible alternative project designs to avoid or minimize land acquisition or restrictions on land use, especially where this would result in physical or economic displacement, while balancing environmental, social, and financial costs and benefits, and paying particular attention to gender impacts and impacts on the poor and vulnerable.	While WB policy requires the borrower to explore alternatives that avoid or minimize resettlement impacts, the national regulations only require the provision of compensation	For investment proposed under CDAT, alternatives should be assessed to avoid or minimize involuntary resettlement in project areas and other sensitive areas.

Consultation and participation	The consultation and participation is recognized as important during ESIA study	ESS1 and ESS10 recognizes the importance of early and continuing engagement and meaningful consultation with stakeholders	The National regulation does not recognize Stakeholder engagement and disclosure of appropriate information in accordance with ESS10	Apply ESS10 requirements during the project implementation. SEP has been prepared and updated for the project
Documents Approval and Disclosure	The law specifies the Institution competent for ESIA, ESMP review and approval (ie RDB) but remains silent on its disclosure. It also assigns REMA for the review of other environmental safeguards documents regulated in Rwanda but again remains silent on their disclosure	ESS 1 and ESS10 require that prepared documents are approved by the Bank and disclosed at WB external website	National regulations remain silent on the disclosure of approved documents	Comply with the requirements of ESS10 for documents disclosure. All E&S instruments will be publicly disclosed and also disclosed in the WB external website.
Implementation and Monitoring	The law gives the monitoring responsibility to the project implementer as well as REMA.	The bank has the responsibility to monitor the environmental and social performance of the project in line with legal agreements including ESCP on an ongoing basis.		The implementation and monitoring of the project should be in line with national and WB requirements. This will also be defined in the ESMF and ESIA.
Grievance Mechanism and accountability	The responsibility is given to local administration and courts depending on matter's level.	Complies with World bank that requires project proponents/borrowers to ensure that a grievance mechanism for the project is in place, as early as possible in project development to address specific E&S concerns raised by affected persons (or others) in a timely fashion. Where possible, such grievance mechanisms will utilize existing formal or informal grievance mechanisms suitable for project purposes, supplemented as needed with project-specific arrangements designed to resolve disputes in an impartial manner.	National environmental regulations do not provide for specific grievance mechanisms during the implementation of a given project	Grievance redress mechanisms are being established at project level, PFI level and site level.

ESS2: Labour and Working Conditions

The ESS 2 recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. It has the following objectives:

- To promote health and safety at work ;
- To promote the fair treatment, nondiscrimination and equal opportunity of project workers;
- To protect project workers, including vulnerable workers such as women, persons with disabilities, children (of working age, in accordance with this ESS) and migrant workers, contracted workers, community workers and primary supply workers, as appropriate;
- To prevent the use of all forms of forced labor and child labor;
- To support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law;
- To provide project workers with accessible means to raise workplace concerns.

For the compliance with this ESS2, the borrower has prepared and adopt labor management procedures with provisions on (i) Working conditions and management of workers relationships including terms and conditions of work, nondiscrimination and equal opportunity and workers organizations; (ii) protection of the work force with focus on child labor and minimum age as well as forced labor; (iii) grievance redress mechanisms; (iv) occupational health and safety and (v) fair treatment of all workers including direct, contracted, community, and primary supply workers and Government civil servants, where applicable. These are also reflected in the Law No 66/2018 of 30/08/2018 regulating labour in Rwanda.

It is anticipated that an important workforce will be required for the CDAT project implementation. Not only RAB and BRD's employees will oversee the execution of this project, but also contracted workers during infrastructure development and services provision as well as the majority of unskilled workers sourced from the community members in the project sites and a few required skilled workers from outside of the project area will be mandatory for the smooth running of this project.

The Labor Management Plan (LMP) has been prepared to identify and address issues associated with employment and working conditions, occupational health and safety risks and project related grievances. The Code of Conduct for contractors was included in the LMP and must be incorporated in all contracts. Though the Rwanda labour law captures all requirements of ESS2, it does not provide for the LMP preparation.

ESS3: Resource Efficiency and Pollution Prevention and Management

The ESS3 recognizes that economic activities, agriculture inclusive, often generate pollution to air, water and soil, and use resources that may threaten people, ecosystem services and the environment at the local, regional, and global levels. The current and projected atmospheric concentration of greenhouse gases (GHG) threatens the welfare of current and future generations.

On the other hand, more efficient and effective resource use, pollution prevention and GHG emission avoidance, and mitigation technologies and practices have become more accessible and achievable

This standard targets to (i) promote the sustainable use of resources, including energy, water and raw materials, (ii) avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities, (iii) avoid or minimize project-related emissions of short and long-lived climate pollutants, (iv) avoid or minimize generation of hazardous and non-hazardous waste, (v) minimize and manage the risks and impacts associated with pesticide use.

For compliance with this standard, the Borrower implements technically and financially feasible measures for improving efficient consumption of energy, water and raw materials, as well as other resources. Such measures integrate the principles of cleaner production into product design and production processes to conserve all resources. Furthermore, the Borrower will

avoid or reduce the release of pollutants to air, water and land due to routine, nonroutine, and accidental circumstances, and with the potential for local, regional, and transboundary impacts.

The measures for the management of air pollution, hazardous and nonhazardous wastes, chemicals and hazardous materials and pesticides are included in this ESMF and will be detailed in site specific ESIA/ESMP based on the assessment of impacts and risks. They will be integrated in the bidding documents and contracts during project implementation.

ESS4: Community Health and Safety

The ESS4 recognizes that project activities, equipment and infrastructure can increase community exposure to risks and impacts. Furthermore, communities that are already subjected to impacts from climate change may also experience an acceleration or intensification of impacts due to project activities. It addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of Borrowers to avoid or minimize such risks and impacts, with particular attention to people who, because of their particular circumstances, may be vulnerable.

The Standard's objectives include (i) anticipating and avoiding adverse impacts on the health and safety of project-affected communities during the project life cycle from both routine and nonroutine circumstances, (ii) promotion of quality and safety, and considerations relating to climate change, in the design and construction of infrastructure, including dams, (iii) avoiding or minimizing community exposure to project-related safety risks, diseases and hazardous materials, (iv) establishment of effective measures to address emergency events and (v) ensuring that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities .

The requirements for (i) community health and safety regarding infrastructure and equipment design and safety, traffic and road safety, safety of services, ecosystem services, community exposure to health issues including SEA/SH risks and impacts, emergency and preparedness response, management and safety of hazardous materials and (ii) security personnel shall be implemented to address risks and impacts associated with the project.

ESS5: Land Acquisition, restrictions on land Use and involuntary resettlement

For the AF, the use of IDA resources (Category 9) to directly compensate Project-Affected Persons (PAPs) is introduced. This does not change the ESS5 trigger status, as land acquisition is not a new aspect of the project. However, it expands implementation scope and introduces sequencing and fiduciary sensitivities. PAP compensation under CDAT primarily relates to land acquisition and affected assets linked to irrigation subprojects triggering ESS5.

RAPs will be prepared prior to construction for Cyohoha Phase 2 and Gabiro Phase 2. A dedicated grievance mechanism for PAP compensation will be established at each irrigation scheme with a target resolution time of 30 days for compensation-related complaints.

ESS6: Biodiversity Conservation and sustainable management of living natural resources

The ESS6 recognizes that conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development and maintaining core ecological functions of habitats, including forests and biodiversity they support, is very important. Biodiversity often underpins ecosystem services valued by humans. The impacts on biodiversity can therefore often adversely affect the delivery of ecosystem services. This ESS addresses biodiversity conservation and sustainable management of primary production and harvesting of living natural resources.

The requirements of this ESS are applied to all projects that potentially affect biodiversity or habitats, either positively or negatively, directly or indirectly, or that depend upon biodiversity for their success. Biodiversity is defined as the variability

among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems. Impacts on biodiversity can therefore often adversely affect the delivery of ecosystem services. Habitat is defined as a terrestrial, freshwater, or marine geographical unit or airway that supports assemblages of living organisms and their interactions with the nonliving environment.

The CDAT project triggers this standard since the proposed investment is likely to have potential adverse impacts on natural habitats including wetlands, underground and open water bodies, forests and soil. This requires that CDAT designs appropriate conservation and mitigation measures to avoid or reduce adverse impacts on these ecosystems or their functions. Specific measures will depend on the ecological characteristics of the affected ecosystem and may include provision for monitoring and evaluation to provide feedback on conservation outcomes as well as guidance for developing or refining appropriate corrective actions. Where significant risks and adverse impacts on biodiversity have been identified, the Borrower will develop and implement a Biodiversity Management Plan.

ESS8: Cultural Heritage

Cultural heritage is important as a source of valuable scientific and historical information, as an economic and social asset for development, and as an integral part of people's cultural identity and practice. This standard recognizes that the cultural heritage provides continuity in tangible and intangible forms between the past, present and future and sets out measures designed to protect cultural heritage throughout the project life cycle.

The ESS8 aims at protecting cultural heritage from the adverse impacts of project activities and support its preservation, addressing cultural heritage as an integral aspect of sustainable development, promoting both meaningful consultation with stakeholders regarding cultural heritage and equitable sharing of benefits from the use of cultural heritage.

The requirements of this ESS8 apply to all projects that are likely to have risks or impacts on cultural heritage including (a) projects involving excavations, demolition, movement of earth, flooding or other changes in the physical environment; (b) projects located within a legally protected area or a legally defined buffer zone; (c) projects located in, or in the vicinity of a recognized cultural heritage site or (d) projects specifically designed to support the conservation, management and use of cultural heritage. The requirements apply to cultural heritage regardless of whether or not it has been legally protected or previously identified or disturbed. They also apply to intangible cultural heritage only if a physical component of a project will have a material impact on such cultural heritage or if a project intends to use such cultural heritage for commercial purposes.

The CDAT project triggers the ESS8 as some of the project activities may interfere with physical cultural heritage resources that need to be protected. The ESMF will address impacts on physical cultural resources and will require preparation and submission of a detailed physical cultural resources (PCR) management plan where required and prior to the commencement of civil works. The PCR Management Plan will also include "chance finds procedures".

ESS9: Financial Intermediaries

With the absorption of BDF by BRD (January 1, 2026), BRD-SPID now holds fiduciary and environmental and social risk management responsibility for all grant windows under Subcomponent 1.4. BRD has updated its ESMS to reflect its diversified portfolio, sector-specific E&S lending guidelines, clarified applicable technical standards, and a revised List of Excluded Activities. BRD has recruited two dedicated E&S risk management staff at the institutional level.

ESS10: Stakeholder Engagement and Information disclosure

This ESS recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design

and implementation. It must be read in conjunction with other ESSs.

The ESS10 applies to all projects supported by the Bank through Investment Project Financing. To this ESS, “stakeholder” refers to individuals or groups who: (a) are affected or likely to be affected by the project (project-affected parties, PAPs); and (b) may have an interest in the project (other interested parties). The project borrower will identify, analyse and engage with stakeholders throughout the project period, commencing such engagement as early as possible in the project development process and in a timeframe that enables meaningful consultations with stakeholders on project design. Through meaningful consultations, borrowers will provide stakeholders with timely, relevant, understandable, and accessible information and interact with them in a culturally appropriate manner, which is free of manipulation, interference, coercion, discrimination and intimidation.

The process of stakeholder engagement will involve the following: (i) stakeholder identification and analysis; (ii) planning how the engagement with stakeholders will take place; (iii) disclosure of information; (iv) consultation with stakeholders; (v) addressing and responding to grievances; and (vi) reporting to stakeholders. The Project borrower shall maintain and disclose as part of the E&S assessment, a documented record of stakeholder engagement, including a description of the stakeholders consulted, a summary of the feedback received and a brief explanation of how the feedback was considered, or the reasons why it was not.

The preparation of a stakeholder engagement plan (SEP) and disclosure of information are conditional for the compliance with the ESS10 requirements. In consultation with the Bank, the project borrower developed and implemented a Stakeholder Engagement Plan (SEP), proportional to the nature and scale of the project and its potential risks and impacts. Additionally, the borrower disclosed project information to allow stakeholders to understand the risks and impacts of the project, and potential opportunities and get feedback from them as early as possible before the Bank proceeds to project appraisal, and in a timeframe that enables meaningful consultations with stakeholders on project design. The SEP is a living document therefore with the AF it was updated accordingly. The CDAT project applies this standard to identify its key stakeholders and ensure they understand the project and enhance its ownership by them. The SEP was prepared, updated and information disclosure started through various consultations organized.

2.3. World Bank industry Sector Guidelines for Agribusiness

In addition to WB ESF, borrowers and projects are also required to apply the relevant requirements of the World Bank Group Environmental, Health and Safety Guidelines (EHSGs). The Environmental, Health, and Safety Guidelines are technical reference documents with general and industry specific examples of Good International Industry Practice (GIIP). The General EHS Guidelines contain information on cross-cutting environmental, health, and safety issues potentially applicable to all industry sectors. The EHS guidelines should be used together with the relevant Industry Sector Guideline(s).

The WB industry Sector EHS guidelines for Agribusiness cover EHS Guidelines for annual crop production, aquaculture, breweries, dairy processing, fish processing, food and beverage processing, mammalian livestock production, meat processing, perennial crop production, poultry production, poultry processing, sugar manufacturing and vegetable oil processing. The CDAT is anticipated to comply with the annual crop production, perennial crop production as well as food and beverage processing (possible processing of vegetables like tomato, sweet pepper and chili as well as fruit raw materials such as passion fruit, tree tomato, watermelon, etc into value-added food and beverages). The BRD ESMS will also require compliance with both WB ESSs and EHSGs for agribusiness, mostly annual crop production, perennial crop production and food and beverage processing under CDAT project.

The Environmental, occupational health and safety and community health and safety issues both in annual crop production and perennial crop production primarily include Soil Conservation and Management, Nutrient Management, Crop Residue and

Solid Waste Management, Water Management, Pest Management, Use and Management of Pesticides, Fertilizers, Biodiversity and Ecosystems, Genetically Modified Crops, Energy Use, Air Quality and Greenhouse Gas (GHG) Emissions. Occupational health and safety (OHS) issues associated with annual and perennial crop production include the physical hazards (operational and workplace hazards, machinery and vehicles, confined and restricted space entry, exposure to organic dust), risk of fire and explosion as well as biological and chemical hazards.

The potential exposure to pesticides and presence of pesticides or by-products in potentially harmful concentrations in foodstuffs and postharvest products, potential exposure to pathogens associated with the use of manure, potential exposure to air emissions from fires, burning of crop waste, residues, or solid waste and increased risk of vehicle or machinery injuries on roads and access routes around the community are the major community health and safety risks. These guidelines provide specific recommendations and performance indicators to monitor to minimize risks to communities which CDAT will continuously observe.

CHAPTER THREE: ENVIRONMENTAL AND SOCIAL BASELINE CONDITIONS

The CDAT project is being implemented throughout the country by RAB and BRD. This section provides a summary of the overall baseline condition of Rwanda in terms of bio physical environment, as well as the socio economic and cultural attributes.

3.1. Physical environment

Rwanda is a mountainous landlocked country, located in Central Africa, at latitude 2.00 S and longitude 30.00 E, bordered to its south by Burundi for about 290km, Tanzania to its east for 217 km, Uganda to its north for 169km and the Democratic Republic of Congo (DRC) to its west for 217 km. Rwanda has a total surface area of 26, 338 sq. km of which the total land area is 24, 948 sq. km and 1, 390 sq. km is land and water respectively.

3.1.1 Climate

Rwanda experiences a tropical highland climate that is moderated by its elevated terrain. Average annual temperatures generally range from 16°C to 22°C, with relatively limited seasonal variation. Rainfall is generally abundant across the country, although its distribution can be irregular in both time and space. Average wind speeds are typically between 1 and 3 m/s.

Climatic conditions vary significantly across Rwanda's diverse topography. In the high-altitude regions along the Congo-Nile Ridge, average temperatures range from 15°C to 17°C, accompanied by high levels of rainfall. The volcanic highlands in the northwest experience even lower temperatures, which can fall below 10°C in some locations. In the central plateau and mid-altitude zones, average temperatures range between 19°C and 21°C, with annual rainfall averaging approximately 1,000 mm. In the eastern and southeastern lowlands, temperatures are generally higher and may exceed 30°C during the hottest months, particularly in February and July–August. These areas receive lower annual rainfall, typically between 750 and 900 mm.

Rwanda's climate is primarily influenced by rainfall patterns and is characterized by four distinct seasons: two rainy seasons and two dry seasons. Although rainfall is generally distributed throughout the year, increasing variability has been observed, contributing to both droughts and extreme rainfall events. Total annual precipitation ranges from approximately 800 mm in the northeastern regions to over 1,600 mm in the high-altitude areas of Nyungwe and the northwestern highlands, with rainfall generally decreasing from west to east.

Rwanda is highly vulnerable to climate variability and climate change due to its dependence on rain-fed agriculture, mountainous terrain, and rapidly growing population. Climate-related hazards are unevenly distributed across the country. The Eastern Province, including districts such as Nyagatare, Rwamagana, and Gatsibo, as well as parts of the Southern Province such as Gisagara, are particularly susceptible to recurrent droughts and prolonged dry spells, which threaten agricultural productivity, water resources, and livelihoods. Conversely, the Northern and Western Provinces, including districts such as Gakenke, Nyamasheke, Karongi, Rutsiro, and Nyabihu, as well as Nyaruguru District in the Southern Province, experience intense rainfall that frequently triggers floods, soil erosion, and landslides. These hazards can result in significant damage to infrastructure, agricultural land, ecosystems, and human settlements.

Projected climate change impacts for Rwanda include rising temperatures, increased rainfall variability, more frequent and severe droughts in eastern regions, and heightened risks of flooding and landslides in mountainous areas. These trends underscore the importance of climate adaptation measures, resilient infrastructure development, sustainable land management, and improved disaster risk reduction strategies to strengthen the country's resilience to climate-related shocks.

3.1.2 Relief

Rwanda has a hilly and mountainous relief with an altitude ranging between 900 m and 4,507 m. The components of that relief

are:

- *Congo-Nil Ridge* overlies Kivu Lake with an altitude between 2,500 m and 3,000 m. It is dominated in the Northwest by the volcanic ranges consisting of five volcanic massifs of which the highest is Kalisimbi with 4,507 m.
- *The central plateau* represents a relief of hills with an altitude ranging between 1,500 m and 2,000 m.
- *The lowlands of the East* are dominated by a depression characterized by hills with more or less round top and 1,000 to 1,500 m in altitude. 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.

3.1.3 Hydrology

Rwanda is endowed with substantial water resources covering approximately 417,000 ha, including over 40 lakes occupying about 128,000 ha, more than 6,400 km of rivers and streams, and approximately 278,000 ha of wetlands and marshlands. Surface water resources are derived mainly from rainfall runoff and a dense hydrographic network with an average drainage density of about 2 km of watercourses per km².

The country's hydrological system is divided into two major drainage basins by the Congo–Nile Ridge, which extends from north to south and forms the principal watershed separating flows toward the Congo Basin and the Nile Basin. The western region, covering approximately 33% of Rwanda's territory, belongs to the Congo Basin and contributes about 10% of the country's water resources. This basin includes Lake Kivu and rivers such as Sebeya, Koko, Rusizi, Rubyiro, and Ruhwa. The eastern region, representing about 67% of the national territory, forms part of the Nile Basin and drains nearly 90% of Rwanda's water resources through the Nyabarongo and Akanyaru rivers, which combine downstream to form the Akagera River, the principal tributary of Lake Victoria and one of the headwaters of the Nile River.

Most rivers originate from the slopes of the Congo–Nile Ridge and flow through extensive wetland systems and shallow lakes. The Nyabarongo and Akagera river systems are closely associated with vast marshlands that influence hydrological processes by regulating river flows, reducing flood peaks, and sustaining dry-season base flows. The hydrographic network is denser in the Western, Northern, and Southern Provinces, while the Eastern Province is characterized by fewer and more seasonal streams.

Wetlands constitute one of Rwanda's most important hydrological and ecological resources. Covering approximately 278,000 ha, they act as natural water reservoirs and sediment traps, regulating the national water balance by buffering extreme hydrological events. During the rainy season, wetlands reduce peak runoff and flood intensity by storing excess water, while during the dry season they gradually release stored water, helping to maintain river flows. Wetlands also reduce the erosive force of flowing water, facilitating the deposition of suspended sediments and preventing downstream siltation of rivers and water bodies.

Beyond their hydrological functions, wetlands provide significant ecological and socio-economic benefits. They serve as important habitats for fish spawning, support rich biodiversity, and contribute to ecosystem conservation. Approximately 94,000 ha of wetlands have been brought under agricultural use, primarily for crops such as maize, beans, and sweet potatoes. Wetlands also support traditional livelihoods through livestock grazing, harvesting of plant materials for handicrafts, and brick-making activities.

Recognizing their environmental significance, the Government of Rwanda acceded to the Convention on Wetlands of International Importance (Ramsar Convention) in 2003 and has designated several wetlands for international conservation. The Rugezi Wetland was among the first sites listed under the convention, while other important wetland complexes, including Mugesera–Rweru, Kamiranzovu Marsh, and the wetlands within Akagera National Park, have been identified for conservation and potential Ramsar designation. To strengthen wetland management and conservation, Rwanda developed an action plan for the implementation of the Ramsar Convention in 2004.

Groundwater resources are closely linked to the country's wetland systems, which function as important recharge zones through infiltration and percolation. Groundwater levels in many wetland areas occur at depths of approximately 8 m. Rwanda's renewable groundwater resources are estimated to discharge about 66 m³/s, with over 22,000 identified springs contributing approximately 9 m³/s. Although groundwater constitutes an important component of the national water resource base, available information on its extent and characteristics remains limited.

Rwanda also possesses numerous lakes of varying sizes. Major lakes located entirely within the country include Burera, Ruhondo, Muhazi, Mugesera, Ihema, and Rwanyakizinga, while Lakes Kivu, Rweru, and Cyohoha are shared with neighboring countries. Lake Kivu, the largest lake in Rwanda, is situated along the western border with the Democratic Republic of Congo. With depths reaching approximately 475 m, the lake is notable for its significant dissolved methane gas reserves, which are increasingly being utilized for energy production. The lake drains southward through the Rusizi River toward Lake Tanganyika.

Overall, Rwanda's hydrological system is characterized by abundant surface and groundwater resources, extensive wetland ecosystems, and an interconnected network of rivers and lakes that play a critical role in water supply, flood regulation, biodiversity conservation, agriculture, and hydropower development.

3.1.4 Quality of water

In Rwanda, the quality of water is generally good with a pH ranging between 6 and 7.5. Surface water often carries a lot of soil sediments and, in mining and volcanic regions, the water can contain traces of arsenic, lead, mercury, fluoride, iodide and other toxic metalloids and heavy metals, leading to water resources degradation.

The physico-chemical pollution of water is not frequent due to the low 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. The pollution of watercourses and lakes by the water hyacinth and other invasive species is a very recent and alarming phenomenon in Rwanda.

3.1.5 Soils

The Rwandan pedology is characterized by six types of soils namely: Soils derived from schistose, sandstones and quartzite formations (50%); Soils derived from granite and gneissic formations (20%); Soils derived from basic intrusive rocks (10%); Soils derived from recent volcanic materials (10%); Soils derived from old volcanic materials (4%); Alluvial and colluvial soils (6%).

There is also an assortment of deposits of minerals such as tin, wolfram, Colombo tantalite and gold with the mining sector playing significant role in the national economy and as one of the key drivers of foreign direct investment in the country. Rwanda's soils contain many of the metal compounds found in laterite soils, but are generally lighter, more fertile, more workable, and less problematic to farmers than true laterite soils. There are two sub zones, with vastly different soils. To the northwest and the lower portions of the larger river valleys are very fertile volcanic soils covering approx. 10% of the country. Elsewhere, the largely metamorphic bedrock has produced generally poor quality with fertility varying and depending on extent of erosion and leaching.

About 30% of Rwanda's land is suitable for farming, and another 30% for grazing. Except where the land is seriously eroded or leached by heavy farming, the soils have good humus content and fertility. Intensive food crop production, often on steep slopes, has led to serious soil erosion.

Pastureland has also been overgrazed in many areas. Population pressure on the richer lands is sufficiently intense that soil damage, which is due to leaching, erosion, and intensive farming without adequate fertilizer, is an increasingly serious problem. The over dependence on agriculture, high population density, and rugged mountainous terrain with steep slopes that makes them

prone to serious erosion and leakage of nutrients, and being among the least users of mineral fertilizers, combine to deplete the soils of needed nutrients and consequent reduction in agricultural productivity and production.

Rates of nutrient depletion range from moderate, 30 to 60 kilograms of NPK per hectare per year in the humid forest areas and wetlands to high, above 60 kilograms in the highland areas. It is estimated that in bad years, the difference between nutrient inputs and nutrient losses in Rwanda can be as bad as 136 kilograms of NPK per hectare. Nutrient imbalances are highest where fertilizer use is particularly low and nutrient loss, mainly from soil erosion, is high.

Rwandan soils are naturally fragile. 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. The slopes of hills are exposed to erosion notably in the case of clay, sandy or gravely soils. In the wide water surfaces of eastern regions like Bugesera and Rusizi, the valleys are of vertisols and alluvial types are fertile. The slope slight as they may be, are threatened by erosion due to the weak permeability of soils.

3.1.6 Air

Rwanda has one of the lowest emissions per capita in the world, estimated at 0.65 tonnes CO₂/person (including land use change), compared to a global average of 4.63 tonnes CO₂/person (Nsengimana *et al.*, 2011). The majority of greenhouse gases (GHG) emissions were CO₂ (87%) at 531 Gg, dominated by transport (52%) and industrial processes (28.5%).

The air pollution from dust particles and vehicle emission is increasingly growing. During the dry season, there is a marked increase in air borne diseases due to dust particles emission especially in urban areas (REMA, 2009). Poorly maintained roads, old mopeds, motorcycles and vehicles cause an increasing concentration of different air pollutants (Henninger, 2009).

The air pollution resulting from dust is expected to increase during rehabilitation works and terrace making, especially during dry seasons. Adequate mitigation measures should be proposed to minimize air pollution levels as well as diseases and ill-health effects associated with transport.

3.2 Biological Environment

Rwanda is covered with diverse ecosystems that include mountains, forests, gallery forests, savannahs, wet and aquatic zones, wood and agro ecosystems. All these ecosystems have a rich flora and fauna. From the initial environment assessment, the proposed sub projects do not affect any critical natural habitats, as it will be implemented in the already cropped areas.

3.2.1 Protected areas

The fauna and the flora can be better preserved and protected through the establishment 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.

Rwanda has four national parks (Nyungwe, Akagera, Volcanoes and Mukura -Gishwati national Parks) and some forest reserves like Muvumba Acacia forest gallery. Nyungwe, Mukura –Gishwati and Volcano National Park) are highland forests with a high degree of biological diversity and rare animal species, such as mountain gorillas, Ruwenzori colobus monkeys and golden chimpanzees.

It is estimated that about 2,150 plant species are found in Rwanda, of which 700 species have medicinal value. Rwanda as a whole is known for its rich variety of flora is accompanied by an equal variety of fauna, including several species of birds and primates. The country has more than 275 species of birds, 24 of which are endemic to Albert Rift. Towards the east of the country lies the Akagera National Park, the forests galleries and wooded savannahs. Population pressures have already drastically reduced the land area of natural forests of Rwanda from about 30 % to presently fewer than 10 % in less than a century for

agricultural, pastoral and settlement purposes.

The production of export crops (pyrethrum plantations around Volcanoes National Park, tea plantation around Nyungwe), food crops in Gishwati, etc. contributed to loss of natural forests. The deforestation of Rwanda's remaining forests is also a result of high fuel wood consumption. Heavily populated and cultivated areas adjacent to the natural forest have caused significant loss of genetic diversity within Rwanda's natural forest.

In general, for a period of about 40 years, the surface area of the natural forests of Rwanda underwent a decrease of about 65 % between 1960 and 2002.

The search for arable lands, extensive farming, illegal felling of forests for firewood, production of charcoal and poles for construction in urban areas, as well as improper land use have drastically contributed to the reduction of the surface area of forests. This led to biodiversity loss.

The dense high-altitude forests of Volcanoes National Park is home to about half (320) of the world's remaining population (650) of Mountain Gorillas. Mountain gorillas consume large amounts of vegetation from more than 70 different plant species and spend about 30% of each day foraging for food. They consume roots, leaves, stems of herbs, vines from trees, shrub-sized plants, wild celery, gallium, vines, berries, barks and bamboo shoots.

Nyungwe National Park serves as habitat for 12 species of primates, among which there are black and white Colobus monkeys that wonder around in huge troupes, some are as many as 300 agile individuals. There are also known to be 275 species of birds in the Nyungwe.

In the Akagera National Park, there is the largest variety of wildlife species that include buffaloes, zebras, antelopes, warthogs, baboons, Giraffes, elephants, hippopotamus and crocodiles. The main threats remaining for these species are the destruction of their habitats and poaching.

The newly established Gishwati-Mukura National Park has more indigenous species, but it has been badly degraded that the remaining intact natural forest is less than 7% of the original area. This was mainly due to human activities such as settlements and conversion of the forest into agriculture and livestock farmlands. Some few wild animals are hosted in Mukura-Gishwati, including few populations of Chimpanzee (*Pan troglodytes*) and Golden Monkey (*Cercopithecus mitis kandti*).

3.2.2 Biodiversity of wetlands

The ecosystems of the Rwandan wetlands inhabit a rich biological diversity of animal and vegetation (more than 104 plant species have been identified), except for Lake Kivu, Bulera and Ruhondo, due to their liminological characteristics. The Lake Kivu contains very poor aquatic flora and the density of the phytoplankton is relatively low due to the lack of mixture of layers (the nutrients are found at the bottom of the lake). Aquatic fauna in the lake is also poor due to its physical isolation.

In the Akagera National Park, the flora is dominated by the *Cyperus*, *Phragmites*, *Phinix*. An invasive species, the Water Hyacinth (*Eichornia crassipes*) is present and has recently started spreading, thus posing a threat to biological diversity of the lakes. Some lakes like Cyambwe, Rwampanga and Rweru are particularly rich in hippopotamuses and crocodiles. The flora of many other lakes, such as Nasho, the lakes of Gisaka and Bugesera, is mainly dominated by papyrus with *Cyperus papyrus* mixed with *Miscandium violaceum* and *Nymphaea nouchallii*. All these lakes are associated with gallery forests onshore or on small islands.

In contrast, the aquatic flora and fauna of the Northern lakes (Burera and Ruhondo), are poor due to the physico-chemical situation unfavourable to their development and the isolation of these two lakes. The concentration of the plankton is less important in Lake Bulera than in Ruhondo due to its high depth which limits light penetration, thus reducing plankton growth in Bulera lake. This lake is about 90 m deep while Ruhondo lake does not exceed 50 m of depth. Lake Muhazi is landlocked, isolated, and located at 40 km from Kigali city. Its ichthyologic fauna is very limited. Three endemic species and other nine introduced species are found

within the lake. 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*.

3.2.3 Biodiversity in agricultural systems

a) Croplands

Rwanda agricultural land presently covers around 55.8 % of the total surface area of the country and is continuously cultivated. 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 vulgaris*), eleusine (*Eleusine corocana*), Colocases (*Colocasia antignorum*), maize (*Zea mays*), rice (*Oryza sativa*), wheat (*Triticum sp*), barley (*Hordeum vulgare*), peas (*Pisum sativum*), sojabean (*Soja hispada*), peanut (*Arachis hypogea*), sweet potato (*Ipomea durcis*), potato, cassava (*Manihot esculanta*) and banana (*Musa spp*).

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 and limited to coffee, tea and pyrethrum.

b) Pastoral zones

In Rwanda, the essential part of animal husbandry is comprised of one family ownership with a small number of animals per household. As agriculture occupies the biggest portion of land, the cows graze in paddocks, on roadsides, and in some parts of marginal lands. This obliges farmers to adopt the zero grazing or semi-permanent farming and grow fodder crops such as *Tripsacum laxum*, *Setaria spp*, *Desmodeum spp*, *Pennisetum purpureum*, *Mucuna pruriensis*, *Cajanus cajan*, *Calliandra calothyrsus*, *Leucaena diverifolia*, *Sesbania sesban*, etc. However, one can notice the development of ranching in Nyagatare, Gatsibo, Kirehe and Kayanza Districts of Eastern Province and Gishwati area in Nyabihu District of West. Other pastoral land is very limited across 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 threatened species along with pyrophile species with small bromatological value, such as *Eragrostis spp*, *Sporobolus spp* and *Digitaria spp*.

c) Forestry and tree cultivation

The Government of Rwanda has invested in afforestation and reafforestation through an annual forest planting season. For instance, Rwandans planted 25 million trees during the 2020/21 Forest Planting Season in an effort to expand and restore forests and contribute to the global effort to address climate change. The season's planting efforts included 7,400 hectares of agroforestry, 900 hectares of classic forest and 77,000 fruit trees. 500 hectares of private woodlots were rehabilitated to increase their productivity. This year (2026), approximately 43 million trees will be planted

The first forest plantations were created in 1920 and 1948 and only consisted of Eucalyptus. Later on other tree species were introduced. These included *Pinus spp*, *Callistris spp*, *Grevillea robusta*, *Cedrella spp*, *Cupressus spp*. The Arboretum of Ruhande (Huye District) 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 drain and further acidify soils that already are acidic, which in turn causes reduction or even extermination of the undergrowth, thus planting those species eventually leads to erosion.

The tree-covered surface area was estimated at 256,300 hectares in 1998. Despite efforts of diversifying tree species, it was estimated that 99 % of planted trees consisted of Eucalyptus spp. A replacement of those trees by agroforestry species, such as Grevillea, Cedrella, Maesopsis, Calliandra, Leucena proves to be of urgent need, including developing agroforestry in agricultural zones.

Rwanda's monthly community service brings people together to achieve a common outcome. Known as Umuganda, this home

grown initiative has provided the opportunity for people to engage in planting trees to increase the country's forest coverage as well as protect the environment in their local area.

Today, the current country's forest cover is equivalent to 30.4% - about 724,662 hectares. Of this, 53% are plantations, 21% are wooded savannas, 19% are natural mountain rainforests and 6.2% are shrubs.

3.3 Socio-Economic Environment

3.3.1 Population and demographic characteristics

Rwanda is among the most densely populated countries in Africa and the world. According to the Fifth Rwanda Population and Housing Census (RPHC5) conducted in 2022, the country's population reached 13,246,394 residents, comprising 51.5% females and 48.5% males. The population increased from 10.5 million in 2012, reflecting an average annual growth rate of 2.3% over the intercensal period.

Population density has continued to rise, reaching 503 inhabitants per square kilometre in 2022, compared with 415 inhabitants per square kilometre in 2012. This places Rwanda among the most densely populated countries in the East African region, exceeding neighbouring countries such as Burundi, Uganda, and Kenya. Population distribution remains uneven across the country, with the highest densities recorded in urban districts, particularly within the City of Kigali, while lower densities are found in predominantly rural districts such as Nyagatare, Kayanza, Gatsibo, and Bugesera.

Despite rapid urbanization, Rwanda remains predominantly rural. The 2022 census shows that 72.1% of the population lives in rural areas, while 27.9% resides in urban areas, representing a significant increase in urbanization from 16.5% in 2012. Most Rwandans live in private households, with the average household size declining from 4.3 persons in 2012 to approximately 4.0 persons in 2022.

Rwanda continues to have a youthful population structure. The median age is 20 years, indicating that half of the population is below this age. The proportion of persons aged 65 years and above increased slightly from 3.2% in 2012 to 4.2% in 2022, while the working-age population (15–64 years) accounts for about 56% of the total population. These demographic characteristics have important implications for service delivery, employment creation, education, healthcare, and long-term development planning.

3.3.2 Human settlements

1. Rural settlements

For years, rural settlements in Rwanda have been and continue to be scattered in some regions of the country. For a long time, they have been characterized by unplanned occupation of space, thus doing harm to environment by wastage of land and soil erosion. However, in December 1996, the Government adopted a national human settlement policy aimed at establishing an improved rural human settlement model, grouping settlements in villages generally known as IMIDUGUDU, which meet the criteria of environmental viability through the reorganization of the national space, land reform, improved housing quality, etc.

2. Urban settlements

Rwanda is experiencing rapid urbanization driven by population growth, economic transformation, and rural-to-urban migration. To guide this growth, the Government of Rwanda has adopted a proactive urban development approach through the National Urbanization Policy and the National Land Use and Development Master Plan (2020–2050), which promote planned, compact, green, and inclusive urban settlements. These policies seek to prevent the proliferation of informal and unplanned settlements while improving access to housing, infrastructure, public services, sanitation, and economic opportunities.

According to the Fifth Rwanda Population and Housing Census (RPHC5) conducted in 2022, 27.9% of Rwanda's population resides in urban areas, representing a significant increase from 16.5% in 2012 and 4.6% in 1978. This trend reflects the country's

accelerating urban transition and the success of policies aimed at promoting urban growth beyond the City of Kigali through the development of secondary cities and emerging urban centers.

Under the National Land Use and Development Master Plan (2020–2050), Rwanda's urban system is structured around the City of Kigali, six designated secondary cities (Huye, Muhanga, Musanze, Nyagatare, Rubavu, and Rusizi), and a network of district urban centers and growth poles. The plan projects that by 2050 approximately 70% of Rwanda's population estimated at over 22 million people will live in urban areas. To accommodate this growth sustainably, urban expansion will be guided by integrated spatial planning, densification strategies, mixed land-use development, and investment in resilient infrastructure and affordable housing.

The CDAT project is primarily implemented in rural areas where agriculture remains the dominant land use. According to the National Land Use and Development Master Plan (2020–2050), much of Rwanda's rural landscape is characterized by integrated settlement patterns combining agriculture, housing, and community infrastructure at village level. The plan emphasizes the protection of agricultural land, sustainable rural development, and the consolidation of settlements to optimize land use efficiency while preserving productive farmland and environmentally sensitive areas.

3.3.3 Energy and transport

In Rwanda, Woody fuels, biomass wastes, methane gas of Lake Kivu representing 57 billion m³ and solar energy are the sources of energy used in households, industries and handcrafts. The transport sector is generally dominated by road transport. In the sub sector of air transport, the country has two international airports (Kigali and Kamembe) and aerodromes (Huye, Rubavu and Musanze) used in internal transport. Lake transport is used mainly on Lake Kivu for connecting districts of the Western Province.

3.3.4 Industry and Mining

Rwanda's industrial sector has expanded significantly over the past decade as part of the country's transformation agenda under Vision 2050 and the National Strategy for Transformation (NST2). Industrial development is increasingly being concentrated in planned industrial parks and designated economic zones to minimize conflicts between industrial activities, residential areas, and environmentally sensitive ecosystems. Nevertheless, environmental management remains a critical concern, particularly regarding industrial emissions, wastewater discharge, solid waste generation, noise pollution, and the protection of wetlands and water resources.

To address these challenges, the Government of Rwanda has strengthened environmental regulations, land-use planning, and compliance monitoring. Industries are required to adhere to environmental standards established by the Rwanda Environment Management Authority (REMA) and other sector regulators, including the implementation of environmental impact assessments, pollution control measures, and waste management systems.

Mining and quarry sites are distributed across many parts of the country, including hilly areas surrounding potential project locations. While numerous sites are currently operational, a substantial number of abandoned mines and quarries remain from historical extraction activities. These abandoned sites pose environmental, safety, and landscape degradation challenges, including erosion, open pits, and risks to nearby communities.

The rehabilitation of abandoned mining and quarry sites has become a national priority. The Government of Rwanda is implementing measures to restore these degraded areas through backfilling, slope stabilization, revegetation, and environmental rehabilitation programs. In addition, mining operators are now legally required to undertake site restoration and rehabilitation as part of their operational and closure obligations, reinforcing the country's commitment to sustainable mining practices and

environmental stewardship.

3.3.5 Agriculture

Agriculture remains the primary socio-economic activity in the project areas and continues to play a vital role in Rwanda's economy. The sector contributes significantly to national employment, food security, and rural livelihoods. Agricultural production is predominantly characterized by smallholder family farms, where a substantial portion of production is consumed by households, while surplus produce is increasingly marketed to generate income.

In line with national development priorities, the agricultural sector is undergoing a gradual transformation from subsistence-based farming to a more commercial and market-oriented system. Current interventions focus on agricultural commercialization through the consolidation of land for priority crops, development of irrigation infrastructure, promotion of high-value crops, establishment of aggregation and collection centers, strengthening of farmer cooperatives, facilitation of access to agricultural finance, expansion of agro-processing industries, and improved linkages between producers and markets. Digital agricultural services and climate-smart agricultural practices are also being promoted to enhance productivity, resilience, and competitiveness.

Farming systems in the project areas remain diversified and involve the integration of multiple crops to optimize land use, enhance resilience, and support household food security. However, agricultural productivity is still constrained by limited access to modern inputs and technologies, including improved seeds, mechanization, irrigation facilities, and extension services. Consequently, yields remain below their potential and are highly vulnerable to climate variability and extreme weather events.

Agricultural expansion and unsustainable land management practices have, in some areas, contributed to environmental degradation, including soil erosion, declining soil fertility, loss of biodiversity, and pressure on natural resources. Furthermore, efforts to intensify agricultural production and commercialization have not always adequately considered potential environmental and social risks associated with the increased use of fertilizers, pesticides, herbicides, irrigation schemes, and agro-processing activities. As agricultural commercialization continues to expand, there is a growing need to promote sustainable and climate-resilient production systems that enhance productivity and market access while safeguarding environmental quality, ecosystem services, and community health and safety.

3.3.6 Access to finance in Agriculture

Agriculture remains a cornerstone of Rwanda's economic development and a primary source of livelihood for the majority of the population. The sector contributed approximately 24% of the national Gross Domestic Product (GDP) in 2021, employed nearly 75% of the workforce, and generated more than half of the country's export earnings. During the 2021–2022 fiscal year, agricultural exports generated approximately USD 640.9 million in foreign exchange revenue. Beyond its economic contribution, the sector plays a critical role in ensuring food security, reducing poverty, and supporting rural development.

Over the past decade, Rwanda has implemented significant reforms aimed at modernizing and commercializing agriculture through the Fourth Strategic Plan for Agriculture Transformation (PSTA 4, 2018–2024). Building on these achievements, the Government has launched the Fifth Strategic Plan for Agriculture Transformation (PSTA 5, 2024–2029), which aligns with the objectives of the Second National Strategy for Transformation (NST2, 2024–2029) and Vision 2050. PSTA 5 prioritizes increasing agricultural productivity, strengthening climate resilience, enhancing food systems, promoting private sector participation, expanding agro-processing, and improving market access to support sustainable economic growth and rural transformation.

A key pillar of both NST2 and PSTA 5 is improving access to finance across agricultural value chains. The Government recognizes

that adequate financial services are essential for enabling farmers, cooperatives, agribusinesses, and agricultural enterprises to invest in improved technologies, irrigation systems, mechanization, climate-smart agriculture, post-harvest infrastructure, and value addition. To address financing constraints, Rwanda has implemented several interventions aimed at increasing the flow of financial resources to the agricultural sector.

These interventions include the establishment of the Agricultural Guarantee Facility (AGF) through the Development Bank of Rwanda to reduce lending risks for financial institutions, the expansion of agricultural insurance schemes through the National Agriculture Insurance Scheme (NAIS), and the promotion of blended finance mechanisms that leverage both public and private investment. The Government has also strengthened access to affordable credit through partnerships with commercial banks, microfinance institutions, Savings and Credit Cooperative Organizations (SACCOs), and farmer organizations. In addition, programs supporting financial literacy, digital financial services, and value chain financing have been expanded to improve financial inclusion among smallholder farmers and rural enterprises.

Despite these efforts, agriculture continues to face significant financing challenges. Historically, the sector has received a disproportionately small share of formal credit relative to its contribution to employment and economic output. Limited collateral, high production risks associated with climate variability, and the predominance of smallholder farming continue to constrain access to finance. Consequently, NST2 and PSTA 5 emphasize scaling up agricultural finance, de-risking investments, promoting innovative financing instruments, and mobilizing greater private sector participation to unlock the sector's full potential.

The continued implementation of these financing interventions is expected to accelerate agricultural commercialization, enhance productivity and resilience, increase rural incomes, and contribute to Rwanda's broader goals of food security, poverty reduction, and inclusive economic transformation as envisioned under Vision 2050.

The project seeks to increase the use of irrigation, promote agricultural commercialization, and expand access to agricultural finance and insurance for farmers, cooperatives, and agribusiness enterprises across priority value chains. CDAT supports the rehabilitation and development of irrigation infrastructure, land husbandry interventions, market-oriented agricultural production, matching grants for agribusiness investments, and the scaling-up of agricultural credit and insurance schemes.

3.3.7 Cultural resources in Rwanda

The national cultural resources are composed of the tangible cultural heritage (buildings, monuments, landscapes, books, works of art and artifacts, etc) and intangible cultural heritage (practices, representations, expressions, folklore, traditions, language, and knowledge, and natural heritage including culturally significant landscapes, and biodiversity).

The tangible cultural heritage in the country includes museums, caves and rocks with bas-reliefs marking the legendary or historically events that occurred on the site, churches and other colonial buildings, sacred hills, forests and trees with legendary history, thermal springs and wells used for ritual purposes, etc. Rwanda has 6 museums that make up the Institute of National Museums of Rwanda (INMR) including (i) King's Palace in Rukari, Nyanza District; (ii) Ethnographic Museum in Huye District, (iii) Kigali Genocide Memorial at Gisozi, Gasabo District, (iv) Rwanda Art Museum, formerly the Presidential Palace Museum in Kanombe, Kicukiro District, (v) Kandt House Museum in Nyarugenge, Nyarugenge District and (vi) Museum of the Environment, near Lake Kivu in Karongi District.

The King's Palace is the reconstruction of the traditional royal residence, a beautifully crafted thatched dwelling in Nyanza, the former capital of the kingdom in Rwanda. The Ethnographic Museum, a gift from the King Baudouin of Belgium in late 1980s, displays historical, ethnographic, artistic, and archaeological artefacts accompanied by visual aids, giving visitors a rich insight

into the Rwandan culture. Three museums are localized within Kigali City. Kigali Genocide Memorial at Gisozi, inaugurated in 2004, is the final resting place for more than 250,000 victims of the Genocide against the Tutsi. Beyond this main memorial centre, there are other memorials across the country, including the Genocide Memorial of Nyanza, Ntarama, Nyamata, Murambi, Camp Kigali Belgian Monument, etc.

The second museum is the Rwanda Art Museum that displays contemporary artworks from the country and abroad. The flight debris from the presidential jet shot down on April 6th, 1994 are within the garden of the Museum and remain a heritage site. The Kandt House Museum is another cultural heritage within the City of Kigali. It was the residence of the first Germany colonial governor of Rwanda, Richard Kandt, until the early 1900s. It includes three main parts: (i) the social, economic and political life of Rwandans before the colonial period, (ii) the experience of the Rwanda citizens during the colonial period and (iii) the history of Kigali before, during and after the colonial period. The environmental Museum, located in the Western Province, mostly presents traditional herbal medicine garden.

The caves in Musanze District; rocks of Ndaba, Kamegeri, Ngarama, Shali, etc, Kibeho holy area, thermal springs of Bugarama, Buhanga kwa Gihanga natural forest, etc are many other cultural resources across the whole country.

As per the Law No 28/2016 of 22/07/2016 on the preservation of cultural heritage and traditional knowledge, the intangible cultural heritage can be divided into two:

- Oral tradition, oral literature, songs, cultural dances, rituals and taboos, intangible art, crafts and folklore, festivals, cultural events, knowledge and practices;
- documentary heritage: rare manuscripts, pictures, slideshows and speeches.

The above law provides for the protection of Rwandan cultural heritage, both tangible and intangible resources.

3.4. Summary of key environmental and social issues in proposed project sites

The project sites are tentatively identified and not yet confirmed but they will be selected from highland, middle land and lowland, the main topographic features across the country and will involve irrigated and rain fed agriculture. The key issues in terms of environmental and social concerns and which are significant to the design, planning and implementation of CDAT AF are summarized below:

- Soil erosion
- Loss of vegetation covers during land husbandry activities, construction of Irrigation and postharvest infrastructure as a result of land clearance, reclamation and clearing natural habitat for planting and processing of crops.
- Labor influx in search of employment
- Loss of topsoil and reduction of soil fertility leading to loss of fertile soils, sedimentation and siltation.
- Water use/extraction for irrigation and impact on downstream water uses and aquatic ecosystem,
- Water quality deterioration
- Intensified use of agrochemicals on farmlands and associated risks like surface and underground water pollution, non-targeted species loss, soil pollution and human poisoning,
- Impacts and risks due to rehabilitation and development of irrigation infrastructure, which would include construction of new and rehabilitation of existing dams
- Existing Agri-SMEs and value-chain companies/entities that may have pre-existing / ongoing environment, health, and safety (EHS) issues/risks like inappropriate use of agrochemicals, poor waste management practices, air pollution, worker health and safety risks, etc
- Spread of communicable and water borne diseases
- Loss of income due to missing one growing season by farmers due to land husbandry works
- Land ownership conflicts,

- Land acquisition and resettlement
- Child labour and GBV, SEA/ SH related issues, etc.
- Gender impacts related to lack of attention to the differential access of male and female farmers to technologies and inputs.
- Mechanization could lead to women losing labour opportunities because they lack new skills and access to market.
- Irrigation and agriculture project can have negative impacts on women's livelihood and status when interventions increase women's burden without providing them additional assets or income.
- Access roads leading into the project area or near habitat may facilitate unplanned settlements and destruction of that habitat;
- **SSIT/FLID-specific risks:** Proliferation of small-scale water abstraction (e.g., individual solar pumps) leading to localized groundwater depletion or user conflicts if unregulated. Potential for visual intrusion or noise from pumps. E-waste from solar equipment at end-of-life (batteries, inverters, control boxes, solar panels).
- **Cumulative impacts:** The addition of 3,575 ha of large-scale irrigation and 2,000 ha of SSIT/FLID increases the potential for cumulative impacts on water resources, aquatic ecosystems, and sedimentation within the same watersheds (e.g., Akagera and Akanyaru river basins).
- **PAP compensation impacts:**
 - Land acquisition and resettlement for Cyohoha Phase 2 and Gabiro Phase 2
 - Need for timely and fair compensation using IDA funds
 - Potential social conflicts over land access and compensation.
- **Results-Based Climate Finance (RBCF) pilot impacts:**
 - Shade-grown coffee tree planting and forest management
 - Verification requirements for sound forest management
 - Linkage to loans and principal rebates
 - Need of grievance redress mechanisms, including escalation procedures (grievances may mostly come from verification processes & reports).

Site-specific baseline summary for the AF large-scale schemes (Cyohoha Phase 2 and Gabiro Phase 2)

While the generic baseline approach in the preceding sections remains appropriate for the SSIT/FLID window, whose sites are tentatively identified and not yet confirmed, the two large-scale hillside schemes financed under the AF are confirmed investments for which site-specific ESIA are underway. The key baseline characteristics emerging from those studies are summarized below:

Parameter	Cyohoha Phase 2 (2,600 ha)	Gabiro Phase 2 (975 ha)
Location	Bugesera District, Eastern Province	Nyagatare District, Eastern Province
Agro-ecological setting	Eastern savanna lowlands; bimodal rainfall with pronounced dry seasons and recurrent drought exposure	Eastern savanna lowlands; semi-arid conditions with high irrigation water demand
Water source / catchment	Lake Cyohoha and associated wetlands within the Akanyaru catchment (transboundary with Burundi)	Surface water resources within the Akagera basin serving the Gabiro command area
Key environmental sensitivities	Proximity to Lake Cyohoha shoreline and fringing wetlands; wetland buffer zone requirements; risk of cumulative abstraction from the Akanyaru system.	Water balance constraints in a water-stressed area; soil erosion on developed hillsides; proximity to savanna habitats and wildlife corridors of the wider Akagera landscape.
Key social sensitivities	Land acquisition affecting PAPs will be assessed during the preparation of RAP through consultations with affected communities	No Land acquisition affecting PAPs; Consultations held with affected communities on 29/01/2026 (39 participants)
E&S instruments	Site-specific ESIA/ESMP and RAP under preparation; hydraulic structure safety assessment as applicable	Site-specific ESIA/ESMP under preparation; hydraulic structure safety assessment as applicable

Cumulative hydrological baseline for the Akagera and Akanyaru catchments

The AF adds approximately 5,975 ha of irrigation (3,575 ha of large-scale schemes and up to 2,000 ha under SSIT/FLID, with 1,300 ha targeted operational by project closing), nearly doubling the irrigation footprint of the parent project within shared catchments. A catchment-level water balance is therefore required as the reference baseline against which cumulative hydrological impacts will be monitored. This baseline will draw on the Rwanda Water Resources Board (RWB) catchment management plans for the Akanyaru and Akagera catchments, national hydrometric records at gauging stations relevant to the project command areas, and groundwater monitoring data.

The Cumulative Impact Assessment (CIA), budgeted under Chapter 9 of this ESMF (US\$ 90,000, including biodiversity assessment), shall establish, in any case before commissioning of the Cyohoha Phase 2 and Gabiro Phase 2 schemes: (i) total renewable surface water and groundwater yield of the affected sub-catchments; (ii) existing permitted and estimated unpermitted abstractions; (iii) projected abstraction by the parent project, the AF schemes and SSIT/FLID systems; (iv) environmental flow requirements for downstream wetlands and aquatic ecosystems, including transboundary considerations under OP 7.50; and (v) dry-season flow and seasonal groundwater-level benchmarks at defined monitoring points. These benchmarks shall serve as the baseline for the cumulative-impact and wetland ecosystem services monitoring indicators in Chapter 7, and no abstraction shall exceed the limits set in RWB permits informed by this water balance.

CHAPTER FOUR: PUBLIC CONSULTATION AND PARTICIPATION

4.1 Background and Rationale

The Project stakeholders' consultations were carried out in order to provide information on the ongoing project and to collect first-hand information on concerns, perceptions and opinions on the ongoing CDAT project and its Additional Financing. All institutional, local governance and target beneficiary stakeholder views are critical for confirming relevance of proposed interventions for effectiveness and efficiency of proposed approaches and for impact and sustainability of the intended positive changes.

The stakeholder's consultation meetings help in highlighting the socio-economic and environmental concerns and impacts that could arise from the project and coming up with appropriate mitigation measures.

Out of 16 proposed sites for CDAT implementation, the consultation meetings were arranged for 11 sites located in 10 Districts and 3 Provinces. Cyamuganga and Karambi sites of Gatsibo and Kayonza Districts in Eastern Province; Gatuna, Nyamuziga, Gana-Kinoni and Banga sites respectively in Gicumbi, Rulindo, Burera and Gakenke Districts of Northern Province; Bakokwe and Makera sites of Muhanga District, Kiryango of Ruhango, Budubi of Nyanza District and Agatobwe of Nyaruguru District in Southern Province were visited. The visited sites were randomly chosen on the basis of the landscapes where the CDAT project was to be implemented, i.e. highland, middle land and lowland. The sites in East, South and North are in lowland, middle land and highland areas respectively.

District leaders/ staff and representatives of farmers are stakeholders met across visited sites. District authorities included Vice-Mayor in charge of economic affairs, Director of Agriculture and Natural Resources, District and Sector agriculture Officers, District Environmental officer, District Irrigation Officer and District Inspector of agriculture and animal husbandry. All visited sites are either managed by cooperatives or self-help groups. In this regard, representatives of cooperatives or small help groups exploiting the selected sites were invited. Consultations with Districts and farmers' representatives were organized in the represented Districts and conducted in Kinyarwanda.

For the additional Financing, additional consultations were conducted for the new AF sites (Cyohoha phase 2, Gabiro Phase 2) and for SSIT/FLID beneficiaries nationwide.

4.2. Consultation Approach and Locations

All stakeholder engagement activities conducted during the preparation stage were documented, and records of participants, key issues raised, and agreed actions were maintained and annexed to project safeguard documentation. Feedback received from stakeholders was systematically reviewed and incorporated into CDAT-AF project design, environmental and social instruments, and implementation arrangements. 414 people, including 230 males and 184 females participated in the consultations. The Table below summarizes the consultation sites and number of participants at each site disaggregated by gender.

Table 2: Sites selected for consultations meeting and participants (AF)

S/N	District Name	Date	Location	Type of participants	Number of Participants		Total
					Male	Female	
EASTERN PROVINCE							
1	Nyagatare	15/01/2026	District Head office	District Officials & Executive committed District & Sector Agronomist, Private Sector Representative, RYAF, Sacco Representative	23	12	35

S/N	District Name	Date	Location	Type of participants	Number of Participants		Total
					Male	Female	
2	Gatsibo	20/01/2026	District Head office	District Officials & Executive committed District & Sector Agronomist, Private Sector Representative, RYAF, Sacco Representative	18	9	27
3	Kayanza	21/01/2026	District Head office	District Officials & Executive committed District & Sector Agronomist, Private Sector Representative, RYAF, Sacco Representative	30	13	43
4	Bugesera	23/01/2026	District Head office	District Officials & Executive committed District & Sector Agronomist, Private Sector Representative, RYAF, Sacco Representative	25	15	40
SOUTHERN PROVINCE							
5	Ruhango	27/01/2026	District Head office	District Officials & Executive committed District & Sector Agronomist, Private Sector Representative, RYAF, BDF, Sacco Representative	18	13	31
6	Nyanza	21/01/2026	District Head office	District Officials & Executive committed District & Sector Agronomist, Private Sector Representative, RYAF, Sacco Representative	21	13	34
WESTERN PROVINCE							
7	Rusizi	15/01/2026	District Head office	District Officials & Executive committed District & Sector Agronomist, Private Sector Representative, RYAF, Sacco Representative	31	13	44
8	Nyamasheke	20/01/2026	District Head office	District Officials & Executive committed District & Sector Agronomist, Private Sector Representative, RYAF, Sacco Representative	17	24	41
NORTHERN PROVINCE							
9	Gicumbi	15/01/2026	District Head office	District Officials & Executive committed District & Sector Agronomist, Private Sector Representative, RYAF, Sacco representative	15	19	34
SPECIFIC SITES							
10	Cyohoha site	26/01/2026	Bugesera	CDAT project area affected communities	19	27	46
11	Gabiro site	29/01/2026	Nyagatare	CDAT project area affected communities	13	26	39

4.3. Public consultation findings (updated for AF)

4.3.1. Findings from AF consultations:

The project conducted targeted consultations with:

- **Water User Associations (WUAs):** at existing and new irrigation schemes (Cyohoha Phase 2, Gabiro Phase 2) to discuss scheme governance, operation and maintenance (O&M) cost recovery, and women's leadership targets (50% by project end). District leaders emphasized the need for stronger WUA capacity in financial management, cost recovery for O&M, and conflict resolution. They supported the project's target of 50% women in WUA decision-making positions.
- **PAP compensation:** District leaders welcomed the use of IDA funds (category 9) for timely compensation, noting some past delays with counterpart funding.
- **SSIT/FLID beneficiaries (smallholder groups):** Farmers expressed strong interest in small-scale irrigation technologies but highlighted affordability constraints and lack of technical knowledge. Environmental concerns raised included potential over-abstraction of groundwater and competition for water with downstream users.
- **Private irrigation suppliers:** Suppliers for equipment vendors, installation contractors requested transparent procurement processes, quality standards, and warranty provisions for SSIT/FLID equipment.
- **Women's producer groups:** Women farmers requested targeted access to SSIT/FLID grants, credit line, and insurance products, noting that traditional lending criteria (land titles, collateral) exclude many women.
- **Youth agribusiness enterprises:** Youth groups requested tailored financing products (lower interest rates, longer grace periods) and business development services, including mentorship, market access, and digital tools.

Consultation summary (AF): 414 people, including 230 males and 184 females, participated in AF consultations across targeted 11 locations.

Incorporation of consultation findings into the ESMF and project design (ESS10 feedback loop)

In line with ESS10, the concerns raised during the AF consultations summarized above were systematically reviewed by RAB-SPIU and BRD, and were incorporated into the design of the AF and of this updated ESMF as set out in the table below. Feedback on how each concern was addressed is being communicated back to the consulted stakeholders through District briefings, WUA meetings and the disclosure of this ESMF, and the loop will remain open during implementation through the GRM and the continuous stakeholder engagement activities of the updated SEP.

Stakeholder group and concern raised	How the concern was addressed in the AF design / this ESMF
SSIT/FLID beneficiaries: risk of groundwater over-abstraction and competition with downstream users	Mandatory RWB water abstraction permits and simplified water-use declarations (Chapter 6); dedicated SSIT/FLID screening checklist with cumulative-abstraction criteria; groundwater level and abstraction monitoring indicators (Chapter 7); water-conflict grievances prioritized in the GRM with escalation to RWB (Chapter 9)
SSIT/FLID beneficiaries: affordability constraints and limited technical knowledge	Matching-grant design with capacity building module on sustainable water use, irrigation scheduling and record-keeping (Chapter 8); pictorial Kinyarwanda training materials for low-literacy beneficiaries
Women's producer groups: exclusion by traditional lending criteria (land titles, collateral)	Targeted access measures for women under SSIT/FLID grants, the credit line and insurance products; 50% women target in WUA decision-making positions; gender-disaggregated monitoring
Youth agribusiness enterprises: need for tailored financing and business development services	Youth-responsive financing features and business development support integrated in Subcomponents 1.3 and 2.1; youth participation tracked in project M&E
Communities at Cyohoha Phase 2 and Gabiro Phase 2 / District leaders: past delays in compensation	Direct IDA-financed PAP compensation (Category 9, up to US\$ 1.61 million) with a dedicated compensation grievance pathway and a 30-day resolution target (Chapter 9); compensation completed before

	commencement of works at affected sites
Private irrigation suppliers: transparent procurement, quality standards and warranties	Quality and warranty requirements plus e-waste take-back obligations embedded in SSIT/FLID procurement and supply contracts (Chapters 2 and 5); certification of installation contractors (Chapter 8)
WUAs and District leaders: weak WUA capacity in O&M cost recovery and conflict resolution	WUA training on O&M cost recovery, water allocation, conflict resolution and women's leadership (Chapter 8); WUA representation in site GRCs

Engagement of vulnerable and marginalized individuals

The AF introduces technically demanding, application-based windows (SSIT/FLID matching grants and BRD-administered financing) that could inadvertently exclude vulnerable or marginalized individuals, including elderly farmers, persons with disabilities, women heads of household, and persons with low literacy. To ensure inclusive access, the project shall implement the following differentiated engagement measures, consistent with the updated SEP: (i) assisted application desks at Sector level, supported by RAB-SPIU field staff and SEDOs, to help vulnerable applicants complete SSIT/FLID applications and E&S documentation; (ii) simplified, pictorial application and training materials in Kinyarwanda; (iii) the option to apply through legally recognized cooperatives or self-help groups, with safeguards to ensure that benefits accrue to the vulnerable members concerned; (iv) mobilization meetings held at accessible venues and times, with door-to-door outreach for persons with reduced mobility; (v) proactive identification of vulnerable PAPs during RAP preparation, with tailored compensation support; and (vi) monitoring of the participation of elderly farmers, persons with disabilities and women in grant windows, reported in the bi-annual ESHS reports. Grievances alleging exclusion from project benefits shall be admissible through all GRM channels at no cost to the complainant. Below are some photos from consultation meetings:



Figure 1: Stakeholders meeting with participants in Bugesera District



Figure 2: stakeholder meeting with participants in Gatsibo and Rusizi Districts respectively

CHAPTER FIVE: POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS AND GUIDELINES FOR MITIGATIONS

5.1 Introduction

This chapter identifies the generalized potential impact that could arise from the activities of the project either during the construction phase or the operational phase. The identified impacts apply to the socio-economic environment as well as the bio-physical environment. For the Additional Financing (AF), new impact categories have been added to reflect the expanded scope, including large-scale irrigation (Cyohoha Phase 2, Gabiro Phase 2), SSIT/FLID matching grants, PAP compensation, and the RBCF pilot for shade-grown coffee.

5.2 Positive Impacts

The CDAT implementation across the country brings about many impacts. The identified positive impacts for different phases of the project cycle are discussed in the following sections:

5.2.1. Impact during Planning and Design phase

a) Employment opportunities

During the planning and design period, new jobs are being created for the skilled and unskilled labour in the community to conduct topographical investigations. The unskilled labour are being sourced from the local residents. Indirect employment is in the form of suppliers and other forms of sub-contracted works that are required for planning and design of project components. Women and youth also have an opportunity to secure employment. Under the AF, additional employment will be generated for ongoing studies, ESIA preparation, and RAP implementation at Cyohoha Phase 2 and Gabiro Phase 2 sites.

b) Skills transfer and capacity building

The international consultants associate with local partners. In the process of planning and design, the local skilled and unskilled labour work with the international experts. This process of working together will transfer design and planning tools, computer design software and other useful guidelines which are used in similar topographical conditions in the world.

5.2.2 Impacts during construction phase

a) Rural employment and income generation

The irrigation, land husbandry and post-harvest infrastructures constructions as well as access roads works are labour intensive and for that reason, the labour needed in the project area creates much needed employment opportunity to the local community. The contractors and service providers commit to a policy that gives priority to the locals in the neighborhood at the time of employing casual or skilled labour. Under the AF, the two new large-scale irrigation schemes (Cyohoha Phase 2: 2,600 ha; Gabiro Phase 2: 975 ha) will generate significant short-term construction employment, with priority for local workers, women, and youth.

It is also anticipated that indirect employment opportunities are being created within local communities through the provision of services to the construction teams, such as the sale of food and beverages, accommodation renting and transport.

b) Capacity building of farmers

During the construction works, farmers are being sensitized and trained on various construction works, irrigation practices/ technologies and operation and maintenance of equipment, appropriate application of fertilizer, IPM, etc., thus imparting skills to them for improved production as well as to access markets, which they will utilize even after the project's exit. Under the AF, SSIT/FLID beneficiaries will receive targeted training on solar-powered irrigation system installation,

operation, and maintenance, as well as water use efficiency and basic financial management.

c) Increased public revenues

Revenues are collected by both the national and local authorities from the procurement of construction materials and irrigation equipment, employees' salaries, VAT on materials and services, among others.

d) Climate adaptation benefits

The AF investments in large-scale irrigation (Cyohoha Phase 2, Gabiro Phase 2) and SSIT/FLID will enhance climate resilience by reducing dependence on increasingly erratic rainfall, stabilizing yields during drought periods, and improving water management under climate stress. Land husbandry improvements (1,220 ha) will reduce erosion, enhance soil moisture retention, and protect downstream irrigation infrastructure from siltation. The expansion of NAIS-backed agricultural insurance (US\$ 1.5 million AF allocation) will transfer climate-related production risks (droughts, floods, extreme weather) through market-based mechanisms.

e) Increased access to financial services by farmers

The crops risks and losses due to unpredictable natural disasters (heavy rains, drought, pests and diseases, etc) are increasing from one season to another and from one location to another. This makes farmers feeling unsafe and reluctant to invest in agriculture, especially horticultural crops and limit access to adequate and affordable financial services. This results in insufficient credit, low levels of investment and low productivity of agriculture.

The introduction of insurance schemes by the CDAT project triggers access to finance and enhances crop productivity. Indeed, the farmers' hope for agriculture will be increased and they will feel safe to access loans and diversify their products and will be able to repay back their loans. The financial institutions will increase the disbursement of loans and other financial services to the agriculture sector since the high-risk perception is mitigated. Under the AF, the credit line is expanded by ~20% (US\$ 11.41 million total additional allocation), with new lending focused on borrowers with direct and verifiable links to smallholder commercialization, including women's producer groups and youth agribusiness enterprises.

5.2.2. Impacts during operation phase

a) Improved Soil conservation and catchment rehabilitation and protection

The implementation of land husbandry technologies in the command area as well as its irrigation contribute to soil conservation as a result of reduced erosion, proper management of runoff and soil fertility amelioration. Adequate supply of water as well as proper use of manure and mineral fertilizers will improve the soil quality and sustainably enhance soil fertility thus improving the crop yields and increasing income to farmers.

In addition to command area development, the project also makes interventions in water catchment and command area catchment for catchment restoration and protection of constructed irrigation infrastructures. This will lead to soil and water conservation both in the Command Area and Command Area Catchment and Watershed Catchment.

b) Flood control

The dam and irrigation channels to be constructed will control floods downstream by storing water, channeling it in irrigable command areas and evacuating excess water. The flood control effect of the project will free more land for farming as well as prevent destruction of food crops for those farmers exploiting the command area in the wet season.

c) Increased farm incomes from crop output

An increase in farm incomes as a result of increased and improved agricultural inputs and increased marketed crop output is anticipated. This would additionally be due to better and reliable market access of high-value crop produce that would

fetch a good selling price as well as increased volumes of marketable output of different crops. As a result of increased incomes, farmers will be able to access inputs which they will use to expand existing enterprises. The proceeds could also enable them to purchase more pieces of land elsewhere where they could grow food crops that do not require irrigation, in order to utilize the irrigable land for commercial farming only.

d) Poverty reduction through increased agricultural production

The CDAT project promotes increased agricultural productivity, diversification of agricultural crops, and commercialization of agriculture from subsistence agriculture insurance. The improvement in crop productivity will raise the income for the rural poor above the poverty line of less than a dollar a day. This is an indirect impact that will take a long process that will be felt after many years.

e) Empowerment of beneficiaries in proper application of agrochemicals and farming practices:

During CDAT implementation, beneficiaries are being capacitated on different topics like application of fertilizers and pesticides, post-harvest handling, irrigation technologies, operation and maintenance of irrigation equipment, compliance with environmental and social safeguards, etc. The Project builds on and further strengthens the existing farmer organizations (self-help groups, cooperatives, water user association and farmer unions; youth and women groups) created under SPIU World Bank funded projects to help them transform into dynamic, successful and sustainable enterprises, which are not dependent on public investments.

The capacity building is being done through training, workshops, study tours, demonstration plots, etc. and will impart skills and knowledge to beneficiaries required for sustainable crop productivity.

f) Reduction of weather hazards risks

Adverse weather is a major peril affecting crops both in developed and non-developed areas and which is difficult to predict and prevent. Crop damages and poor yields due to bad weather can lead to lower revenues for farmers. This can lead to difficulty in paying back loans and satisfying household expenses.

During its implementation, the CDAT scaled up agricultural finance and strengthened agricultural insurance.

This will lead to increased crop production and quick compensation for weather induced losses. The insurance improves sustainability of crop production by giving access to finance for inputs. Financiers are usually willing to offer loans because weather insurance risk has diminished.

g) Environmental Protection

The ongoing CDAT project promotes intensification of agriculture as opposed to subsistence agriculture. It reduces pressure of farmers to push onto more fragile lands or sensitive natural habitat or to rely on labour intensive gathering activities off-farm. It thus intensifies farm production through the increased and adequate use of improved inputs that increase productivity. This is an indirect impact that will protect marginal areas and sensitive ecosystems from agricultural encroachment. The Project also maintains irrigation infrastructure (terraces, canals, etc) in order to be efficient in controlling erosion.

The increased use of pesticides on the fields may be a threat to the birdlife and beneficial insects (e.g. bees). The selection and adequate application of pesticide is of great importance in fauna protection.

h) Efficient use of available water resources

The ongoing project invests in infrastructure development for water harvesting and water distribution for irrigation purposes. This will minimize water losses and increase water availability to more areas and crops. It also protects the

hydrological systems from sedimentation, flooding and contamination. This will curb the rate of irrigation in the area and the country.

i) Market creation

The ongoing project creates a market for farm inputs including seeds, fertilizers, compost and pesticides. It also creates opportunities for irrigation equipment. Under AF, private irrigation suppliers (equipment vendors, installation contractors) will benefit from increased demand for SSIT/FLID technologies (solar pumps, drip kits).

j) Availability of post-harvest infrastructures and Collective harvest for large quantities and market continuity

The existing post-harvest infrastructures in project sites will be maintained or upgraded while new others will be constructed. The ongoing CDAT will construct drying and collection facilities near farmer fields for immediate post-harvest handling. The project will also co-invest in simple, primary processing equipment and business training of cooperatives and/or individual entrepreneurs managing the business. This is expected to reduce post-harvest losses, improve quality, increase quantities, ensure value addition and allow farmers to find reliable market outlets, leading to significant increases in income.

The ongoing project will involve establishment of post-harvest infrastructure for storage of produce to promote large volumes of high value harvest, control market price of their produce and enhance continuity in supplying demanding markets for their produce, locally, regionally and internationally.

k) Solar-powered irrigation benefits (new under AF)

Under SSIT/FLID, solar-powered pumps will reduce or eliminate fuel costs and GHG emissions compared to diesel pumps, lowering operating expenses for smallholders. Solar systems are more reliable in remote areas without grid electricity, enabling dry-season production and increasing annual cropping cycles.

5.3 Negative Impacts

5.3.1 Potential adverse impacts

a) Design and Planning and construction Phase

The design and planning phase of this project involve identification of sites and suitable areas for irrigation, post-harvest and land husbandry infrastructures and undertaking detailed feasibility studies. The expected adverse impact at this stage concerns conflict over project beneficiaries due to disagreement and misunderstanding. All best practices, like stakeholder's involvement, etc. should be considered to ensure that the design considers the environmental and social aspects.

The primary anticipated adverse impacts expected during the construction phase include:

(i) Soil erosion

During the construction of irrigation dam, canals, post-harvest infrastructures and access roads, excavated soils due to excavation and clearing for irrigation facilities, PHIs, roads will be exposed to agents of erosion, mostly water and wind, resulting in increased erosion and landslides. If not combatted, it can develop into a cumulative impact of loss of valuable productive soils to the receiving waters, sedimentation of receiving waters, silting and blockage of delivering canals, and loss of agricultural productivity of the marshland. The erosion that will occur during the construction will be minimal and localized in the areas where excavation will take place only. The impact duration is only expected to be felt during the construction phase.

Most of the above impacts are of short duration and localized in the areas where excavation takes place and could be managed by the management plans. The proper management of borrow and quarry areas will be implemented during construction phase.

Soil erosion and land degradation occurring during the construction phase of the project can be avoided through:

1. Only clear areas earmarked for construction;
Dispose of the excavated soils immediately after excavation completion;
2. Construct retention ditches below the construction area to control erosion risks;
3. Reclamation of pits done in a way to leave the site in a safe, stable, and non-polluting condition with no remaining soils or stones unnecessary for post-operational use and prevent the establishment of stagnant water and erosion as well as support vegetation growth over long-term.

(ii) Soil and water contamination

During the construction of irrigation facilities (dam and reservoir, main canals), PHIs and access roads, heavy machinery such as excavators, graders, wheel loaders, etc. will be used for earth moving construction works.

This equipment requires re-fueling, maintenance and repair works, which result in oil spillage. Contamination of soils and run-off ending in the receiving bodies could cause soil and water quality degradation, if no mitigation measures are implemented. Furthermore, various types of wastes from construction sites or camps can be generated and their dumping in haphazard manner may cause soil, surface and ground water pollution near the construction sites and breeding site for mosquitoes. These impacts are of short duration and will be reversible with a proper management.

The waste likely to fall on the ground or water, mostly from spillage of oil and grease by construction machinery and equipments, especially during their maintenance or construction wastes should be controlled through the following measures:

- Adoption of appropriate waste disposal methods at the site. Construction machinery and project vehicles should be maintained only in-service stations and approved areas. Proper care should be taken while locating the above utilities/ facilities so as to minimize the soil and water pollution.
- A proper waste management system should be established. In this regard, dustbins for collection of domestic wastes at the camp or construction site should be provided. The collected wastes should be disposed of in landfills approved by the District.
- Care needs to be taken to provide adequate sanitary facilities and drainage in the temporary colonies of the construction workers. The provision of adequate washing and mobile toilet facilities with septic tanks and appropriate refuse collection and disposal system should be made obligatory.

(iii) Air and noise pollution

There are movements of construction equipment and humans at various project sites. Dust and exhaust fumes expected from earth moving and materials supply activities by machineries will excessively increase levels of dust and noise, thus causing air pollution as well as noise.

In a bid to reduce the effects of dust and exhaust fumes emission, it is proposed that the following measures are implemented:

- The contractor is required to use equipment and automobiles that have certification of good working conditions from "National Automobile inspection centre" to avoid exhaust fumes since automobiles in good condition pollute

less.

- CDAT project coordination on site and District ensures that contractors are doing routine maintenance, repair of trucks and machines. This would reduce on the exhaust fumes from the machines.
- The Contractors spray water regularly (at least twice a day but more frequently in areas close to settlements) when clearing land and compacting roads to reduce the dust.
- Activities that create a lot of noise or irritations, such as vibrations, heavy equipment moving earth, excavations, shall be restricted to normal working hours (7h00-17h00) to prevent noise for neighbours at night.
- Generators for use at the site shall have silencers to reduce on the noise emitted.

(iv) Loss of biodiversity on the hillsides and valley

The clearing of land for camp site installation, installation of irrigation infrastructures and PHIs, land husbandry works lead to loss of biodiversity and ecological imbalances. It is anticipated that planned activities for various CDAT sites will provoke changes in the existing biodiversity (ie common crops to high value crops, tree component change, with more agroforestry fruit trees come fruit birds, with carrot and lettuce come rats and other rodents, etc.

The scope of impact are being localized and felt in the construction area. The impact will be long term in terms of duration on construction sites because the crops and land will be lost for as long as the project is implemented. This impact is unavoidable and will be mitigated through compensation measures which will include compensation of land, crops and trees on construction sites.

The tree or grass clearing should only be limited to construction site and the introduction of invasive species in the area should be avoided. The water hyacinth (*Eichornia crassipes*), responsible for much disruption of aquatic systems, must not be introduced in marshlands ecosystem. The tree or grass planting should also be planned for to replace lost plant species. It is also important to avoid construction in sites of high importance within the broader region or landscape.

(iv bis) Biodiversity impacts from irrigation expansion (new under AF)

The expansion of large-scale irrigation (Cyohoha Phase 2, Gabiro Phase 2) and SSIT/FLID (2,000 ha) may lead to habitat fragmentation, loss of wetlands, and alteration of aquatic ecosystems.

Proposed mitigations:

- Maintain environmental flow requirements (ESS3) and establish buffer zones (minimum 10–20 m) along rivers and wetlands;
- Exclude critical habitats (ESS6) from irrigation development;
- Implement biodiversity screening for all SSIT/FLID subprojects, prohibiting activities in or near protected areas or high-value conservation zones.

(v) Loss of properties

Due to clearing and excavations for various constructions, there will be temporary or permanent land take for construction sites of irrigation infrastructures, PHIs and access roads, leading to loss land and assets (houses, crops, trees, etc). The loss of land and assets on land (crops, trees and structures) due to construction works is anticipated during CDAT implementation; hence resulting in people's displacement and assets loss. The preparation of a resettlement action plan (RAP) according to the RPF to fully compensate for lost/damaged property and resettle the displaced persons is compulsory to mitigate this impact. Under the AF, IDA resources (up to US\$ 1.61 million, Category 9) will be used to directly compensate PAPs for land acquisition and affected assets, expediting resettlement processes. RAPs will be prepared prior to construction for Cyohoha Phase 2

(vi) Workers and Community Health and Safety risks

During the construction phase, workers will be subjected to situations that could be detrimental to their health and safety. Indeed, the subprojects employ enough labour for its timely completion. Infectious diseases, are likely to be disseminated due to manpower increase and interactions among the workers, local community or with service providers such as food vendors, especially during peak demand for manpower. Other occupational diseases like AIDS/HIV, malaria, diarrhea, etc, from workers that have migrated to the project site in search of employment plus locals willing to spend more due to increased income from construction wages are likely to be transmitted.

Different types of accidents at the site are likely to increase due to increase in manpower and road traffic. A few examples include injuries caused by handling of construction equipment or from stepping on or using sharp objects, fire outbreak, road traffic accidents, emissions of dust that might cause respiratory dysfunctions, etc. Furthermore, the open pits may create additional habitats for water borne disease vectors and possible safety issues for people and livestock, mostly drowning in deep/steep pits.

The management measures including proper sanitation, waste disposal facilities, awareness campaigns for the prevention of infectious diseases like, AIDS/HIV, sexually transmitted diseases and other communicable diseases, , etc), sensitization for health insurance is needed at the project site. The provision and use of protective equipment to workers (helmets, boots, masks, etc) are also compulsory.

(vi bis) Occupational safety during pump installation (new under AF – SSIT/FLID)

Installation of solar-powered pumps and drip irrigation systems involves risks of electrical hazards (improper wiring), lifting injuries (heavy components), and falls (working on elevated platforms or near boreholes).

Proposed mitigations:

- Provide training for beneficiaries and local technicians on safe installation, grounding of solar panels, and use of personal protective equipment (PPE) (gloves, safety glasses, hard hats).
- Require licensed electricians for all electrical connections.
- Develop simple pictorial safety guides for non-literate users

(vii) Increased risks of GBV, SEA/SH and child labour

Besides the above health and safety issues, some undesired effects like crime (theft) are likely to increase as a result of social interaction in the workplace and its surroundings. The increased cases of gender-based violence (GBV), sexual exploitation and abuse (SEA), sexual harassment (SH) or other sexual offences are anticipated during the construction phase. The use of child labour is also predicted due to increased employment opportunities. The impact may be of short duration and reversible but can be of a high magnitude if not well managed.

The reinforcement of laws on child labour, sexual harassment/ prostitutions and gender equity should be done. Promoting collaboration with local authorities to enhance access of workers families and the community to public health services and promote immunization is also important. Regular training or sensitization of workers on GBV, SEA/SH and child labour prevention and awareness campaigns for the surrounding community in the project areas are strengthened.

b) Operation Phase

i) Reduction of water flow downstream and changes in hydrological regime

The irrigation involves blocking and deviation of the water flow from water course, lake and groundwater in the canal to

the identified area. Due to this, the downstream water users might experience temporary shortfall in the amount of water available, therefore disrupting activities and sources of livelihood that depend on the water. This is also likely to cause changes in hydrological regime of micro catchment and threat to aquatic and terrestrial biodiversity in water bodies, particularly in the dry season. This is a long-term impact as it is likely to occur not only during the reservoir filling or water diversion to irrigation canals but also throughout the irrigation period.

The impact will be medium to high in terms of magnitude, severity and scale. The diversion of a portion of water to fill up irrigation dams, night storages and irrigate the command areas will reduce the water body level. This impact will likely happen at peak period. The measures to mitigate the potential project impacts on water resources include:

- ✓ Regulate water abstraction for irrigation and other uses. Irrigation water should be efficiently used, especially during dry or drought period to enable all schemes to continue receiving water all time and in adequate quantity;
- ✓ Adopt proper water management measures to minimize water losses / wastage. In this regard, the calendar for irrigation water distribution should be established and implemented and well monitored; damaged pipes should immediately be repaired in all sites.

The master meters as part of the infrastructure to be developed may be installed where needed. This master meter will be used to control the amount of water abstracted from the water body, thus allowing for management of water abstraction and water flow downstream.

(i bis) Groundwater abstraction risks (new under AF – SSIT/FLID

- SSIT/FLID technologies (solar pumps, boreholes, shallow wells) may lead to localized or cumulative groundwater depletion if multiple systems are installed in the same catchment without coordination.
- Over-abstraction could lower water tables, affect neighboring wells, and reduce dry-season base flows in rivers.

Proposed mitigations:

- Screen all SSIT/FLID subprojects using an E&S checklist that assesses groundwater availability, recharge rates, and proximity to other abstraction points.
- Prohibit SSIT/FLID in water-stressed areas or near critical wetlands (as defined by RWB).
- Require simple water level logbooks for borehole users, with random spot checks by RAB-SPIU agronomists.
- Maintain environmental flow requirements and consult downstream users on reservoir operation rules.
- Strengthen Water User Associations (WUAs) with training on conflict resolution, water allocation rules, and monitoring of abstraction.
- Establish local water use agreements and grievance mechanisms (GRM) at scheme level.

ii) Water and soil quality degradation

During ongoing CDAT execution, the support to agricultural inputs including improved/bio-fortified seeds, fertilizers, pesticides, etc are being provided. The supplied fertilizer and pesticide are being applied in the fields. These agrochemicals, if applied in large amounts and at inappropriate time, may pollute water resources in the streams and have cumulative effects in the basin and groundwater. Pesticides applied will bio-accumulate in the soaked soils of the command area, upsetting the natural ecological balance and biodiversity of the wetlands downstream.

The infiltration of irrigation water in excess of available root zone storage will penetrate beyond the reach of roots and eventually recharge groundwater. Nitrates, salts, and other chemicals used in crop cultivation that dissolve in the soil water

will move with the water. Crops with high water and Nitrogen requirements (like vegetables) may increase the potential risk of nitrate pollution to groundwater. Because they do not evaporate, nitrates/nitrites are likely to remain in water until consumed by plants or other organisms. The pesticide infiltrating in the soil can contaminate the soil by accentuating soil acidity or salinity depending on the type of pesticide used.

The CDAT has prepared the Pest Management Plan (PMP) which provides guidance on the safe use of pesticides and fertilizer in the cultivation and production of crops. The site specific ESIA/ESMP also reflects it in the ESMPs section. Farmers will also be continuously trained in techniques of agrochemical applications (handling, labeling and application of agro-chemicals under field conditions). The training is being organized to raise awareness of farmers and extensionists on the amounts and conditions for applying fertilizers and pesticides to prevent water and soil pollution and health risks.

However, priority is put on adoption of non-chemical control practices. In this regard, farmers are being advised to use cultural, physical, mechanical control and use of biological control practices before chemical control options because they are inexpensive and safe to humans, farm animals and the environment. Farmers are being advised to do regular field monitoring to check if there are no pests and diseases in their field.

iii) Air pollution due to tillage and inappropriate pesticides application

During pesticides application, some residues are released into the air and can settle to the ground, be broken down by sun light and water in the atmosphere or dissipate into the surrounding air. The pesticides or dust in the air pollute the ambient air and become a health risk depending on toxicity level and quantity of them in the air as well as the quantity that a person breathes or gets exposed to.

In a bid to mitigate the negative impacts of pesticides, the following is proposed:

- ✓ Where possible, avoid or minimize pesticides and adopt adequate agricultural practices to control pest and diseases;
- ✓ Monitor the weather when applying pesticides and avoid very hot or windy days or rainy days;
- ✓ Follow label directions when using pesticides;
- ✓ Consider staying inside with doors and windows closed when pesticides are being applied near houses/settlements;
- ✓ Wear adequate personal protective equipment when applying pesticides or nearby application zones of pesticides.
- ✓ Where possible, start land preparation works shortly before the coming of rains to minimize dust emission

iv) Loss of biodiversity

The inundation of the river upstream due to damming or access roads could result in physical and economic displacement, hinder access to grazing and water sources for livestock, and destroy vegetation and natural habitats including aquatic ecosystems.

The storage, handling, use and disposal of agrochemicals may also have negative impacts to biodiversity. There exist, for instance, different species of birds, beneficial insects like bees in the project areas that are likely to be affected. The irrigation coupled with excessive use of agrochemicals may also lead to changes in biodiversity. In all instances where high input-dependent crop/pest practices are adopted, pesticide misuse is known to be common and can result in the following impacts:

- Destruction of crop pollinators leading to poor crop yields;
- Elimination of the natural enemies of crop pests and consequent loss of natural pest control that keeps the populations of crop pests very low;
- Development of pest resistance to pesticides, encouraging further increases in the use of chemical pesticides;

- Contamination of the soil and water bodies;
- Toxicity to fish and birds;
- Proliferation of aquatic and terrestrial weeds;
- Pesticide poisoning of farmers and deleterious effects on human health;
- Unacceptable levels of pesticide residues in harvested produce and in the food chain; and
- Loss of biodiversity in the environment, particularly of the aquatic non-target species.

The proposed mitigation measures include:

- ✓ Avoidance of introduction of invasive species and degradation of natural habitat. Care should be taken not to introduce invasive species during re-vegetation of the area. The water hyacinth *Eichornia crassipes*, responsible for much disruption of aquatic systems, must not be introduced in wetlands ecosystem;
- ✓ Use IPM practices to control pests and diseases, where possible;
- ✓ Adequately select and apply pesticides and monitor the weather when applying pesticides and avoid very hot or windy or rainy days;
- ✓ Establish buffer zones around reservoirs or along main drainages, access roads and on embankments of terraces to protect built infrastructures and replace destroyed flora and reestablish new habitats.

(iv bis) E-waste from solar equipment (new under AF – SSIT/FLID)

- Solar-powered irrigation systems generate e-waste at end-of-life: batteries (lead-acid or lithium), inverters, control boxes, and solar panels (containing hazardous materials like cadmium, lead).
- Improper disposal can leach toxic substances into soil and groundwater.

Proposed mitigations:

- Include e-waste management provisions in the SSIT/FLID operations manual, specifying take-back or recycling arrangements with suppliers.
- Train beneficiaries on proper battery disposal and prohibit burning or landfilling of solar components.

v) Increased pest and disease resistance and dissemination of crop diseases

The increased area of irrigated land may create a more humid environment that may result in an increase of agricultural pests and plant diseases. Change to a more uniform environment on the subproject areas will favour vigorous species adapted to a wide variety of conditions. Diseases and weeds will spread quickly via the re-use of wastewater and drainage water.

Increased pests and plant diseases are likely to affect farm harvest and lead to food insecurity and malnutrition in different areas of the country. This trigger increased use of pesticides leading to water contamination, air pollution and health risks.

To mitigate against emergence of pests and diseases, an incorporation of IPM approaches are proposed. These measures should involve rotational cropping practices which preserve greater diversity in habitat thus reducing impact of pests and diseases. Crop varieties used in this project should carefully be selected and tested in order to avoid new diseases and pests spreading.

vi) Increased risks of occupational health and safety

(a) Communicable diseases and other occupational diseases

During the operation phase, labour force, both skilled and unskilled, will be employed across project sites for the day-to-day management of activities.

A part of that labour force may come from outside the site and interactions between workers or workers and surrounding communities are anticipated to lead to proliferation of infectious diseases if measures to defeat them are not considered., Malaria, HIV/AIDS, diarrhea, hepatitis viruses and other water related diseases are among communicable diseases likely to occur.

The other occupational diseases include respiratory diseases (asthma, allergic alveolitis, chronic pulmonary diseases, etc), cancer, and other diseases caused by abusive use of agrochemicals and other chemical agents are likely to increase as a result of ongoing CDAT implementation.

The above impacts are of medium to substantial significance in terms of magnitude depending on the type and quantity of chemicals used. Contraction of diseases are common in worksites but can be controlled through preventive measures.

In order to avoid or reduce the health impacts associated with ongoing CDAT project, the following is reinforced:

- ✓ The project, farmers' organizations together with local authorities are required to enforce workers' health and safety measures by using appropriate personal protective equipment (PPE), acquiring medical insurance "mutuelle de santé" for all workers as a means of affordability of treatment;
- ✓ Give preference to the application method with the lowest EHS risk and ensure non-target organisms are not affected;
- ✓ Ensure that all equipment is in good condition and properly calibrated to apply the correct dosage;
- ✓ Avoid disposing of human excreta or other wastes in the irrigation water;
- ✓ Use personal protective equipment (PPE) when working in water (gant boots, etc) and improve personal hygiene (bathing with clean water after work, avoiding drinking irrigation water, washing clothes, etc);
- ✓ Conducting regular maintenance on irrigation and drainage canals to control siltation, aquatic weed growth, slow water flow or stagnant pools which are ideal breeding conditions for many water-borne vectors and waterborne diseases;
- ✓ Adopt adequate biocontrol measures where possible
- ✓ Carry out surveys to assess the incidence of waterborne related diseases within project areas. In this regard, the ongoing CDAT should develop a program in collaboration with the Ministry of Health (MINISANTE) and the local communities which undertakes bi-annual survey of health records in Health Care Facilities (HCFs) and field surveys to ascertain the spread of malaria and other water borne diseases (WBDs). These data should then be used to develop a WBD prevention programme within project sites that could include use of Insecticide Treated Nets, Indoor Residual Spraying among others.

(b) Occupational safety risks

Different types of accidents at the subproject site are likely to increase due to increase in manpower, activities and traffic. The injuries caused by handling of farm equipment or using sharp objects, fire outbreak, roads' accidents, dust's emissions likely to cause respiratory dysfunctions, noise and vibrations from farm equipment and labour force causing temporary or permanent deafness, drowning risks, poor handling of pesticides and fertilizer, mostly due to lack of appropriate PPEs by farmers, etc are among safety risks.

Besides OHS issues (including fatalities and injuries), some undesired effects like crime (theft) are likely to increase as a result of social interaction.

The increase of gender-based violence (GBV) cases, sexual exploitation abuse (SEA) or other sexual offences and use of child labour are also predicted due to increased employment opportunities.

Depending upon the types of manufacturing units and number of employees, the impact will be of medium to substantial significance in terms of magnitude if not well managed but can be minimized through preventive measures, including:

- ✓ Undertaking education and awareness of workers and surrounding communities on avoiding safety risks at the workplace, etc.
- ✓ Establishing safety best practices in the workplace (ie putting in place warning signs and control-line systems as well as easy-to-follow safety procedures to alert workers near edges,)
- ✓ Regular maintenance of the appliances and electronics;
- ✓ Provision and use of appropriate protective equipment to sites workers such as wellington boots, helmets, masks, etc.
- ✓ Undertaking safety assessment at the site and maintaining records of all incidents and accidents arising from manufacturing facilities and businesses and providing correction measures where needed;
- ✓ Enforcing acquiring medical insurance for all workers as a means of affordability of treatment by the business owners, contractor together with local authorities;
- ✓ Awareness meetings on GBV, child labour and sexual harassment/ prostitutions preventions and gender equity;
- ✓ Establishing grievance redress mechanisms to handle site complaints, including social conflicts, etc.

i) Increased hazardous and other wastes

During the operation of the project, various types of wastes, both wastewater and solid waste are likely to be generated and adversely impact the environment and health if improperly disposed of. The crop residues, wastewater from air conditioning systems from constructed cold rooms, processing units, solid wastes from processing units, etc are expected during the project operational phase. A big portion of expected wastes is biodegradable and present no hazard while others can be hazardous and therefore have significant harmful effects on health and the environment, either alone or in contact with other wastes. Some wastes may cause air pollution while others can lead to water and soil pollution, emit nauseating odour (bad smell) and have aesthetic concerns. The waste may also contain a wide range of micro-organisms which are dangerous to public health.

The appropriate waste disposal techniques should be adopted at each and every project site and fully be implemented. The biodegradable and non-hazardous wastes can be collected, composted and used as organic fertilizer. Others may be processed into animal feeds or be used as mulching. The wastewater can be well collected and disposed of in approved dumping sites to minimize risks of soil and water pollution as well as health and safety risks.

ii) Pressure on energy resource

The energy is needed and predominantly used for production, lighting and other business uses. In CDAT sites, the electricity will be mandatory in processing units and other postharvest facilities. As the processing units and postharvest facilities increase, the energy consumption is expected to increase and likely to result in electricity shortage especially in remote areas with low energy supply. This impact is of low to moderate significance in terms of magnitude.

Using energy-efficient equipment and operating them efficiently, improving the electricity availability in project sites to balance demand and supply where applicable, etc. are some of the best measures for energy use efficiency.

iii) Encroachment into the developed areas

Due to development activities (improved access roads, electricity availability, employment opportunities in the developed schemes, etc) in the project areas, unplanned settlements may be created or nearby settlements be well developed. This may be associated with vandalism and damages to irrigation infrastructures, occupation of high-risk zones and their

destruction, etc.

Consultation meetings between local leadership, farmers and immigrants, giving employment preference to members of the local community and enforcement of the regulation on National Land Use and Development Master Plan 2020-2050 will be mandatory to control the issue.

iv) Other social issues

At the completion of irrigation facilities and command area development, the land under irrigation will be redistributed and some users may lose part of their land or shifted to new plots within the developed scheme. Other plots may be given to new people. This may generate social issues if the land redistribution is not fairly and transparently done. On the other hand, hillside areas adjacent to developed schemes and developed with land husbandry techniques will require to be consolidated for their efficient management and productivity. This can also cause issues if land consolidation and crop selection are done without communication and consent with landowners/ users. Hillside and marshland areas are privately and publicly owned respectively.

The mobilization/ awareness raising of affected parties on land redistribution and land consolidation approaches, the full involvement of project affected people in the whole process of land redistribution and consolidation and the reinforcement of the regulations on land consolidation and irrigation master plan will help to manage the land issues.

5.3.2 Localized Impacts

Most of the activities planned under the ongoing CDAT project will vary from medium to small in scale. With the introduction of SSIT/FLID, the scale of individual subprojects is smaller (typically <10 ha per grant), but the cumulative number across a district could be high. Therefore, cumulative impacts on water tables and farmer-water user conflicts become a moderate risk that requires active coordination at sector and cell levels. Consequently, the significance of the direct negative environmental and social impacts is likely to be low to moderate except where they accumulate in single watersheds.

5.3.3 Cumulative Impacts

Many of the subprojects may result in cumulative impacts on humans and natural resources. Cumulative impacts are those that may result from individually small-scale activities with minimal impacts but which over time can combine to have a significant impact. Cumulative impacts can also be defined as impacts that potentially develop from the combined impacts of more than one subproject. These include for instance:

- Increased use of pesticides and fertilizer which may have downstream impacts; and
- Attraction of immigrant populations to communities that have improved production systems and social infrastructure.
- Increased sedimentation of the natural water bodies and valley

The stakeholders will be provided with an opportunity to learn how to avoid or mitigate localized impacts from initial subprojects so that measures can be integrated in subsequent activities.

5.3.4 Ecological Impacts and Land Degradation

A number of the proposed activities in the subprojects can lead to both localized and cumulative impacts on biodiversity, wetlands, soils and water quality. Land degradation may arise due to subprojects that involve intensification of agriculture. The environmental and social screening tools identified in this ESMF will be used to identify and mitigate the potential impacts as they relate to certain types of community investments. Considerable attention must, therefore, be paid to the environmental consequences of current pest and diseases management practices in Rwanda.

5.4 Guidelines for mitigation measures

All adverse impacts are considered for mitigation. Specific measures have been suggested in this section and include project modification, provision of alternatives, and pollution control the mitigation measures are applied to impacts arising from construction, operation and maintenance aspects of the various project activities.

The contractor is responsible for determining the cost of mitigation and to include such cost as part of its total cost for executing the works. The Project is therefore required to include the mitigation measures as part of the Request for Proposal (RFP) or tender documents for contractors to enable them quote appropriately. The mitigation measures are presented in the following table in a descriptive format.

These measures should not be considered as complete, and the full and final complete measures for each subproject shall be determined by the subproject E&S assessment and required site specific instruments (ie ESIA, ESMP, C-ESMP)

Table 3: General Environmental and Social Impacts and their mitigation for CDAT

Project Component	Specific activities	Negative impact	Mitigation measure
Planning and Construction Phase			
Value Chain and Infrastructure Development	Site selection and subproject designs	Conflict over project beneficiaries due to disagreement and misunderstanding	- Involve all the stakeholders in site selection (organizing consultation meetings, sites visit with stakeholders) - Stakeholder engagement plan and communication plan for the project.
	Clearing and excavation during camp site installation and construction of irrigation and post-harvest facilities, access roads and land husbandry infrastructures	Loss of properties (land, houses, crops, trees, income sources) and displacement of people	- Preparation of a site-specific resettlement action plan (RAP) according to the RPF to fully Compensate and resettle the displaced persons and lost/damaged property
		Soil erosion	- Only clear areas earmarked for constructions - Installing and maintaining temporary drainages before the permanent drainage system or contour drains during constructions to control storm water efficiently especially in access roads, borrow pits and PHIs areas; - Avoid earthworks during heavy rains (mid-March to mid-May); - Planting of vegetation (native, non-invasive species) on cleared site immediately after construction of embankments and buffer zones of reservoirs, canals, etc - Dispose unused stockpiled topsoil's before rains

Project Component	Specific activities	Negative impact	Mitigation measure
		Soil and water contamination from Oil spillage, poor sanitary infrastructures	- Regular maintenance of motorized machinery and equipment in service stations and approved areas; - Establishment and Adoption of appropriate waste disposal plan; - Adequate sanitary facilities and drainage in the temporary colonies of the construction workers - Latrine location and design should take into consideration distance from water sources, soil type.
		Air and noise pollution	- Use noise and dust mitigation measure to minimize impacts eg PPEs, watering of construction sites to reduce dust; - Schedule working hours during daytime; - Avoid burning of any kinds of waste or construction materials - Control the speed of construction vehicles
		Loss of biodiversity on the hillsides and valley	- Make an inventory of flora and fauna in cleared area and reservoirs areas and water bodies feeding the irrigation facilities and propose mitigation measures
		Community Health and Safety risks	- Preparation of site Occupational Health and Safety (OHS) plan and Contractor to comply with OHS requirements; - Site Contractor and his personnel to be trained in relevant OHS requirements to ensure their safety; and contractor to carry out sensitization of the community in
Project Component	Specific activities	Negative impact	Mitigation measure

			regard to hazards from construction activities - Adopt health and safety measures at every site, including safe driving, signage, cordoning off working areas, waste management, hygiene, etc. - Provide PPEs to all construction workers and enforce their use
		Loss of cultural heritage or item of traditional value	- Before earthworks, identify all cultural heritages in project sites and comply with the provisions of local regulations - Develop a chance and find procedure during works
		Increase of Gender based violence (GBV) cases, prostitutions and use of child labour	- Reinforcement of the laws on child labour, sexual harassment/ prostitutions and gender equity.
			- Awareness meetings on GBV, child labour, prostitutions preventions.
			- Awareness programs on child protection through close collaboration with existing Child protection Committees within the community and capacity building for those committees.
		Loss of soil fertility	- Application of lime after construction to reduce soil acidity - Application of good quality organic materials including compost, green manure, mulch, etc. to improve soil properties after construction

(SSIT/FLID under Subcomponent 1.4) (SSIT/FLID under Subcomponent 1.4)	Installation of small-scale irrigation technologies (solar pumps, drip kits, small bunds, water harvesting structures)	-Localized water depletion (groundwater or surface water) if multiple systems installed in same catchment without coordination. - Soil erosion around installation points. - Minor waste from packaging (plastic drip lines, pump batteries).	- Screening: Use E&S checklist to assess cumulative abstraction potential in target cells. Prohibit SSIT/FLID in water-stressed areas or near critical wetlands. - Technical specifications: Require flow restrictors or efficient technologies (drip over sprinklers). - Community coordination: Grants to groups or cooperatives preferred over individuals; require basic Water User Association (WUA) agreement for shared water sources. - Waste management plan: Include take-back or recycling provisions for drip tape and batteries.
Agricultural Finance and Insurance	Mobilization of farmers for agriculture financing	High perception of risks in agriculture sector	- Perceptions on agriculture sector demystified through availing information related to crop
Project Component	Specific activities	Negative impact	Mitigation measure
	and insurance opportunities		productivity, value chain & environmental risks and market failure - Agriculture insurance granted and required information provided. - Managing stakeholders expectation through the stakeholder engagement process.
		Insufficient credit and low level of investments in agriculture sector	- Mobilization meetings with financial institutions and beneficiaries on agriculture investments and agriculture insurance scheme - Funds in agriculture sector availed, - Access to finance institutions improved

		Poor monitoring measures on the implementation of the E&S risks and impact mitigation	- Have adequate capacity for field inspections to monitor adherence to standards and required standards and required practices, such as for reforestation, waste handling, protection of buffer zones, mainstreaming gender etc. - Developing and using adequate monitoring tools
Operation Phase			
Value Chain and Infrastructure Development	Filling reservoirs/storages or abstraction of water from sources (water courses, lakes, groundwater, etc)	Reduction of water for downstream users, particularly in dry season	- Install water abstraction monitoring infrastructures (gauges, etc) and infrastructures to measure flow levels in rivers - Determine and maintain environmental flow requirements for rivers considering human, livestock and ecological needs;
Project Component	Specific activities	Negative impact	Mitigation measure
			- Capacitate WUAs in keeping monitoring records for abstraction and river flow, operation and maintenance of irrigation infrastructures, etc - Implement catchment rehabilitation interventions

	Inadequate application of agrochemicals	Water and soil quality degradation	- Developing the ESCP and provide guidance on the safe use of pesticides and fertilizer in the cultivation and production of crops - Minimize the use of agrochemicals through adopting conservation agriculture techniques, explore organic/natural fertilizer - Train farmers in proper use, handling, storage and disposal of agrochemicals and containers - Careful supervision of agrochemicals application - Prevent/minimize soil erosion by maintaining erosion control measures and drainage structures - Establish buffer zone along riverbank, main canals, reservoirs in accordance with Rwandan regulations - Carry out water and soil quality assessment regularly through testing
		Air pollution	- Keep dust down by watering access roads, especially sections near settlements - Monitor the weather when applying pesticides and avoid very hot or windy days or rainy days;

			- Follow label directions when using pesticides and fertilizer; - Consider staying inside with doors and windows closed when pesticides are being applied near houses/ settlements; - Wear adequate personal protective equipment when applying pesticides or nearby application zones of pesticides. - Where possible, avoid or minimize pesticides and adopt adequate agricultural practices
		Waterlogging and salinization or acidification	- Regulated types and amounts of fertilizer applied based on actual nutrients required; - Adequate application of pesticides; - Training of farmers to regulate quantities of water used and application of agrochemicals.
		Loss of assets and biodiversity due to inundation in the reservoir area, clearing for constructions, land husbandry, etc	- Compensate for flooded land, canals, PHI and assets on that land - Avoid introduction of invasive species and degradation of habitat during re-vegetation of the area. - Use IPM practices to control pests - Adequately select and apply pesticides and monitor the weather when applying pesticides and avoid very hot or windy days or rainy days - Establish buffer zones around reservoirs or along main drainages, access roads and on embankments of

Project Component	Specific activities	Negative impact	Mitigation measure
			terraces to protect built infrastructures and replace destroyed flora and reestablish new habitat
		Increased pest and disease resistance and dissemination of crop diseases	Incorporation of IPM approaches and adoption of other good agricultural practices like rotational cropping practices which preserve greater diversity in habitat thus reducing impact of pest and diseases. Use of diseases tolerant crops
	Operation and maintenance of irrigation, post-harvest, and land husbandry infrastructures and access roads	Water wastage	- Prepare operation and maintenance manual for irrigation infrastructures - Capacity building of WUA and Cooperative in O&M of irrigation infrastructures - Creation of Water User's Association (WUAs) to manage quantities of apportioned water for each crop, hence reducing on likely water misuse.
		Conflicts between farmers over water resource uses (livestock keepers, domestic use and irrigation)	- Provide water points and animal troughs where needed; - Sensitize communities on preventing livestock from drinking from reservoirs, canals and damaging irrigation infrastructures - Establishing local monitoring system to reduce conflicts and manage them at early stage
	Land redistribution and consolidation	Social conflicts between land users or land users and local authorities	- Awareness meetings of stakeholders, including PAPs, on land redistribution and consolidation; - Full involvement of the PAPs in the whole process

Project Component	Specific activities	Negative impact	Mitigation measure
	Influx of people due to potential job opportunities and land distribution/ lease		- Proper enforcement of regulations on land distribution, land consolidation and irrigation master plan
		Growth of settlements due to induced in-migration	- Plan for population increase and consequent demand on public utilities - Awareness campaigns for communicable diseases and other diseases preventions - Enforcement of the national Land Use and Master Plan 2020-2050
		Insecurity concerns among host communities	- Give employment preference to members of the local community - Consultation meetings between local leadership, farmers and immigrants
	Health and safety risks	Increased Spread of Water Borne Diseases	- Undertake regular survey in project sites and collect health records from surrounding Health Care Facilities (HCFs) to ascertain the spread of malaria and other water borne diseases; - Supply Insecticide Treated Nets for malaria control and carry out Indoor Residual Spraying in affected households. - Capacity building of schemes users on waterborne diseases trend and prevention
		Proliferation of pests and vermin due to wastes and poor hygienic conditions posing health risks to the communities	- Dispose of the construction waste and solid waste as per REMA's solid waste guidelines - Sensitize farmers on waste management practices - Recycle, reuse, recover, reduce waste

		Respiratory, gastric, dermatological, hygiene problems	- Use of personal protective equipment during application of fertilizer and pesticides - Train farmers in the handling, storage, transport, application and disposal of agrochemicals
		Incidents at the dam, storage, canals, borrow areas and access roads (drowning, death, injuries, road accidents, etc)	- Preparation of dam safety plans; - Ensure sound dam design, and maintenance (checking structure, desilting, etc) - Cordoning off all borrow pits/quarries to prevent humans and livestock falling in; - Erect warning signs at possible access points to reservoirs; access roads; - Awareness campaigns on dam/storages safety - Provide buffer zones in the surrounding of dams, storages, along main canals, etc
Agricultural Finance and Insurance	Strengthening and scaling up agricultural finance and insurance	Limited knowledge on climate smart agriculture (CSA) techniques	- Consultations with financial institutions and farmers on CSA techniques and risks mitigation
		Limited access to financial services in the agricultural sector, especially credit	- Funding availed to agriculture sector - Improving technical support to farmers receiving financial support - Availing accessible and affordable agricultural insurance scheme to farmers - Capacity building of farmers on farming as a business (FAAB) and finances management - Ensure that financial services information is available for rural communities to promote inclusion.

Project Component	Specific activities	Negative impact	Mitigation measure
		Increased loss of crops due to unpredictable disasters (heavy rains, drought, diseases) affecting crops	- Availing insurance schemes affordable and accessible by farmers; - Awareness campaigns for insurance schemes adoption
Value Chain and Infrastructure Development (SSIT/FLID)	Operation of small-scale irrigation (pumps, drip, micro-sprinklers)	- Groundwater level decline (unregulated pumping). - Salinization or waterlogging in poorly drained small plots. - Noise from motorized pumps near settlements.	- Monitoring: Simple water level logbooks for borehole users. Random spot checks by RAB-SPIU agronomists. - Technical guidance: Train beneficiaries on irrigation scheduling to avoid over-application. - Noise control: Recommend submersible or shielded pumps for systems near dwellings.

Supply chain risks and primary suppliers (ESS2)

The AF introduces significant procurement of solar equipment (photovoltaic panels, batteries, inverters) under the SSIT/FLID window, in addition to construction materials (cement, steel, aggregates, timber) for irrigation and post-harvest infrastructure. In line with ESS2, the risk of child labor, forced labor and serious safety issues in the supply chains of primary suppliers shall be assessed and managed as follows: (i) bidding documents and supply contracts for solar equipment and construction materials shall require suppliers to certify that their goods are not produced using forced or child labor, and shall include the right of the project to audit and to terminate the contract where credible evidence of such practices emerges; (ii) RAB-SPIU and BRD shall screen primary suppliers, at procurement stage, against publicly available information on labor risks in the relevant supply chains, including the recognized forced-labor risks in segments of the global polysilicon/solar panel supply chain; (iii) where a significant risk of child or forced labor is identified and cannot be remediated within a reasonable period, the project shall shift to suppliers that can demonstrate compliance; and (iv) supply chain monitoring shall be reported in the bi-annual ESHS reports. These provisions complement the project LMP, which covers direct, contracted, community and primary supply workers.

Survivor-centered approach to SEA/SH risk management (ESS4)

Beyond the identification of SEA/SH risks and the referral pathways to District One Stop Centers (OSCs, Isange One Stop Centers) already reflected in this ESMF, the project shall apply the following survivor-centered protocols:

- Confidentiality: the identity of survivors, and any information that could identify them, shall be kept strictly confidential. SEA/SH cases shall be recorded in a separate, access-restricted log, and shall not be entered in the standard GRM grievance log; only the nature of the case, the date, the referral made and the case status shall be reported, in de-identified form.
- Trained first responders: the RAB-SPIU and the BRD-SPID Social Safeguards Specialists, shall act as the project-level GBV/SEA/SH focal points and first responders. Contractors shall each designate a trained GRM/GBV focal point, and workers and communities shall be informed of confidential reporting channels (including a dedicated telephone line and in-person reporting to female focal points).
- Separate handling from standard grievances: SEA/SH allegations shall never be investigated, mediated or adjudicated by the project or by site GRCs. Upon receiving a report and with the survivor's informed consent, the focal point shall refer the survivor within 72 hours to the nearest OSC for medical, psychosocial and legal support, and to the Rwanda Investigation Bureau where the survivor wishes to pursue criminal proceedings. The role of the GRM is limited to safe receipt, referral and follow-up of service provision, and to verifying any link of the alleged perpetrator to the project for the purpose of applying the Code of Conduct.
- Accountability and reporting: all project and contractor workers shall sign and be trained on Codes of Conduct prohibiting SEA/SH; substantiated breaches shall lead to disciplinary action up to dismissal. Any SEA/SH allegation linked to the project shall be reported to the World Bank within 48 hours in de-identified form, respecting the survivor's consent and safety at all stages.

Voluntary Land Donation (VLD) protocol for SSIT/FLID subprojects (ESS5)

Under the SSIT/FLID window, smallholder groups may make small parcels of land available for shared infrastructure (e.g., water harvesting structures, pump platforms, pipe routes) through community arrangements. To ensure such arrangements are genuinely voluntary and do not result in coerced transfers or the impoverishment of smallholders, land may be accepted through Voluntary Land Donation only where all of the following criteria, consistent with ESS5 and the project RPF, are met and documented:

- the donor is the legitimate holder of the land rights concerned, confirmed against the land register or recognized customary evidence, and both spouses consent in writing in accordance with Rwanda's matrimonial property regime;
- the donor is fully informed of the purpose of the donation, of the alternatives, and of the right to refuse or to seek compensation instead, and confirms in writing that refusal carries no penalty and no loss of eligibility for project benefits;
- the donated area does not exceed 10% of the donor's total landholding, does not require the physical relocation of any household, and does not reduce the remaining holding below the level needed to maintain the donor's

livelihood;

- the donation is witnessed by an independent third party (e.g., Cell Executive Secretary or a community representative not benefiting from the subproject), and documented using a standard VLD form recording the parcel, the parties, the consultation held, and the signatures, with copies retained by the donor, the Sector land office and RAB-SPIU;
- the donor retains full access to the GRM, and any dispute concerning a donation suspends the related subproject activity until resolved.

SSIT/FLID subprojects involving land transactions that do not meet all VLD criteria shall be treated as involuntary land acquisition and processed under the project RPF, or redesigned to avoid the acquisition. VLD documentation shall be verified during RAB-SPIU screening clearance and audited under the targeted SSIT/FLID audits.

CHAPTER SIX: ENVIRONMENTAL AND SOCIAL MANAGEMENT PROCESS

6.1 Introduction

This chapter of the ESMF describes the process for ensuring that environmental and social concerns are adequately addressed through mitigation and monitoring measures, institutional arrangements and procedures used by the Project for managing the identification, preparation, approval and implementation of subprojects. These include all selected sites for irrigation development or rehabilitation, matching grants projects, insurance and agri-financing projects under the ongoing project and the Additional Financing (AF). 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. The project and subproject preparation and reporting will be done through the RAB/SPIU as the focal point for environmental compliance. The ESMF provides substantial guidance on how each subproject should be planned, designed and implemented to avoid or minimize adverse environmental and social impacts as follows.

6.2 Environment and social screening process

The CDAT activities associated with environmental and social concerns include infrastructure development (ie construction of irrigation infrastructures, PHIs and access roads, large-scale irrigation under AF (Cyohoha Phase 2, Gabiro Phase 2) as well as SSIT/FLID matching grants) and agricultural finance and insurance. The screening process intends to:

- Determine the potential environmental and social impacts of selected subprojects as to whether they are likely to cause negative environmental and social impacts and design measures to mitigate adverse impacts, if any;
- Assess the quality of the project design in terms of E&S safeguards compliance;
- Facilitate informed decision making by providing clear and well-structured analysis of the effects and consequences of the proposed actions;
- Determine whether a full ESIA or partial ESIA (or ESMP) are needed or not, or any other subproject specific assessment, plan, or other requirement.

For SSIT/FLID subprojects under AF (subcomponent 1.4 matching grants),

A simplified but robust screening will be conducted by RAB/SPIU using a dedicated SSIT/FLID E&S checklists (see annex 8). The screening will assess:

- Proximity to water bodies and groundwater dependency.
- Cumulative number of similar systems in the same catchment.
- Land tenure security of the applicant group.
- Potential for downstream or downslope user conflicts.

FLID eligibility screening

Applicants must demonstrate: (i) membership in a legally recognized farmer group or cooperative; (ii) proof of land use rights (formal or customary) for the proposed site; (iii) a basic business plan linking production to a verified commercial off-taker; and (iv) commitment to comply with E&S requirements (water abstraction limits, buffer zones, waste disposal).

SSIT-specific environmental screening

Additional criteria for technologies involving pumps (solar or electric), boreholes, or surface water abstraction: (i) assessment of available water yield and dry-season flow; (ii) prohibition of systems in water-stressed areas or near critical wetlands (as defined by RWB); (iii) requirement for flow restrictors or efficient application methods (drip over sprinklers); and (iv) noise control measures for motorized pumps near dwellings.

SSIT/FLID proposals will be classified as **Low Risk** (cleared with standard ESMP conditions), **Moderate Risk** (requires site-specific ESMP), or **High Risk** (ineligible for financing) based on the screening results.

For the purposes of this classification, “**High Risk**” is defined in accordance with the **World Bank Environmental and Social Framework (ESS1) risk classification** i.e., proposals whose potential adverse impacts are significant, irreversible or unprecedented, or which are located in sensitive areas and this ESF-based definition takes precedence over the national (RDB) categorization wherever the two differ.

Disbursement conditions for SSIT/FLID grants

No SSIT/FLID grant shall proceed to disbursement until the simplified E&S screening checklist, land-use documentation, water abstraction assessment/declaration, simplified ESMP and any required RWB permit or conditions have been reviewed and cleared by RAB-SPIU. High-risk SSIT/FLID proposals, including those in sensitive wetlands, over-abstracted catchments, active land/water disputes or critical biodiversity areas, shall be ineligible.

The project implementers (RAB and BRD) will conduct the screening of received applications technically feasible to identify potential E&S risks/impacts and determine whether the subproject is environmentally feasible and socially acceptable or not and if yes, which environment and social risk management instruments need to be prepared for compliance with E&S standards/safeguards requirements of both the borrower and World Bank.

The irrigation development projects, the matching grants and agricultural insurance projects will be screened for environmental and social (E&S) risks by RAB while agricultural investments requesting for financing will all be screened by BRD. The E&S screening of each subproject prepared for funding will be performed by each implementing agency and will result in its classification into one of the four categories (low, medium, substantial and high) depending on the type, location, sensitivity, and scale of the subproject and the nature and the magnitude of its potential E&S impact and risk. This classification will be based on the provisions of the World Bank Environmental and Social Framework (ESF) on Assessment and Management of E&S risks and impacts (ESS1). The screening exercise will be based on the E&S screening checklist, relevant E&S regulations of Rwanda and the WB as well as the BRD exclusion list of activities. The BRD exclusion list of activities will only be in use for investments requesting BRD support.

The E&S screening checklist and BRD exclusion list of activities are presented in Annexes 1 and 2 respectively. Before the screening process is initiated, the review of plans, designs and technical and financial prefeasibility or feasibility reports are to be undertaken for every subproject submitted for funding to mainstream E&S concerns into the whole subproject review process. Where there is no feasibility study that has started or planned for, discussions on activities proposed for each site may take place and E&S concerns considered.

The final screening results will inform on the potential E&S impacts/risks likely to be associated with the prepared subproject and which subproject requires a full ESIA study, partial ESIA (or ESMP) or not. The summary project screening report (SPR) will be prepared for any subproject not requiring an ESIA or ESMP. RAB and BRD shall notify their respective beneficiaries of the findings of subproject screening for E&S risks/ impacts.

Water abstraction permits (new under AF)

For any subproject involving surface water or groundwater abstraction for irrigation (including SSIT/FLID), the implementing agency (RAB or BRD) or grant beneficiary shall obtain the necessary water abstraction permit from the Rwanda Water Resources Board (RWB) prior to construction or installation.

Permit conditions will specify maximum abstraction volumes, permitted abstraction periods (e.g., dry season restrictions), and monitoring requirements.

For SSIT/FLID subprojects, a simplified water use declaration form will be developed by RAB in consultation with RWB for small-scale abstractions (<1 ha or <5 m³/day).

Dam safety screening threshold

Given that the AF large-scale schemes (Cyohoha Phase 2 and Gabiro Phase 2) involve significant hydraulic structures, the screening process shall apply the dam safety thresholds of ESS4, Annex 1. Any dam of fifteen (15) metres or more in height, or any dam between five (5) and fifteen (15) metres in height that impounds more than 3 million cubic metres or presents special design complexities (e.g., unusual foundation conditions, high seismicity, or retention of toxic materials), shall be treated as a large dam and shall trigger the enhanced dam safety requirements: preparation of dam safety plans (construction supervision and quality assurance plan, instrumentation plan, operation and maintenance plan, and Emergency Preparedness Plan), independent review by a panel of experts, and periodic safety inspections. Dams below these thresholds (small dams) shall require dam safety measures designed by qualified engineers, adapted from good practice. These thresholds are reflected in the exclusion and eligibility criteria in Annex 3, and no works on a structure meeting the large-dam threshold shall commence before the corresponding dam safety instruments are cleared by the World Bank.

For any irrigation scheme under the CDAT AF that meets the large dam threshold defined above, RAB-SPIU shall constitute an independent Panel of Experts (PoE) in accordance with ESS4 Annex 1. The PoE shall comprise three or more members with expertise in the technical fields relevant to the dam's safety aspects including geology, hydrology, hydraulics, civil and geotechnical engineering, and hydromechanical design and none of its members shall have had prior involvement in the investigation or design of the scheme under review. For high hazard dams, members shall possess recognized international expertise in their respective fields. RAB-SPIU is responsible for constituting the PoE and shall submit the proposed composition and terms of reference to the World Bank for no-objection prior to appointment. The PoE's scope shall normally extend beyond dam safety to cover project formulation, technical design, construction procedures, and associated works.

The PoE shall be mobilized as early as possible in project preparation no later than the commencement of detailed engineering design and shall remain continuously engaged through all four phases of the dam's development: (i) investigation and feasibility; (ii) detailed design; (iii) construction; and (iv) initial reservoir filling and start-up. During the construction phase, the PoE shall convene for site review missions at least twice per year, and additionally whenever a significant design change, unexpected geological condition, or construction anomaly arises that warrants independent assessment. No first impoundment or commencement of dam operations shall proceed without a final PoE clearance report confirming that all outstanding recommendations have been addressed to the Panel's satisfaction, and without World Bank clearance of the corresponding dam safety instruments. The World Bank may send an observer to PoE review meetings.

Following each review mission, the PoE shall produce a written report signed by all participating members documenting its findings, conclusions, and recommendations. RAB-SPIU shall provide a copy of each PoE report to the World Bank promptly after it is issued, together with a statement of actions taken on the recommendations of the preceding report. The cost of PoE mobilization, travel, and reporting shall be reflected in the ESMF implementation budget (Chapter 9) and in the relevant subproject ESIA/ESMP.

Pesticide screening criteria (alignment with WBG standards)

In line with ESS3 and the WBG requirements on pest management, the project shall not finance or otherwise support the procurement or use of: (i) formulated products that fall in WHO Hazard Classes Ia (extremely hazardous) and Ib (highly hazardous); or (ii) formulated products in WHO Hazard Class II (moderately hazardous), unless the project can demonstrate that appropriate controls exist and that they will be handled exclusively by trained personnel with adequate protective equipment, storage and application practices; nor (iii) pesticides listed in Annexes A and B of the Stockholm Convention, the Rotterdam Convention or the Montreal Protocol, or otherwise subject to international bans. The BRD Exclusion List (Annex 3) has been aligned accordingly, and the project Pest Management Plan (PMP) governs the selection, handling, storage, application and disposal of all agrochemicals under the project.

6.3 Subproject registration process

As per the Rwanda environmental and social regulations, all subprojects requiring a full ESIA shall be registered with the Competent authority, Rwanda Development Board (RDB), before the beginning of subproject environmental and social study. In this regard, RAB recruits consultants to screen and proceed with the registration of the subprojects requiring full ESIA to RDB. On the other side, BRD will screen all received applications for E&S risks assessment and will request a

business owner or client whose subproject requires a full ESIA or partial ESIA (or ESMP) to hire a consultant to proceed with the registration of the subproject to RDB.

The first step for subproject registration is the preparation and submission of a proposed subproject in the form of the project brief to RDB by the Consultant on behalf of the developer (RAB or BRD's client). The project brief provides information on the intended subproject as well as the basis for the screening and on which RDB approves the EA Terms of Reference (ToRs) submitted together with the project brief by the Consultant.

It contains the following information:

- a) Name, title and address of the developer;
- b) Name, purpose, objectives and nature of the subproject, including attributes such as size of subproject, design, activities that shall be undertaken during and after the establishment of the project, products and inputs, etc.
- c) Description of the proposed project sites and its surroundings and alternative sites, if any, where the project is to be located.
- d) Description of how the proposed subproject and its location conform to existing laws, regulations and policies governing such project and the use of the site/area proposed for its location.
- e) Any likely environmental impacts that may arise due to implementing various phases/stages of the project and proposed mitigation measures thereto.
- f) Description of any other alternatives, which are being considered (e.g. siting, technology, construction and operation procedures, sources of raw materials, handling of wastes etc., decommissioning/closure and site restoration).
- g) Any other information that may be useful in determining the level of EA required.
- h) Stakeholders in the project implementation;
- i) Budgetary requirement for the impacts mitigation measures.

The project brief will be submitted together with the proposed terms of reference (ToRs) for review and approval. As per the current procedures, the submission is made online by the Consultant. RDB will take a maximum of 15 days to review the project brief, organize a site visit in collaboration with RAB and BRD (and its client) and review and approve the submitted ToRs. Furthermore, RAB shared its ToRs with the World Bank for review and clearance as well.

6.4 ESIA preparation requirements

The ESIA study is being prepared where needed as per the screening report and conducted by a Consultant (a firm or individuals) hired by RAB (for subprojects under its scope) or the subproject beneficiary (for BRD financed subprojects) before the start of works. The consultants/consultancy firms are selected from the environmental experts and firms registered with Rwanda Association of Professional Environment Practitioners (RAPEP). The selected experts or firms should have no direct or indirect interests in the subproject.

For SSIT/FLID subprojects, a full ESIA is not required. However, a simplified Environmental and Social Management Plan (ESMP) covering water abstraction rates, noise control, waste disposal, and soil conservation must be prepared by the grant applicant with technical assistance from RAB-SPIU extension staff before the first disbursement. The simplified ESMP shall be based on a standardized template (see Annex 5) and shall be approved by the RAB-SPIU E&S unit.

The type of expertise needed in the ESIA includes:

- Environmental Specialist, with extensive experience in agricultural development activities;
- Soil Scientist, with vast experience in soil and land management
- Ecologist or Natural Resource Management Specialist with vast experience in ecosystems management (aquatic ecosystems, land ecosystem, protected areas, etc)

- Hydrologist or Water resource management Specialist with experience in water consumption, runoff and water bodies;
- Socio-economy Specialist in rural economy/development or related fields.

The following are steps for the preparation of ESIA study:

❖ **Scoping**

The next stage, after screening and determining that a proposed subproject activity should be subject to the ESIA process, is to decide on the scope and content of the ESIA report or environmental impact statement (EIS).

The land legislations, Law on Environment and associated regulations determine a core of key topics that must be covered as the minimum information to be contained in an EIS.

This scoping is conducted by the developer (or his ESIA experts) in consultation with Lead Agencies and all relevant stakeholders. It establishes important issues to be addressed in the environmental impact assessment and eliminate the irrelevant ones.

❖ **Data collection and stakeholder's consultations**

This is a stage where desk review and intense consultations with relevant authorities, stakeholders, affected communities and other interested parties as well as field observations are undertaken by the Consultant. Through public consultations, desk review and sites observations, relevant data are collected and analyzed, major impacts predicted and investigated in depth, mitigation measures and plans proposed for both adverse and beneficial impacts and compensatory measures recommended for immitigable impacts and monitoring measures developed. All project alternatives are thoroughly examined. Impacts are quantified in terms of magnitude (major, moderate, negligible), extent (regional, local, site specific) and duration (long-term, medium-term and short-term).

❖ **Impacts prediction and analysis and determination of impacts significance**

The impact identification is a way of predicting the environmental and social consequences of a proposed subproject and its alternatives. For every subproject, through consultations with beneficiaries, stakeholders and sites observations during the scoping, all possible impacts associated with the intended subproject will be listed and justified. The impact prediction should look at both direct and indirect impacts as well as the interactions between them. The Consultants will analyze identified impacts by conducting risk assessment, evaluation and risk management.

❖ **Report preparation**

At the completion of the ESIA study, the consultancy firm produces a formal document, termed an environmental impact statement (EIS). This document should provide sufficient information to objectively appraise and either approve or disapprove of a proposed subproject. The EIS shall have the content outlined in Annex 4. While there is no limit to number of pages required, the EIS should be concise, addressing only the relevant issues based on logical assumptions and simulations. The guidelines for the preparation on ESMP are presented in Annex 4.

The full or partial ESIA shall include, as relevant, thematic management plans, including but not limited to :

- (i) Emergency Response Plan (ERP): A master ERP is being prepared and adapted for each subproject's circumstance.
- (ii) Additionally, with regard to dam safety, a master Emergency Preparedness Plan (EPP) is being prepared by RAB and adapted for each subproject involving dams.
- (iii) Given the potential for impacts on sustainability of water extracted for irrigation, aquatic biodiversity consideration, competing demand for water for other purposes, and other concerns that can accumulate beyond specific subproject impacts, a Cumulative Impact Assessment (CIA) will be prepared with regard to

the cumulative impacts of the project (with a specific emphasis on irrigation schemes), and Biodiversity Impact Assessment will be prepared as part of the Cumulative Impacts Assessment, and Biodiversity Management Plans prepared for each subproject involving adverse impacts on biodiversity.

- (iv) Given that it is a targeted agricultural project where use of agrochemicals is envisioned, a site Pest Management Plan (PMP) is being prepared to ensure that all agrochemicals are handled, stored, disposed of, and applied according to relevant international standards and codes of conduct, as well as the EHSGs; RAB prepared a framework Pest Management Plan that will inform the subproject level plans.

❖ **Review of the ESIA report and decision making**

The Consultancy firm prepares the ESIA report which is submitted to the Client (RAB or BRD's client) for review and approval. The project organizes a validation workshop involving all stakeholders including public agencies (participating District, REMA, RDB, MoE, NLA, RWB), local farmers' organizations and farmers' representatives. The reviewed and corrected report is submitted to RDB and World Bank for review and approval. The ongoing project shall obtain clearance and completion Certificate from World Bank and RDB respectively.

The Project Management is responsible for completing the screening checklist (Annex 2) and ensuring that the final ESIA reports are approved by World Bank and RDB prior to subproject implementation.

❖ **Disclosure of ESIA**

After the ESIA clearance by RDB, the concerned implementing entity will disclose the approved report by making copies available at its respective website, head office and in the District where the subproject is situated. The disclosure of the ESIA report means the authorization of the subproject to commence while the rejection means no project funding.

This is to mean that each subproject will be permitted to start after the clearance of the full ESIA report by RDB and clearance and disclosure by the Bank.

❖ **Integrating ESIA/ESMP requirements into contracts and loans agreements**

RAB is expected to hire contractors and supervising firms for the execution of civil works. The E&S requirements are being integrated in the bidding documents and contracts agreements. On the other hand, the loan agreements between BRD and Clients/ borrowers are being prepared before the disbursement of funds. The E&S Technical Clauses (ESTC) are also being incorporated in the loan agreements.

❖ **Monitoring, Audit and reporting**

Each subproject requiring full ESIA includes an Environmental and Social Monitoring Plan (ESMP) which is a part of the EIS (ESIA). Each implementer shall undertake the monitoring of ESMP implementation by contractors, schemes 'users and borrowers (business

owners) under its scope. Furthermore, RAB will monitor the environmental and social performance of matching grants investments implemented by BRD-SPID (legacy grants) and RAB-SPIU (SSIT/FLID grants). The monitoring of E&S parameters included in the ESIA study should be an ongoing responsibility of the lead agency.

The ESMP has a monitoring plan that shall set forth specific activities and indications to assess progress and efficiency in the implementation of environmental and social risks and impacts management measures as set forth by the ESIA/ESMP. The monitoring shall also identify key indicators of the social risks and impacts and environmental quality and impacts to be monitored and threshold levels above which the impacts are significant, delineate responsibilities specifying who collects data, who acts, what specific actions and costs involved. The monitoring plan shall include provisions for on-site monitoring during site preparation, construction and operation phases; future maintenance requirements and provision for audit during

the operation of the project, if any.

The environmental and social audit (ESA) is a type of evaluation intended to identify the environmental and social compliance and management system implementation gaps, along with related corrective actions. It is usually conducted when a development is already in place and used to check on existing practices, assessing the environmental and social effects of current activities. Under CDAT project, the ESA will be carried out at the end of the project or whenever deemed adequate (in case of reasonable concern like environmental and social legislation, pressure from stakeholders, etc.).

The borrower should submit a progress report on quarterly basis to BRD. The latter will consolidate reports from clients and share with RAB on bi-annually basis, the project coordination entity. RAB will also prepare its monitoring reports on quarterly basis and will compile reports from both its scope and that of BRD and submit them to World Bank. RAB and BRD report immediately to the WB in case of any significant ESHS related incident.

6.5 Mitigation and Management plan

Mitigation measures will be considered starting with the Environmental and Social Assessment process. E&S Impacts identified as severe will be further analyzed to identify additional mitigation measures that are potentially available to eliminate or reduce the predicted level of impact. Potential mitigation measures include vegetation restoration plan, engineering design solutions, stakeholder's participation in land, occupational and community health and safety, etc. The ESMP should be developed so as to counter the impacts assessed and also the likely impacts during the implementation of the works and operational phase.

6.5.1 Guidelines for mitigation measures

All adverse impacts are considered for mitigation. The mitigation options considered include project modification, provision of alternatives, and pollution control. In case where the effectiveness of the mitigation is uncertain, monitoring programmes will be introduced. The mitigation measures are applied to significant impacts arising from construction, operation and maintenance aspects of the

various subproject projects. The contractor is responsible for determining the cost of mitigation and to include such cost as part of its total cost for executing the works. CDAT is required to include the mitigation measures as part of the Request for Proposal (RFP) or tender documents for contractors to enable them quote appropriately. This updated ESMF makes reference to the World Bank industry Sector Guidelines General and the selected three sectors for Agribusiness to address potential impacts.

6.5.2. Compliance with ESMP Implementation

The Environmental and Social Safeguards Specialist (ES and SSS) of RAB/ SPIU and BRD will have the responsibility for carrying out this monitoring by visiting the subprojects, and pursuing the following corrective measures as required.

- 6.5.1.1 If a violation of the ESMP or RAP or any ES clause in contract is detected during a site visit, the Contractor or borrower will be notified of the violation, and the means of rectification, verbally. The ES will discuss with the Contractor/ Operator or borrowers a realistic deadline for rectifying the violation.
- 6.5.1.2 If a violation is reported to the ES by some other entity, they will conduct a site visit and, similarly, issue the verbal warning and deadline for rectification.
- 6.5.1.3 The verbal warning will be confirmed in writing to the Contractor/ Operator or borrower within five working days.
- 6.5.1.4 The ES will return to the site on the deadline, and if the violation is still occurring, he will notify the contractor / operator in writing of the continuing violation, informing him of actions/measures to be taken by the Project.

6.6 Biodiversity Screening

Purpose: To avoid or minimize impacts on sensitive habitats, protected areas, wetlands, and critical biodiversity features.

Screening process: For every subproject (large-scale irrigation, SSIT/FLID, post-harvest infrastructure), RAB or BRD shall conduct biodiversity screening using the Biodiversity Screening Checklist (Annex: 10). The screening shall identify:

- Proximity to protected areas (national parks, forest reserves, RAMSAR wetlands);
- Presence of critical habitats (as defined by ESS6);
- Presence of threatened or endemic species;
- Wetlands, riparian zones, and fish migration corridors
- Areas of high biodiversity value outside protected areas.

Classification: Based on screening results, subprojects shall be classified as:

- **Low risk:** No sensitive habitats present; standard ESMP conditions apply
- **Moderate risk:** Sensitive habitats present but avoidable; requires Biodiversity Management Plan (BMP) with mitigation (e.g., buffer zones, seasonal restrictions);
- **High risk:** Critical habitat present or impacts irreversible; subprojects are ineligible for financing. In line with ESS6, no subproject that would result in significant adverse impacts on, or conversion or degradation of, critical habitat shall be financed under CDAT; no conditional exception applies.

For SSIT/FLID subprojects: Biodiversity screening shall be conducted at the grant application stage using a simplified checklist. Subprojects located within 500 m of a protected area or critical wetland shall be classified as High Risk and are ineligible for financing.

Responsibility: RAB-SPIU (for irrigation and SSIT/FLID) and BRD-SPID (for credit line and legacy grants) shall conduct biodiversity screening and ensure that BMPs are prepared and implemented where required.

CHAPTER SEVEN: IMPLEMENTATION AND MONITORING OF THE ESMF

7.1 Monitoring and reporting of Environmental and Social Indicators

The performance monitoring requires that (i) the various safeguards instruments (ESMF, RPF, ESIA or ESMP and RAP and other EHS guidelines) have been prepared to the required standard, within the required timelines and approved by the responsible entities, (ii) Environmental and social mitigation measures and the presence of any adequately unmitigated ESHS impacts or risks have been or are being implemented, and (iii) subprojects stakeholders and interested parties are participating in all stages of the E&S management and monitoring processes. Furthermore, the monitoring requires to be carried out at the intervention level to assess the performance of the implemented activities. The E&S performance monitoring will be done by the Environmental and Social Specialists of RAB and BRD.

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

- The BRD and RAB E&S Specialists should consider the environmental and social criteria that require measurement (i.e. groundwater levels, levels of income, incidents' cases, etc.) based on the ESMF findings; a list of initial proposals is given below;
- Using that list of criteria, a set of indicators can be integrated into the screening forms used in the project approval process in each site. 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.
- Ensure that those indicators are incorporated in the Contractor's and supervising firm' contracts.

Initial proposals

The key parameters to be considered under CDAT subprojects include monitoring of water quality, soil fertility, agricultural production, income generation, population influx and health and safety risks, agriculture financing and insurance. For the Additional Financing (AF), additional monitoring parameters include area under SSIT/FLID, number of FLID beneficiaries, water-use efficiency, climate-smart agriculture adoption, watershed restoration, biodiversity conservation, grievance resolution performance, SEA/SH incidents, and greenhouse gas reduction. 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 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.

Monitoring of Participation Process

The following are indicators for monitoring of the participation process involved in the project activities. Number and percentage of affected business owners consulted during the planning stage:

- Level of decision making of affected people;
- Level of understanding of project impacts and mitigation;
- Effectiveness of local authorities to make decisions;
- Frequency and quality of public meetings;
- Degree of involvement of women or disadvantaged groups in discussions.

The main components of the monitoring plan include identified environmental and social 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. This information is reflected in the ESIA/ESMP prepared for the site. Sites specific monitoring checklists is prepared for each subproject and is included as an integral part of site specific ESIAs. 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 ESMP document.

The contractors and supervising firms have safeguards staff, who establish communication with the local residents that may be affected by the project and be responsible to inform them about all of the project related activities, especially those related to E&S impacts of the project and planned mitigation measures. They will also be responsible for handling raised safeguards issues or communicate them to the Project management for further measures, if needed.

The contractors and supervising firms working with RAB also prepare their compliance reports in respect to ESMP, which document the implementation of environmental and social mitigation and protection measures (together with prescribed monitoring activities carried out during the reporting period) on monthly basis and submit them to Project Manager who in turn, share the report with the Bank. On the other side, BRD compiles E&S reports from its clients/ borrowers and share with RAB for overall reporting to the World Bank. However, in case of any kind of accident or endangerment of protected environments, reporting to project Management both under RAB and BRD, participating District and World Bank will be immediate.

The CDAT project will have the authority for immediate suspension of works if Contractors and borrowers' performance is found to be in serious contravention with the environmental and social standards and regulations.

Monitoring and compliance in accordance with ESMF and site specific ESMPs, including monitoring of implementation of site-specific mitigation measures on each subproject during the project implementation will be undertaken by ES and reported in writing to the coordinating entity and the Bank. Bi-annual Environmental, Social, Health and Safety (ESHS) reports, including monitoring indicators and reporting on the implementation of the requirements set forth in the ESMPs will be prepared by ES and submitted for the Bank's review. In case of fatalities or major incidents on sites, the Project through the coordinating entity will immediately report to WB.

The table below indicates project indicators to be monitored and reported against.

These are preliminary generalized indicators and subproject specific indicators are determined in the subproject ES assessment process including ESIAs, ESMPs and other ES plans.

Table 4: Monitoring indicators for CDAT

Monitoring parameter	Monitoring Activity/Indicators	Target	Responsibility for monitoring
E&S Safeguards Instruments			
Approvals and implementation	% of ESIA/ESMP completed and cleared	100% ESIA/ESMP Approved	RAB/SPIU and BRD Environmental Specialist
	% of RAP implementation completed	100 % RAP implemented	RAB/SPIU Social Safeguard Specialist
Safeguards Training	Number of CDAT and District staff trained	Project management team, District staff (Environmental Officer, land valuator, agriculture officer, cash crops officer, forestry officer, Sector Agronomist and Cell executive secretary)	RAB/SPIU & BRD's Environmental and Social Safeguards Specialists
	Number of project beneficiaries	Farmer's organizations, schemes' users, loan beneficiaries	
Reporting	No. of monthly, quarterly and bi-annually reports received	12 monthly, 4 quarterly and 2 biannual reports Received	RAB/SPIU & BRD's Environmental and Social Safeguards Specialists
	No. of annual reports and audit reports received	1 annual report received, at least 2 audit reports for the whole project life Cycle	
Intervention level Monitoring			
Water availability and quality	Number of days water is not available for irrigation	Zero days water is not available	WUA, CDAT Engineer
	Abstraction rates	As specified in scheme water abstraction permit	WUA, CDAT Engineer
	Number of cases recorded from downstream water users	No single case recorded	WUA, CDAT Engineer
	Area (ha) with water quality problems	Water is still good for irrigation	Cooperative, WUA and District, CDAT agronomist

	Water-use efficiency	Irrigation water applied per hectare (m ³ /ha) compared to crop water requirement Within 20% of calculated crop water requirement (CWR)	WUA, CDAT Engineer, RWB
	% of SSIT/FLID systems using drip irrigation (most efficient)	50% of SSIT/FLID area under drip	RAB-SPIU agronomist
Area under SSIT/FLID	Cumulative hectares of SSIT/FLID installed and operational	2,000 ha by Feb 2029	RAB-SPIU agronomist
Number of FLID beneficiaries	Number of smallholder farmers or groups receiving SSIT/FLID matching grants.	At least 4,000 households (estimated 2 ha/household average)	RAB-SPIU M&E unit
Soil quality	Area of scheme where salinization or acidification is present and evident	No salinization or acidification evident	Cooperative, District, CDAT agronomist
Air and noise pollution	Number of cases of noise or air pollution raised	No cases of air and noise pollution recorded	Farmers, Cooperative and District, CDAT
Climate-smart agriculture (CSA) adoption	Number of farmers trained in CSA practices (e.g., drought-tolerant crops, IPM, conservation agriculture)	15,000 farmers trained by Feb 2029	RAB-SPIU agronomist, District Agriculture Officer
	Hectares under CSA practices (e.g., mulching, agroforestry, terracing, crop rotation)	10,000 ha	RAB-SPIU agronomist
Biodiversity conservation	Number of trees planted for ecological rehabilitation	At least 80% of planted trees survived and are in good condition	Farmers, Cooperative and District, CDAT
	Forest Area (ha) (area afforested in the buffer zone of reservoir, canals or area inadequate to agriculture or enriched forests)	100% of established forests is well maintained	WUA, District, REMA, CDAT
	Introduction/ proliferation of Invasive species in the project area	No invasive species in the project area	Cooperative, WUA, District and CDAT (RAB/SPIU & BRD E&S Specialists)
Catchment rehabilitation and protection	Number of Hectares of catchment area rehabilitated	Total catchment area rehabilitated is well maintained and valorized	Cooperative, District and CDAT/ RAB/SPIU & BRD E&S Specialists

	Number of Ha of terraced land	Total terraced land is well maintained and used	
	Buffer zone area (Ha) established, and forest rehabilitated (Ha)	Buffer zones & forests are well maintained and used	
	Length (Km) of established drainage systems	All drainage systems are well maintained	
Flood Control	Area faced with flooding before project (Ha) or new areas faced with flooding after project (Ha)	No area faced with floods	Schemes' users, District and CDAT
Employment opportunities	Number of skilled and unskilled workers employed	Significant increase in job creation versus Baseline data	Contractors, District and RAB/SPIU & BRD E&S Specialists
Affected properties	Types of affected assets (land, crops, trees and houses) and compensation measures in place	100% affected assets fully compensated, and PAPs are satisfied	Contractors, District, borrowers and RAB/SPIU & BRD E&S Specialists
Pests and Diseases in Crops	Pests and diseases' occurrence in project sites	No new diseases and pests resulting from the project implementation	farmers, borrowers, CDAT Agronomist and RAB/SPIU & BRD E&S Specialists
Increased cases of environmental and OHS risks	Recorded cases of, malaria, bilharzias, etc among occupational diseases in the workplace	No significant increase of occupational diseases versus Baseline data	Contractors, borrowers, Cooperative, WUA, District, local health centers (Ministry of Health) and RAB/SPIU & BRD E&S specialists
	Recorded safety cases (accidents, drowning of humans and livestock, fire break, etc)	No significant increase of occupational risks versus Baseline data	
	Ecosystems damages	Change in ecosystem composition	
SEA/SH monitoring	Number of reported SEA/SH incidents (disaggregated by type: sexual exploitation, abuse, harassment)	Zero incidents, or all reported incidents addressed through GRM and referral pathways	District One Stop Center (OSC), Gender Monitoring Office (GMO), BRD-SPID, Contractor GRM focal points
	Percentage of SEA/SH complaints resolved within specified GRM timeframe (30 days)	100% resolved within 30 days	GRC, District OSC

	Number of workers trained on SEA/SH prevention and Code of Conduct	100% of contractors' workers (construction and operation) trained	Contractors, RAB-SPIU, BRD-SPID
Labour influx, Child labour and Gender based violence (GBV) risks	List of workers, origin (within or outside the project area) and age (records on workers above 18 years old)	No child labour cases in the project area	Cooperative, WUA and District
	Number of GBV cases recorded	No significant increase of GBV case versus Baseline data	District, Cooperative and WUA
Agriculture finance and insurance	Number of beneficiaries with financial services	All bankable business proposals submitted are supported	Cooperative, District, BRD E&S Specialists
	Crops losses (ha) due to disasters (heavy rains, drought, diseases)	All affected crops are timely reported and insurance paid	Cooperative, District, BRD E&S Specialists
Grievance redress mechanisms	Active site-specific Grievance Redress Committees (GRCs)	All grievances received are timely resolved	Cooperative, WUA, District, CDAT (RAB/SPIU& BRD E&S Specialists)
Grievance resolution performance	Percentage of grievances (E&S-related) addressed within the time specified in the PIM (30 days for simple cases, 60 days for complex cases)	100% addressed within specified timeframe	GRC, RAB-SPIU M&E unit
Stakeholders engagement process	Number of stakeholders' meetings organized; communication made through various channels, etc	Project stakeholders are aware of the project and fully involved in its activities	RAB, BRD, Districts, beneficiaries' organizations
Monitoring Indicators for SSIT/FLID under CDAT AF			
Water abstraction (SSIT/FLID)	Number of boreholes or surface intakes installed per sub-catchment (cell level).	No more than 3 large-capacity SSIT/FLID boreholes per cell without a hydrogeological study.	RAB-SPIU agronomist, District Water Officer

Groundwater level trend	Seasonal depth-to-water table measurements (sample of representative SSIT/FLID sites).	No decline >2m over 3 years compared to baseline.	RWB / District Water Officer
Farmer conflict (water use)	Number of grievances related to SSIT/FLID water extraction (e.g., downstream users, neighbors).	Zero unresolved conflicts.	GRC, Cell Executive Secretary
Soil condition around SSIT/FLID plots	Visible signs of waterlogging, salinization, or erosion around SSIT/FLID plots (spot checks).	No new soil degradation attributable to SSIT/FLID.	RAB-SPIU agronomist, District Agriculture Officer
E-waste from solar equipment (SSIT/FLID)	Number of used batteries, inverters, or solar panels returned to supplier or certified recycler	100% of end-of-life equipment recycled or disposed safely	RAB-SPIU Engineer
Wetland ecosystem services (cumulative hydrological alteration)	Wetland area within project-influenced sub-catchments (Akagera and Akanyaru) maintained in good ecological condition (ha), based on periodic rapid wetland condition assessments; ecosystem services reviewed under the CIA and E&S audits.	No net loss of wetland area or ecological condition attributable to the project; 100% of wetland buffer zones maintained.	REMA, RWB, RAB-SPIU E&S Specialists

7.2 Monitoring Roles and Responsibilities

a) RAB/ SPIU World Bank Financed Projects

The CDAT project jointly implemented by RAB and BRD through their respective SPIUs. The Project Implementation Unit (PIU) is housed in RAB with responsibility for overall project coordination and management of activities under Component 1, Subcomponent 2.2, component 3 and Component 4.

BRD implements all activities under subcomponent 2.1 and sub component 1.4. Under the AF, RAB-SPIU also implements the new SSIT/FLID matching grants (Subcomponent 1.4), while BRD-SPID is responsible for legacy MG and ICF grants transferred from BDF.

With regard to monitoring, the RAB/SPIU World Bank Funded Project will provide overall coordination in monitoring of all activities under its scope. The RAB/ SPIU Monitoring and Evaluation staff, jointly with the SPIU Environmental and Social Safeguards team (Environmental Specialist, Social Safeguards Specialist and Environmental and Social Safeguards Officers) are primarily responsible for ensuring compliance to the monitoring framework which includes the E&S monitoring. They undertake review of the monitoring reports emanating from the implementing agencies (contractor and supervising firm during works implementation, cooperative, WUA or participating District during operation phase) and will then submit these monitoring reports upon approval to the World Bank.

Critical role of the RAB/SPIU includes data analysis as well as maintenance of management information systems and all baseline data. Other than preparation of quarterly reports, the SPIU will implement all the necessary modifications in the monitoring framework.

b) Development bank of Rwanda (BRD)

BRD, through SPID (BRD-SPID) and Environmental and Social Risk Management function, is the designated implementing entity for Subcomponent 1.4 (Grants for Value Chain Development) and Subcomponent 2.1 (Scaling up agricultural finance) under the CDAT project, and is responsible for ensuring that all activities under its mandate including legacy Matching Grants (MG) and Innovation Challenge Fund (ICF), Results-Based Climate Finance (RBCF)-supported investments, and agricultural finance operations are implemented in full compliance with the requirements of the updated Environmental and Social Management Framework (ESMF). The Environmental and Social Commitment Plan (ESCP), the Stakeholder Engagement Plan (SEP), BRD's own Environmental and Social Management System (ESMS), and all applicable national environmental and social legislation. To fulfill this responsibility, BRD will continue to undertake comprehensive environmental and social due diligence throughout the project cycle, including screening during beneficiary appraisal to identify potential risks, verifying beneficiary compliance with agreed mitigation measures during implementation, monitoring environmental and social performance on an ongoing basis, documenting and implementing corrective actions where non-compliance is identified, managing and escalating grievances through its established redress mechanism, and reporting on environmental, social, health, and safety (ESHS) performance indicators through bi-annual reports submitted to RAB; the overall coordinating entity for review and onward transmission to the World Bank, thereby ensuring that all financed activities uphold the highest environmental and social standards throughout project implementation period.

c) Rwanda Environment Management Authority (REMA)

REMA will inspect the compliance with environmental safeguards by the Project. It will carry out this role by ensuring that the environmental and social management plans (ESMPs) contained in the cleared design package are implemented as specified therein. REMA should review the reports from the project and also rely on a bottom-up feedback system from the ground by going through the monitoring reports and making random project site visits to inspect and verify for themselves

the nature and extent of the impacts and the success or lack off, of the mitigation measures.

d) Other implementing Partner Institutions of CDAT project

All the implementing institutions identified under this project, will monitor the specific components of project that they are targeted to execute. They include Ministry of Environment (MoE) and its agencies (REMA, RWB and NLA), MINALOC and Districts, Ministry of health (MINISANTE) and its agency (RBC), Ministry of Commerce and Industry and its agencies (RCA and BRD), Gender Monitoring Office (GMO), Private Sector Federation (PSF) and Rwanda Bankers Association (RBA) as well as local communities. The Gender Monitoring Office (GMO) will play a key role in tracking SEA/SH and GBV indicators under the AF.

The MoE and its Agencies will support the project in the management of (i) water resources at a catchment level, including provision of water permit and ecosystem monitoring; (ii) land use and acquisition as well as (iii) in tree planting and buffer zone establishment.

The Ministry of local administration (MINALOC) through participating Districts will assist in mobilization of local communities in the project intervention areas for the adoption and ownership of the infrastructures and in resettlement process. Through the district environmental officer (DEO), Social Protection Officer, district labour Inspector and district One Stop Center (OSC), the district will monitor on daily basis the implementation of safeguards measures reflected in the safeguard's documents. District OSCs will also monitor SEA/SH incident reporting and referral pathways under the AF.

The Ministry of health (MINISANTE) and its agency (RBC) will be responsible for campaigning and fighting against occupational diseases including communicable diseases , waterborne diseases, etc as well as monitoring their prevalence.

With regard to the Ministry of Trade and Industry (MINICOM) and its agencies, especially Rwanda Cooperative Agency (RCA), will play a key role in the formation, organization and capacity strengthening of Cooperatives, including agricultural cooperatives, in project sites. The Ministry will also intervene in the monitoring of trade regulations implementation (prices for different items, including crops products, etc).

The Private Sector Federation (PSF) will be involved in providing services, supplying agricultural inputs and transformation of agricultural produces.

Local Communities

Local communities will be useful agents in collection of data that will be vital in monitoring and as such they will play a role in the monitoring framework. Local communities in the project intervention areas will receive training and capacity building skills in data collection to be done by the implementing agencies so as to equip them with the ability to collect data. District Councils will, as part of the planning process, communities who will play a key role in identifying community infrastructure investments, prioritizing project interventions. Community consultation protocols will also ensure representation of potentially vulnerable and under-represented groups. Specific community groups like self-help groups, youth groups will be formed by farmers within the developed area. They will oversee the maintenance of LH infrastructures and their exploitation.

Contractors and Consultants

The project will hire services of contractors, service providers and supervising firms to execute planned activities and monitor the compliance with E&S requirements. The Contractor shall prepare a Construction ESMP (CESMP) based on this site-specific instruments (ESIA/ESMP, RAP) and detailed feasibility report prior to the commencement of civil works. The CESMP will be submitted by the Contractor to the Supervision Consultant and implementing agency for review and approval. No civil works shall commence until a CESMP has been approved by RAB. The supervising consultants will monitor the CESMP

implementation by the contractor, provide proper guidance and report to the implementing agency.

7.3 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. A number of indicators would be used in order to determine the status of affected people and their environment (land being used compared to before, how many clean water sources than before, etc). The Table 4 above depicts the parameters to be monitored by the RAB/SPIU and BRD Environmental and Social Specialists in order to assess whether these goals are met or not. Under the AF, evaluation will specifically assess the effectiveness of SSIT/FLID in increasing water-use efficiency, reducing GHG emissions, and improving smallholder resilience to climate shocks.

7.4 Quarterly and Annual Reviews

Quarterly and annual reviews will be undertaken by the environmental and social safeguards teams of RAB and BRD. These reviews are necessary to:

- Ensure that subprojects are complying with the processes established in the ESMF and any other ES plan or contractual requirement;
- Ensure that subprojects are compliant with the conditions and requirements stipulated in the ESIA/ESMPs, ESCPs, Labour Management Plan (LMP) and RAPs, and contracts,
- Identify challenges and opportunities in order to improve Programme performance; and
- Be able to determine the cumulative impacts of the project to establish attainment of the Programme Development Objectives.

The review session produces a quarterly and annual review reports for the project. The quarterly and annual review reports will be presented to CDAT project in order to ensure that the project activities are implemented in an environmentally sound manner. For the AF, quarterly reviews will include a dedicated section on cumulative watershed impacts, SSIT/FLID performance, and SEA/SH incident trends.

7.5 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 and whether the conditions of approval attached to the ESIA/ESMP report are being implemented satisfactorily.

The CDAT Project Management Team is responsible for ensuring that environmental and social audits are carried out at mid-term review and project end. The internal E&S reports, done are shared with the World Bank, and participating Districts. The external E&S audit will be done at the Project end or whenever requested by the donor or national competent authority, REMA. For the AF, an additional targeted audit of SSIT/FLID implementation will be conducted two years after the start of grant disbursements to assess water abstraction compliance, e-waste management, and climate adaptation outcomes.

CHAPTER EIGHT: INSTITUTIONAL ASSESSMENT, CAPACITY BUILDING AND TECHNICAL ASSISTANCE

8.1 Introduction

The effective implementation of this ESMF requires technical capacity in the human resource base of implementing institutions as well as logistical facilitation. Implementers need to understand inherent social and environmental issues and values to be able to clearly identify their indicators.

While preparing and updating this ESMF, an institutional assessment was inbuilt to identify strengthening needs on social and environmental evaluation, screening, mitigation and monitoring. For the Additional Financing (AF), the capacity building needs have been expanded to include climate-smart irrigation, water governance, environmental compliance for SSIT/FLID, ESS implementation, occupational health and safety, and gender and social inclusion.

8.2. Institutional Assessment and Capacity building

The overall CDAT project management is the responsibility of RAB under the Ministry of Agriculture and Animal Resources (MINAGRI) and Development Bank of Rwanda (BRD). Both institutions have been responsible for implementing several World Bank-funded projects in a satisfactory manner. These include Land Husbandry, Water Harvesting and Hillside Irrigation Project (LWH), Third Rural Sector Support Project (RSSP3) (both closed), the Sustainable Agricultural Intensification and Food Security Project (SAIP, ongoing) for RAB and the Renewable Energy Fund Project (REF), Rwanda Housing Finance Project (RHFP) and Socio-Economic Inclusion of Refugees and Host Communities in Rwanda Project (SEIRHCP) for BRD. Both institutions also implemented projects from other development partners like AfDB, IFAD, etc.

RAB through its Single Project Implementation Unit (SPIU) of World Bank funded projects has a Safeguards Team familiar with Rwanda and World Bank Environmental and Social Framework (WB ESF); the same applies to BRD. However, both teams will need to be strengthened through capacity building for them to manage the tasks mentioned above during CDAT implementation and the expanded scope under the AF (large-scale irrigation, SSIT/FLID, PAP compensation). For the Additional Financing (AF), the capacity building needs have been expanded to include climate-smart irrigation, water governance, environmental compliance for SSIT/FLID, ESS implementation, occupational health and safety, and gender and social inclusion.

8.3 Human Resource Capacity Requirements

The current safeguards team at the RAB/SPIU is made of an Environmental Safeguards Specialist and a Social Safeguards Specialist and eight District Environmental and Social Officers who have been overseeing the overall safeguards issues in currently closed and ongoing WB funded project sites. Under the AF, BRD-SPID will also oversee E&S risks of legacy MG and ICF grants transferred from BDF. Each PFI will be required to designate an E&S focal point who will receive training on ESS9 requirements, environmental and social management systems (ESMS), and monitoring of sub-loan portfolio E&S performance.

The CDAT project is being implemented in close collaboration with participating Districts and participating financial institutions (PFIs), both commercial banks (CBs) and microfinance institutions (MFIs). Each District has one land officer, social protection officer, labour inspector and environmental officer among other staff who are responsible for the social and environment safeguard aspects of the development projects in the District. The staff at the sector level that are responsible for the implementation of CDAT include Agronomist, Social protection officer and land manager whereas the responsible staff at the cell level consist of the Cell Executive secretary (ESs) and the Social and economic development officer (SEDOs). However, due to limited budget, workload and capacity limitation, the engagement of the staff mentioned above is specifically restricted to minor community level development actions.

The E&S risk management aspects are daily taken care of by the Cells and Sectors staff. However, their level of training

and technical capacity on safeguards is not sufficient and will need to be enhanced. All the PFIs do not have staff in charge of E&S safeguards in the banks' operations. The focal person for each PFI will be appointed to monitor the implementation of E&S aspects in CDAT financed projects (under BRD scope). For the AF, each PFI will be required to designate an E&S focal point who will receive training on ESS9 requirements, environmental and social management systems (ESMS), and monitoring of sub-loan portfolio E&S performance.

The RAB/SPIU and BRD emphasize on capacity building through trainings and workshops of the RAB and BRD staff, PFIs' focal persons, relevant district staff (land officers, land valuator, social protection officers, environmental officers; Agronomists, Executive Secretaries, SEDOs), Grievance redress committees (GRC) and farmers' organizations and borrowers/clients on E&S safeguards implementation and monitoring aspects (ie monitoring compensation, valuation, Grievance Redress Mechanisms, gender equity and GBV, child labor prevention, follow up of displaced PAPs, reporting, etc.) to ensure proper safeguards management under CDAT. Such trainings and workshops shall be provided by the project management. Additionally, BRD prepared a structured Environmental and Social Capacity Building Plan that will include both BRD and PFI capacity and needs assessment as well as activities throughout the project implementation to help ensure that both BRD and PFIs are able to meet the requirements outlined above. This plan will include adequate budget and resources for implementation.

8.4. Technical Capacity Enhancement

Mobilization meetings, awareness campaigns and trainings on social and environment safeguards will be required for the following institutions and personnel:

1. Staff of RAB/ SPIU WB and BRD;
2. Local Government Authorities (District environment officer, District Social protection officer, Executive Secretary of Sector & Cells, Agronomist, land officer) in Districts covered by CDAT;
3. PFIs' focal persons;
4. Site specific Grievance Redress Committees (GRCs);
5. Contractors who will be contracted to undertake the construction works as well as supervising firms;
6. Farmers organizations (Cooperatives and Associations);
7. Borrowers,
8. Community opinion leaders.

Under the AF, additional trainees include:

- RAB-SPIU field staff responsible for SSIT/FLID grant appraisal and monitoring;
- Water User Association (WUA) leaders at AF large-scale irrigation schemes (Cyohoha Phase 2, Gabiro Phase 2);
- SSIT/FLID grant beneficiaries (smallholder groups and cooperatives);
- District One Stop Center (OSC) staff for SEA/SH response and referral.

The Capacity building will cover the following topics:

- Overview on CDAT project, WB Environmental and Social Framework and Rwanda safeguards regulations;
- Implementation and Compliance with ESMF and other safeguards instruments;
- Stakeholder engagement, consultation and partnerships;
- Implementation and monitoring the compliance of safeguards during both the construction and operation phase of the CDAT activities.
- Grievance Redress Mechanism
- Reporting, monitoring and follow up

Training for SSIT/FLID implementation

Given the new SSIT/FLID window under Subcomponent 1.4, the following additional capacity building is required:

- **RAB-SPIU field staff (Agronomists, E&S Officers):** Training on simplified E&S screening for small-scale irrigation, recognizing signs of groundwater stress, and basic hydrology for farmer-led schemes.
- **District Water Officers and Rwanda Water Resources Board (RWB) staff:** Orientation on monitoring cumulative abstraction from multiple SSIT/FLID systems and applying the national water permit framework to small-scale users.
- **Grant applicants (cooperatives and smallholder groups):** One-day module on "Sustainable water use for SSIT/FLID" covering: (i) irrigation scheduling, (ii) avoiding dry-season over-pumping, (iii) maintaining buffer zones near streams, and (iv) simple record-keeping of pumping hours.
- **PFI (for SSIT/FLID co-financing):** Awareness of E&S risks associated with small-scale irrigation lending.
- **WUA leaders at AF large-scale irrigation schemes:** Training on O&M cost recovery, conflict resolution, water allocation, and women's leadership (target 50% women in decision-making).
- **Contractors for SSIT/FLID installation:** Certification on safe installation practices, electrical grounding, and e-waste take-back procedures.

The estimated budget for capacity building under the AF (included in the overall ESMF budget of US\$ 240,000) will cover:

- Development of training manuals and pictorial guides (for low-literacy beneficiaries)
- Facilitator fees and participant per diems;
- Translation into Kinyarwanda;
- Monitoring and evaluation of training effectiveness (pre- and post-training assessments).

8.5 BRD-SPID ESMS adequacy, PFI oversight and BDF legacy portfolio transition

8.5.1 ESMS adequacy assessment and time-bound capacity development plan.

While BRD has updated its ESMS and recruited two dedicated E&S risk management staff, a structured baseline assessment of the adequacy of the updated ESMS against ESS9 requirements shall be undertaken, and identified gaps closed through the time-bound actions below. The assessment shall cover, at a minimum: the E&S policy and procedures; the categorization and screening methodology; the application of the exclusion list and applicable national and WB requirements to sub-loans and grants; organizational capacity and seniority of E&S staff; the E&S provisions of legal agreements with PFIs and borrowers; monitoring, portfolio-level risk aggregation and reporting; the grievance mechanism; and SEA/SH risk management.

#	Action	Responsible	Timeline
1	Independent gap assessment of the BRD-SPID ESMS against ESS9, with a corrective action plan agreed with the World Bank	BRD-SPID, with World Bank review	Within 3 months of AF effectiveness
2	Closure of priority gaps identified in the assessment (procedures, tools, delegation of authority for E&S decisions)	BRD-SPID	Within 6 months of AF effectiveness
3	Development of a GRM Structure for the Legacy Grants (CDAT Matching Grant and Innovation Fund components).	BRD/E&S Team and WB	Within 3 months of AF effectiveness
4	Maintenance of two dedicated and qualified E&S staff at BRD, with clear reporting lines to senior management	BRD/SPID	Throughout implementation period of the Legacy Grants (already recruited)

5	World Bank prior review of the E&S screening of the first five sub-loans/grants processed by BRD-SPID under the AF	BRD-SPID / World Bank	From AF effectiveness until post-review status is granted
6	Annual review and update of the ESMS, reflecting portfolio changes and audit findings	BRD-SPID	Annually
7	Implementation of the BRD Environmental and Social Capacity Building Plan (BRD and PFI needs assessment, training and budget)	BRD-SPID	Ongoing, per the Plan

8.5.2 Minimum ESMS capacity standard and oversight protocol for SACCOs and MFIs.

Recognizing that the designation of a focal point is not, on its own, sufficient for institutions with little or no ESMS experience, participation of SACCOs and small MFIs as PFIs shall be conditional on meeting the following minimum ESMS capacity standard: (i) adoption of a simple, documented E&S procedure proportionate to the nature of their CDAT portfolio, based on a template provided by BRD; (ii) a designated focal point who has completed the standardized ESS9 training curriculum described below; (iii) systematic application of the exclusion list and of the E&S screening checklist to every CDAT-financed sub-loan, with records retained; and (iv) quarterly E&S reporting to BRD in a standard format.

BRD shall deliver a standardized training curriculum for SACCO and MFI focal points covering: the WB ESF and ESS9 obligations; use of the exclusion list and screening checklist; recognition of E&S red flags in agricultural lending (agrochemical misuse, wetland encroachment, unpermitted water abstraction, child labor); the GRM; and reporting. BRD-SPID shall apply an oversight protocol comprising: portfolio-level E&S screening of each PFI's CDAT pipeline; annual on-site verification visits covering a sample of at least 10% of active CDAT sub-loans per PFI; corrective action plans with deadlines where non-compliance is found; and suspension of a PFI's eligibility for new CDAT financing where material non-compliance is not remedied. Oversight results shall be included in the bi-annual ESHS reports.

8.5.3 BDF legacy portfolio handover protocol.

To ensure continuity of E&S compliance for the legacy Matching Grants and ICF grants previously managed by BDF, the following handover protocol was implemented: (i) BRD-SPID, compiled a complete inventory of legacy grants, recording for each the E&S screening category, the status of any required ESMP actions, outstanding grievances, and any pending compliance issues; (ii) all E&S files, grievance logs and monitoring records of the former BDF portfolio have been formally transferred to BRD-SPID with a documented handover certificate; (iii) a joint RAB-SPIU/BRD-SPID verification of the inventory shall be completed within ninety (90) days of AF effectiveness, and a remediation plan prepared for any unclosed ESMPs, unresolved grievances or compliance gaps, with responsibilities and deadlines; and (iv) the inventory, handover certificate and remediation plan shall be summarized in the first bi-annual ESHS report following AF effectiveness and their implementation tracked thereafter. The standalone LMP applies to all categories of project workers under ESS2, including former BDF staff transitioned to BRD-SPID and other BRD-SPID workers engaged on the project.

CHAPTER NINE: ESMF IMPLEMENTATION ARRANGEMENTS AND BUDGET

The Environmental and Social Management framework (ESMF) implementation and budgeting process presented under this section considers institutional arrangements required to implement the environmental actions and an estimated cost for its implementation. It is worth to note that the real cost of the mitigation measures will be determined during the preparation of ESIA/ESMPs and Resettlement Action Plans (RAPs) for each sub-projects/district.

9.1 ESMF Implementation

As stated above, the Project is jointly implemented by RAB and BRD under the coordination of RAB. RAB will implement all subcomponents of Component 1 (Value Chain and Infrastructure Development), Subcomponent 2.2 (Strengthening agricultural insurance) of Component 2 (Agricultural Finance and Insurance), Component 3 (Project Management) and Component 4 (Contingency Emergency Response Component, CERC). Under the Additional Financing (AF), RAB-SPIU will also implement the new SSIT/FLID matching grants under Subcomponent 1.4. BRD will be responsible for Subcomponent 2.1 (Scaling up agricultural finance) of Component 2 (Agricultural Finance and Insurance), Components 3 and 4. Under the AF, BRD-SPID will additionally assume fiduciary and E&S responsibility for legacy Matching Grants (MGs) and Innovation Challenge Fund (ICF) grants transferred from BDF, following the absorption of BDF by BRD effective January 1, 2026 former BDF staff working on CDAT have transitioned to BRD-SPID. Fiduciary responsibility for legacy Matching Grants (MGs) and Innovation Challenge Fund (ICF) grants will transfer from RAB-SPIU to BRD-SPID effective with this AF. Until AF effectiveness, RAB-SPIU retains fiduciary responsibility and BRD-SPID will report expenditures through RAB-SPIU. The Project Implementation Manual and Grant Manuals will be revised to reflect this change." Each implementing agency will manage all E&S aspects associated with activities under its scope. In addition to implementing agencies, other stakeholders (RDB, REMA, PFIs, Farmers, etc) will play a key role in the implementation of this ESMF and are detailed in Table 5 below. The implementation arrangement builds on responsibilities already in place to ensure that the requirements of this ESMF are met.

Table 5: Role and responsibilities in the ESMF implementation

No	Activity	Responsible institutions
1	ESMF coordination	RAB/SPIU
2	Subproject screening, brief Preparation	RAB/SPIU and BRD/PFIs RDB
3	Preparation of terms of reference	Consultants, RAB/SPIU and PFIs' clients
4	Approval of terms of Reference	Rwanda Development Board (RDB) and the World Bank
5	ESIA/ ESMP study	Consultants hired by RAB/SPIU and PFIs' borrowers
6	Review of ESIA/ESMP report	- RAB/SPIU - Borrowers/PFIs/BRD-SPID - Participating Districts - RDB - World Bank
7	Approval of full or partial ESIA and Issuing ESIA completion Certificate	- World Bank - RDB
8	Implementation of the ESMF	- RAB/SPIU - BRD-SPID and PFIs - Districts

9	Implementation of ESMPs	- Contractors and Supervising Firms hired by MINAGRI/RAB - PFI's borrowers - SSIT/FLID grant beneficiaries (simplified ESMP)
10	Monitoring of safeguards implementation	- Supervising firm hired by RAB/SPIU - RAB/SPIU - BRD-SPID - Participating Districts - REMA - World Bank - District Environmental Officers (DEOs) (enhanced role under AF); - Rwanda Water Resources Board (RWB) for water abstraction monitoring
11	Reporting of Safeguards implementation	- Contractors and supervising firms hired by RAB/SPIU - PFIs - BRD-SPID - RAB/SPIU

Additional responsibilities under AF:

- RAB-SPIU will designate dedicated E&S officers for SSIT/FLID grant monitoring and will coordinate with RWB on water abstraction permits;
- BRD-SPID will integrate E&S oversight of legacy MG and ICF grants into its existing ESMS and will report on these activities through the bi-annual ESHS reports.
- District Environmental Officers (DEOs) will receive additional training and resources to conduct regular spot checks on SSIT/FLID installations and large-scale irrigation sites, with a focus on buffer zone compliance, erosion control, and waste management.
- Rwanda Water Resources Board (RWB) will be responsible for issuing water abstraction permits for all irrigation subprojects (including SSIT/FLID where applicable) and for monitoring cumulative abstraction in high-risk catchments.

The monitoring and reporting will be the responsibility of the implementing agencies under RAB coordination. Reporting will be made on bi-annual basis. However, whenever an emergency event takes place, RAB shall notify the World Bank of the incident within three days of occurrence.

9.2 Disclosure of updated ESMF

Following its joint preparation by RAB and BRD and clearance by the World Bank, the updated CDAT ESMF will be disclosed by making copies available at the RAB/SPIU head office, Project website and BRD website. The site specific ESIA/ESMP reports will also be disclosed by making copies available at its head office, Project website, BRD website, District headquarters, and local government agencies, REMA and other stakeholders of the CDAT. The Government of Rwanda through RAB will also authorize the World Bank to disclose this ESMF electronically through its external website. For the AF, the updated ESMF, SEP, and ESCP will be disclosed locally and through the World Bank's external website.

9.3 Grievance Redress Mechanism

The Grievances Redress Mechanisms are required to ensure that stakeholders, beneficiaries and project affected people are able to lodge complaints or concerns, without cost, and with the assurance of a timely and satisfactory resolution of the

issue. The procedures also ensure that the entitlements are effectively transferred to the intended beneficiaries. Grievances may arise from members of communities who are dissatisfied with eligibility criteria use, community planning and resettlement measures, actual implementation or compensation.

a) Established procedures and time frame for Grievance redress mechanism

Grievance redress mechanisms are increasingly important for development projects, where ongoing risks or adverse impacts are anticipated. They serve as a way to prevent and address community concerns, reduce risk, and assist larger processes that create positive social change.

The subprojects to be implemented under CDAT are minor to moderate in nature. Addressing complaints through Contractor, supervising firms, Project liaison personnel, Grievance redress committees, local authority, borrowers and community gatherings are simple means that should be used.

The creation of a Grievance Redress Committee (GRC) is given priority in each subproject. For SSIT/FLID activities under CDAT AF, water-related grievances (e.g., one farmer's pump lowering a shared water table or reducing flow to downstream users) will be prioritized. The GRC at cell/sector level will include a water user representative. If unresolved, the grievance is escalated to the District Water Officer and the Rwanda Water Resources Board (RWB) for technical assessment and possible revocation of water abstraction permits.

The members of the site GRC include the representatives of Sectors covered by the project site, District Environmental Officers, Contractor, Supervising firm, CDAT staff and representatives of PAPs. The GRC is chaired by the Executive Secretary of the Sector, assisted by a representative of PAPs as Vice Chair and Supervising firm as Secretary.

The GRC meetings are held at the respective Sector/cell's office at least once two weeks from the date of receiving complaints. The GRCs will also be created at borrower and PFI's levels. The site level GRC may be composed of 3 people, namely the borrower, local authority and representative of the affected community. Each PFI will use its existing structure for grievances' handling but the focal person will liaise the site with PFI. The GRCs at BRD and RAB/SPIU will also be created to handle unresolved issues from sites and PFIs including those related to the RBCF. For the AF, a dedicated grievance mechanism for PAP compensation (Category 9) will be established at each irrigation scheme, with a target resolution time of 30 days for compensation-related complaints.

b) Grievance resolution approach

The channels of receiving complaints include presentation of complaints via face-to-face meetings, written complaints, telephones, email communication, third party (e.g., farmers' organizations, Church, private sector, etc).

If the aggrieved person does not receive a response or is not satisfied with the outcome from site GRCs within the agreed time, s/he may lodge his/her grievance to the RAB/SPIU or PFI/BRD to help resolve such matters. If requested, or deemed necessary by the subproject Committee, the District Project Coordination officer will assist the aggrieved person in this matter.

The relevant RAB/SPIU and PFI/BRD will then attempt to resolve the problem (through dialogue and negotiation or with the assistance of other concerned stakeholders) within 30 days of the complaint being lodged. If no agreement is reached at this stage, then the complaint is dealt with through the local courts (Abunzi) where possible. Where matters cannot be resolved through local routes, the grievance will be referred to higher authorities at the national level. The site GRC provides assistance at all stages to the aggrieved person to facilitate resolution of their complaint and ensure that the matter is addressed in the optimal way possible.

For subprojects financed through the Development Bank of Rwanda (BRD), including CDAT Matching Grant (CDAT MG), Investment Climate Facility (ICF), and Results-Based Climate Finance (RBCF) activities, grievances shall be managed through a unified institutional grievance mechanism aligned with the BRD Environmental and Social Management System (ESMS), World Bank Environmental and Social Framework (ESF), project E&S instruments, and applicable national legislation.. BRD will elaborate appropriate GRM mechanisms for its components, including escalation process, aligning with existing mechanisms.

(i) Intake Channels: BRD shall maintain accessible grievance channels including toll-free hotline, dedicated email (grievance@brd.rw), physical drop boxes at BRD offices, PFI branches, and submission through BRD-SPID field staff during site visits.

(ii) Grievance Classification: Grievances shall be categorized as: (a) land acquisition and compensation; (b) environmental impacts; (c) water abstraction conflicts; (d) labour and working conditions; (e) community health and safety; (f) SEA/SH and GBV; (g) beneficiary eligibility and grant/loan disbursement; (h) RBCF-specific (tree survival, rebate payments); and (i) other.

(iii) Resolution Timeframes: BRD shall adhere to the following timeframes: (a) simple cases: 15 working days; (b) moderate cases (including water conflicts): 30 working days; (c) complex cases (including compensation disputes): 60 working days. For PAP compensation grievances, a target resolution time of 30 working days shall apply.

(iv) RBCF-Specific Grievances: Grievances related to tree planting verification, rebate calculations, and payment delays shall be handled by the RBCF Technical Committee. Unresolved cases shall be escalated to the BRD GRC.

c) Grievance Log

The site specific GRC ensures that each complaint is appropriately tracked and recorded. The log will contain complaint details (complainant, type of grievance and its summary) record of the persons responsible for an individual complaint, and records of dates for the following events:

- ✓ Date the complaint was reported;
- ✓ Date the Grievance Log was added onto the project database;
- ✓ Date information on proposed corrective action sent to complainant (if appropriate);
- ✓ The date the complaint was closed out; and
- ✓ A date response was sent to the complainant.

d) Monitoring Complaints

The Project Site Coordinator will be responsible for:

- ✓ Providing the site GRC reports on a bi-weekly basis detailing the number and status of complaints;
- ✓ Any outstanding issues to be addressed; and
- ✓ Monthly reports, including analysis of the type of complaints, levels of complaints, status of received complaints, actions to reduce complaints and initiator of such action.

For the AF, grievance data will be disaggregated by type (land/compensation, water conflict, labor, SEA/SH, GBV, other) and reported quarterly to the World Bank. The project will track the percentage of grievances addressed within the time specified in the PIM (30 days for simple cases, 60 days for complex cases) as a key performance indicator (IR-3.2)

9.4. ESMF Implementation budget

The Budget for the implementation of this ESMF will mainly consist on preparation of safeguards tools, capacity building

and monitoring of mitigation measures. The cost for mitigation measures will be included in the ESIAs, ESMPs and RAPs. Under the AF, the ESMF budget has been revised to include additional safeguards supervision, water-resource monitoring, climate-risk monitoring, environmental audits, and enhanced district-level safeguards staffing. The table below show the estimated cost for the implementation of the ESMF for the proposed project.

Table 6: Estimated budget for the implementation

Item	Unit	Quantity	Unit Cost (US \$)	Total Cost (US \$)
Preparation of safeguards instruments				
ESIAs	Study	12	25,933	311,196
SSIT/FLID simplified ESMPs (batch preparation)				
	Batch	5	5000	25,000
	Cumulative Impact Assessment (CIA) including Biodiversity assessment	1	90,000	90,000
Other environmental studies	Study	LS		200,000
Subtotal 1				626,196
Capacity building				
Training of project beneficiaries and stakeholders	Training sessions	6	40,000	240,000
Subtotal 2				240,000
Project Monitoring				
RAB/ SPIU and BRD-SPID	Persons	2	15,000	30,000
Enhanced district-level safeguards staffing (DEOs, social protection officers)	Allowances	16	2,000	32,000
Water-resource monitoring (RWB cooperation, flow gauges, groundwater logbooks)	LS/ Persons	1	30000	30000
Climate-risk monitoring (RAB Climate Change Specialist, data collection)	LS/ Persons	1	20000	20000
Districts	Persons	LS	10,000	10,000
Subtotal 3				122,000
Environmental and Social Audits (ESA)				

ESA	Study	1	80,000	80,000
SSIT/FLID targeted audit				
	Study	1	25,000	25,000
Subtotal 4				105,000
Annual Review of Environmental and Social safeguards performance				
Workshops	Number	5	5,000	25,000
Subtotal 5				25,000
Total				1,118,196
Contingency (10%)				111,820
Grand Total				1,230,016

The total cost for ESMF implementation, including safeguards documents preparation, monitoring of ESMPs, capacity building, auditing and workshops for unit performance review is estimated at US \$ 1,230,016, compensation cost exclusive.

CHAPTER TEN: CONCLUSION AND RECOMMENDATIONS

The Government of Rwanda (GoR), through the Ministry of Agriculture and Animal Resources (MINAGRI) has prepared and is implementing an agricultural project that promotes productivity, commercialization, resilience and access to financial services for target beneficiaries (e.g. farmers and their organizations, SMEs, agribusinesses, etc.) in selected agricultural value chains. This project, called Commercialization and De-risking for Agricultural Transformation (CDAT) is being funded by World Bank Group. The project received an Additional Financing (AF) of US\$ 80 million in 2026, restoring funds partially canceled in 2024, and extending the implementation period to February 28, 2029.

In a bid to mitigate adverse impacts likely to occur during its execution, the Government of Rwanda (GoR), through MINAGRI, prepared the ESMF for CDAT project to provide guidance on the management of environmental and social impacts and risks. The ESMF will also provide institutional arrangements as well as environmental and social safeguards instruments to be prepared as part of the implementation of CDAT activities in full compliance with Rwanda regulations and World Bank ESF. For the AF, the ESMF has been updated to reflect the expanded scope, including large-scale irrigation (Cyohoha Phase 2: 2,600 ha; Gabiro Phase 2: 975 ha), a new SSIT/FLID matching grant window (2,000 ha), direct compensation of Project-Affected Persons (PAPs) using IDA funds (Category 9), and the results-based climate finance (RBCF) pilot for shade-grown coffee. Under the AF, a US\$ 4 million grant from the Compact with Africa (CwA) Green Business Multi-Donor Trust Fund will finance a results-based climate finance (RBCF) pilot for shade-grown coffee. BRD will finance loans and pay principal rebates for verified tree planting alongside coffee-related investments. Final rebates are contingent on evidence of sound forest management including tree survival, replanting, and related measures verified two years after planting. This requires the 22-month extension of the project closing date to February 28, 2029.

Based findings from the consultation meetings with local communities and their leaders and field observations for potential sites visited, the activities to be implemented across various sites to solve identified impacts (construction of irrigation facilities, post-harvest and land husbandry infrastructures, irrigation and use of agrochemicals, etc) are likely to have negative impacts on environment and humans. The project was therefore found to trigger all Environmental and Social Standards (ESS), except the ESS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities. The AF does not change the ESS trigger status; ESS7 remains not triggered, and OP 7.50 (International Waterways) remains applicable with no additional steps required. The environmental and social risk rating remains Substantial.

In this report, the policy, legal and institutional frameworks for the CDAT ESMF and the environment and socio-economic baseline conditions in potential project areas were developed and the public consultation and participation meetings with local communities and local authorities from potential sites selected for consultation conducted. Based on findings from consultation meetings and field observations, potential environmental and social impacts of CDAT project were predicted and guidelines for mitigation developed. The present study report also provides the CDAT environmental and social management process as well as the implementation and monitoring procedures. For the AF, additional consultation findings have been incorporated, including feedback from Water User Associations (WUAs), SSIT/FLID beneficiaries, private irrigation suppliers, women's producer groups, and youth agribusiness enterprises.

This ESMF has an inbuilt grievance procedure that will be used to address grievances that are likely to arise during the ESMF implementation. For the AF, the grievance redress mechanism (GRM) has been strengthened to include water-use conflict resolution (with escalation to RWB) and dedicated pathways for PAP compensation complaints. The estimated budget for the ESMF is US \$ 1,230,016 (including contingency) reflecting additional costs for SSIT/FLID simplified ESMPs,

enhanced district-level safeguards staffing, water-resource monitoring, climate-risk monitoring, and an additional SSIT/FLID targeted audit. PAP compensation (Category 9: US\$ 1.22 million) is separate.

Given the nature of the project, the potential adverse impacts are minimal and can be controlled through proposed mitigation measures. The site specific Environmental and social Impact Assessment (ESIA) to be developed before the start of works at site level, will propose site specific measures to mitigate adverse impacts. For SSIT/FLID subprojects, a simplified ESMP will be prepared instead of a full ESIA.

Successful implementation of this ESMF will depend to a large extent on the involvement and participation of local communities and local leaders.

Specifically, it is recommended that:

- Feasibility and detailed design studies are needed to determine project sites and interventions needed to solve raised issues by beneficiaries;
- Environmental and Social safeguards awareness and education for the key stakeholders and affected communities must be an integral part of the ESMF implementation.
- District and local community structures should fully be involved in all steps of the project implementation and adequately trained to implement the screening process as well as appropriate Environmental and Social Management Plans.
- Awareness/ sensitization meetings should also focus on agriculture insurance as this is new to many project beneficiaries/ stakeholders.

Additional recommendations for the AF:

- Water abstraction permits shall be obtained from RWB for all irrigation subprojects, with simplified water use declarations for small-scale SSIT/FLID systems;
- SEA/SH prevention and response measures shall be included in contractor codes of conduct, with confidential reporting mechanisms and referral pathways to District One Stop Centers (OSCs).
- Capacity building shall cover climate-smart irrigation, water governance, environmental compliance for SSIT, ESS implementation, occupational health and safety, and gender and social inclusion

This framework will apply to all project activities under CDAT, including Subcomponent 2.1 activities and the new SSIT/FLID grants under Subcomponent 1.4. It should be regularly updated to respond to changing local conditions. It should be reviewed and approved through the national approval process and by the World Bank prior to project negotiations. It should also incorporate lessons learned from implementing various components of the project activities. The SEP and ESCP have been updated for the AF and disclosed locally and through the World Bank's external website

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ANNEXES

Annex 1: List of participants to consultation meetings in different District



REPUBLIC OF RWANDA
RWANDA AGRICULTURE BOARD (RAB)
SINGLE PROJECT IMPLEMENTATION UNIT
COMMERCIALIZATION AND DE-RISKING FOR AGRICULTURAL TRANSFORMATION
PROJECT (CDAT-AF)



ATTENDANCE LIST: STAKEHOLDERS MEETING WITH CDAT-AF PROJECT BENEFICIARIES in Nyagatare on 15/01/2026

N°	AMAZINA YOMBI	AHO AKORERA	ICYO AKORA	TELEPHONE	UMUKONO
1	MATAMBO Benon	BDF	Branch Manager	078954442	
2	Rukera Thomas	Farmer	Farmer	078944442	
3	Muker Christine	Umurungi (Mushuri) Farmer		0785992332	
4	NIZOMUNGU Gilbert	Umurungi	WUO Manager	078376889	
5	KAMUKAMBA William	RWEMPHASHA	Umurungi's WUO	0788683057	
6	MUTANGANA Lambert	BPR Umurungi	P. Banker	0788554650	
7	BATAMURIZA Peace	NYAGATARE	UBUCORUZI	078659723	
8	NIYITANGA Theogene	KIYOHABE Sector	SANRO	0786642364	
9	NZEVIMANA Etienne	RUKOMO	SANRO	0788451909	
10	UWAMISABA M. Jeanne	KARANGAZI	UBUCORUZI	0782042464	
11	MUAGURU S. Eric	Karungazi	Umurungi	0788425250	
12	MATISABA J. Christone	KARANGAZI	Umurungi's WUO	078361242	
13	MUGARO FAUSTIN	DISTRICT	BASE COOP	0788257061	
14	BITUMUKI R. Rector	Butunda	Umurungi	0788810914	
15					



REPUBLIC OF RWANDA
RWANDA AGRICULTURE BOARD (RAB)
SINGLE PROJECT IMPLEMENTATION UNIT

COMMERCIALIZATION AND DE-RISKING FOR AGRICULTURAL TRANSFORMATION
PROJECT (CDAT-AF)



ATTENDANCE LIST: STAKEHOLDERS MEETING WITH CDAT-AF PROJECT BENEFICIARIES IN BUGESERA ON: 20/01/2026

1	Niyigoba Emmanuel	0783393362	1198580150607055	M	Pres Zon Sitarang	
2	HAREBU Bwira Nnonce	0785889689	119808084824053	M	Umuyyanama	
3	Katungu Theresa	0780252652	1196770046225164	F	Umuyyanama	
4	IRADUKUNDA clementine	0786226025	1100270120609120	F	SK mgenzi M10	
5	BARIGAKAJI De Nya	0789904226	1198380141234010	M	Pres Zon Sitarang	
6	Twagirimana Gidde	0785188598	1198880110943040	M	PI Zone	
7	Mutebari Beatrice	0782558719	1198270159816065	F	Umubitsimukuru	
8	DUKUNDANE Esther	0780471682	120070052824063	F	Accountant wuo	
9	UWIHANGANE Jerome	0782661977	1199180132853039	M	President mgenzi wuo	
10	KYIRABAGASI Solange	0784938098	1199570192354013	F	Agronomiste	
11	Mahoro Polianne	07888279710	1198980188155049	M	Umuyyanama	
12	Tuyirungu Bernard	0734513229	1198980106578034	M	Umuyyanama	
13	KARANGWA Chadrack	0780251740	1198630150364050	M	Umuyyanama	
14	Mutebushyamba Enny	0783570532	1198580150632084	M	Umuyyanama	
15	NSAZIMANA Isaih	0786945963	1199380140126014	M	Umuyyanama	



REPUBLIC OF RWANDA
RWANDA AGRICULTURE BOARD (RAB)
SINGLE PROJECT IMPLEMENTATION UNIT
COMMERCIALIZATION AND DE-RISKING FOR AGRICULTURAL TRANSFORMATION
PROJECT (CDAT-AF)



ATTENDANCE LIST: STAKEHOLDERS MEETING WITH CDAT-AF PROJECT BENEFICIARIES IN KAYONZA DISTRICT 21.01.2026

N°	Amazina	N° y'indamuntu	Aho yaturutse/ Urwego abagarariye	Icyo ashinzwe	Telephone	Umukono
1	TVYIZERE Sereverien	119959016105042	RAB	Intigahira Egu	078505816	
2	IRADUKUNDA J.BAPTISTE	1198080132502049	COCURICU	President	0785600547	
3	RUTAGANKWA J.H.V	1198580160902149	COCURICU	president	0786546169	
4	Nkusi Felicien	1198610158446057	COCURICU	Agronome	0785808427	
5	RUTINDUKA Leonce	119898016107400	UNION TWIBUMWE	Manager	0782132042	
6	BUYENSSENGE Leonce	1199070124961042	COCURICU	Agronome	0788728170	
7	Rubangutsangabo Anselme	119808019585247	District	Environment	0785767091	
8	UKIRURU Innocent	11974208866063	DAO	Gigamba	0782241669	
9	MUKWANAASHYAKA Olivier	119920013630024	PSAC	Field Officer	0799733031	
10	NDUTUYI Jeanne	1199170042441145	PSAC	Field Officer	0782273612	
11	Olive UMUTESI	1198870009888161	Directeur ANE	District	0782218740	



REPUBLIC OF RWANDA
RWANDA AGRICULTURE BOARD (RAB)
SINGLE PROJECT IMPLEMENTATION UNIT

COMMERCIALIZATION AND DE-RISKING FOR AGRICULTURAL TRANSFORMATION
PROJECT (CDAT-AF)



ATTENDANCE LIST: STAKEHOLDERS MEETING WITH CDAT-AF PROJECT BENEFICIARIES IN GATUNDO DISTRICT ON 26.01.2026

N°	Amazina	N° y'indamuntu	Aho yaturutse/ Urwego ahagarariye	Icyo ashinzwe	Telephone	Umukono
1	IRABUKURIA Gracien	1198980114890178	COMSS	Agronome	0784110776	
2	BRYUKUSENGE Emmanuel	1198280172337029	Matshini	ES cell	0788412913	
3	Bazima. Ho	1198550081861001	ES cell	ES cell	0788264676	
4	NAMUYISENGA Francois	117822030426062	Agronome / Holec	Agronome / Holec	078450402	
5	RUTIKANGA Sandrine	1198070136613092	Agronome / Agrib	Agronome	0783501831	
6	MUKANDAYISENGA Jeanne	119927009761415	District	BFNRO	0781623500	
7	BIGISHIMANA Bvodi	119838001238404	District	YSCO	0783561471	
8	Imenire Diane		NYC	Ukukungu	0729010232	
9	NIRISHAKA Frank	1198004582095	NYC / Caden	Caden	078594665	
10	SABARI wellars	—	District	TICAD	0782859400	
11	NISITANGA J. de Dieu	119818009048024	District	DARO	078282804	

Annex 2: Environmental and Social risks Checklist Form

Subproject Name:

Name of District/Sector:

Date:

		Yes	No
A Type of Activity - Will the CDAT subproject:			
1	Support animal Husbandry or processing?		
2	Support irrigation schemes?		
3	Support rural water supply and sanitation schemes?		
4	Support land husbandry		
5	Involve small-scale aquaculture?		
6	Involve post-harvest facilities		
7	Involve food processing?		
8	Build or rehabilitate any structures or buildings?		
9	Support agricultural activities?		
10	Be located in or near an area where there is an important historical, archaeological or cultural heritage site?		
11	Be located within or adjacent to any areas that are or may be protected by government (e.g. national park, national reserve, world heritage site) or local tradition, or that might be a natural habitat?		
12	involve the rehabilitation of an existing irrigation infrastructures or building new infrastructures?		
If the answer to any of question 1-12 is "Yes", please use the indicated Resource Sheets or sections(s) of the ESMF for guidance on how to avoid or minimize typical impacts and risks			
B- Environment -will the CDAT Subproject:			
13	Risk causing contamination of the drinking water?		
14	Cause poor water drainage and increase the risk of water-related diseases such as malaria or bilharzia?		
15	Harvest or exploit a significant amount of natural resources such as trees, fuel wood or water?		
16	Be located within or nearby environmentally sensitive areas (e.g. intact natural forests, wetlands) or threatened species?		
17	Create a risk of increased soil degradation or erosion?		
18	Create a risk of increasing soil salinity or acidity?		
19	Affect the quantity or quality of surface waters (e.g. rivers, streams, wetlands), or groundwater (e.g. wells)?		
20	Result in the production of solid or liquid waste, or result in an increase in waste production, during construction or operation?		
21	Result in the production of solid or liquid waste, or result in an increase in waste production, during construction or operation?		
If the answer to any of questions 14-22 is "Yes", please include an Environmental and Social Management Plan (ESMP) with the subproject application.			
C - Land acquisition and access to resources – Will the subproject:			

22	Require that land (public or private) be acquired (temporarily or permanently) for its development?		
23	Use land that is currently occupied or regularly used for productive purposes (e.g. gardening, farming, pasture, fishing locations, forests)		
24	Displace individuals, families or businesses?		
25	Result in the temporary or permanent loss of crops, fruit trees or household infrastructure such as granaries, outside toilets and kitchens?		
If the answer to any of the questions 22-25 is "Yes", please consult the ESMF and, if needed, prepare a Resettlement Action Plan (RAP)			

1. Site Related Issues

S No	Zoning and Land Use Planning	NO /YES
1.	Will the sub-project affect land use zoning and planning or conflict with prevalent land use patterns?	
2.	Will the sub-project involve significant land disturbance or site clearance?	
3.	Will the sub-project land be subject to potential encroachment by urban or industrial use or located in an area intended for urban or industrial development?	
4.	Is the sub-project located in an area susceptible to landslides or erosion?	
5.	Is the sub-project located on prime agricultural land?	
B.	Utilities and Facilities	
6.	Will the sub-project require the setting up of ancillary production facilities?	
7.	Will the sub-project require significant levels of accommodation or service amenities to support the workforce during construction (e.g., contractor will need more than 20 workers)?	
C	Water and Soil Contamination	
8.	Will the sub-project require large amounts of raw materials or construction materials?	
9.	Will the sub-project generate large amounts of residual wastes, construction material waste or cause soil erosion?	
10.	Will the sub-project result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?	
11.	Will the sub-project lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals (e.g., calcium chloride) for dust control?	
12.	Will the sub-project lead to an increase in suspended sediments in streams affected by erosion, decline in water quality and increased sedimentation downstream?	
13.	Will the sub-project involve the use of chemicals or solvents?	
14.	Will the sub-project lead to the destruction of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards?	

15.	Will the sub-project lead to the creation of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors?	
16.	Is the sub-project located in a polluted or contaminated area?	
D.	Noise and Air Pollution Hazardous Substances	
17.	Will the sub-project increase the levels of harmful air emissions?	
18.	Will the sub-project increase ambient noise levels?	
19.	Will the sub-project involve the storage, handling or transport of hazardous substances?	
E.	Fauna and Flora	
20.	Will the sub-project involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?	
21.	Will the sub-project lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?	
22.	Will the sub-project lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?	
F.	Destruction/Disruption of Land and Vegetation	
23.	Will the sub-project lead to unplanned use of the infrastructure being developed?	
24.	Will the sub-project lead to long-term or semi-permanent destruction of soils in cleared areas not suited for agriculture?	
25.	Will the sub-project lead to the interruption of subsoil and overland drainage patterns (in areas of cuts and fills)?	
26.	Will the sub-project lead to landslides, slumps, slips and other mass movements in terraces?	
27.	Will the sub-project lead to erosion of lands in the valley receiving concentrated outflow carried by covered or open drains?	
28.	Will the sub-project lead to long-term or semi-permanent destruction of soils in cleared areas not suited for agriculture?	
29.	Will the sub-project lead to health hazards and interference of plant growth adjacent to project areas by dust raised and blown by vehicles?	
G.	Cultural Property	
30.	Will the sub-project have an impact on archaeological or historical sites, including historic urban areas?	
31.	Will the sub-project have an impact on religious monuments, structures and/or cemeteries?	
32.	Have Chance Finds procedures been prepared for use in the sub-project?	

33.	Is the sub-project located in an area with designated physical cultural resources, such as archaeological, historical and/or religious sites?	
H.	Expropriation and Social Disturbance	
34.	Will the sub-project involve land expropriation or demolition of existing structures?	
35.	Will the sub-project lead to induced settlements by workers and others causing social and economic disruption?	
36.	Will the sub-project lead to environmental and social disturbance by construction camps?	
37.	Is the sub-project located in an area from which people have been displaced?	
38.	Is the sub-project located in an area where PAPs are temporarily relocated?	
39.	Is the sub-project located in a densely populated area?	
I.	Games, reserves and Natural Habitat	
40.	Does the sub-project require land acquisition? [Note: If YES, fill in the land acquisition form]	
41.	Will the sub-project negatively impact livelihoods? [Note: Describe separately if YES]	
42.	Is the sub-project located in an area with designated natural reserves or protected areas?	
43.	Is the sub-project located in an area with unique natural features?	
44.	Is the sub-project located in an area with endangered or conservation-worthy ecosystems, fauna or flora?	
45.	Is the sub-project located in an area falling within 500 m of natural forests, protected areas, wilderness areas, wetland, biodiversity, critical habitats, or sites of historical or cultural importance?	
46.	Is the sub-project located in an area which would create a barrier for the movement of conservation-worthy wildlife?	
47.	Is the sub-project located close to groundwater sources, surface water bodies, watercourses or wetlands	

2. Proposed control/mitigation measures

If you have answered Yes to any of the above questions, please describe the measures that the project will take to avoid or mitigate environmental and social impacts.

.....

Conclusion/Recommendation

Which course of action do you recommend in reference to Rwandan regulation and World Bank ESSs?

Full ESIA

☐ Environmental and Social Audit (ESA)

Partial ESIA (ESMP)

☐ No further environmental assessment required

In addition to environmental tools, what other safeguards tools do you recommend in line with E&S safeguard requirements of development institutions (if any),?

RAP
approach

☐ Willing seller-willing buyer

Other (Specify)

Evaluator/ Screener details

Name: [type
here]

Position: [type here]

Date: [type here]

Approval details

Name: [type here]

Position: [type here]

Date: [type here]

Annex 3: BRD Exclusion list of Activities

BRD does not finance the following projects:

- Production or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements, or subject to international bans, such as pharmaceuticals, ozone depleting substances, PCB's, etc. With respect to pesticides and herbicides, and in alignment with WBG standards: financing is excluded for formulated products falling in WHO Hazard Classes Ia (extremely hazardous) and Ib (highly hazardous); for products in WHO Hazard Class II (moderately hazardous) where safe handling capacity (trained personnel, protective equipment, appropriate storage and application) is not demonstrated; and for pesticides listed under, or otherwise banned by, the Stockholm Convention, the Rotterdam Convention or the Montreal Protocol;
- Trade in animals, plants or any natural products not complying with the provisions of the CITES convention;
- Production or trade in weapons and munitions and armed related activities;
- Production or trade in tobacco;
- Gambling, casinos, and equivalent enterprises;
- Production or trade in radioactive materials. This does not apply to the purchase of medical equipment, quality control (measurement) equipment and any equipment where BRD considers the radioactive/nuclear source to be trivial and/or adequately shielded;
- Production or trade in unbonded asbestos fibers and other non-permitted chemicals and polluting substances. This does not apply to purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%;
- Drift net fishing in the marine environment using nets more than 2.5 km in length and fishing using electric shocks and explosive materials;
 - Construction or rehabilitation of large dams as defined under ESS4, Annex 1; i.e., dams of 15 metres or more in height, or dams of 5 to 15 metres in height impounding more than 3 million cubic metres or presenting special design complexities; is excluded from BRD/PFI financing; such structures may only be financed under RAB-implemented components subject to the full dam safety requirements of ESS4 (dam safety plans, independent panel of experts and Emergency Preparedness Plan) cleared by the World Bank;
- Any operation leading to or requiring the destruction of a critical habitat (both natural and modified habitat or ecologically sensitive areas), or high Conservation value areas or any forestry project which does not implement a plan for improvement and sustainable management;
- Production or trade in wood or other forestry products other than from sustainably managed forests;
- Activities which may affect adversely sites of cultural or archaeological significance;
- Production or sale of strong alcohol intended for human consumption;
- Transboundary trade in waste or waste products, unless compliant with the Basel Convention and the underlying regulations;
- Trade in goods without required export or import licenses or other evidence of authorization of transit from the relevant countries of export, import and, if applicable, transit;
- Drug and human trafficking;
- Any criminal or outlawed activities;
- Any business prohibited by laws and regulations;
- Terrorism and money laundering activities;
- Production or activities involving harmful or exploitative forms of forced labor /harmful child labor
- Activities linked to tax evasions;
- Any trade related to pornography or prostitution.

In addition, BRD will not finance or partner with organization funding to any activity involving the following:

- Production and distribution or investment in media that are racist, antidemocratic or that advocate discrimination against a part of the population;
- Exploitation of diamond mines and marketing of diamonds where the host country has not adhered to the Kimberley Process;

- Any sector or any service subject to an embargo by the United Nations, European Union and/or France in a particular country and with no absolute or relative restriction regarding the amount;
- Prospection, exploration and mining of coal; land-based means of transport and related infrastructure essentially used for coal; power plants, heating stations and cogeneration facilities essentially fired with coal, as well as associated stub lines
- Nuclear power plants (apart from measures that reduce environmental hazards of existing assets) and mines with uranium as an essential source of extraction;
- Non-conventional prospection, exploration, and extraction of oil from bituminous shale, tar sands or oil sands;

Annex 4: Content of an Environmental and Social Impact Assessment Report

The ESIA report should entail the following:

1. Executive summary of the ESIA report which should be brief and focus on following matters:

- Name and location of the project;
- Name of the developer
- Name of the agency preparing ESIA;
- Methodology for conducting ESIA study
- Main impacts identified;
- Mitigation recommendations;
- Environmental and social monitoring plan;
- Conclusion and recommendations

2. Introduction and objectives: it provides the project context, problems to resolve and particular objectives.

3. Description of the proposal and its alternatives. In this part, it is necessary to describe in detail the proposed project and its alternatives including those not subjected to pre-feasibility study or feasibility study. Attention should be concentrated to the comparison of different alternatives. The following are the required contents of the section "*Description of the proposal and its alternatives*":

- The stage of the project cycle where the project is being implemented (pre-feasibility study, feasibility study or design);
- Outlines of the plan for impact prediction and mitigation measures;
- Raw materials, supplies, energy, water and equipment to be used for implementing the project and its alternatives;
- Operational parameters such as capacity and product output;
- Tables, photographs, diagrams and maps;
- Comparison of characteristics of alternatives (extent, location, technology, products, energy and raw materials demands) in the present socio-economic, technical and environmental situation;
- A summary of project technical, economic and environmental characteristics.

4. Policies, legal and institutional frameworks. In this section, the proposal must be shown to be in line with policies, laws, institutional framework and development strategy of Rwanda.

5. Description of present (baseline) environmental and social status (analysis of initial state). In this section, the environment and social in the project area should be appropriately described. The following aspects should be presented:

- Environmental baseline conditions (natural and socio-economic);
- Social baseline conditions
- Sensitivity and values (cultural, aesthetic) of environment in the project area.

6. Impact identification and assessment. In this section, the spatial and temporal scope of the impacts and characteristics of different impacts (whether positive or negative, direct or indirect, their intensity, extent and significance) should be presented for the project and also for all alternatives considered. The following aspects should be presented:

- Assessment of all impacts to the local population;
- Environmental and social data base, study methods and assumptions;
- Limitations and reliability of the data and study results;
- Compliance with the environmental and social standards and license issuing procedures;
- Significance of impacts, criteria and standards used for assessment of impact significance;
- Measures to avoid and mitigate impacts.

In this section, methods of data collection, methods and criteria used for assessing degree of danger and significance of impacts must be indicated. Cumulative impacts must be emphasized. A summary table of

impacts for each alternative should be provided.

7. Analysis of alternatives

The main content of this section is the comparison of the main positive and negative impacts, impact mitigation and monitoring measures of alternatives. The environmentally suitable alternative is determined based on the following aspects:

- Impacts with largest effects, measures for avoiding, mitigating and managing them;
- Impacts for which the developer has committed to take prevention measures and unavoidable impacts;
- Allocation of cost and benefit between the levels, partners and population of the project area;
- Information on protection measures or resettlement, acquiring opinions of the public;
- Environmental and social improvement opportunities.

8. Environmental and social management and monitoring plan (ESMP).

In this section, tasks to ensure the implementation of mitigation measures and monitoring of impacts should be presented. This is a plan for monitoring and management of impacts during the implementation and operation of the project. This plan includes the following contents:

Environmental and social management plans (ESMP)

- Adverse impact for each planned activity
- Description of proposed mitigation measures for each adverse impact;
- Implementation schedule including indicators, costs, etc;
- Assignment of responsibility for implementation;
- Estimated cost.

Environmental and social monitoring plans (ESMP)

The matrix has been developed for the impact monitoring to facilitate the monitoring frame work which includes the following:

- Adverse impact,
- Parameters to be monitored,
- Indicators for measuring the impact,
- Method used for verification,
- Frequency of monitoring,
- Responsibility,
- Costs involved.

Implementation arrangements

- Institutional arrangement,
- Grievance redress mechanisms,
- Capacity building required,
- Implementation schedule and estimated budget,
- Monitoring and reporting procedures.

9. Safety Plans

- Master Emergency Response Plan (ERP)
- Master Emergency Preparedness Plan (EPP) for sites with irrigation dams

10 Cumulative Impact Assessment (CIA) with a specific emphasis on irrigation schemes, and Biodiversity Impact Assessment will be prepared as part of the Cumulative Impacts Assessment, and Biodiversity Management Plans prepared for each subproject involving adverse impacts on biodiversity.

11. Conclusion and recommendations

12. Annexes where tables, drawings, maps, documents and information used as reference should be presented.

Annex 5: Content of an Environmental and Social Management Plan Report (or partial ESIA)

The ESMP report or partial ESIA (or limited ESIA) should cover the following:

1. Executive summary of the ESMP

This section should be brief and focus on following:

- Name and location of the project;
- Name of the developer
- Name of the agency preparing ESIA;
- Methodology for conducting ESMP study
- Main impacts identified;
- Mitigation recommendations;
- Environmental and social monitoring plan;
- Conclusion and recommendations

2. Introduction

It provides the project context, problems to resolve and particular objectives.

3. Policies, legal and institutional frameworks.

In this section, the intended project must be shown to be in line with policies, laws, institutional framework and development strategy of Rwanda.

4. Description of present (baseline) environmental and social status

In this section, the environment in the project area should be appropriately described. The following aspects should be presented:

- Environmental and social baseline conditions (natural and socio-economic);
- Sensitivity and values (cultural, aesthetic) of environment in the project area.

5. Potential Impacts identification and Mitigation measures

In this section, the spatial and temporal scope of the impacts and characteristics of different impacts (whether positive or negative, direct or indirect, their intensity, extent and significance) should be presented for the project and also for all alternatives considered. The following aspects should be presented:

- Assessment of all impacts to the environment;
- Environmental and social data base, study methods and assumptions;
- Compliance with the environmental standards and license issuing procedures;
- Measures to avoid and mitigate impacts.
- Cumulative impacts must also be emphasized.

6. Environmental and social management and monitoring plan (ESMP).

In this section, tasks to ensure the implementation of mitigation measures and monitoring of impacts should be presented. This is a plan for monitoring and management of impacts during the implementation and operation of the project. This plan includes the following contents:

Environmental and social management plans (ESMP)

- Adverse impact for each planned activity
- Description of proposed mitigation measures for each adverse impact;
- Implementation schedule including indicators, costs, etc;
- Assignment of responsibility for implementation;
- Estimated cost.

Environmental and social monitoring plans (ESMP)

The matrix has been developed for the impact monitoring to facilitate the monitoring frame work which includes the following:

- Adverse impact,
- Parameters to be monitored,
- Indicators for measuring the impact,
- Method used for verification,
- Frequency of monitoring,
- Responsibility,
- Costs involved.

Implementation arrangements

- Institutional arrangement,
- Grievance redress mechanisms,
- Capacity building required,
- Implementation schedule and estimated budget,
- Monitoring and reporting procedures.

7. Safety Plans (if applicable)

- Master Emergency Response Plan (ERP)
- Master Emergency Preparedness Plan (EPP) for sites with irrigation dams

8. Cumulative Impact Assessment (CIA) with a specific emphasis on irrigation schemes, and Biodiversity Impact Assessment will be prepared as part of the Cumulative Impacts Assessment, and Biodiversity Management Plans prepared for each subproject involving adverse impacts on biodiversity.

9. Conclusion and recommendations

10. Annexes where tables, drawings, maps, documents and information used as reference should be presented

Annex 6: CDAT AF Public consultations' raised issues and proposed responses

ISSUE RAISED	RESPONSE
Stakeholder and public perceptions and awareness regarding the proposed project	Cooperative members across all districts are enthusiastic about the CDAT-AF project and are willing to fully support it, recognizing its importance in meeting their ongoing needs.
Expected risks and negative effects of the Project to the local community.	Stakeholders underscored climate change challenges and requested that the CDAT-AF project strengthen field-based training on climate-smart agriculture.
Expected benefits of the project for stakeholders.	The members of cooperative wish that the project - Continued support for irrigation system - Expansion of staple and horticulture crops and vegetable production - Training on pest and disease management - Support for model farms and vegetable production - Assistance to vulnerable households and infrastructure management - Support for childcare services and access to market transport - Supporting farmers via small scale irrigation technology and other type of value chain aspects
Willingness of all stakeholders to accept and participate in resource mobilization.	Cooperative members expressed willingness: Produce and use organic manure to increase productivity per unit area; - Actively participate in and support all project activities; and - Obtain crop insurance for their agricultural production.
Raised concerns/complaints from the livestock/Cattle farm owners. Lack of fodder for livestock,	No complaints from livestock /Cattle owners; cattle are kept at home. The project will provide fodder along the buffer of canals to support livestock farming
Raised concerns/complaints from the additional financing project specific activities	Participants suggested assigning community health workers a key role in selecting nutrition beneficiaries to ensure effective and well-implemented activities.
Water shortage (not enough and poorly distributed) which is accentuated during dry periods; Low productivity (less than 1ton/ha for bean, 1.5tons/ ha maize) and the site used in traditional way; Crop diseases affecting vegetables grown in the marshland (tomato, cabbage) Erosion from hills surrounding the marshland, causing sedimentation and crops damages The sites face with seasonal flooding that also affects the developed schemes. Over the 2020B season, the flooding of the sites leads to loss yields; Access roads are in poor conditions. They are facing with landslides and gullying during rainy periods	The Construction of irrigation facilities for irrigation water availability and distribution will increase water availability; The marshland is currently used for food crops production (maize, bean, vegetables at small scale such as tomato, cabbage) and farmers' intention is to see the site developed for maize and bean or rice or horticulture if water availability issue is resolved; The community using the marshland and adjacent hillsides should be capacitated in selected value chains; operation and maintenance of infrastructures, pest and diseases control; Land husbandry works for erosion control, soil fertility improvement and job creation; Construction of water storage facilities to support the sites, limit floods and extend irrigated area to parts where water was not reaching downstream sites. Construction of the access road crossing the marshland;

An issue was raised where participant feared, the project will affect the properties and assets	Availing good quality seed and other inputs (fertilizer) on time; Compensation for assets likely to be affected by the irrigation and access roads facilities
--	--

Annex 7: Simplified E&S Screening checklist for SSIT/FLID Matching Grants

Subproject Name: _____ **Grant Amount (US\$):** _____
Applicant (Cooperative/Group): _____ **No. of beneficiaries:** _____
Location (Sector/Cell): _____ **Irrigation type proposed:** ☐ Solar pump ☐ Motorized pump ☐ Drip kit ☐ Small bund/weir ☐ Other: _____
Water source: ☐ Borehole/groundwater ☐ Stream/river ☐ Lake ☐ Marshland ☐ Rainwater harvesting

Question	Yes	No	If Yes, action required
A. Water Resources			
1. Is the proposed water source already used by other farmers or for domestic supply?			
2. Are there 3 or more similar SSIT/FLID systems already operating within the same cell/catchment?			
3. Is the proposed source a wetland designated as sensitive (e.g., RAMSAR site, protected marshland)?			
4. Will abstraction occur during the dry season (June–August) when flows are lowest?			
B. Land and Soil			
5. Is the proposed plot located on steep slopes (>15% gradient) without existing terracing?			
6. Is the plot prone to waterlogging or salinity (white crust, stunted crops)?			
C. Social			
7. Does the applicant hold recognized land use rights (lease, title, or certified customary right)?			
8. Is there any known dispute over the water source or land among community members?			
9. Will the system be located within 50 m of a dwelling (noise risk)?			
D. Waste and Chemicals			
10. Will the system use plastic drip lines or other non-biodegradable materials?			

NB: Applicants must demonstrate: (i) membership in a legally recognized farmer group or cooperative; (ii) proof of land use rights for the proposed site; (iii) a basic business plan linking production to a verified commercial off-taker; and (iv) commitment to comply with E&S requirements.

Screening outcome:

- ☐ **Low Risk** – Proceed with standard conditions (see Annex 8).
☐ **Moderate Risk** – Requires a site-specific ESMP (e.g., flow meter, noise shielding, buffer zone).
☐ **High Risk (ineligible)** – Do not finance (e.g., RAMSAR site, active dispute, over-abstracted catchment).

Screeners name: _____ **Date:** _____

Annex 8: Generic ESMP Template for Small-Scale Irrigation Technologies (SSIT/FLID) (To be completed by grant applicant with RAB-SPIU assistance)

Subproject Name: _____ Grant Agreement No.: _____

Activity/Impact	Proposed Mitigation Measure	Responsible person	Estimated cost (RWF)
Water abstraction	- Install a flow meter or restrictor (if pump >2 hp). - Do not pump more than 0.5 L/s per 0.1 ha during dry season. - Keep daily log of pumping hours.	Group representative	
Noise from pump	- Place pump inside a simple insulated box or shield (if within 50 m of house). - Run pump only between 7:00 AM and 6:00 PM.	Group representative	
Soil erosion	- Maintain grass or mulch cover on uncropped areas. - Install small contour bunds around pump pad.	Group member (designated)	
Waste (drip tape, pesticide containers)	- Collect all used drip tape and plastic waste at end of season; deliver to district collection point. - Triple-rinse pesticide containers and crush; do not reuse for water storage.	Group secretary	
Chemical runoff	- Do not apply fertilizers or pesticides within 3 hours before anticipated rain. - Maintain a 5 m untreated buffer strip along any stream or drainage channel.	Group agronomist	
Safety	- Install a simple guard or fence around pump intake/open water. - Cover electrical connections.	All members	

Monitoring plan (SSIT/FLID)

Parameter	Frequency	Method	Responsible
Pumping hours (daily log)	Monthly review	Spot check by RAB field officer	RAB-SPIU agronomist
Water level in borehole (if applicable)	Start of dry season and end of dry season	Dip tape measurement (group trains one member)	Group member + District Water Officer
Noise complaints	Quarterly	GRC records review	Cell Executive Secretary
Waste collection receipts	At season end	Copy of disposal receipt	Group secretary

Signed: _____ (Grant applicant) Date: _____

Reviewed by: _____ (RAB-SPIU E&S Officer) Date: _____

Annex 9: Water Abstraction Assessment Form

1. APPLICANT INFORMATION

Applicant Name: _____
Organization/Company: _____
Telephone: _____ Email Address: _____
Contact Person: _____ Position: _____

2. PROJECT INFORMATION AND LOCATION

Project Name: _____
District: _____ Sector: _____ Cell _____
GPS Coordinates: _____
Land Parcel/Plot Number: _____
Purpose of Water Abstraction:
☐ Irrigation
☐ Livestock
☐ Construction Activities

Description of Project Activities:

3. WATER SOURCE DETAILS

Source Type

- ☐ River/Stream
☐ Lake/ Reservoir/Dam
☐ Spring
☐ Wetland

Name of Water Source: _____
Catchment/Basin: _____
Distance from Project Site: _____
Source Characteristics
Average Flow/Yield (if known): _____

Seasonal Variations Observed:

- ☐ Yes ☐ No
If yes, describe:

4. WATER ABSTRACTION REQUIREMENTS

Proposed Abstraction Rate (m³/day): _____
Maximum Abstraction Rate (m³/hour): _____
Annual Water Demand (m³/year): _____
Operating Hours per Day: _____
Days of Operation per Year: _____
Abstraction Method
☐ Pumping
☐ Gravity Intake

Infrastructure Details

5. EXISTING WATER USES

Are there existing water users downstream or nearby?

☐ Yes ☐ No

If yes, identify users:

☐ Communities

☐ Farmers

☐ Industries

☐ Livestock Keepers

6. ENVIRONMENTAL IMPACT ASSESSMENT

Potential Impacts

Potential Impact	Yes	No	Remarks
Reduced downstream flow	☐	☐	
Lowering groundwater levels	☐	☐	
Impact on wetlands	☐	☐	
Impact on aquatic ecosystems	☐	☐	
Water quality deterioration	☐	☐	
Soil erosion/sedimentation	☐	☐	
Community water conflicts	☐	☐	

Mitigation Measures

7. WATER CONSERVATION AND EFFICIENCY MEASURES

Describe measures proposed to reduce water losses and improve efficiency:

☐ Water Metering

☐ Leak Detection Program

☐ Water Recycling/Re-use

☐ Efficient Irrigation Systems

☐ Rainwater Harvesting

☐ Staff Awareness Programs

8. MONITORING AND REPORTING

Monitoring Equipment

☐ Water Meter

☐ Water Quality Monitoring Equipment

Other: _____

Monitoring Frequency

☐ Daily

☐ Weekly

☐ Monthly

☐ Quarterly

☐ Annually

9. SUPPORTING DOCUMENTS CHECKLIST

Document	Attached	Not Attached
Site Location Map	☐	☐

Document	Attached	Not Attached
Layout Plan	☐	☐
Environmental Impact Assessment	☐	☐
Land Ownership Documentation	☐	☐
Water Quality Analysis	☐	☐

10. ASSESSMENT BY REVIEWING OFFICER

Technical Evaluation

Water Availability Assessment:

Environmental Considerations:

Potential Impacts on Existing Users:

Recommended Abstraction Limit (m³/day):

Recommendation

☐ Approved

☐ Approved with Conditions

☐ Deferred Pending Additional Information

☐ Rejected

Reasons/Conditions:

11. APPROVAL

Assessing Officer: _____

Designation: _____

Signature: _____ Date: _____

Approving Authority: _____

Signature: _____ Date: _____

Annex 10: Biodiversity Screening Tool

PROJECT INFORMATION

Project Title: _____
Project Proponent: _____
Project Location: _____
District/Region: _____
GPS Coordinates: _____
Date of Assessment: _____
Assessor Name: _____

SECTION A: PROJECT CHARACTERISTICS

A1. Type of Project

- ☐ Agriculture
- ☐ Irrigation
- ☐ Water Abstraction
- ☐ Mining/Quarrying
- ☐ Infrastructure Development
- ☐ Energy Generation
- ☐ Industrial Development
- ☐ Tourism Development
- ☐ Residential/Commercial Development
- ☐ Other (Specify): _____

A2. Project Scale

- ☐ Small (< 5 ha)
- ☐ Medium (5–50 ha)
- ☐ Large (> 50 ha)

A3. Project Activities

Select all that apply:

- ☐ Land clearing/vegetation removal
 - ☐ Earthworks/excavation
 - ☐ Water abstraction
 - ☐ River diversion
 - ☐ Wetland drainage
 - ☐ Waste generation
 - ☐ Noise-producing activities
 - ☐ Increased human access
 - ☐ Construction of buildings/roads
 - ☐ Other: _____
-

SECTION B: SCREENING OF BIODIVERSITY SENSITIVITY

B1. Protected and Conserved Areas

Is the project located:

Question	Yes	No
Within a protected area?	☐	☐
Within 5 km of a protected area?	☐	☐
Within a community conservation area?	☐	☐
Within a designated ecological corridor?	☐	☐

If yes, provide details:

B2. Critical Habitats

Does the project area contain or occur near:

Habitat Type	Yes	No
Natural forest	☐	☐
Wetland	☐	☐
River or stream ecosystem	☐	☐
Lake shoreline	☐	☐
Grassland/savanna	☐	☐
Montane habitat	☐	☐
Sensitive aquatic habitat	☐	☐
Other natural habitat	☐	☐

Details:

B3. Species of Conservation Concern

Are any of the following known or likely to occur in the project area?

Species Category	Yes	No	Unknown
Endangered species	☐	☐	☐
Critically endangered species	☐	☐	☐
Vulnerable species	☐	☐	☐
Endemic species	☐	☐	☐
Migratory species	☐	☐	☐
Protected species	☐	☐	☐

Sources of information:

- ☐ Field survey
- ☐ Community consultation
- ☐ Existing studies
- ☐ Biodiversity database
- ☐ Other: _____

SECTION C: POTENTIAL IMPACTS

Will the project potentially cause:

Potential Impact	Yes	No
Habitat loss	☐	☐
Habitat fragmentation	☐	☐
Loss of vegetation cover	☐	☐
Disturbance to wildlife	☐	☐
Reduced river flows	☐	☐
Wetland degradation	☐	☐
Water pollution	☐	☐
Soil erosion	☐	☐
Increased invasive species risk	☐	☐
Increased human-wildlife conflict	☐	☐

Describe significant impacts:

SECTION D: MITIGATION HIERARCHY

Avoidance Measures

Minimization Measures

Restoration/Rehabilitation Measures

Biodiversity Offsets (if applicable)

SECTION E: SCREENING OUTCOME

Risk Classification

- ☐ Low Biodiversity Risk
- ☐ Moderate Biodiversity Risk
- ☐ High Biodiversity Risk

Criteria for Classification

Low Risk

- No protected areas affected.
- No critical habitats present.
- No threatened species likely to be affected.
- Impacts are minor and reversible.

Moderate Risk

- Sensitive habitats present nearby.
- Potential impacts manageable through mitigation.
- Limited effects on species or ecosystem services.

High Risk

- Project located in or near protected/critical habitat.
 - Threatened species likely affected.
 - Significant habitat loss or fragmentation expected.
 - Irreversible biodiversity impacts possible.
-

SECTION F: RECOMMENDED ACTION

- ☐ No further biodiversity assessment required.
- ☐ Site-specific biodiversity survey required.
- ☐ Biodiversity Management Plan required.
- ☐ Full Biodiversity Impact Assessment (BIA) required.
- ☐ Project redesign required to avoid sensitive biodiversity features.

Comments:

ASSESSOR DECLARATION

I certify that this screening has been completed using available information and professional judgment.

Assessor Name: _____

Signature: _____

Date: _____

REVIEW AND APPROVAL

Reviewing Officer: _____

Organization: _____

Signature: _____

Date: _____