Republic of Rwanda

Ministry of Environment

DETAILED GUIDELINES

ECONOMIC & FINANCIAL ANALYSIS (EFA)

FOR GCF FUNDING PROPOSALS DEVELOPMENT AND REVIEW

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ABOUT THE GUIDELINES

This document presents the detailed guidelines for integrating economic and financial analysis (EFA) into Green Climate Fund (GCF) project proposal development in Rwanda, developed to support national stakeholders in aligning project submissions with GCF investment criteria and expectations. These guidelines aim to strengthen the economic and financial rationale of proposed projects, ensuring a robust evidence base for climate finance mobilization.

The guidelines provide a practical, step-by-step approach tailored to the Rwandan context, including key metrics, local benchmarks, sector-specific guidance, and templates to assist project developers and reviewers. They are designed to be used throughout the project development cycle—from concept note design to full funding proposal preparation—and support the operationalization of Rwanda's climate finance strategy.

This work was developed through collaboration with the Rwanda Environment Management Authority (REMA), the National Designated Authority (NDA) to the GCF, the Ministry of Environment, the Global Green Growth Institute (GGGI), and other technical experts.

These guidelines reflect Rwanda's commitment to evidence-based climate action and a green economy transition. We hope they serve as a practical and empowering resource for all project proponents engaged in delivering impactful and bankable climate solutions.

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ACRONYMS AND ABBREVIATIONS

Acronym	Definition
AE	Accredited Entities
AfDB	African Development Bank
AMA	Accreditation Master Agreement
ARCAFIM	Africa Climate Finance Mobilization
BCR	Benefit-Cost Ratio
BRD	Development Bank of Rwanda
BRT	Bus Rapid Transit
CAPEX	Capital Expenditure
CBA	Cost-Benefit Analysis
CIF	Climate Investment Funds
CN	Concept Note
CNFS	Climate and Nature Finance Strategy
CPCIC	Rwanda Cleaner Production and Climate Innovation Center
DAE	Direct Access Entities
CO_2e	Carbon Dioxide Equivalent
CBO	Community-Based Organizations
CSO	Civil Society Organizations
DFI	Development Finance Institution
DMA	Division of Mitigation and Adaptation
DSCR	Debt Service Coverage Ratio
EFA	Economic and Financial Analysis
EIRRD	Economic Internal Rate of Return
ENPV	Economic Net Present Value
ESCO	Energy Service Company
ESIA	Environmental and Social Impact Assessment
EV	Electric Vehicle
FAO	Food and Agriculture Organization
FIRR	Financial Internal Rate of Return
FONERWA	Rwanda Green Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GGCRS	Green Growth and Climate Resilience Strategy
GHG	Greenhouse Gas
GCF	Green Climate Fund
GCK	Green City Kigali
IAE	International Accredited Entities
IRR	Internal Rate of Return
IUCN	The International Union for Conservation of Nature

LDCs	Least Developed Countries
LTS	Long-Term Strategy
LWH	Water Harvesting and Hillside Irrigation Program
MDB	Multilateral Development Bank
MINAGRI	Ministry of Agriculture and Animal Resources
MINECOFIN	Ministry of Finance and Economic Planning
MINICOM	Ministry of Trade and Industry
MININFRA	Ministry of Infrastructure
MoE	Ministry of Environment
MRV	Measurement, Reporting and Verification
M&E	Monitoring & Evaluation
NAP	National Adaptation Plan
NCT	National Coordination Team
NDC	Nationally Determined Contribution
NGO	Non-Governmental Organization
NISR	National Institute of Statistics of Rwanda
NMT	Non-Motorized Transport
NOL	No-Objection Letter
NPV	Net Present Value
NST1	National Strategy for Transformation
O&M	Operations and Maintenance
OPEX	Operating Expense
ORMC	Office of Risk Management and Compliance
PAP	Proposal Approval Process
PAYGO	Pay-As-You-Go
PPF	Project Preparation Facility
PPP	Public-Private Partnership
PSF	Private Sector Federation
PSTA	Strategic Plan for Agriculture Transformation
RBF	Results-Based Financing
RCCDN	Rwanda Climate Change and Development Network
RDB	Rwanda Development Board
REG	Rwanda Energy Group
REMA	Rwanda Environment Management Authority
RENGOF	Rwanda Environmental NGOs Forum
RFA	Rwanda Forestry Authority
RGIF	Rwanda Green Investment Facility
RLMUA	Rwanda Land Management and Use Authority
RMB	Rwanda Mines, Petroleum and Gas Board
RSB	Rwanda Standards Board
RURA	Rwanda Utilities Regulatory Authority
RWB	Rwanda Water Resources Board
SACCO	Saving and Credit Cooperative Society
SAP	Simplified Approval Process
SDG	Sustainable Development Goal

SME	Small and Medium-Sized Enterprise
SPV	Special Purpose Vehicle
tCO_2e	Tonnes of Carbon Dioxide Equivalent
TSSP	Transport Sector Strategic Plan
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value-Added Tax
WACC	Weighted Average Cost of Capital

1 INTRODUCTION

1.1 PURPOSE OF GUIDELINES

These guidelines aim to strengthen the quality and impact of GCF concept notes and funding proposals for Rwanda by providing a structured approach to Economic and Financial Analysis (EFA). Through clear methodologies and tools, the guidelines can equip stakeholders—particularly Rwanda's National Coordination Team (NCT)—to demonstrate financial viability, economic rationale, and alignment with national climate priorities. The guidelines specifically aim to:

- Equip stakeholders with practical tools to assess financial and economic aspects of proposed interventions.
- Promote integration of EFA throughout proposal development to demonstrate cost-effectiveness, impact, and alignment with Rwanda's NDCs and climate goals.
- Bridge Rwanda's climate ambition with the GCF's investment criteria, facilitating proposals that support inclusive, low-carbon, and climate-resilient development.

1.2 ROLE OF EFA GCF PROJECT DEVELOPMENT

Economic and Financial Analysis (EFA) is a cornerstone of GCF's Proposal Approval Process (PAP). It ensures that proposed interventions are economically sound, financially sustainable, and capable of delivering long-term climate impact. The EFA serves the following key roles:

Demonstrating value for money, including cost-effectiveness (e.g., USD/ton CO_2e avoided) and economic rates of return.

Assessing financial viability through analysis of revenue models,funding gaps, and operational sustainability.

Aligning with GCF investment criteria, particularly "Efficiency and Effectiveness" and "Sustainable Development Potential".

Building stakeholder confidence by grounding proposals in clear, data-driven insights.

Although not mandatory, concept notes, especially those requesting Project Preparation Facility (PPF) support or submitted under the Simplified Approval Process (SAP), benefit from early EFA insights. These can help refine project structure, identify financing needs, and improve alignment with GCF expectations. Even where a full EFA is not feasible, basic EFA inputs significantly strengthen the strategic case at concept stage.

1.3 OVERVIEW OF RWANDA'S CLIMATE FINANCE LANDSCAPE

Rwanda climate change policies and strategies

Rwanda has developed a comprehensive suite of climate-related policies and strategies that together form the foundation for climate investment planning and alignment with the Green Climate Fund (GCF). The following key documents define Rwanda's vision, targets, and institutional frameworks for climate action:

- **Vision 2050:** Aspires to a carbon-neutral and climate-resilient economy by mid-century.
- **Updated Nationally Determined Contribution (NDC, 2020):** Targets a 38% GHG reduction by 2030 and outlines adaptation measures across priority sectors.
- **Green Growth and Climate Resilience Strategy (GGCRS)**: Provides the national low-carbon development pathway and emphasizes green innovation and resilience.
- **National Strategy for Transformation (NST2)**: Ensures climate goals are mainstreamed into national and sectoral planning frameworks.
- **Environment and Climate Change Policy (2019)**: Establishes cross-sectoral policy alignment on natural resource protection and climate integration.
- **Climate and Nature Finance Strategy (CNFS, 2023)**: Framework for mobilizing and coordinating finance for climate and biodiversity.
- **Rwanda Green Taxonomy (2023)**: Defines eligible green investments to guide private and public capital flows.
- **Sector-Specific Strategies**: Including the National Forestry Policy (2018), Disaster Risk Reduction Strategy (2019–2024), National Cooling Strategy (2019), and others.

Climate finance context

Rwanda is widely recognized for its leadership in climate action and innovative climate finance mechanisms, aligning national priorities with global platforms such as the Green Climate Fund (GCF). Initiatives like the Ireme Invest Facility, the Sustainable Finance Roadmap, and the Intego Facility and Rwanda Green Fund (FONERWA) reflect Rwanda's commitment to leveraging public-private partnerships, blended finance, and national systems to scale climate action. FONERWA, established as the country's primary climate finance vehicle, has mobilized and deployed USD 250m resources to support over 45 green projects across sectors, strengthening national capacity to deliver low-carbon, climate-resilient development. The recent accreditation of the Development Bank of Rwanda (BRD) as a GCF Direct Access Entity further enhances Rwanda's ability to mobilize international climate finance, with a specific focus on unlocking private sector investment. By strategically channeling resources into priority sectors such as renewable energy, climate-smart agriculture, and urban resilience, Rwanda addresses both mitigation and adaptation imperatives.

The ND-GAIN Index ranks Rwanda 126th in climate vulnerability and 91st in readiness, indicating moderate capacity to absorb and deploy climate investments.[1] While significant progress has been made, persistent challenges in food security, water resource management, and health systems require targeted investments. Structural barriers such as fragmented financial flows, limited private sector participation, and coordination gaps among institutions also constrain Rwanda's full potential to mobilize and absorb climate finance.

To address these systemic issues, Rwanda's Climate and Nature Finance Strategy (CNFS) emphasizes the need for more integrated and coordinated approaches to investment planning and pipeline development. By promoting alignment across government entities, streamlining project selection, and strengthening national systems for resource mobilization and absorption, the strategy aims to enhance predictability, transparency, and impact in the delivery of climate and nature finance.[2] The national climate finance landscape is shaped by:

National Leadership:	Core institutions such as the Ministry of Environment (MoE), Rwanda Environment Management Authority (REMA), Ministry of Finance and Economic Planning (MINECOFIN), and the Rwanda Green Fund (FONERWA) play central roles in resource mobilization, coordination, and implementation.
International Collaboration:	Multilateral and bilateral partners—including GCF, GEF, CIF, AfDB, and others—provide substantial support, though often through project-based or sectoral channels.
Emerging Opportunities:	The accreditation of Direct Access Entities (DAEs) such as the Development Bank of Rwanda (BRD) is unlocking more localized and flexible financing, particularly for private sector engagement and innovative instruments.

1 *University of Notre Dame, ND-GAIN Country Index: Rwanda, (2023).*

2 *Ministry of Environment, Climate and Nature Finance Strategy (CNFS), (2023).*

2 ALIGNMENT WITH GCF AND RWANDA PRIORITIES

2.1 GCF STRATEGIC PRIORITIES 2024-2027

The Green Climate Fund's Strategic Plan 2024–2027 emphasizes increased ambition, results, and country ownership as core principles to accelerate climate action. Key priorities include balanced support for mitigation and adaptation, enhanced direct access, and greater mobilization of private and public capital. These priorities are well aligned with Rwanda's climate finance goals, including the implementation of its updated Nationally Determined Contributions (NDCs) and Climate and Nature Finance Strategy (CNFS).

A central target of the Strategic Plan is to mobilize $65 billion in climate finance by 2027, presenting a significant opportunity for countries like Rwanda to expand access to concessional funding and attract co-investment. The GCF also aims to double the number of approved funding proposals from Direct Access Entities (DAEs) and enhance support for adaptation and resilience-building in vulnerable countries, particularly Least Developed Countries (LDCs) and African states.[1]

The Strategic Plan places a strong focus on:

- Translating national strategies (e.g. NDCs, NAPs, LTS) into investable programs.
- Promoting innovation and private sector participation, especially through green bonds, blended finance, and early-stage risk-tolerant instruments.
- Engaging MSMEs, women-led businesses, and national financial institutions to deliver locally owned solutions.
- Scaling nature-based solutions and low-emission technologies in agriculture, energy, water, and urban development.
- Supporting just transitions in key sectors to promote inclusive, climate-resilient economic growth.

The GCF also supports capacity building and institutional strengthening to improve country readiness and programming. This complements Rwanda's efforts to enhance the role of national institutions—such as REMA, FONERWA and BRD —and to scale domestic financing platforms like Ireme Invest.

Overall, the Strategic Plan offers a clear framework for Rwanda to strengthen its project pipeline and leverage its leadership in climate finance to access and scale GCF resources effectively.

1 *Green Climate Fund, Strategic Plan for 2024–2027, (2023).*

2.2 GCF INVESTMENT CRITERIA

The Green Climate Fund evaluates funding proposals based on six investment criteria that ensure projects align with its overarching objectives of achieving paradigm shifts and advancing climate resilience. These criteria include:[2]

1. **Impact Potential:** Measures the project's contribution to achieving GCF's objectives in both mitigation (e.g., greenhouse gas emission reductions) and adaptation (e.g., enhancing resilience to climate impacts).
2. **Paradigm Shift Potential**: Assesses the project's ability to catalyse systemic changes, scale transformative solutions, and drive long-term impacts across sectors and geographies.
3. **Sustainable Development Potential:** Evaluates co-benefits beyond climate impact, such as economic growth, gender equity, health improvements, and biodiversity conservation.
4. **Needs of the Recipient:** Considers the vulnerability of the target population or region and the barriers to climate finance faced by the recipient country or stakeholders.
5. **Country Ownership:** Reflects alignment with national priorities, such as Rwanda's Nationally Determined Contributions (NDCs), and engagement with stakeholders, including the National Designated Authority (NDA) and Direct Access Entities (DAEs).
6. **Efficiency and Effectiveness:** Analyses cost-effectiveness, financial sustainability, and the ability to leverage additional resources through co-financing.

These criteria serve as the foundation for assessing project proposals, including concept notes, ensuring coherence between GCF investment principles and Rwanda's national climate strategies.

2.3 INTEGRATING RWANDA'S NDCS AND CLIMATE POLICIES WITH GCF CRITERIA

Rwanda's most recently updated Nationally Determined Contribution outlines a 38% reduction in greenhouse gas emissions by 2030 and identifies 24 adaptation priorities across critical sectors.[3] These commitments are supported by the Climate and Nature Finance Strategy (CNFS), which offers a coherent framework to align climate investments with national priorities and GCF funding criteria.

The CNFS and NDCs demonstrate strong alignment with the Green Climate Fund's (GCF) investment criteria and its 2024–2027 Strategic Plan, particularly the emphasis on just transitions, systemic transformation, and private sector mobilization. Rwanda's focus on scaling renewable energy, promoting climate-smart agriculture, and advancing resilient urban development mirrors GCF's ambition to support high-impact, country-driven, and transformational programming.

2 *Green Climate Fund, Investment Criteria Indicators, (2020).*

3 *Government of Rwanda,* ***Updated Nationally Determined Contribution (NDC)****, (2020).*

Key areas of alignment include:

- **Impact Potential:** Rwanda's NDC targets both mitigation (e.g., renewable energy, clean mobility) and adaptation (e.g., climate-smart agriculture, water resource management), directly contributing to GCF objectives.
- **Paradigm Shift Potential:** The NDC prioritizes systemic shifts, including decentralized renewable energy, sustainable land use, and low-emission transport. The CNFS further reinforces this by promoting programmatic, scalable investments—an approach central to GCF's paradigm shift mandate.
- **Country Ownership:** Institutions such as the Ministry of Environment (MoE), REMA (as NDA), and FONERWA (as a key executing entity) ensure alignment with national development frameworks and inclusive stakeholder engagement.
- **Efficiency and Effectiveness:** Rwanda's CNFS emphasizes blended finance instruments—including concessional loans, green bonds, and carbon markets—to improve capital mobilization and project bankability. This aligns with GCF's priority on leveraging public funds to catalyze private investment and enhance cost efficiency.
- **Sustainable Development Potential:** The CNFS integrates cross-cutting themes such as gender equity, youth inclusion, and poverty reduction—ensuring that climate interventions yield social and economic co-benefits, in line with GCF's sustainable development mandate.

By embedding GCF investment criteria into national project preparation processes, Rwanda is strategically positioned to access climate finance that accelerates its transition to a low-carbon, climate-resilient, and inclusive economy.

2.4 KEY STAKEHOLDERS

Effective development and implementation of GCF projects in Rwanda relies on a coordinated network of national institutions, each playing a specific role within the GCF architecture.[4]

National Designated Authority (NDA)

- Rwanda Environment Management Authority (REMA)
  - Role: Serves as the official NDA to the GCF. Provides strategic oversight, ensures alignment with Rwanda's national climate policies and priorities, and issues the No-Objection Letter (NOL) for all GCF submissions.

Direct Access Entities (DAEs) and Accredited Entities (AEs)

- Ministry of Environment (MoE) – DAE
  - Role: Accredited to directly access and manage GCF resources on behalf of the Government of Rwanda. Supports the development, submission, and oversight of GCF-funded projects to ensure alignment with national climate and development goals.
- Development Bank of Rwanda (BRD) – DAE

4 *Government of Rwanda, Terms of Reference for the National Coordination Team (NCT) for Engagement with the Green Climate Fund, (2021).*

- Role: Recently accredited (2024/2025) as a national AE. BRD can now directly design, finance, and manage GCF-funded projects. As a development finance institution, BRD is well-positioned to channel climate finance to the private sector and catalyze investments in key sectors.

Executing Entities (EEs)

- Rwanda Green Fund (FONERWA)
  - Role: Operates as a primary Executing Entity under AEs/DAEs. Responsible for implementing GCF projects, mobilizing resources, and managing grants aligned with national climate priorities.

International Accredited Entities (IAEs)

- Rwanda also partners with IAEs such as the African Development Bank (AfDB), Acumen, and IUCN, which act as AEs for regional or global GCF-funded programs involving Rwanda.

National Coordination Team (NCT)

- The NCT supports REMA in its role as NDA by ensuring technical review, stakeholder coordination, and strategic alignment of GCF projects. It plays a critical role in concept note screening, proposal endorsement, and monitoring project performance.
- Mandate: Includes supporting the Country Programme, managing the No-Objection procedure, and ensuring project alignment with GCF investment criteria and national priorities.
- Operations: The NCT meets quarterly and may convene ad hoc meetings to assess urgent proposals or review critical issues.
- Composition:
  - Chair: Ministry of Finance and Economic Planning (MINECOFIN)
  - Vice-Chair 1: Private Sector Federation (PSF)
  - Vice-Chair 2: Rwanda Green Fund (FONERWA)
  - Secretariat: Rwanda Environment Management Authority (REMA)
  - Members:
    - Ministry of Environment (MoE)
    - Development Bank of Rwanda (BRD)
    - Ministry of Infrastructure (MININFRA)
    - Ministry of Agriculture and Animal Resources (MINAGRI)
    - Rwanda Development Board (RDB)
    - Rwanda Mines, Petroleum and Gas Board (RMB)
    - Rwanda Water Resources Board (RWB)
    - Rwanda Forestry Authority (RFA)
    - Rwanda Land Management and Use Authority (RLMUA)
    - Rwanda Cleaner Production and Climate Innovation Center / Rwanda Climate Change and Development Network (CPCIC/RCCDN)
    - Rwanda Environmental NGOs Forum (RENGOF)

3 STEP-BY-STEP GUIDANCE FOR ECONOMIC AND FINANCIAL ANALYSIS FOR CONCEPT NOTES

3.1 PURPOSE OF ECONOMIC AND FINANCIAL ANALYSIS (EFA)

Economic and Financial Analysis (EFA) is a critical component of the Green Climate Fund's (GCF) project appraisal process. It provides the evidence base to demonstrate that proposed interventions are not only aligned with climate and development priorities but are also economically justified, financially viable, and strategically structured.

In the Rwandan context, EFA serves as a powerful tool for planning and prioritization. It allows project developers and the National Designated Authority (REMA) to assess which interventions deliver the highest impact per dollar spent, align with national priorities, and offer strong potential for transformational change.

While full-scale EFA is not mandatory at the Concept Note (CN) stage, early-stage analysis is strongly encouraged—particularly for projects involving concessional loans, revenue-generating components, or blended finance structures. A concise but well-reasoned EFA strengthens project design, supports alignment with GCF investment criteria, and signals readiness to the GCF Secretariat, REMA, and potential co-financiers.

Early-stage EFA can help to:

- Justify the need for concessional finance by identifying affordability gaps, financial risks, or limited private return on investment.
- Quantify benefits using key metrics (e.g., cost per ton of CO_2 avoided, cost per beneficiary) to demonstrate value for money.
- Align project logic with Rwanda's NDCs, climate policy frameworks, and the GCF's six investment criteria.
- Inform co-financing strategies by estimating funding gaps and testing basic financial viability.
- Enhance internal coordination by ensuring that REMA, executing entities, and technical partners apply consistent economic and financial assumptions from the outset.

3.2 IMPORTANCE AND LIMITATIONS OF EFA IN CONCEPT NOTES

Even in preliminary form, EFA brings structure and clarity to Concept Notes. It helps move proposals beyond high-level ambition by supporting claims of climate impact, affordability, and sustainability with indicative financial reasoning and data. Early-stage EFA improves internal decision-making, facilitates REMA's screening process, and signals to GCF reviewers that the proposal is grounded in realism and logic.

a. Key Contributions of EFA at Concept Note Stage

The following are the key ways in which early-stage Economic and Financial Analysis (EFA) strengthens a GCF Concept Note and supports REMA's internal and external project review processes:

Justifying the Need for GCF Support

- Identifies financing gaps, affordability constraints, high perceived risks, or market failures that justify concessional support.
- Demonstrates how GCF instruments (e.g., grants, concessional loans) can de-risk or unlock private or public investment, improve project bankability, lower risk profiles, or enable scale.
- Clarifies where the project would not proceed, scale, or deliver benefits without GCF involvement.

Early Alignment with GCF Investment Criteria

- Maps basic EFA indicators (e.g., FIRR, cost per ton CO_2e avoided, cost per beneficiary) to GCF evaluation criteria.
- Provides early evidence of impact, efficiency, sustainability, and alignment with national priorities.
- Demonstrates the project's potential to deliver measurable climate impact, value for money, and sustainable development benefits.

Building Stakeholder Confidence

- Presents transparent, data-driven assumptions and scenarios to strengthen credibility with REMA, co-financiers, and implementation partners.
- Enhances trust with the NDA (REMA), the GCF Secretariat, and potential investors.
- Signals technical preparedness and supports REMA's internal appraisal process.

Improving Proposal Readiness

- Identifies key structural issues, such as unrealistic cost assumptions, weak or undeveloped revenue models, or scalability constraints, while there is still flexibility to revise.
- Lays the groundwork for robust financial modelling at the full proposal stage.
- Supports more strategic financial structuring (e.g., choice of financial instrument, concessionality justification).

b. Common Limitations of EFA at Concept Note Stage

Despite its benefits, early-stage EFA faces several practical limitations. These highlight the importance of a proportional, flexible approach to EFA at the concept stage.

Limited Financial Data Availability

- Detailed financial inputs—such as CAPEX, OPEX, tariffs, or revenue models—are often incomplete or under development at this stage.
- Concept Notes typically do not require full financial models; instead, basic metrics (e.g., cost per beneficiary, indicative FIRR) serve as proxies.
- In nascent sectors, reliable market data may be unavailable or outdated.

Resource and Time Constraints

- Smaller project proponents may lack the technical capacity to conduct advanced modelling.
- Concept Note timelines often do not allow for extensive modelling or in-depth financial analysis.
- A streamlined, proportional EFA approach helps ensure effort is proportionate to project scale and complexity.

Evolving Project Design

- Project scope, delivery model, or financial structure may shift or evolve throughout concept development.
- Early EFA findings may require revision once feasibility studies, detailed designs, or stakeholder consultations are complete.
- EFA outputs should be presented as indicative and subject to revision during the full proposal stage

Uncertainty in Assumptions

- Projections related to future costs, uptake rates, climate scenarios, or technology prices are often speculative.
- Core assumptions (e.g., discount rates, fuel prices, affordability) may lack benchmarks or empirical grounding.
- Early EFA should clearly state assumptions and acknowledge their tentative nature.

Considering these challenges, a proportional approach is recommended: simple, well-sourced, and indicative analyses that focus on demonstrating logic, viability, and strategic fit, rather than precision. Projects may use proxy values, regional benchmarks, or data from comparable interventions to support their claims.

3.3 ECONOMIC AND FINANCIAL ANALYSIS

Understanding the distinction between economic and financial analysis is essential to producing a credible Economic and Financial Analysis (EFA). While closely related, the two approaches serve different objectives and rely on different assumptions, perspectives, and tools.[1]

a. Financial Analysis

Financial analysis assesses a project's viability from the perspective of the implementing entity, investor, or operator. It focuses on actual cash flows—revenues, expenditures, taxes, debt service—and determines whether a project is bankable or financially sustainable. Unlike economic analysis, it does not include externalities such as environmental or health benefits, which are not monetized in market transactions.

The core purpose of financial analysis is to determine whether:

- The project can generate sufficient cash flows to cover its operating and capital costs.
- The returns are attractive enough for investors or financiers.
- Concessional finance (e.g. grants or soft loans) is needed to fill a financial viability gap.

This analysis helps identify affordability constraints, set tariffs, justify co-financing structures, and demonstrate whether GCF support is necessary and catalytic

Key Components of Financial Analysis

- Cash Flow Projections

Cash flow analysis involves forecasting the inflows (e.g., revenues, savings) and outflows (e.g., capital expenditures, operational and maintenance costs, debt repayments) over the project lifecycle. It determines whether the project remains solvent over time and identifies funding gaps.

Example:

A water supply project may incur $1 million in capital costs, with annual revenues of $150,000 and O&M costs of $50,000. Net cash flow = $100,000/year. Cash flow projections help assess if the project can cover debt and sustain operations in financial analysis.

- Financial Indicators

These indicators help determine financial viability, profitability, and sustainability from the project implementer or investor perspective. At the Concept Note stage, simplified calculations and assumptions are acceptable, especially when full models are unavailable.

Net Present Value (NPV): NPV is the sum of all future net cash flows (inflows minus outflows), discounted to their present value using a financial discount rate. It shows whether a project generates more value than it costs.

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1 Green Climate Fund. ***Annex VI: Economic and Financial Analysis (EFA) Guidance****. GCF Programming Manual, 2016, pp. 1-28*

Formula:	Interpretation:
$$\text{NPV} = \frac{R_t}{(1+i)^t}$$ NPV = net present value R_t = net cash flow at time t i = discount rate t = time of the cash flow	• NPV > 0 → Financially viable • NPV < 0 → Project may require concessional finance

Example:

A project costs $400,000 upfront and generates $100,000/year for 5 years. At a 10% discount rate:

NPV = ≈$79,000NPV

This means that the project is financially viable.

Financial Internal Rate of Return: FIRR is the discount rate at which the NPV of a project's cash flows equals zero. It represents the project's expected financial return.

Interpretation:

- If FIRR > cost of capital, the project is attractive
- If FIRR < cost of capital, viability gap exists

Example:

For the project above, FIRR ≈ 16%. If the required return is 10%, the project is attractive.

Note: FIRR is best calculated using Excel or financial calculators.

Payback Period: The time required for cumulative net cash flows to recover the initial investment. A simple indicator of liquidity and repayment speed.

Formula (simple projects):

Payback Period = Initial **Investment**/Annual Net Cash Flow

Example:

$400,000 investment, $100,000/year returns = payback in 4 years.

Scenario Analysis: Scenario analysis involves comparing the project's financial performance under different assumptions—most critically, with and without GCF support. This helps demonstrate how GCF concessional finance improves project viability, affordability, or scale. It also prepares project proponents and reviewers to anticipate financial risks and respond to uncertain variables.

At the Concept Note stage, simplified scenario analysis can help illustrate:

- Beneficiary Affordability:Assess how GCF support affects pricing for end users or beneficiaries.
  - o Example: A mini-grid project may only offer affordable electricity tariffs if partially financed with GCF grants; without support, tariffs may be prohibitively high.

- Return on Investment (ROI): Compare financial returns (e.g., FIRR or NPV) under different financing structures.
    - Example: A clean cooking project may have a FIRR of 4% without GCF and 12% with GCF. The differential shows concessional finance is essential to attract investors.
- Long-Term Sustainability:

Analyze whether the project remains solvent and operational beyond the GCF funding period.

- Example: A land restoration project introduces agroforestry and terracing practices in degraded hillside areas. GCF funds cover initial training, seedlings, and community mobilization during the first 3 years. By Year 4, participating farmers begin earning increased income from tree crops and improved yields. Local cooperatives take over seedling production and technical support, funded by a portion of profits. By the end of the GCF-funded period, the intervention is financially self-sustaining at the community level, requiring no further external support for operations.

Other scenario comparisons may include:

- Commercial financing only vs. blended structure
- Slow vs. rapid uptake of services
- High vs. low capital cost assumptions
- Climate shock vs. baseline climate scenarios

Even simple comparisons of "with GCF" vs. "without GCF" outcomes can help clarify the minimum concessionality needed and justify instrument choice (e.g., grant vs. loan).

b. Economic Analysis

Economic analysis evaluates the project's broader value to society, including public goods and externalities that are not reflected in market prices. It adjusts financial flows by excluding taxes and subsidies and applying economic (shadow) prices to reflect true resource costs. For example, economic analysis would include the value of reduced greenhouse gas (GHG) emissions, improved health outcomes, ecosystem services, or other non-market benefits that financial analysis. This is because the positive and negative externalities associated with mitigation and adaption projects are often not captured n market transactions.2 The goal is to assess whether the project's benefits to society exceed its costs, using metrics like economic net present value (ENPV), economic internal rate of return (EIRR), and benefit-cost ratio (:). The perspective is societal and global, aiming to capture the broader impacts of the intervention. This analysis seeks to monetize co-benefits such as:

- Greenhouse gas emission reductions
- Ecosystem restoration
- Public health improvements
- Time savings or avoided damages from climate impacts

It answers questions like: Is the intervention cost-effective for society? Do the total benefits exceed costs from a national or global perspective?

2 *Green Climate Fund.* ***Annex VI: Economic and Financial Analysis (EFA) Guidance****. GCF Programming Manual, 2016, pp. 1-28*

Key components include:

- **Societal and Global Benefits:** Includes monetized values for non-market impacts like carbon sequestration or avoided hospital visits due to improved air quality. Quantify impacts such as:
  - Greenhouse gas (GHG) reductions.
  - Health and ecosystem improvements.
- **Non-monetized co-benefits**, such as enhanced social welfare
- **Economic Metrics**:
  - Economic Internal Rate of Return (EIRR): The EIRR reflects the returns on the mitigation or adaptation measures at society level and it should be above the discount rate used in the analysis.
  - Economic Net Present Value (ENPV): A "value for money" measure provides information on the net total amount of benefits in present value obtained and it should be positive. The EIRR reflects the returns on the mitigation or adaptation measures at society level and it should be above the discount rate used in the analysis.
  - Benefit-Cost Ratio (BCR): The Benefit to Cost Ratio provides information on the "value for money" of the proposed activities and it should be greater than 1.
  - Cost-effectiveness metrics (e.g., $/tCO$_2$ avoided, $/beneficiary): Where data availability permits, applicants are encouraged to estimate the Economic Net Present Value (ENPV) or Benefit-Cost Ratio (BCR) of the intervention. These measures help summarize the overall economic viability of the project, particularly when monetizable co-benefits (e.g., time savings, health impacts, avoided losses) are significant. At concept note stage, even a simple ratio of monetized benefits to costs can serve as a proxy BCR and strengthen the economic case.

To summarize, financial and economic analyses are complementary. A project may be economically sound (i.e., it delivers high public value) but not financially viable (i.e., it doesn't generate sufficient cash returns for private investors). This is precisely where concessional finance plays a catalytic role—bridging the gap between social returns and private incentives.

This distinction underpins the GCF principle of minimum concessionality: provide only as much public funding as needed to make the project viable while maximizing impact.

Table 1: Key Differences Between Financial and Economic Analysis

Aspect	Financial Analysis (Investor Perspective)	Economic Analysis (Societal Perspective)
Perspective	Project Implementer or Investor	Society or national economy
Prices and Costs	Market prices (includes taxes, tariffs, subsidies, etc.)	Economic (shadow) prices (excl. transfers i.e. taxes/subsidies)) to reflect true resource costs
Externalities	Excluded – only captures cash flows to the project. Environmental or social impacts are not monetized in the base financial model	Included – quantifies positive and negative externalities (e.g. carbon emission reductions, health benefits) in monetary terms
Cash Flow Elements	Actual project revenues and costs: capital expenditures, O&M costs, revenues, debt service, taxes, subsidies, etc. (money in and out of project accounts).	Real resource costs and monetized externalities. Uses project costs net of taxes, adds value of external benefits (e.g. costs (e.g. pollution damages). Excludes transfer payments (taxes, subsidies are viewed as transfers within society)
Key Metrics	FIRR, FNPV (@ financial discount rate), payback period, debt service ratios, profitability index. Indicates financial sustainability and any viability gap.	EIRR, ENPV (@ social discount rate), BCR, cost-effectiveness indicators (e.g. $ per ton CO_2 avoided, $ per beneficiary).
Role of Concessional Finance	Determine concessionality required to reach viability	Justify public investment based on net benefits

3.4 CORE METRICS AND THEIR STRATEGIC APPLICATION

To support GCF appraisal, a strong EFA applies a set of core metrics that demonstrate financial feasibility, economic impact, and strategic fit. These metrics are central to aligning with GCF's six Investment Criteria.[3] The table below summarizes how specific EFA metrics inform each GCF criterion. These metrics are most directly aligned with the GCF's 'Efficiency and Effectiveness' criterion, while also supporting other investment criteria such as 'Needs of the Recipient', 'Impact Potential', and 'Sustainable Development Potential' where applicable.[4]

3 *Green Climate Fund,* ***Investment Criteria Indicators****, Incheon: Green Climate Fund, 2020*

4 *Green Climate Fund,* ***Economic and Financial Analysis Annex: SAP Guidance****, Incheon: GCF Secretariat, 2022.*

Table 2: Key Economic and Financial Metrics for GCF Proposal Assessment

Metric	Purpose and Key Considerations	Aligned GCF Investment Criteria
Cost-Effectiveness	Measures how efficiently a project delivers outcomes relative to costs. o Includes $/tCO$_2$e avoided, $/beneficiary, $/hectare restored. o Benchmarks should be compared to similar projects.	Efficiency & Effectiveness, Impact Potential
Financial Adequacy	Assesses whether a project has sufficient financial resources to achieve its goals. o Analyze financing structure adequacy. o Identify committed and potential funding sources. o Highlight funding gaps and sensitivity to those gaps. o Clarify how GCF support addresses the shortfall	Efficiency & Effectiveness, Needs of Recipient
Minimum Concessionality	Ensures GCF finance is no more than necessary. o Use financial indicators (i.e. FIRR) to compare project performance with and without GCF support to demonstrate viability gap. o Explain how GCF de-risks the project or improves affordability.<?> o Justify financial instrument selection and terms (e.g. grant vs. loan), including the potential for revenue generation o Explain how GCF improves affordability or corrects market	Efficiency & Effectiveness, Needs of Recipient
Leverage & Catalyzation	o Demonstrates ability to attract or mobilize additional capital and drive systemic change. o State co-financing ratio and expected amount of financing to be leveraged as a result of the project. o Show mobilization of private/public capital (e.g. via blended finance, carbon credits). o Demonstrate scalability, replication potential, and policy/market enabling conditions. o Demonstrate catalytic/transformative effects (e.g. market deepening, policy shifts, innovation).<?>	Paradigm Shift Potential, Efficiency & Effectiveness

Sustainability Post-GCF (Long-Run Economic and Financial Viability	Evaluates whether benefits can be sustained after GCF support ends. o Assess whether revenue covers O&M and operational sustainability. o Provide ENPV and/or EIRR to indicate long-term viability. o Highlight institutional readiness and risk mitigation for long-term delivery. o Include strategies for local integration and exit planning. o Include recommendations for maintaining project benefits through local partnerships or additional fundraising.	Efficiency & Effectiveness, Country Ownership
Scenario & Sensitivity Analysis	Test robustness of assumptions and justifies need for GCF support. o Compare project outcomes with and without GCF support. o Analyze risks from cost overruns, demand shifts, climate impacts. o Show how GCF improves project stability or scale o What mitigation measures can be implemented for unfavorable scenarios?	Efficiency & Effectiveness, Needs of Recipient
Sustainable Development Potential	Evaluates broader co-benefits, including social, environmental, and economic impacts. o Identifies benefits to health, gender, biodiversity, livelihoods. o Show alignment with SDGs and national development goals. o Quantify job creation or support for vulnerable groups (women, youth, low income).	Sustainable Development Potential, Impact Potential

In addition to the core metrics above, EFA may also incorporate sector-specific or cross-cutting indicators, including:

- Health Benefits: Reductions in disease burden or healthcare costs (e.g., from clean cooking or air pollution control).
- Gender Metrics: Improved access, income, or empowerment outcomes for women and girls.
- Ecosystem Services: Valuation of non-market benefits such as biodiversity, carbon sinks, soil retention, or water quality improvements.

3.5 ALIGNMENT OF METRICS WITH GCF INVESTMENT CRITERIA

Economic and Financial Analysis (EFA) plays a central role in addressing several of the GCF investment criteria—most notably Efficiency and Effectiveness, while also contributing to Needs of the Recipient, Impact Potential, and Sustainable Development Potential. This section outlines how EFA supports each of the six investment criteria and presents the associated metrics and indicators.5

Table 3: Role of Economic and Financial Analysis (EFA) in Meeting GCF Investment Criteria

GCF Investment Criterion	Purpose	EFA Contribution	Key Indicators	Relevance of EFA
Impact Potential	Measures expected contribution to mitigation and/or adaptation goals. Demonstrates the project's direct link to addressing climate challenges, using robust data and analysis.	Translates climate benefits into economic terms (e.g., avoided damage, cost savings) and quantifies outcomes (GHG reductions, resilience benefits).	o GHG emissions reduced (tCO_2e) o Number of people with increased resilience o Avoided economic losses	**Moderate** o EFA helps quantify impact where possible

5 *Green Climate Fund.* ***Annex VI: Economic and Financial Analysis (EFA) Guidance****. GCF Programming Manual, 2016, pp. 1-28*

Paradigm Shift Potential	Evaluates potential for systemic/ transformational change, innovation, and replicability.	Demonstrates scalability through strong FIRR/EIRR and innovative financial mechanisms (e.g., PPPs, blended finance)	o FIRR/EIRR with and without GCF o Evidence of market or policy transformation o Replication pathways o Innovation in delivery or finance	**Moderate** o Supports analysis of financial structures enabling paradigm shift.
Sustainable Development Potential	Assesses social, environmental, and economic co-benefits.	Monetizes non-climate co-benefits (e.g., health savings, job creation) and quantifies contributions to SDGs	o Jobs created o Gender-equitable outcomes o Ecosystem services enhanced	**Low–Moderate** o Indirect, through valuation of externalities.
Needs of the Recipient	Assesses the vulnerability and financing constraints of the country or population.	Identifies affordability constraints, investment barriers, and justifies concessionality based on structural and market failures	o Climate vulnerability indices o FIRR without GCF support o Institutional and technical readiness	**Moderate–** Justifies concessionality and de-risking needs
Country Ownership	Evaluates alignment with national priorities and involvement of local institutions.	Demonstrates integration with national investment frameworks and mobilization of domestic institutions or co-financing mechanisms	o Alignment with NDCs/NAPs o Use of national data o Role of local actors/ institutions	**Low** - Supports strategic alignment and reinforces national relevance but is not central

Efficiency and Effectiveness	Assesses cost-effectiveness, financial soundness, and ability to leverage other resources.	Applies financial metrics (FIRR, NPV), economic returns (EIRR), and cost-effectiveness indicators. Demonstrates financial structure, minimum concessionality and long-term viability. Demonstrates mobilization of co-financing and replicable impact.	o FIRR, EIRR, NPV, BCR o Cost per tCO_2e avoided o Co-financing ratio o Risk allocation strategy o Minimum concessionality demonstrated	**High** - This is the primary criterion where EFA is essential.

3.6 INTEGRATING EFA INTO PROJECT CONCEPT NOTE DEVELOPMENT

The Concept Note stage is a critical entry point for integrating Economic and Financial Analysis (EFA) into project design. Embedding EFA early helps identify financial viability gaps, demonstrate economic value, and clarify the rationale for GCF support. This section outlines practical steps to conduct a preliminary EFA during the Concept Note stage, even when data is limited, and to align findings with GCF investment criteria in a concise, decision-useful format.

Key EFA steps at Concept Stage

At the concept note stage, information may be preliminary, but it is important to outline the economic and financial rationale of the project. REMA (as NDA) will review concept notes to decide if they merit further development and endorsement to GCF, so a basic EFA ensures only viable concepts advance. Key steps at this stage include:

Define the Baseline and Project Intervention

- Clearly articulate the problem the project addresses, the proposed intervention, who the beneficiaries are, and what changes are expected.
- Establish a baseline ("without project") scenario that describes the continuation of current emissions, vulnerabilities, or service gaps.
- Define the "with project" scenario—how the intervention will reduce emissions, improve resilience, or generate development impact. This framing forms the foundation for both financial and economic assessments.
- Include indicative figures where possible.
- Example: "Without the project, households will continue using diesel, emitting X tCO_2/ year. With the project (solar mini-grids), emissions will fall by Y% and electricity access

will increase."

1. **Conduct a Preliminary Financial Assessment**
    - Using rough estimates, check the financial viability of the project for the implementer or investor. At concept note stage, a full financial model is not needed, but one should estimate major cost and revenue components.
    - Identify potential revenue streams or savings. For revenue-generating projects (like energy or water services), what tariffs or sales might be expected? For non-revenue public-good projects, are there any cost savings or productivity gains?
    - Estimate total capital investment requirements (e.g. infrastructure, equipment, deployment).
    - Forecast operational and maintenance (O&M) costs, and identify any revenue streams (tariffs, product sales) or savings (e.g. energy efficiency reducing utility bills).
    - If possible, apply basic financial metrics such as the Financial Internal Rate of Return (FIRR), payback period, and Debt Service Coverage Ratio (DSCR) if loans are involved. Simplified financial modelling at this stage is sufficient.
    - Compare a "with GCF" scenario (e.g. with a grant or concessional loan) to a "without GCF" scenario (e.g. full commercial financing or scaled-down version). If the project is only viable with concessional finance, this demonstrates minimum concessionality and financial additionality.
    - Example: "FIRR with GCF support: 12%; without GCF: 4%. Project is not viable without concessional finance."

Applying FIRR and EIRR in Concept Notes and Proposals

FIRR (Financial Internal Rate of Return) and **EIRR** (Economic Internal Rate of Return) are key metrics used to assess the viability of climate projects:

- **FIRR** reflects the financial profitability of the project from the investor's perspective.
- **EIRR** captures the broader economic value by including external benefits (e.g., reduced emissions, health impacts) and excluding financial transfers (e.g., taxes, subsidies).

In Concept Notes, FIRR and EIRR can be presented as indicative metrics to demonstrate the project's financial and economic rationale. At this early stage, proponents are not expected to submit detailed models, but should:

- Provide an estimated FIRR using simplified cash flow projections based on key cost and revenue assumptions.
- Estimate EIRR by monetizing co-benefits such as GHG emission reductions (using a carbon price), time savings, or avoided losses.
- Include a with- and without-GCF comparison to show how concessional finance improves project viability or enables a positive EIRR.
- As a benchmark, the GCF typically considers:
  - ◊ FIRR >0-10% (but in some cases can be negative)
  - ◊ EIRR >10–15%

These metrics help reviewers assess value-for-money, justification for concessionality, and whether the project meets GCF's expectations for impact and efficiency.

2. Estimate and Quantify Economic Benefits

- Mitigation: CO_2 avoided × shadow carbon price (e.g. \$30/tCO_2)
- Adaptation: People protected, livelihoods enhanced, water security improved
- Include other co-benefits: improved health, ecosystem services, job creation, etc.
- When monetization is feasible, derive a rough Economic IRR (EIRR) or benefit-cost ratio (BCR). Use local data or proxy values where available. If monetization is not possible, provide a clear qualitative description supported by analogous studies or secondary sources. At concept stage you might not monetize these, but you should describe them and potentially cite studies or analogous projects indicating their significance. Example: "Terracing projects in Rwanda have doubled yields, suggesting high economic value."
- Exclude transfer payments (e.g. subsidies or taxes) from economic calculations and focus on real resource flows. For instance, a subsidy from government is not a net economic benefit (just a transfer), so focus on real resource gains or losses. Using these, qualitatively argue that benefits outweigh costs. Example: "The project will reduce 50,000 tCO_2 over 20 years. At \$30/tCO_2, the estimated climate benefit is \$1.5 million, excluding health and ecosystem gains."

3. **Justify the Case for GCF Support**
    - Explain the viability gap or barrier: Is GCF support needed for affordability, scale, de-risking, or demonstration?
    - Justify the financial instrument sought (grant, loan, guarantee) in terms of market failure, viability gaps, or risk-return dynamics.
    - Frame minimum concessionality: GCF financing should be essential but not excessive.
    - Example: "Due to limited willingness to pay and high upfront costs, private investors cannot recoup costs without grant support. GCF's $10 million grant fills a critical viability gap."
4. **Map EFA Results to GCF Investment Criteria**

    Use EFA findings to align the project with GCF's six investment criteria (see Section 3.5):
    - Impact Potential: tons CO_2 avoided, beneficiaries reached
    - Efficiency & Effectiveness: cost/ton, cost/beneficiary, FIRR/EIRR
    - Needs of Recipient: affordability constraints or market failures
    - Paradigm Shift: scalability, replication or co-financing leverage
    - Sustainable Development: co-benefits
    - Country Ownership: national policy alignment
5. **Identify Key Assumptions and Risks**
    - At concept stage, identify the most sensitive factors that could affect viability.
    - Note key variables to refine later (e.g. input costs, uptake rates, yield improvements, carbon pricing).
    - Highlight high-level and critical risks and possible mitigation strategies.
    - *Example: "The project depends on farmer uptake of irrigation*; mitigation includes awareness and training."
6. **Present a Short EFA Summary in the Concept Note**
    - While not a requirement, a dedicated EFA section or annex (1–2 pages) can include:
        - ◊ Indicative FIRR, EIRR, cost/ton CO_2e, cost/beneficiary.
        - ◊ A table of assumptions or summary metrics if available.
        - ◊ Reference to similar projects or feasibility studies, if available.

Practical Tips and Parameters for Concept Notes

When conducting Economic and Financial Analysis (EFA) at the Concept Note stage, using appropriate parameters and benchmarks is essential to ensure credibility, comparability, and alignment with GCF expectations. This section provides guidance on key parameters, benchmark ranges, and Rwanda-specific considerations to enhance quality and comparability of EFA inputs.

Table 4: Discount Rates and Time Horizon[6]

Parameter	Guideline
Financial Discount Rate	8–12% (nominal); ~10% real for public-sector projects. If Private sector is involved, use relevant cost of capital
Social Discount Rate	10% (real) commonly applied in Rwanda and Africa for GCF projects. Use 5–7% for long-term or intergenerational projects (e.g., forestry, resilience).
Time Horizon	10-20 years (transport) 20–25 years (urban infrastructure);[9] 20–30+ years (forestry or long-lived adaptation projects with delayed benefits). Avoid truncating analysis before long-term benefits like avoided flood damage or carbon sequestration are realized.

Table 5: Shadow Pricing and Externalities

Parameter	Guideline
Carbon Price	$40–80/tCO$_2$[10] This is consistent with World Bank and GCF benchmarks. In addition to carbon shadow pricing, other shadow values may be applied to capture non-market societal benefits. These include shadow wages for informal labor, shadow water pricing in agriculture, or the value of statistical life/health savings in resilience and infrastructure projects. These are optional but recommended where co-benefits are material to the economic case.
Labor (Shadow Wages)	Use the prevailing market wage unless significant surplus labor exists. In such cases, a lower shadow wage (e.g., 0.5–0.7× market rate) may be justified to reflect opportunity cost.
Exchange Rate Conversion	Use a factor of 1.0 unless known distortions exist between official and market exchange rates. Document assumptions clearly.
Transfers	Exclude taxes, subsidies, and interest payments from economic analysis. Focus on real resource flows—materials, labor, services, and externalities—rather than financial transfers. [11]
Other Externalities	Quantify externalities where feasible (e.g., emissions during construction, ecosystem impacts). Where not quantified, they should be noted qualitatively and discussed in sensitivity or risk sections.

GHG Accounting and Benchmarks

Projects should use IPCC or GCF-approved methodologies for GHG estimation and validate results against Rwanda's NDC, Biennial Transparency Reports (BTRs), or National Communications where possible.

6 *Green Climate Fund. Programming Manual: Step-by-Step Guide for Developing Funding Proposals to the Green Climate Fund. Incheon, South Korea: GCF, 2020.*

Table 6: EFA Indicator Benchmarks for GCF Projects

Indicator	Preferred Range
Cost per tCO_2e avoided	< $50/$tCO_2e$ preferred; < $250/$tCO_2e$ acceptable with strong co-benefits and justification (e.g. LDC, adaptation, market creation).
Cost per beneficiary	$50–200 (adaptation/resilience)
EIRR	>10% acceptable; >15% strong
FIRR (with GCF support)	>10% desirable where applicable (e.g., revenue-generating or private sector projects); optional or qualitative for public goods
Co-financing Ratio	≥1:1 preferred (higher for non-grant instruments)

Rwanda-Specific Data Sources

- Use Rwanda-specific baselines such as REG for grid emission factors, MINAGRI for agricultural data, and NISR for socio-economic data.
- Align with the GGCRS, NDCs, and other national frameworks and sectoral policies.
- Refer to existing or past project data (e.g. Green Gicumbi, BRD solar portfolio) where applicable.

Sensitivity Testing and Exit Strategy

- Run downside scenarios (low uptake, cost overruns).
- Show how returns vary under different assumptions.
- Illustrate how the project will sustain itself post-GCF: *"After five years of GCF support, the business model achieves steady cash flows with 100% private sector ownership."*

Optional Enhancements for Concept Note–Stage Economic and Financial Analysis (EFA)

The following optional elements can help proponents strengthen the logic and feasibility of their financial structuring approach, particularly when proposing concessional instruments or transition pathways. While detailed modelling is not required at the Concept Note stage, proponents are encouraged to consider the following enhancements to strengthen credibility, align with GCF good practices, and ease transition to Full Proposal development:

- Sensitivity Acknowledgement: Briefly note which assumptions (e.g., adoption rates, GHG prices, cost inflation) are most uncertain and how they may affect project viability or scale.
- Distributional Impact: Indicate if the project targets specific groups (e.g., women, youth, farmers in high-risk zones) or includes mechanisms to improve equity in benefit-sharing.
- Assumption Validation: Where possible, reference local studies, stakeholder input, or government data to justify key economic or financial assumptions.
- Clear Counterfactual (BAU) Scenario: Describe what would happen without the project or GCF support, including climate risks, missed opportunities, or ongoing market failures.

- Transition to Scale: Highlight how GCF support (e.g., grant, concessional loan, TA) will unlock longer-term private investment or mainstreaming via national systems.
- Risk–Instrument Alignment: Explain how the chosen financial instruments address specific risks (e.g., a guarantee to mitigate repayment risk, a grant to reduce affordability barriers).

3.7 APPLYING EFA INTO PROJECT PROPOSAL REVIEW

NCT members can apply the EFA findings as part of the internal review and validation of concept notes and funding proposals. EFA should inform decisions on project readiness, feasibility, and alignment with GCF investment criteria. This section provides practical steps to guide review:

- Check alignment with GCF criteria: Assess whether EFA inputs (e.g., cost-benefit, FIRR/ERR, affordability metrics) support paradigm shift, impact potential, and economic efficiency.
- Evaluate completeness: Ensure all required EFA components (as outlined in Sections 3.5–3.6) are addressed. Identify any critical omissions or unjustified assumptions.
- Assess realism of assumptions: Confirm that EFA parameters provided (e.g., EIRR, price assumptions, cost estimates) are aligned with national benchmarks or validated sources.
- Validate co-financing logic: Review the financial structuring and co-financing ratios to ensure mobilization is realistic and well justified (and in line with similar proposals).
- Determine "Go" vs. "No-Go": Use a checklist (see Section 7) to score or flag proposals. A strong EFA with justified assumptions and clear structuring supports a "Go" decision; weak or missing EFA may require revision or rejection.

3.8 CONCLUSION

A well-executed Economic and Financial Analysis (EFA) is more than a technical requirement—it is a strategic tool for shaping effective, bankable, and high-impact climate investments.

When applied early and proportionately, EFA helps REMA and project developers:

- Identify viable projects aligned with GCF investment criteria.
- Make the case for concessional support.
- Demonstrate long-term financial and economic value.

Concept Notes do not require perfection— only clarity, coherence, and credible justification. A 1–2-page EFA summary using proxy values or analogous data can suffice. REMA is encouraged to update benchmarks and assumptions over time, using real data from Rwanda's growing climate finance portfolio. At the concept note stage, economic and financial analysis is expected to be indicative rather than definitive. The goal is to demonstrate logical coherence, proportional value-for-money, and preliminary feasibility—not to provide full modeling or audited financials. Assumptions should be transparent, justifiable, and refined during full proposal preparation or via PPF support.

4 FINANCIAL STRUCTURING AND CO-FINANCING

Economic and Financial Analysis (EFA) is not complete without addressing the project's financial structure and co-financing strategy. The GCF places significant emphasis on how its resources catalyze additional finance and ensure long-term financial sustainability. This section provides guidance on structuring blended finance models, quantifying co-financing contributions, and aligning financial instruments with project needs and risk profiles.

4.1 BLENDED FINANCE MODELS

Blended finance refers to the strategic use of concessional finance to mobilize additional public or private capital toward climate objectives. GCF-supported blended structures often combine grants, concessional loans, guarantees, equity, and results-based finance.

Key GCF principles for blended finance

- Minimum concessionality: Use only the level of concessional finance necessary to make the project viable.
- Financial additionality: Demonstrate that without GCF support, the project would not proceed, or would do so at reduced scale or impact.
- Crowding-in: Design the structure to attract additional capital from DFIs, commercial lenders, or equity investors.

Common structures

- Grant + Commercial Equity: Grants reduce capital costs or subsidize riskier components (e.g. last-mile distribution), making equity investment viable and unlocking private equity.
- Concessional Loan + Senior Debt: GCF's concessional loan de-risks the project for commercial senior lenders.
- Grant + Results-Based Finance (RBF): Grant is disbursed based on achieved and verified results, such as connections, emissions reduced, or hectares restored.
- Guarantees or Risk Sharing: Partial risk guarantees can reduce perceived risks and unlock bank lending for new sectors (e.g. ESCO models or agriculture resilience).
- *Example:* A solar home system (SHS) uses a $5 million GCF grant structured as results-based financing to subsidize household connections in remote villages. The RBF improves revenue certainty and reduces risk, enabling a $5 million commercial loan to finance product procurement.

EFA Phasing or Prioritization

- Applicants are also encouraged to use EFA results to support internal prioritization or sequencing of activities. For example, interventions with high EIRR or low abatement cost may be positioned earlier in the project lifecycle, while those requiring greater concessionality may follow once enabling systems are in place. This can strengthen the financial logic and improve cost-effectiveness over time

4.2 LEVERAGING PRIVATE SECTOR CONTRIBUTIONS

Mobilizing private capital is a strategic priority for the Green Climate Fund (GCF). GCF strongly encourages proposals to demonstrate how concessional resources can crowd in private investment, reduce perceived or real risks, and catalyze market transformation. REMA and project developers should carefully articulate how GCF support enables private sector participation through:

- Co-investment.
- Innovative structuring (e.g., aggregation vehicles, credit enhancements).
- Risk mitigation.

Mechanisms to mobilize private finance include:

- Public-Private Partnerships (PPPs): GCF funds can be used to de-risk upfront risks and improve the risk-adjusted returns for private investors involved in service delivery (e.g., solar mini-grids, waste-to-energy, or water infrastructure).
- Aggregation Vehicles: GCF resources can be invested in specialized intermediaries that aggregate small-scale projects or lend to SMEs—for example, through green credit lines, energy access funds, or energy efficiency finance platforms.
- Revenue Guarantees or Feed-in Tariffs: Where market pricing is uncertain, GCF support can take the form of results-based payments or guarantees to ensure revenue stability.
- Risk Mitigation Instruments: Partial risk guarantees or subordinated tranches can help absorb first losses, improving the investment profile for commercial financiers and reducing capital costs (e.g. ESCO models).

In all cases, the financial analysis should demonstrate:

- Commercial viability: The project should show that, once initial barriers are addressed or markets are proven, the private sector can take over and scale the model without continued concessional support.
- Minimum concessionality: GCF funds should only be used to overcome identifiable viability gaps (e.g., FIRR below investor threshold without GCF support, and just above it with support).
- Exit strategy: A credible exit strategy should be presented showing how concessional support will phase out (e.g., phased subsidy reduction or transition to market-based terms).

Example: The Rwanda Green Investment Facility (RGIF)[1]

The Rwanda Green Investment Facility (RGIF), also known as Ireme Invest, implemented under GCF's FP221, blends grants, loans, and guarantees to mobilize private capital for green and climate resilient projects. It supports private sector through:

- A Partial Risk Guarantee Fund to reduce investor risk.
- Blended financing windows (grants, reimbursable grants, concessional loans).
- Technical assistance for pipeline development.

While RGIF itself is GCF-funded, it leverages co-financing from domestic and international private sources and supports crowding-in of commercial finance through local banks, ESCOs, and agri-SMEs.

4.3 CALCULATING AND CATEGORIZING CO-FINANCING CONTRIBUTIONS

The co-financing ratio is a key GCF metric used to assess the financial leverage and catalytic effect of GCF funding. Co-financing refers to all non-GCF contributions — in cash or in-kind — that help implement the project and reflect ownership, commitment, and scalability. Although the GCF does not mandate a minimum level or specific source of co-financing, contributions from Accredited Entities (AEs) and third parties are strongly encouraged. Co-financing helps maximize the impact of GCF funding, attract additional investment, strengthen country ownership, and signal aligned interests between the GCF, AEs, and partner countries.

GCF Definition of Co-Financing

GCF defines co-financing as all non-GCF resources—financial or in-kind—that contribute to the implementation or scaling of a project. These may come from public, private, philanthropic, or other third-party sources, and can be provided domestically or internationally. Co-financing helps demonstrate commitment, ownership, and catalytic potential.

- Public Finance

Financial contributions from public entities, either domestic or international, that are more than 50% government-owned or controlled. These may include:

◊ Domestic public sources: National or sub-national budgets, public financial institutions, and state-owned enterprises (e.g. REG, WASAC).

◊ International public sources: Bilateral or multilateral donors, development finance institutions (DFIs), or UN agencies (e.g. AfDB loans, KfW grants, UNDP support).

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1 Green Climate Fund. ***Funding Proposal: FP221 – Rwanda Green Investment Facility (RGIF).*** *Incheon, South Korea: Green Climate Fund, 2022.*

- Private Finance
  - ◊ Resources provided by entities that are primarily privately owned. These include:
    - o Equity investments: From Special Purpose Vehicles (SPVs), impact investors, or private developers.
    - o Commercial loans or guarantees: From local or international banks and private lenders.
    - o PPP contributions: Private participation in public-private partnership arrangements.
    - o Leveraged Finance (Catalyzed Finance)
  - ◊ Private capital mobilized as an indirect result of GCF involvement. These investments are typically made by new actors who are attracted to the sector or business model due to de-risking or demonstration effects of the GCF-supported project.
- Mobilized Private Finance
  - ◊ Private finance directly induced by GCF resources, often through concessional instruments, risk-sharing mechanisms, or results-based payments. This category reflects the immediate catalytic role of GCF funds. This only includes private finance that is only made possible or catalyzed because of GCF's involvement
- Parallel Finance[2]
  - ◊ Financial flows that support the same overarching goals as the GCF project (e.g., climate resilience or mitigation) but are not essential for implementing the funded activity. These may be invested in complementary activities or regions.
- In-Kind Contributions
  - ◊ Non-cash resources that support the project and are:
    - o Quantifiable,
    - o Relevant to the intervention,
    - o Independently verifiable.
    - o Examples include land, labor, technical expertise, equipment, or office space—often provided by local governments, NGOs, or community groups. GCF recognizes in-kind contributions, particularly in LDC contexts, when properly documented.

All co-financing should be linked to specific project activities or components and categorized by source, type, and status.

2 Parallel finance is not always required or emphasized in GCF proposals, but it is recognized in GCF guidance, particularly in the context of broader climate finance flows and reporting, not necessarily as core co-financing. It can be included for context—to highlight complementary funding that supports the same objectives, especially in transformational or country-programmatic approaches.

Types of Co-Financing (with Examples)

Source Type	Sub-Type	Example
Public – Domestic	Budget allocations	Government of Rwanda covering 10% of infrastructure
	SOE services/ infrastructure	REG or WASAC providing grid extensions
	In-kind	Land or public labor provided for project use
Public – International	Grants or loans from DFIs	AfDB loan, KfW grant, UNDP TA support
	Technical assistance	FAO or UNEP staff secondments
Private	Equity	Equity from SPV investors
	Loans	Commercial bank financing
	In-kind	Use of staff, marketing assets, or distribution infrastructure
Other / NGO / Philanthropic	Grants or subsidies	Climate foundation or NGO support
	Technical expertise	NGO-led training, outreach, or capacity-building
Leveraged (Catalyzed)	Follow-on private investment	Private equity fund enters the market due to GCF de-risking

Note: In-kind contributions are eligible if they are quantifiable, relevant to the project, and independently verifiable.

The co-financing ratio is a key GCF metric:

Formula:

Co-financing (Co-financing amount) ÷ (GCF contribution)

Co-financing Amount = (Total project cost – GCF contribution)

Minimum expectation:

While the GCF does not require any minimum amount of co-financing for a funded activity, a 1:1 leverage ratio is preferred, especially for mitigation and private sector projects. For LDC adaptation projects, lower ratios may be accepted with justification.

Best practices:

- Disaggregate by source (domestic, international, private) and type (grant, loan, equity, in-kind).
- Indicate status (e.g. confirmed, tentative, indicative).
- Link contributions to project components or activities.
- Avoid double-counting – each contribution should be uniquely attributed.

Example Table:

Source	Type	Amount (USD)	Status
GCF	Grant	10,000,000	Requested
Government of Rwanda	Budgetary	5,000,000	Confirmed
Development Bank (e.g. AfDB)	Loan	8,000,000	Tentative
Private Equity (SPV)	Equity	3,000,000	Indicative
Total		26,000,000	

→ Co-financing ratio = (26M – 10M) / 10M = 1.6 : 1

4.4 PUBLIC V.S. PRIVATE SECTOR APPLICATIONS

The EFA and structuring approach should reflect whether the project is public or private sector-led.

Public Sector Projects:

- Commonly funded via grants or mixed with concessional loans.
- Revenues may be indirect (e.g. avoided damage, public service delivery).
- Financial viability is less critical than economic justification.
- Focus on ensuring long-term sustainability and service delivery (e.g. O&M covered from public budgets).

Private Sector Projects:

- Must demonstrate profitability and ability to service debt.
- Financial structures typically include equity, debt, and guarantees.
- GCF's role is to de-risk, catalyze innovation, or scale nascent markets.
- Emphasis on replication, scalability, and crowding-in.

In either case, ensure the financing structure matches the risk, returns, and development goals. REMA should verify that proposals:

- Use concessional finance only where needed.
- Align the financial instrument with the project type.
- Show a credible exit or scale-up pathway.

5 SECTOR SPECIFIC GUIDANCE

Different sectors in Rwanda exhibit distinct economic, financial, and climate-related characteristics that must be reflected in GCF concept notes. This section offers tailored EFA guidance for three priority sectors identified in Rwanda's NDC and national strategies: Transport, Agriculture, and Cities, Buildings, and Urban Systems. For each sector, the guidance covers: alignment with national policies, economic justification, financial structuring approaches, and metrics that enhance the proposal's credibility and fit with GCF investment criteria.

5.1 TRANSPORT

Transport plays a central role in Rwanda's sustainable development agenda and is a key priority under the updated Nationally Determined Contribution (NDC) and the Transport Sector Strategic Plan (2024–2029). As urbanization accelerates and trade intensifies, the sector presents significant opportunities for both mitigation—through electrification, modal shift, and clean mobility solutions—and adaptation, including climate-resilient infrastructure in flood-prone areas.

Low-emission, climate-resilient transport can deliver broad socio-economic co-benefits, including reduced air pollution, improved access to jobs and services, and enhanced road safety. E-mobility solutions such as electric motorcycles, buses, and charging infrastructure also hold strong private sector investment potential.

5.1.1 E-mobility (Electric Vehicles and Motorcycles)

Policy Alignment

E-mobility is a cornerstone of Rwanda's strategy to decarbonize its transport sector. The government has recently passed legislation to phase out fuel-based motorcycles in urban areas, with electric vehicle (EV) regulations expected soon. Motorcycles constitute the largest vehicle segment, with registrations increasing from 141,532 in 2021 to 177,187 in 2023 —a 25.5% rise in two years.[1] The National E-Mobility Strategy (2021) outlines both fiscal and non-fiscal incentives such as VAT exemptions, capped electricity tariffs, and rent-free land for charging infrastructure.[2] Multiple e-mobility initiatives have been piloted in Kigali, with national scaling planned.

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1 IGIHE (2024). ***Rwanda records 22% growth in motor vehicle imports over two years***. *Available at: https://en.igihe.com/business/article/rwanda-records-22-growth-in-motor-vehicle-imports-over-two-years (Accessed: 18 May 2025).*

2 Ministry of Infrastructure (2021). ***National E-Mobility Strategy for Rwanda***. *Government of Rwanda. Available at: https://www.mininfra.gov.rw*

Concept notes should demonstrate clear alignment with national and sectoral strategies:

- National E-Mobility Strategic Paper (2021): Roadmap for deployment, infrastructure, and incentives.
- Transport Sector Strategic Plan (2024–2029): Focuses on low-emission urban mobility and modernizing public transport.
- Green Growth and Climate Resilience Strategy (GGCRS) and Updated NDC (2020): Position e-mobility as a national mitigation priority.

Confirmed incentives and regulatory measures include (not yet fully implemented):[3]

- VAT and import duty exemptions for EVs, batteries, and parts.
- Capped electricity tariffs for charging stations, aligned with industrial rates and including off-peak pricing incentives
- Rent-free access to public land for charging infrastructure.
- Planned mandates requiring EV charging provisions in new buildings and urban plans

Current Pilots and Implementation

- Ampersand and Spiro have deployed over 5000 e-motorcycles in Kigali with associated battery-swapping or charging infrastructure.[4][5]
- Volkswagen launched a fleet of e-Golfs in Kigali as part of its "Move" electric taxi service, supported by charging stations at the Kigali Convention Centre and the Special Economic Zone.[6]
- Rwanda is currently implementing a Mitigation Action Facility (MAF)-funded project to scale electric motorcycle (e-moto) adoption, led by BRD and FONERWA. The programme supports a national shift toward low-emission transport and includes a credit enhancement facility to de-risk private lending, a targeted rebate scheme for low-income and women operators, and a technical hub for market development and policy coordination. The project builds on earlier pilots and aims to deploy over 52,000 e-motos, avoid more than 420,000 tCO_2e, and mobilize EUR 197 million in total investment. It also delivers co-benefits such as air quality improvement, income gains for drivers, and increased inclusion of women in the e-mobility value chain.[7]
- A growing number of private actors are entering the market, including lease-to-own and retrofit models (e.g. REM, REVOO).

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3 Government of Rwanda (2021). ***Strategic Paper on Electric Mobility Adaptation in Rwanda****. Ministry of Infrastructure*

4 CleanTechnica (2025). Ampersand leads the charge as electric motorcycle market share surges in Kigali, Rwanda. Available at: https://cleantechnica.com/2025/05/01/ampersand-leads-the-charge-as-electric-motorcycle-market-share-surges-in-kigali-rwanda/ (Accessed: 18 May 2025).

5 Changing Transport (2024). ***Driving Rwanda's Green Future****. Available at: https://changing-transport.org/driving-rwandas-green-future/ (Accessed: 18 May 2025).*

6 Volkswagen Newsroom (2024). ***First for Africa: Volkswagen and Siemens launch joint electric mobility pilot project in Rwanda****.*

7 NAMA Facility (2023). Accelerating the Deployment of E-Motos in Rwanda – Revised NSP Proposal. Submitted by the Government of Rwanda, FONERWA, and BRD.

Economic Analysis

The economic case for EV's in Rwanda is strong. Electric motorbikes have up to 40% lower operating costs than petrol models in Rwanda[8], offering substantial savings for drivers and reducing reliance on fossil fuel imports. According to REMA estimates, a nationwide shift to electric motorbikes would save Rwanda up to US$22 million annually in fuel expenditures.[9] Concept notes should quantify both financial and economic benefits using Rwanda-specific benchmarks. Key benefits include:

Monetizable Financial Benefits

- Fuel cost savings per vehicle or fleet.
- Reduced O&M expenses, particularly for 2W vehicles.
- Revenue generation from fare collection, lease-to-own models, or battery-swapping.
- Improved asset utilization through digital ride-hailing and tracking platforms.

Economic Co-Benefits

- System-wide GHG reductions, applying Rwanda's emissions factors.
- Health savings from reduced air pollution (e.g., fewer respiratory illnesses).
- Time and productivity gains from shorter commutes and fewer breakdowns.
- Job creation across the value chain (drivers, technicians, battery managers).
- Resilience to fuel price shocks and reduced reliance on imports.
- Private sector market development (e.g., leasing, assembly and local manufacturing, digital services).

Financial Structuring

Due to high upfront costs and a nascent market, e-mobility investments in electric motorcycles and vehicles often require concessional support and blended finance. Concept notes should propose financially viable structures that demonstrate scalability and private sector engagement:

Blended Finance Strategy

- Grant-funded components: Charging infrastructure, R&D, battery recycling.
- Revenue-generating elements: Lease-to-own EVs, swap-as-a-service models, EV taxi platforms.
- Financial modeling: Show break-even points, lease vs. fuel savings, or battery payback for drivers/operators.

Risk Allocation

- Government to cover policy/regulatory risks.
- GCF concessional finance to de-risk early adoption or demand uncertainty.

8 *Augustine, Abraham. "Ampersand's Electric Motorbikes Could Help Kenya's EV Market Grow."* ***Rest of World****, 2024.*

9 *Global Green Growth Institute. "Six Ways Rwanda Is Building Resilient and Sustainable Transport Systems."* ***Global Issues****, May 4, 2022.*

Innovative Financing Structures

- Battery-swapping networks (e.g., Ampersand, Spiro).
- On-lending via local FIs (e.g., for driver asset ownership).
- PPP models for infrastructure deployment.
- Performance-based leasing (swap or distance-based).

Ownership and O&M Considerations

- Ownership models: Who will own the transport assets (e.g., buses, depots, charging infrastructure)? Options may include:
  - ◊ Public ownership (e.g., government or municipal agency).
  - ◊ Private operators (e.g., under leasing or concession agreements).
  - ◊ Cooperatives or public-private joint ventures
- Operations and maintenance (O&M): Who will operate and maintain the fleet and infrastructure? For example:
  - ◊ Public agency O&M with contracted private services.
  - ◊ Fully private operators under performance-based service contracts.
  - ◊ Outsourced maintenance agreements for electric buses and chargers.
- Cost recovery mechanisms: How will operational and maintenance costs be recovered?
  - ◊ Through user fees (e.g., fares, swap fees).
  - ◊ Public subsidies or service payments (especially in low-income corridors).
  - ◊ Blended mechanisms combining farebox revenue with climate finance or government contributions.

Demonstrate how GCF support raises project viability, e.g., increasing EIRR from 5% to >15%, or making lease payments affordable to low-income users.

Table 7: Key Metrics for E-Mobility

Indicator	Indicator Value	Benchmark Source
Lifespan	10 - 15 years (typical EV asset life assumed)	FP237, GCF guidance
Cost per tonne CO_2 avoided	$20–$60/tCO_2e (e.g., FP237: $52.34; FP186: $21.89)	FP237, FP186
EIRR	10–20% (e.g., 16% in FP237)	FP237,
Annual GHG reduction	>50,000 - 200,000 tCO_2e/year in large-scale fleet transitions (typically approx. 400,000 tCO_2e/year)	FP186, FP237
Private capital leveraged	≥50%, target ratio ≥1:1 (e.g., FP237 achieved 62%)	FP237
Vehicle O&M cost savings	15–30% (e.g., TCO improvement from 1.31x to 1.15x vs diesel)	FP186
Modal Shift	Percentage of trips shifted from fossil-fuel vehicles to electric modes (% or km)	FP237
Jobs created	Technicians, drivers, service staff – estimate based on rollout size	GCF SAP Transport Guidance

People benefitting	Direct and indirect beneficiaries (e.g., drivers, passengers) – project-specific	FP 237
Battery reuse/ recycling	Highlight circular economy value chains or potential, grid/backup integration from reused batteries	FP237

Additional Indicators

- Time savings: E.g. Up to 20–80% per trip, monetized using average wage.
- GHG intensity: EVs emit up to 4x less CO_2/km vs. ICE (qualitative unless local test data).
- FIRR: Optional if fare/lease model or carbon revenue is included.
- Cost per tonne CO_2 (with GCF only): Can be used to demonstrate concessional efficiency.

5.1.2 Public Transit Infrastructure (Bus Systems, BRT)

Policy Alignment

Rwanda's transport strategy prioritizes a shift toward high-capacity, low-emission urban mobility, with strong emphasis on public transit infrastructure such as Bus Rapid Transit (BRT) systems. The Transport Sector Strategic Plan (TSSP) 2024–2029 calls for:10

- A modality shift to public transport.
- Scaling dedicated bus lanes from 0.6 km to 47.8 km in Kigali by 2028/29.
- Expanding scheduled intercity routes by over 69 km.
- Introducing bus management systems, smart traffic signals, and upgraded junctions to reduce congestion.

These efforts support Rwanda's Updated NDC, which includes increasing public transit use and reducing urban GHG emissions through modal shift and low-emission transport modes. IFC and GGGI are supporting technical studies and pilots for e-bus deployment in Kigali, aligned with this framework.[11] Rwanda is advancing plans to implement Bus Rapid Transit (BRT) systems in Kigali to reduce congestion and enhance urban mobility. The proposed corridors—first identified in the Kigali City Master Plan—include a 17 km median-lane BRT route targeting up to 100,000 passengers per day, with projected commute time reductions of 25–40% and EIRRs ranging from 15–25%.[12] Recent initiatives, such as piloting dedicated bus lanes (DBLs) along key arterial roads, reflect steady progress toward implementation.[13] In addition, the government aims to electrify 20% of buses by 2030, which is projected to reduce emissions by an estimated 72,000 tCO_2e.[14] GCF support can accelerate this transition by financing climate-smart infrastructure, including e-bus fleets, intelligent transport systems, and resilient corridor design.

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10 Government of Rwanda (2024). ***Transport Sector Strategic Plan 2024/25–2028/29 (Abridged Version)****. Ministry of Infrastructure.*

11 Global Green Growth Institute (2022). ***GGGI and IFC Partner to Support Rwanda's Electric Bus Transition****. Available at: https://gggi.org/rwanda-aims-to-have-20-of-all-buses-transition-to-electric-by-2030*

12 JICA and Nippon Koei Co., Ltd. (2018). Data Collection Survey on Development of Urban Transport System in Kigali City – Final Report.

13 The New Times (2024). City of Kigali to Pilot Dedicated Bus Lanes. Available via allafrica.com (Accessed: 18 May 2025).

14 Global Green Growth Institute (2022). GGGI and IFC Partner to Support Rwanda's Electric Bus Transition. ***Available at:*** *https://gggi.org/rwanda-aims-to-have-20-of-all-buses-transition-to-electric-by-2030*

Current Pilots and Implementation

In addition to dedicated bus lanes and BRT corridor planning, several donor-supported projects are piloting innovative public transport improvements:

- Urban Mobility Improvement Project (JICA, 2024): Piloted operational reforms such as distance-based tariffs and scheduled bus timetables. A follow-up project is being prepared to install smart traffic signal systems in Kigali.[15]
- KOICA ITS Project (2025): Titled *"Improving the Green Mobility Service through ICT to Respond to Climate Change in Kigali City"*, this project will focus on Intelligent Transport Systems (ITS) to enhance public bus operations and route optimization.
- Kigali Urban Transport Improvement (KUTI) Project (AfDB): Aims to reduce urban congestion through major junction upgrades—such as underpasses, flyovers, signalisation—and the construction of new e-mobility infrastructure including NMT (non-motorized transport) facilities.[16]

Economic Analysis

BRT and optimized bus networks offer measurable economic benefits through increased system efficiency, time savings, and air quality improvements. BRT can cut commute times by up to 40%, and enables mass modal shift from informal or high-emission transport to efficient, low-cost transit systems.[17] These reductions are achieved through dedicated lanes, faster boarding, and optimized traffic management, enabling modal shift from high-emission transport to efficient, low-cost mass transit. In parallel to BRT development, Kigali's urban mobility strategy also promotes non-motorized transport (NMT) and multimodal integration as cost-effective, low-emission solutions. Investments in cycling lanes, pedestrian infrastructure, and transit hubs not only support last-mile connectivity but also deliver significant health and equity co-benefits. For example, Kigali's bi-weekly car-free days have contributed to an estimated 15% reduction in PM2.5 levels, demonstrating the potential of NMT to reduce urban air pollution. These measures also enhance mobility for low-income users and groups traditionally underserved by formal transport systems. GCF financing can help scale these interventions as part of a broader climate-smart urban transport ecosystem.[18]

Concept notes should include Rwanda-specific quantifications of:

- GHG reduction per passenger-km or per bus life span.
- Time saved per passenger valued at average wage rates.
- O&M savings from cleaner, more reliable bus fleets.
- Economic productivity gains through congestion mitigation and improved access to jobs and services.

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15 MININFRA and JICA (2022). MININFRA and JICA Launch Urban Mobility Improvement Project in Kigali. Ministry of Infrastructure, Rwanda. Available at: https://www.mininfra.gov.rw/updates/news-details/mininfra-and-jica-launch-urban-mobility-improvement-project-in-kigali (Accessed: 9 June 2025).

16 African Development Bank (2023). Kigali Urban Transport Improvement (KUTI) Project – Appraisal Report

17 C40 Cities Climate Leadership Group (2016). Good Practice Guide: Bus Rapid Transit.

18 Kalisa, Egide, Andrew Sudmant, Remy Ruberambuga, and Jonathan Bower. From Car-Free Days to Pollution-Free Cities: Reflections on Clean Urban Transport in Rwanda. International Growth Centre, June 2021.

Health and environmental co-benefits (e.g., from air quality improvements) are significant, especially in congested urban corridors.

Financial Structuring

While infrastructure (e.g., BRT lanes, terminals, ITS systems) requires grant or concessional finance, buses and service operations can attract private investment under PPP or ESCO structures. Farebox revenues alone are insufficient, but viability can be improved through:

- Capital subsidies for electric buses (estimated at $40,000–$300,000 per bus).19
- Risk-sharing mechanisms for fare or usage shortfalls, such as:
  - ◊ Minimum revenue guarantees: Government ensures a baseline income if fare revenues fall below projections.
  - ◊ Viability gap funding (VGF): Public or donor co-financing covers the gap between operating costs and affordable fares.
  - ◊ Fare top-up subsidies: Government pays a per-passenger subsidy to make services financially viable.
  - ◊ Revenue risk pooling: Aggregating revenues across routes to offset low-performing corridors
  - ◊ Ridership-agnostic contracts: Operators are paid based on availability or distance (e.g., per km served), not fare revenue.
- Performance-based service contracts for operators.
  - ◊ Per-kilometer payments: Operators are paid for each kilometer driven, regardless of passenger numbers
  - ◊ Availability-based payments: Payments tied to bus availability and service hours rather than fare revenue
  - ◊ Service quality bonuses/penalties: Incentives or deductions based on reliability, punctuality, cleanliness, or customer satisfaction
  - ◊ Fuel or emissions efficiency incentives: Bonuses for meeting fuel or GHG reduction benchmarks
  - ◊ Maintenance-linked payments: Part of payments contingent on fleet condition or uptime

GCF precedent demonstrates a range of structuring options for BRT systems:

- Performance-based contracts for private bus operators, with payments linked to availability, km driven, and service quality (as used in FP085 – Karachi Green BRT).
- Leasing models, where buses are procured by the government or a public agency and leased to operators to reduce upfront capital requirements.
- Viability gap funding and fleet transition support to bridge the cost gap for low-emission buses or to facilitate the retirement of informal fleets (as in FP085's scrapping compensation mechanism).
- Farebox-independent payments, where operators are paid based on service delivery metrics, decoupling income from ridership fluctuations.

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19 Grütter Consulting (2021). Global Electric Bus Market Overview: Cost Structures, Financing Needs, and Funding Mechanisms. (Referenced in GCF FP085: Green BRT Karachi Proposal and related e-mobility financing analyses by Grütter Consulting)

- Revenue diversification, including advertising, real estate (e.g., station shops), or integrated mobility services (bike share, parking), to strengthen financial sustainability.

These structures improve bankability, reduce demand risk, and attract private operators into public transit ecosystems. These structures, proven in GCF-funded BRT projects, should be clearly referenced in Concept Notes that involve PPPs, leasing models, or blended finance solutions for fleet and infrastructure.

Concept notes should:

- Clearly separate infrastructure and rolling stock finance.[20]
- Identify blended finance instruments for each component.
- Include simple models showing EIRR uplift from concessionality (e.g., from 8% to 15%)/

Ownership, operations, and cost recovery mechanisms (e.g., user fees, government service payments) must be clearly articulated.

Table 8: Key Metrics for Public Transit Infrastructure

Indicator	Indicator Value	Benchmark Source
Lifespan	25–30 years (BRT infrastructure); 12–16 years for buses	FP195, FP085
Cost per tonne CO_2 avoided	$23.21 (FP195) - $224.23 (FP085), ranges from $97–$476 internationally; average ~$227	Grütter Consulting, FP195, FP085, FP225
EIRR	14–18% (e.g., 18% in FP085; 14–16% with GCF in FP195)	FP085, FP195
Annual GHG reduction	87,000 tCO_2e/year (FP085); 160,000 tCO_2e/year (FP195, multi-country fleets)	FP195, FP085
GHG reduction per bus	412–1,521 tCO_2e/bus over lifespan	Grütter Consulting (cited in multiple GCF proposals)
GHG reduction per passenger	Project-specific; can be calculated based on modal shift and increased ridership	
Cost per passenger-km improved	$0.05–$0.10, depending on occupancy, route density, and operational structure, based on international BRT benchmarks	C40 Cities (2016)
Commute time savings	20–40% reduction ((Karachi: $59M/year in monetized benefits; Rio BRT: up to 55% time reduction)	C40 Cities, FP085

20 In transport projects, infrastructure (e.g., BRT lanes, stations) is typically financed through public or concessional sources, while rolling stock (e.g., buses) may attract private capital through PPPs, leasing, or fleet service contracts. Separating these components helps clarify ownership, risk allocation, and blended finance structure

Private capital leveraged	≥50%, 67% (FP195), 91.6% (FP085)	FP195, FP085
Ridership increase	High-volume corridors (e.g., 200,000+ riders/year). Example: Karachi BRT: 320,000 daily passengers projected.	FP085
CAPEX subsidy per bus	$40,000–$300,000 (depending on size and powertrain). Subsidies typically cover 80–100% of the incremental cost (i.e., the price difference between diesel and low-emission alternatives).	Grütter Consulting, FP085 (qualitative range)
Reduced vehicle O&M costs	20–35% savings compared to diesel fleets	FP085, FP195, Grütter Consulting
Time saved per passenger	Time savings monetized at USD 59 million per year in FP085 (part of EIRR calculations); actual reduction varies by corridor and mode. International BRT examples (e.g. Rio's TransOeste) report travel time cuts of up to 55%.	FP085, C40 Cities[<?>]
Emission grid factor	Varies by country: e.g., Panama 0.230; Uruguay 0.065; Rwanda 0.49 tCO_2/MWh; average ADB program countries ~0.205 → The higher the grid emission factor, the greater the CO_2 savings from switching from diesel to electric buses	FP195 Annexes, national inventories, NDC tracking report[<?>]

Additional Indicators

- Health impacts: Improved air quality contributes to lower rates of respiratory and cardiovascular diseases, especially in urban and vulnerable populations.
- Urban livability enhancements: Less traffic noise, improved pedestrian safety, and increased promotion of non-motorized transport (e.g., cycling infrastructure).
- Road safety benefits: Reduced fatalities and injuries due to safer bus infrastructure, bike lanes, and a shift from informal to regulated transit systems.
- Gender equity and access: Share of female passengers projected to rise from under 10% to 20%, supported by design features such as universal access, station lighting, and safety measures.
- Economic co-benefits: Fuel and pollution-related cost savings, with potential job creation in EV operations, maintenance, and local manufacturing.
- Social inclusion: Priority seats, station design, and safety protocols enhance access for elderly passengers, persons with disabilities, and low-income users.

- Battery lifecycle considerations: Despite challenges in data gathering, capturing the lifespan of existing batteries and battery recycling ratios can offer valuable inputs for financial and sustainability analysis, particularly when evaluating long-term operating costs and circular economy impacts.

5.1.3 Climate-Resilient Road Infrastructure

Policy Alignment

Rwanda's road network is increasingly vulnerable to climate-related disruptions such as flooding, landslides, and soil erosion, especially in hilly and rural regions. Climate-resilient Road infrastructure is a national priority under the Green Growth and Climate Resilience Strategy (GGCRS), the Updated Nationally Determined Contribution (NDC, 2020), and the Transport Sector Strategic Plan (TSSP) 2024–2029, which mandates the integration of climate risk into all road planning and investments. The TSSP outlines a target to construct and rehabilitate over 800 km of resilient roads (including feeder and national roads), integrate nature-based solutions, and promote climate-resilient design standards such as improved culverts, slope stabilization, and drainage channels.21 This approach is reflected not only in national frameworks but also in recent GCF investments in Rwanda. For example, FP245 (Green City Kigali) integrates climate-resilient road and drainage infrastructure to manage flood and landslide risks in hilly terrain, in line with Rwanda's adaptation priorities.22

Concept notes should reference these national frameworks and justify design elements using local climate risk data, rainfall projections, and vulnerability assessments. Where applicable, proposals should cite Rwanda's Guidelines on Disaster and Climate Resilient Road Infrastructure and ESIA reports.

Economic Analysis

Resilient roads reduce economic losses from service interruptions and emergency repairs. In Rwanda, these risks are not theoretical: the 2007 floods caused an estimated $4–22 million in infrastructure damage in just two districts.23 More recently, the 2023 floods resulted in 131 fatalities, displaced over 5,000 households, and caused an estimated $193 million in damage, including to roads and bridges.[24]

Concept notes should quantify the economic and connectivity benefits of road resilience measures. While context-specific, studies and national experience suggest that climate-proofed feeder roads can significantly reduce closure days, protecting access to markets, healthcare, and schools. Concept notes should quantify:

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*21 Government of Rwanda (2024). **Transport Sector Strategic Plan 2024/25–2028/29 (Abridged Version)**. Ministry of Infrastructure.*

22 Green Climate Fund (2022). Funding Proposal FP245: Green City Kigali – Rwanda. Submitted by the Rwanda Green Fund (FONERWA).

23 Stockholm Environment Institute (SEI) and Rwanda Environment Management Authority (REMA) (2009). The Economics of Climate Change in Rwanda.

24 World Bank (2024). Rwanda Disaster Risk Management Development Policy Credit with a Catastrophe Deferred Drawdown Option (Cat DDO) – Project Appraisal Document (P181603). Washington, D.C.: World Bank Group.

- Avoided damage and repair costs (e.g., $/km/year)
- Time and productivity losses averted due to uninterrupted access
- Value of goods transported through all-season corridors
- Impact on market connectivity and trade resilience

Where a full cost-benefit analysis is not feasible, proxy indicators can be used to strengthen the adaption case:

- Number of flood-free travel days added
- Percentage reduction in outage days

A strong GCF precedent is FP085 (Green BRT Karachi), which incorporated a suite of climate-resilient infrastructure features—including bioswales, permeable pavements, and elevated lane segments—across 18.9 km of road. These measures added an estimated $10.2 million in adaptation costs, of which $7 million was financed by GCF grants. The adaptation rationale emphasized flood risk reduction, uninterrupted service for 1.5 million residents, and reduced long-term maintenance costs.[25] Concept notes should reference baseline vulnerability data and align with GCF's Adaptation Result Areas, especially "Increased resilience of infrastructure and the built environment to climate change threats."

The Climate-Resilient Feeder Roads component under the Rwanda Urban Development Project (RUDP) supported by the World Bank delivered upgraded feeder roads across secondary cities, including improved drainage and slope stabilization. Key results included an 80% reduction in annual road closures, all-weather access for over 600,000 people, and more than 500 km of roads rehabilitated. GCF concept notes can build on this model by explicitly integrating climate-proofing and aligning with adaptation finance principles.26

Financial Structuring

Rural and resilient road infrastructure generally requires public or donor financing due to limited direct revenue streams. However, developers should assess opportunities for blended finance—for example, combining a World Bank loan for basic road works with a GCF grant for climate-resilient design. Performance-based maintenance contracts with local SMEs can improve quality and sustainability while creating local jobs. Where feasible, projects can explore insurance mechanisms or resilience bonds, though simplicity should be prioritized at the concept stage. Where appropriate, integrate nature-based solutions (NBS) such as vegetative slope stabilization, riparian buffers, or floodplain restoration to reduce runoff and enhance climate resilience at lower cost.[27]

25 Green Climate Fund (2018). Funding Proposal FP085: Green BRT – Karachi, Pakistan. Submitted by the Asian Development Bank (ADB).

26 World Bank. Implementation Status & Results Report: Rwanda Feeder Roads Development Project (P126498). Washington, D.C.: World Bank, January 22, 2024

27 Green Climate Fund (2022). Low-Emission Transport Sectoral Guide (Consultation Version 1). Incheon, South Korea: Green Climate Fund.

Grants should cover incremental climate-resilience costs (e.g., raised embankments, oversized culverts), with co-financing through government budgets or MDB loans. Design and analysis should follow principles outlined in the GCF Low-Emission Transport Sectoral Guide, including use of lifecycle costing, avoided service disruption metrics, and resilience-informed maintenance planning. Concept notes should also describe how long-term operation and maintenance will be financed, such as through earmarked government allocations, performance-based SME contracts, or donor-supported technical assistance. GCF concessionality should not only bridge financing gaps but also catalyze systemic change in how resilient infrastructure is planned and financed. This can include:

- Reducing interest rates on blended finance instruments to improve affordability for subnational governments or SMEs.
- Extending tenors for MDB co-loans to improve project bankability in climate-vulnerable areas.
- Supporting performance-based maintenance models that reward long-term resilience outcomes (e.g., uptime-linked SME contracts).
- Funding technical design upgrades that demonstrate the value of climate-proofing to domestic stakeholders—helping shift planning standards over time.

Table 9: Key Metrics for Climate-Resilient Road Infrastructure

Indicator	Indicator Value	Benchmark Source (GCF Proposal)
Reduction in road outage days	PProject-specific; expected decrease in days roads are impassable due to flooding/ landslides. RUDP I: ~29.9 km of drains constructed, improving stormwater management and reducing local flooding.	RUDP I ICR (World Bank); FP085
Kilometers of road made resilient (to 1-in-50 or 1-in-100-year storm events).	RUDP I: ~89.3 km of urban roads rehabilitated or constructed; RUDP II targets ~500 km roads/drainage improvements across secondary cities.	RUDP I ICR; RUDP II PAD
Avoided damage cost per year	Quantified based on historical data and projections. $50,000–200,000/km/year (context dependent)	FP085 (time/O&M savings); weADAPT case studies; RUDP I data
Number of people with year-round access	Project-specific; quantify beneficiaries. RUDP I: ~153,254 people within 500m of all-season roads (target 118,805, exceeded). RUDP II flood risk/wetland interventions to benefit ~220,500 people in Kigali.	RUDP I ICR; RUDP II PAD

Average annual maintenance cost per km	Unpaved / feeder roads: ~$5,000–15,000/km/year (East Africa, DFID, Uganda studies). Paved / BRT/arterials: ~$15,000–30,000+/km/year.	DFID "Cost of Roads in Africa"<?>; Uganda road O&M studies<?>; AfDB<?>
Economic Internal Rate of Return (EIRR)	>10% (e.g., Karachi BRT: 20%)	FP085
Leverage ratio (GCF: co-financing)	1:1 or higher for private-sector components	

Additional Indicators

- Health & safety: Reduced accidents and injuries caused by landslides and degraded roads (e.g. 80% reduction in annual road closures in Rwanda RUDP project).
- Gender-sensitive access: Maintained mobility for women and children to clinics, markets, and schools during rainy seasons.
- Job creation: Employment through SME-led road maintenance contracts.
- Environmental co-benefits: Improved drainage and erosion control; reduced sedimentation in waterways.

5.2 AGRICULTURE

Policy Alignment

Agriculture is recognized as a cornerstone of Rwanda's climate and development agenda. It remains the largest employer—absorbing over 70% of the workforce—and contributes approximately 31% of national GDP.[28] At the same time, it is both the most climate-exposed and one of the most emission-intensive sectors. Over 50% of national GHG emissions are attributed to agriculture, primarily through enteric fermentation in livestock, manure management, rice cultivation, and land degradation.[29] Simultaneously, agricultural productivity and rural livelihoods are increasingly threatened by erratic rainfall, prolonged droughts, soil erosion, and flooding. In response to this dual challenge, climate-resilient and low-emission agriculture is prioritized across Rwanda's core policy frameworks and institutional mandates.

GCF concept notes should clearly demonstrate alignment with national strategies, as well as how proposed interventions contribute to the three paradigm-shifting investment pathways outlined in the GCF Agriculture and Food Security Sectoral Guide (2021):30

1. Resilient agroecological transitions
2. Climate-informed advisory services and risk management
3. Inclusive food system transformation

Key national frameworks include:

- The Strategic Plan for Agriculture Transformation (PSTA V, 2024/25–2028/29)[31]:

28 Rwanda Development Board (RDB). **Investment Opportunities in Agriculture.** Available at: https://rdb.rw/investment-opportunities/agriculture

29 Republic of Rwanda (2020). **Updated Nationally Determined Contribution (NDC).** Kigali, Rwanda.

30 Green Climate Fund (2021). **Sectoral Guide: Agriculture and Food Security**. Green Climate Fund, Incheon, Republic of Korea.

31 Republic of Rwanda, Ministry of Agriculture and Animal Resources (MINAGRI). **Strategic Plan for Agriculture Transformation (PSTA**

Launched in March 2024, PSTA V is Rwanda's fifth agricultural strategy and the first explicitly aligned with climate resilience and food systems transformation. It builds on PSTA IV's productivity and market integration goals, placing greater emphasis on sustainability, private sector engagement, and climate-smart practices. PSTA V targets 8.2% annual sector growth, nearly $2B in agri-export revenue, and over 644,000 new off-farm jobs, with a total budget of $5.4 billion (47% public, 53% private and donor-funded). Key priorities include:

- Scaling climate-resilient production through agroecology, soil health, and sustainable inputs
- Expanding irrigation with improved efficiency and off-grid technologies.
- Enhancing climate risk management via early warning systems, insurance, and advisories.
- Strengthening food system transformation through post-harvest handling, nutrition, and local value addition.
- Increasing private sector investment in green agri-technologies and inclusive input delivery.
- Updated Nationally Determined Contribution:[32] Agriculture is a central pillar of Rwanda's NDC for both mitigation and adaptation:
- Mitigation targets: agroforestry expansion, biogas from manure, composting, and improved fertilizer management to reduce CH_4 and N_2O emissions.
- Adaptation measures: drought-tolerant crops, water harvesting, improved extension services, and diversified food systems.
- Green Growth and Climate Resilience Strategy (GGCRS, 2023 update):[33] The revised GGCRS prioritizes nature-based solutions (NbS) and sustainable land use as key pathways for both climate mitigation and adaptation in the agriculture sector. It calls for scaling up climate-smart agriculture (CSA), including agroforestry, conservation practices, and integrated watershed management. While the strategy does not include numeric targets such as 100% agroforestry adoption, it emphasizes:
- Promoting agroforestry and soil restoration as part of broader land use planning and rural resilience.
- Restoring degraded agricultural lands through sustainable and context-appropriate agroecological approaches.
- Integrating climate risk assessments and vulnerability mapping into agricultural investment planning and extension services.
- National Environment and Climate Change Policy (2020): Reinforces the integration of climate risk into all sectors and promotes conservation agriculture, sustainable land use, and climate-informed food systems.

V), 2024/25–2028/29. Kigali, Rwanda.

*32 Republic of Rwanda (2020). **Updated Nationally Determined Contribution**. Ministry of Environment.*

*33 Republic of Rwanda, Ministry of Environment (2023). **Green Growth and Climate Resilience Strategy: Updated Strategy and Implementation Roadmap 2023–2050**. Kigali, Rwanda.*

Concept notes should clearly articulate how proposed activities align with Rwanda's strategic priorities—such as enhancing food system resilience, restoring ecosystem function, and reducing rural poverty—while also delivering global climate mitigation and adaptation benefits. Proposals should also describe how GCF financing will build on existing national programs and explain how concessionality enables scale, innovation, or risk reduction. National and local ownership, particularly through cooperatives, agri-SMEs, and decentralized service delivery, should be emphasized to ensure sustainability and impact.

Economic Analysis

Agricultural climate investments in Rwanda deliver high economic returns by enhancing productivity, reducing losses, improving rural incomes, and generating co-benefits such as carbon sequestration and ecosystem restoration. GCF concept notes should present a robust economic case that demonstrates how proposed interventions will yield measurable benefits under current and future climate scenarios.

- Yield and Food Security Gains: Climate-smart agriculture (CSA) practices such as soil erosion control, water harvesting, and drought-resistant crops can increase yields by 20–30%, particularly in rainfed and erosion-prone areas. For example, the Transforming Eastern Province through Adaptation project (FP167) in Rwanda aimed to restore 17,945 ha using integrated hillside management—including terracing, composting, and rainwater harvesting. The economic analysis projects an Economic Internal Rate of Return (EIRR) of 10.1% based on direct financial benefits, and over 40% when including co-benefits such as carbon sequestration and time savings, with abatement costs as low as $5.13 per tCO_2e avoided.[34]
- Loss Prevention and Resilience: Irrigation and post-harvest technologies mitigate climate risks like rainfall variability and spoilage. FP257, a multi-country post-harvest loss reduction initiative, achieved an EIRR of 56%, ENPV of $69 million, and a BCR of 8:1, by reducing aflatoxin exposure, improving nutrition, and strengthening food system resilience.[35]
- Income and Livelihood Enhancement: Diversification into high-value crops and processing activities improves household incomes and resilience. For example, FP255 achieved a 23–25% FIRR and BCR of 1.11–1.13 across climate scenarios. Farmers generated higher returns from the same land using CSA practices, enhancing profitability even under RCP 8.5 stress testing.[36]

- Carbon and Ecosystem Co-Benefits

Agroforestry, composting, and manure management enhance soil health and sequester carbon. In FP217, Rwanda's Congo Nile project, agroforestry interventions covering 3,346 ha resulted in an EIRR of 49% and a cost per beneficiary of $31–$40

34 Green Climate Fund (2017). Funding Proposal FP167: Transforming Eastern Province through Adaptation. Submitted by the Ministry of Environment, Rwanda

35 Green Climate Fund (2021). Funding Proposal FP257: Post-Harvest Loss Reduction and Agri-Food Systems Resilience. Submitted by the Food and Agriculture Organization of the United Nations (FAO).

36 Green Climate Fund (2020). Funding Proposal FP255: Promoting Climate-Resilient Agriculture in Highland Ethiopia. Submitted by the Ministry of Finance, Ethiopia.

Valuation Metrics and Shadow Pricing

GCF concept notes must quantify both direct and indirect benefits of proposed interventions. Where full CBA is not feasible, Rwanda-specific proxies or international benchmarks should be used. The following metrics are recommended:

- Shadow carbon price for internal valuation: $40–80/$tCO_2e$ (used to monetize mitigation benefits).[37]
- Water productivity: Measured in kg/m^3 of water used (e.g., for irrigation or processing).
- Avoided yield loss: Expressed in $/ha or % avoided vs baseline.
- Post-harvest loss reduction: Quantified in tons/year or % of annual production preserved.
- Value of ecosystem services: Where applicable, include monetized benefits from erosion control, groundwater recharge, or pollination.

All assumptions should be transparent and linked to risk reduction strategies—for example, irrigation reduces rainfall dependency, while CSA practices buffer yield volatility.

Where direct cost-benefit data is unavailable, use Rwanda-specific benchmarks or regional proxies. Projects must clearly justify assumptions and highlight risk mitigation mechanisms (e.g., irrigation reducing dependency on rainfall, CSA reducing exposure to shocks).

Financial Structuring

Agriculture projects typically involve rural, low-income beneficiaries and contain strong public-good elements, making full cost recovery and commercial viability challenging. As such, blended finance is essential to de-risk investments, crowd in private capital, and support scale. GCF concessionality can play a catalytic role by:

- Grant funding: For farmer extension services, climate advisory systems, input subsidies for vulnerable groups, and small-scale rural infrastructure (e.g., seedbanks, storage units).
- Concessional loans and credit lines: For productive assets such as solar irrigation, cold storage, processing equipment, or biodigesters. These can be deployed via the Rwanda Green Investment Facility (RGIF), BRD, or SACCOs.
- Guarantees and first-loss capital: To incentivize domestic financial institutions to lend to agri-SMEs, cooperatives, or informal producer groups with higher perceived risk.
- De-risking mechanisms: Such as bundling CSA lending with weather-index insurance, providing TA to agri-finance institutions, or embedding climate data into credit scoring. Example: FP262 (Senegal) will deploy a dedicated concessional credit facility to finance over 150,000 biodigester-linked loans over 20 years.[38]

Projects should clearly explain financing structure, exit strategy, and how concessionality improves financial viability—e.g., raising FIRR from 5% to 15%, or making irrigation affordable to female-headed households. GCF concessional finance should go beyond affordability to drive long-term transformation in agricultural finance systems. For example:

- Subsidizing initial CSA investments to prove viability and crowd in domestic lenders.

37 World Bank (2024). **2024 Guidance Note on Shadow Price of Carbon in Economic Analysis**. Washington, DC: World Bank Group.

38 Green Climate Fund (2022). Funding Proposal FP262: Program for Scaling Up the Use of Biodigesters in Senegal. Submitted by the Ministry of Environment and Sustainable Development, Senegal.

- Offering below-market rates to encourage MFIs and SACCOs to lend to traditionally excluded groups, such as informal cooperatives or women-headed farms.
- Financing outcome-based pilots (e.g., pay-for-performance CSA lending) that de-risk innovation and generate data for future replication.
- Bundling loans with weather-index insurance or soil health guarantees to improve perceived creditworthiness and reduce default risk.

Table 10: Key Metrics for Agriculture

Indicator	Indicator Value	Benchmark Source
Lifespan	20–25 years	FP262 (20 years), SAP045 (25 years)
Yield increase	20–100% depending on crop and technique (e.g., CSA, agroforestry, mulching, water harvesting)	FP220 (30–100% depending on technique and crop)
Cost per hectare (climate-resilient)	$250–$500	FP167, GCF Agriculture Sectoral Guide
Cost per beneficiary	$20–$101 (e.g., FP167: $89; FP256: $101)	FP167, FP217, FP256
Financial IRR (FIRR)	>10% (e.g., FP255: 23%, FP167: 10%, FP256: 171%)	FP167, FP255, FP256
Economic IRR (EIRR)	>12–40% (e.g., FP256: 12–26% with GHG value)	FP167, FP255, FP256
Annual GHG reduction (tCO_2e)	≥200,000–3.76 million tCO_2e depending on scope	FP167, FP262
Cost per tCO_2e avoided	$5–$44 (e.g., FP167: $5.13; FP256: $7.22; FP243: $44)	FP167, FP243, FP256
Jobs created	~1,000–5,000 across CSA value chains and FL-RS	FP256, FP257
Land improved	10,000–91,000 ha under climate-resilient or agroforestry use	FP167, FP217, FP256
Direct beneficiaries	>100,000–2.6 million (e.g., FP167: 556,252; FP257: 2.63 million)	FP167, FP257
Inclusion of women/youth	≥40% of beneficiaries	FP256, FP257
Shadow carbon price used in economic analysis	$40–$80/tCO_2e	World Bank (2024)
Post-harvest loss reduction	From 26–37% to 3–12%	FP257
Avoided yield loss under CSA/climate stress	10–20% yield preserved	SAP045, FP220

Additional Indicators

- Soil health: Reduction in erosion and increased soil organic matter content.
- Water access: Improved year-round water availability for irrigation and household use.
- Time savings: Reduced time spent collecting fuelwood and water (e.g., 1–2 hours/day saved, especially for women).
- GHG co-benefits: Reduced emissions from biomass use and increased carbon sequestration via agroforestry.
- Health improvements: Lower incidence of respiratory illness from reduced indoor air pollution.
- Biodiversity: Increased on-farm biodiversity from intercropping and agroecological practices.
- Food security: Reduced hunger months; improved dietary diversity scores.
- Gender empowerment: Increased women's participation in producer groups, financial services, and decision-making.
- Job creation: Employment in CSA input supply, agro-processing, and land restoration activities.
- Financial inclusion: Uptake of rural credit, savings, or insurance products among target beneficiaries.

5.3 CITIES, BUILDINGS AND URBAN SYSTEMS

Policy Alignment

Urban systems are central to Rwanda's low-carbon, climate-resilient development pathway. Urbanization is projected to rise from 18% today to 70% by 2050,[39] placing increasing pressure on infrastructure, land, and services while offering opportunities for climate-smart growth. Globally, urban areas responsible for between 71% and 76% of CO_2 emissions from global final energy use.[40] At the same time, cities face rising risks from climate impacts such as flooding, heat stress, and overburdened infrastructure. Recent flood events in Kigali and secondary cities have caused loss of life, damaged homes and roads, and disrupted economic activity.

GCF concept notes in this sector should demonstrate alignment with national and city-level strategies while contributing to the dual GCF result areas of:

- Mitigation: low-emission buildings, cities, industries and appliances
- Adaptation: resilient infrastructure and built environment

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39 Republic of Rwanda. ***Vision 2050: Abridged Version****. Kigali: Ministry of Finance and Economic Planning, 2020.*

40 Intergovernmental Panel on Climate Change (IPCC). ***Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change****. Edited by P.R. Shukla, J. Skea, R. Slade, A. Al Khourdajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, and J. Malley. Cambridge, UK and New York, NY: Cambridge University Press, 2022*

Emphasis should be placed on:[41]

- Building energy efficiency
- Climate-resilient housing and infrastructure
- Sustainable water and waste systems
- Urban planning and spatial development

Urban climate projects in Rwanda must demonstrate clear alignment with national strategies and city-level planning frameworks. GCF prioritizes country ownership, meaning concept notes must not only cite relevant policies but explain how the proposed interventions concretely support the government's urban development and climate objectives. Establishing this alignment is critical to show that the project is embedded in Rwanda's broader policy landscape and that it reinforces, rather than duplicates, existing efforts.

Key policies to reference and align with include:

- Kigali Master Plan 2050 (2020):[42] Supports high-density, climate-resilient urban growth with integrated land use, transport corridors, and green public spaces.Kigali city planners in their plans to accommodate a population of 3.8 million residents and provide 1.8 million jobs by 2050.
- The National Land Policy (2019 revision): Promotes productive, equitable land use and resilient settlement planning.[43]
- National Urbanization Policy (2015):[44] Promotes inclusive and climate-resilient urban development through compact cities, sustainable infrastructure, and enhanced planning systems across Rwanda's secondary cities (MININFRA, 2025).
- Green Growth and Climate Resilience Strategy (2023 update): Identifies cities and urban systems as priority areas for both mitigation (building efficiency, clean transport) and adaptation (flood protection, NBS).
- Green City Kigali (GCK)[45] & National roadmap for Green Secondary Cities Development (GGGI):[46] Serve as operational models for integrated, inclusive, low-carbon city development (e.g. integrating affordable green housing, renewable energy, and climate-smart infrastructure).
- Rwanda Green Building Minimum Compliance System (2019): Mandates green design for new commercial buildings, with voluntary adoption encouraged for residential developers

Economic Analysis

A robust economic case underpins the rationale for GCF investment in urban climate projects. It should clearly demonstrate that the proposed interventions deliver strong value for money, reduce long-term climate risks, and produce measurable socio-economic gains. Concept notes

41 *Green Climate Fund (2023).* ***SAP Technical Guidelines: Cities and Climate Change****.*

42 *City of Kigali (2020).* ***Kigali Master Plan 2050 – Implementation Plan***

43 *Republic of Rwanda, Ministry of Environment (2019).* ***Revised National Land Policy – Final Version***

44 *Republic of Rwanda, Ministry of Infrastructure (2025).* ***National Urbanisation Policy****.*

45 *City of Kigali (n.d.).* ***Green City Kigali – The Vision****.*

46 *Government of Rwanda and Global Green Growth Institute (2015).* ***National Roadmap for Green Secondary City Development****.*

must articulate both direct financial benefits (e.g., reduced energy costs) and broader societal value (e.g., avoided disaster recovery costs, health improvements), ideally monetizing these where data is available.

Concept notes should quantify both direct and indirect benefits, such as:

- Energy Efficiency and Emissions Reduction
  - ◊ Retrofitting public and residential buildings can reduce energy consumption by 20–60%. These translate into lower energy bills and avoided GHG emissions when benchmarked against Rwanda's grid emission factor.
  - ◊ FP22147 (RGIF) estimated 27,257 tCO_2e avoided over 20 years from green housing and electric bus deployment in Kigali.
  - ◊ In FP073 (Gicumbi)48, energy efficiency upgrades at Mulindi Tea Factory—including improved driers, wood drying infrastructure, and variable speed drives—resulted in cumulative emissions reductions of 12,963 tCO_2e. These interventions were paired with capacity building and are being scaled to other tea factories.49
- Avoided Damages and Risk Reduction
  - ◊ Drainage and flood management systems can prevent millions in losses. Infrastructure upgrades—like flood management systems or climate-resilient housing—can prevent millions in damage from extreme weather. Use historical flooding data (e.g. from 2019 events in Kigali) to quantify these avoided costs.
  - ◊ FP245 (GCK) estimates $5.4 million in urban assets protected through resilient infrastructure in informal settlements, including drainage channels, housing retrofits, and ecosystem restoration. The estimated cost per beneficiary ranged from $50–200, in line with GCF benchmarks.50
- Health and Livability Improvements
  - ◊ Reduced exposure to pollutants, improved sanitation, and better housing design lower disease burdens and health costs. Where possible, assign monetary value to reductions in respiratory or waterborne illnesses. Improved housing, access to clean water, and reduced exposure to floods and pollutants enhance public health and reduce healthcare costs.
  - ◊ Time savings from walkable cities and clean transit increase worker productivity.
  - ◊ FP077 (Mongolia) valued air quality and respiratory health co-benefits using DALY (Disability-Adjusted Life Year) models, showing significant gains in low-income urban communities. These methods can be replicated in Rwandan contexts where indoor pollution and open drainage are public health risks.51

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47 *African Development Bank (2023).* ***FP221: Rwanda Green Investment Facility (RGIF).*** *Green Climate Fund.*

48 *Ministry of Environment, Rwanda (2018).* ***FP073: Strengthening Climate Resilience of Rural Communities in Northern Rwanda.***

49 *Ministry of Environment, Rwanda (2024).* ***FP073: Strengthening Climate Resilience of Rural Communities in Northern Rwanda – Annual Performance Report for Calendar Year 2023.*** *Green Climate Fund.*

50 *Green Climate Fund (2023).* ***FP245: Climate Resilient Urban Human Settlements in Rwanda (Green City Kigali Pilot).***

51 *Green Climate Fund (2018).* ***FP077: Upscaling Renewable Energy Sector to Support NDC Targets in Mongolia***

- Property Value and Productivity Gains
  - ◊ Upgraded infrastructure enhances land and property values, while NBS (e.g., urban wetlands) support food security and microclimate control.
- Financial Returns
  - ◊ Green urban infrastructure often yields EIRRs of 10–20%+, especially when co-benefits are considered.
  - ◊ In FP221 (RGIF), GCF funding is expected to leverage approximately $3.30 in public and private co-financing for every $1 of GCF investment, including loans from EIB, AFD, and private climate funds, as well as grants from FCDO and DANIDA.
  - ◊ *FP194 (PEEB* Cool) targets an EIRR of 48.5% through energy-efficient building design. GCF concessionality was specifically sized to offset incremental debt service for green upgrades, ensuring affordability and high returns for building retrofits. This illustrates the importance of targeted concessionality: by offsetting only the incremental cost of green improvements, projects can achieve strong financial and development returns while maintaining cost discipline.52

Financial Structuring

Financing urban climate solutions in Rwanda requires tailored, often innovative approaches that blend concessional support with public and private capital. Many urban interventions—such as energy-efficient buildings, resilient infrastructure, or green affordable housing—face high upfront costs and uncertain revenue streams. Therefore, strong financial structuring is essential to demonstrate project bankability, affordability for beneficiaries, and long-term sustainability. The concept note should clearly explain how GCF financing will be used to de-risk investments, close viability gaps, or create market incentives, while leveraging domestic and international capital.

Key structuring options include:

- Blended Finance Approaches
  - ◊ Combine GCF concessional resources or sovereign loans with government, MDBs, or private capital. Clearly justify how each source is used and how GCF finance improves affordability or reduces perceived risk.
  - ◊ In FP077 (Mongolia), GCF grant and loan co-financed by ADB and domestic developers supported eco-districts, green housing, and solar heating. GCF concessionality was essential to meet viability thresholds; most subprojects had FIRRs < 9% without it.
  - ◊ In FP245 (GCK), 100% GCF grant was used to pilot climate-resilient infrastructure in informal settlements, with additional government and donor support anticipated for scaling under Green City Kigali.
- Green Mortgages and Housing Finance Models

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52 Agence Française de Développement (AFD) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) (2022). ***FP194: PEEB Cool – Promoting Climate-Friendly Cooling in Buildings through the Programme for Energy Efficiency in Buildings****. Green Climate Fund.*

- ◊ Use GCF guarantees or credit lines to enable concessional green mortgages and rental schemes for energy-efficient housing.
- ◊ Incentivize private developers with grants tied to performance on solar, insulation, and affordability metrics.
- ◊ FP073 (Gicumbi), while not a mortgage program, this project provided affordable green housing (~$11,500 per 4-room unit) using GCF grant financing to subsidize climate-resilient design (e.g., biogas-ready structures, water harvesting). Future scale-up could include low-cost green mortgage models.
- ◊ Potential Partners: Rwanda Housing Authority, BRD, or local MFIs.

- Guarantees and Risk Sharing Instruments
  - ◊ Address key risks that deter private sector participation in emerging green urban markets. Support PPPs in drainage, waste, and transport infrastructure through first-loss guarantees or viability gap subsidies.
  - ◊ In FP077 (Mongolia), GCF support de-risked subnational lending and promoted investment in low-income eco-districts. Instruments included subsidized interest rates and backstopping construction-phase risks.
  - ◊ Future Rwanda-based projects may leverage similar tools through BRD or RGIF for municipal retrofits, NBS infrastructure, or informal settlement upgrades.

- Public-Private Partnerships (PPPs) and ESCO Models
  - ◊ GCF can help structure PPPs for complex urban systems (e.g., waste, water, transit) by bridging viability gaps or providing project preparation support.
  - ◊ Energy Service Companies (ESCOs) can finance and implement energy efficiency retrofits in public or commercial facilities (e.g., hospitals, schools, housing), with repayments linked to verified energy savings.
  - ◊ Programs can deploy first-loss guarantees, technical assistance, and performance-based payments to de-risk ESCO projects in public buildings.
  - ◊ In FP010 (Armenia), GCF is supporting a revolving fund with result-based payments and partial guarantees through Armenia's Renewable Resources and Energy Efficiency Fund (R2E2) to enable ESCOs to retrofit public buildings, including schools.[53]
  - ◊ In FP194 (PEEB Cool), GCF support focuses on de-risking private ESCO lending by covering default risks and providing concessional finance through local financial institutions, aiming to catalyze large-scale energy efficiency investments across industrial and municipal sectors.
  - ◊ This model is directly applicable to Rwanda's emerging Super ESCO program, where GCF funding (via RGIF or FONERWA or a Super ESCO) could:
    - o Offer first-loss coverage or capital buffers to local ESCOs;
    - o Provide performance-based payments for verified energy savings;

53 *United Nations Development Programme (UNDP) (2016).* ***FP010: De-Risking and Scaling-up Investment in Energy Efficient Building Retrofits in Armenia****. Green Climate Fund.*

- Finance a revolving facility to support public building retrofits (e.g., municipal offices, hospitals, schools).

- Local Currency and Affordability Considerations
  - ◊ Projects serving low-income urban populations must demonstrate affordability and reduce currency risks
  - ◊ Structure loans in Rwandan Francs through BRD or RGIF to reduce FX risk.
  - ◊ Deploy PAYGO models for household systems (e.g., rooftop solar, sanitation).

In sum, the financial structuring narrative should convey how the proposed urban climate project uses GCF funding strategically—bridging financial gaps, lowering risks, and crowding in additional finance—while ensuring that solutions are accessible, replicable, and financially viable over time. Where relevant, reference Rwanda-specific instruments (RGIF, FONERWA), mechanisms (guarantees, ESCOs), and data (local interest rates, tariffs, willingness-to-pay studies) to ground the financial model in reality.

Table 11: Key Metrics for Cities, Buildings and Urban Systems

Indicator	Value / Range	Benchmark Source
Lifespan (public building post-retrofit)	20–25 years	FP051, FP010
GHG emissions avoided	15,000–137,000 tCO_2e/year	FP245, FP221, FP010
Energy efficiency improvement	20–60% energy savings	FP051, FP010, FP073
Cost per tCO_2e avoided	$7–$50 (e.g., FP051: $9/$tCO_2e$; FP073: $7.6)	FP051, FP073, FP245
Urban population with reduced risk	150,000–500,000 people	FP245, SAP Cities Guide
Public buildings retrofitted	100–430	FP051, FP010
Cost per urban beneficiary	$50–$200	FP245, FP073, GCF benchmarks
FIRR (with GCF)	>10% (up to 50% for energy efficiency)	FP073, FP077
EIRR	10–21%+	FP245, FP077
Green jobs created	200–1,500	FP156, FP073, FP245
Wetlands / green areas restored	20–120 ha	FP245, Nyandungu Eco-Park
Buildings with solar/EE upgrades	100–1,000+	FP010, FP245, FP221
Leverage ratio (GCF:co-financing)	1:1 to 1:3	FP245, FP221, FP077

Additional Metrics

- Emissions intensity: Reduction in kg CO_2e per m^2 of built area.
- Flood risk mitigation: % reduction in flood extent/damage or average outage duration during heavy rainfall (e.g., FP245 used 10 km of upgraded drainage to protect informal settlements).
- Water & sanitation access: e.g., "10,000 households connected to solar-powered water kiosks."
- Waste treatment: e.g., "30,000 tonnes/year diverted from open dumping to composting or recycling."
- Air quality improvement: Reduction in PM2.5, NOx emissions from clean transport or waste projects.
- Health benefits: Fewer illness cases or reduced healthcare costs from sanitation/air quality improvements.
- Access to urban services: Increase in households receiving clean energy, water, or mobility upgrades.
- Gender inclusion: Number of women-led SMEs supported or % of female-headed households benefiting.
- ESCO projects financed: e.g., "100 municipal buildings retrofitted via ESCO contracts."
- New dwellings i.e . 621 new dwellings under FP221 (RGIF)

6 RISK ASSESSMENT AND MITIGATION

Green Climate Fund (GCF) projects must demonstrate a clear understanding of major risks—financial, operational, climate-related, social, and institutional—and outline credible mitigation strategies. Effective risk management is not only a safeguard requirement but also strengthens the project's economic and financial case. Concept notes should link each risk to targeted mitigation measures and, where appropriate, show how GCF support reduces risk and improves bankability. This section provides a structured approach to identifying, assessing, and mitigating risks at the concept stage, with practical examples that enhance resilience and investor confidence.

6.1 KEY RISK TYPES

Financial Risks

These include volatility in financing terms, budget deviations, or co-financing shortfalls.

- Risk: Foreign exchange exposure – revenues in RWF but loan obligations in USD. Mitigation: Seek local currency financing where feasible; incorporate FX buffers in financial planning.
- Risk: Cost overruns during infrastructure procurement.

Mitigation: Allocate 10–15% contingency; use fixed-price contracts; conduct rigorous cost estimation and value engineering

- Risk: Insufficient co-financing secured at financial close.

Mitigation: Structure project in phases; secure letters of interest; identify alternative sources (e.g. private equity, public funds).

Economic and Market Risks

These affect demand, uptake, or expected benefits realization.

- Risk: Low beneficiary adoption (e.g. irrigation technology uptake by farmers). Mitigation: Conduct targeted sensitization; offer training and aftersales support; design incentives or flexible payment mechanisms.
- Risk: Delayed or lower-than-expected revenue generation.

Mitigation: Use conservative projections; build in buffer periods before repayments begin; consider blended finance to support early-stage operations.

Climate and Operational Risks

Risks from climate shocks, technical failure, or implementation delays.

- Risk: Infrastructure vulnerable to extreme climate events.

Mitigation: Apply climate-resilient design (e.g. 1-in-100-year flood standards); diversify site selection.

- Risk: Underperformance of new or unproven technology.

Mitigation: Engage experienced technical partners; offer TA and training; consider insurance or performance guarantees.

- Risk: Supply chain disruption for imported equipment.

Mitigation: Conduct early procurement planning; identify regional suppliers; maintain buffer stock of critical components.

Social and Institutional Risks

These include exclusion of vulnerable groups or weak delivery capacity.

- Risk: Project fails to reach targeted vulnerable populations.

Mitigation: Conduct participatory planning; apply inclusive design principles; monitor with disaggregated indicators (see Section 7).

- Risk: Limited institutional capacity for implementation.

Mitigation: Build capacity within executing agencies; hire experienced PMUs; partner with NGOs or private service providers where needed.

Policy and Regulatory Risks

Projects depending on new regulations or approvals may face delays or changes in enabling environments.

- Risk: Delays in permitting or absence of enabling regulation.

Mitigation: Engage relevant ministries and regulators from the outset; align with national programs; include policy support components where needed.

6.2. KEY RISK MITIGATION STRATEGIES

GCF-supported projects may benefit from additional de-risking tools that absorb or transfer risk to third parties:

- Insurance: e.g. agricultural index insurance, catastrophe risk insurance for infrastructure.
- Guarantees: partial credit or risk guarantees to reduce perceived risks for co-investors.
- Hedging instruments: to manage exposure to interest rate or currency fluctuations.

Linking Risk Mitigation to GCF Support

Risk analysis should clearly articulate how GCF instruments contribute to risk reduction or enable investment:

- "GCF concessional finance addresses a market failure where perceived risks prevent private investment."
- "Partial guarantees under the GCF facility will reduce default risk and improve terms for commercial co-financiers."
- "To mitigate climate-related risks, project design incorporates a +2°C temperature scenario and 20% increase in rainfall variability to ensure infrastructure and agricultural systems remain resilient under future climate conditions."

Overall, the concept note should present a well-structured risk profile, with mitigation strategies embedded in the technical design, financial structure, and institutional arrangements. Where GCF support is used to de-risk a project or unlock co-financing, this should be explicitly stated and justified. A well-articulated risk strategy signals project readiness and aligns with GCF's expectations for robust, climate-resilient investments.

6.3 ALIGNMENT WITH GCF RISK GUIDELINES (COMPONENT IV)

The Green Climate Fund's *Risk Guidelines for Funding Proposals (Component IV)* outline how the GCF Secretariat evaluates risk at both the project and portfolio level. Adopted under Decision B.17/11, the guidelines distinguish between execution risk, funding structure risk, legal and policy compliance, and overall portfolio concentration.[1]

Key features of the GCF risk review framework include:

- Project-level risk assessment covering implementation feasibility, co-financing uncertainty, technology risk, and social/environmental safeguards.
- Portfolio-level alignment to maintain balance across geographies, sectors, financial instruments, and Accredited Entities.
- Use of instruments like concessional finance, guarantees, or insurance to reduce perceived risk and unlock private capital.
- Compliance with the Accreditation Master Agreement (AMA) and the GCF's Investment Risk Policy.
- Review by internal bodies such as the Division of Mitigation and Adaptation (DMA), Private Sector Facility (PSF), and the Office of Risk Management and Compliance (ORMC).

While Section 6 of this document provides project-level risk categories and mitigation strategies tailored to concept note developers, this framework draws conceptually from the GCF's Component IV guidelines to ensure proposals align with Secretariat expectations and risk appetite.

1 *Green Climate Fund.* ***Risk Guidelines for Funding Proposals (Component IV).*** *Incheon, South Korea: GCF Secretariat, 2017. https://www.greenclimate.fund/document/risk-guidelines-funding-proposals-component-iv.*

7 STAKEHOLDER ENGAGEMENT

Effective stakeholder engagement is a cornerstone of high-quality concept notes and a key factor in strengthening the economic and financial case of a project. The Green Climate Fund (GCF) emphasizes inclusive and participatory design, which not only satisfies safeguard requirements but also enhances project viability, ownership, and sustainability. For REMA and Rwanda's National Designated Authority (NDA), strong stakeholder engagement demonstrates alignment with local priorities, reduces implementation risks, and validates key assumptions underlying the Economic and Financial Analysis (EFA).

Strong stakeholder engagement is a critical enabler of successful project implementation, robust economic analysis, and long-term sustainability. It validates assumptions, supports design refinement, ensures equitable impact, and strengthens country ownership. For concept notes submitted to GCF, project developers should demonstrate that key stakeholders have been consulted, and their input integrated into the project's technical, financial, and institutional design. REMA and the NDA should view stakeholder engagement not as a procedural formality, but as a strategic asset that enhances the quality, relevance, and credibility of the proposed project.

This section provides guidance on how to structure stakeholder engagement at the concept note stage to ensure alignment with Rwanda's governance structures and GCF expectations.

7.1 INSTITUTIONAL ENGAGEMENT AND COUNTRY OWNERSHIP

Stakeholder engagement should begin with ensuring country ownership at both national and subnational levels. The GCF defines country ownership as not only NDA involvement but also coordination with relevant ministries, agencies, and decentralized institutions.

Recommendations:

- Confirm and document NDA involvement. Indicate whether REMA or the Ministry of Environment was consulted and if the concept aligns with Rwanda's Country Programme, NDCs, or climate strategies.
- Engage relevant line ministries early—e.g., MINAGRI for agriculture, MININFRA or the City of Kigali for urban development, MINICOM for value chains. Example: *"The concept note was developed in collaboration with MINAGRI and incorporates feedback from district agricultural officers."*
- Include institutions with sectoral institutions where relevant (e.g., RURA, RSB, BRD).
- Validate financial assumptions through stakeholder input. For example: *"Discussions with farmer cooperatives confirmed the proposed irrigation fee of RWF 5,000/month is affordable."*

- Reflect stakeholder input in design decisions: *"Feedback from district engineers led to phasing the infrastructure component, reducing upfront capital pressure."*

This strengthens project logic, enhances assumption realism, and demonstrates buy-in from key implementation partners.

7.2 ENGAGING VULNERABLE GROUPS AND LOCAL COMMUNITIES

The GCF places strong emphasis on the inclusion of vulnerable populations—such as women, youth, low-income households, and those most at risk from climate change. Rwanda's decentralized governance and local planning structures make such engagement both practical and essential.

Recommendations:

- Clearly identify vulnerable groups that the project targets (e.g., female-headed households, smallholder farmers on fragile land, flood-affected urban communities).
- Document consultations with these groups during concept note preparation—or outline plans to do so. Example: *"The project will include participatory planning sessions with local women's cooperatives to tailor CSA interventions."*
- Reflect their input and preference the design and EFA: *"Women-headed households requested startup inputs in-kind rather than through loans; this was incorporated into the cost structure."*
- Involve district governments, sector-level officials, and community-based organizations (CBOs, CSOs) in planning and delivery.
- Emphasize bottom-up approaches and local ownership to improve sustainability and reduce delivery risks.

8 MONITORING AND EVALUATION (M&E)

At the concept note stage, a full Monitoring and Evaluation (M&E) plan is not required, but it is essential to outline how key economic and financial indicators will be tracked. Integrating Economic and Financial Analysis (EFA) metrics into the results framework signals that the project is grounded in value-for-money principles and creates continuity between justification, design, and implementation. This section provides guidance on incorporating EFA-relevant indicators into the project's logical framework (logframe) and theory of change, ensuring alignment with both GCF expectations and Rwanda's national M&E systems.1

8.1 DEFINING ECONOMIC AND FINANCIAL INDICATORS

When developing the results framework, project proponents should include both standard GCF output/outcome indicators and EFA-linked metrics to monitor implementation efficiency, cost-effectiveness, and financial sustainability. Examples include:[2]

- Cost per beneficiary: Total cost divided by number of direct beneficiaries—particularly relevant for adaptation projects.
- Cost per output unit: E.g., cost per hectare restored, cost per km of road upgraded, or cost per solar system installed.
- Cost per tonne of CO_2e avoided: A key mitigation metric used by GCF to assess cost-effectiveness.
- Repayment rate: For projects with revolving funds or loans, this indicates financial sustainability.
- Leverage ratio: The amount of co-financing mobilized per dollar of GCF support.
- Income or productivity change: E.g., percentage increase in average household income or reduction in climate-related losses—these support the economic rationale and can be tracked via baseline and target values.

These indicators should be derived from the initial EFA and refined during implementation. Including them from the outset embeds a performance-based approach focused on impact and accountability.

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1 Green Climate Fund. ***GCF Programming Manual: Guidelines for Developing a Funding Proposal****. Incheon, South Korea: Green Climate Fund, 2020. https://www.greenclimate.fund/document/gcf-programming-manual.*

2 Green Climate Fund. ***Annex VI: Economic and Financial Analysis Guidance****. In* ***GCF Programming Manual****, 2020, 1–28.*

8.2 INTEGRATING EFA METRICS INTO THE LOGFRAME

The logical framework (logframe) at concept note stage should include a simplified format—listing indicators, baselines, targets, and assumptions. Even if detailed data is unavailable, indicative targets help articulate the project's intended economic and financial results.

Recommendations:

- Break down composite indicators: For instance, EIRR is not directly trackable, but its drivers (e.g., yield gains, time savings, avoided losses) can be monitored. Monitoring these outcomes effectively supports economic analysis. That means your logframe outcomes (like increased crop yields, improved water access, etc.) are what drive the EIRR.
    - ◊ Example: If a project's EIRR is driven by improved agricultural yields, include "% increase in yield" as an outcome-level indicator.
- Include financial indicators at output or outcome level:
    - ◊ E.g., "Private finance mobilized ($)" or "Revolving fund repayment rate (%)".
    - ◊ If GCF funding is expected to leverage $30 million in private finance, this should be reflected in the logframe as a target under an outcome indicator.
- Monitor unit cost trends: Track changes in cost per hectare, household, or system over time to assess implementation efficiency.
- Capture economic assumptions in the assumptions/risks column:
    - ◊ E.g., "farmgate prices remain stable," or "maintenance of infrastructure is sustained by communities."

A well-integrated M&E framework reinforces the EFA narrative. It reinforces value-for-money thinking and ensures that financial and economic assumptions are tested and validated during implementation. At the concept note stage, include key economic and financial indicators in a simplified logframe, aligned with EFA findings. This builds confidence among REMA, the GCF, and co-financiers that project outcomes will be measured not only by outputs delivered, but also by their cost-effectiveness and long-term economic impact.

9 PRIVATE SECTOR ENGAGEMENT

Private sector engagement is essential for scaling climate action, fostering innovation, and ensuring sustainability beyond the life of donor-funded projects. The Green Climate Fund (GCF) places strong emphasis on mobilizing private sector actors—as co-financiers, service providers, and long-term partners. For REMA and project developers, a strong concept note should assess current private sector involvement and, where gaps exist, outline strategies to strengthen it.

This section provides a practical framework to assess and enhance private sector inclusion in concept notes. It draws on both GCF guidance and Rwanda's *Private Sector Mobilization Plan for Climate Action (PSMP-CA, 2022–2030)*,[1] which identifies priority sectors, financing mechanisms, and enabling policies to attract climate-smart private investment.

9.1 PRIVATE SECTOR ENGAGEMENT STRATEGY

Private sector actors are not only potential co-financiers and implementers but also important stakeholders during concept note development. Their input helps validate assumptions, ensure feasibility, and align project design with market realities.

Recommendations:

- Engage relevant firms and investors (e.g., agro-dealers, solar distributors, fintech providers, transport operators). Document insights on pricing, consumer demand, and market barriers.
- Validate core EFA assumptions. Example: *"Local solar companies confirmed that the proposed retail price is commercially viable and aligned with market demand."*
- Use the Private Sector Federation (PSF) and its chambers (e.g., agriculture, energy) to structure consultations.
- If applicable, mention any early discussions with potential PPP partners or private investors. This strengthens alignment with GCF's paradigm shift and private capital mobilization goals.
- Reflect insights in design and structuring.
- Example: *"Consultations with construction SMEs revealed a preference for sub-RWF 50M contract sizes, informing the procurement approach."*

1 *Rwanda Environment Management Authority (REMA).* ***Private Sector Mobilization Plan for Climate Action (PSMP-CA), 2022–2030****. Kigali: Government of Rwanda, 2022.*

9.2 ASSESSING PRIVATE SECTOR ROLES IN THE CONCEPT NOTE

To evaluate whether private engagement is adequate, start with these key questions:

- Are private actors included? E.g. local banks, SMEs, cooperatives, or investors listed as partners or implementers?
- Is private co-financing proposed? If the financial structure includes only GCF and public funds, this may represent a missed opportunity.
- Does the project enable future investment? Even if no direct co-finance is secured, does the concept build market readiness or pilot business models?
- Who sustains the project post-GCF? Will private firms operate infrastructure or manage service delivery beyond the project lifecycle?

Evaluate whether the private sector involvement is adequate given the nature of the project. For example, a renewable energy proposal should generally include private developers or financiers. In contrast, an adaptation project in vulnerable rural areas might have fewer direct investment opportunities but even in adaptation-focused projects, private actors like agro-dealers, equipment suppliers, and financial intermediaries may play critical roles. Refer to Rwanda's PSMP-CA to identify high-potential sectors and suitable instruments such as PPPs, credit lines, or blended capital structures.

Private Sector Engagement Evaluation Checklist

Engagement Area	Key Consideration
Private Co-Finance	Are contributions from private actors included? Are they quantified and linked to specific project components?
Revenue Model	Will a private entity deliver or manage any revenue-generating activities (e.g. energy services, agricultural inputs)?
Private Beneficiaries	Are SMEs, cooperatives, or entrepreneurs among the beneficiaries (e.g. SMEs gaining access to climate-friendly loans, farmers' cooperatives strengthening value chains.)?
Barriers to Investment	Does the concept identify barriers that currrently keep private investment away? Are risks, low returns, or policy gaps addressed?
Exit Strategy	Is there a clear role for private actors in sustaining results after GCF support ends? A good concept will outline a path for the private sector to gradually step in (e.g. through training, demonstrations that prove a business case, etc.)

9.3 ENHANCING AND INTEGRATING PRIVATE SECTOR PARTICIPATION

If a concept note lacks robust private sector integration, consider the following entry points:

- Co-Financing Opportunities: Even if not yet secured, identify potential partners and where private capital could contribute —e.g. banks for credit lines, agro-processors as off-takers, or solar companies for distribution. Mention discussions or intent to engage.
- GCF De-Risking Instruments: GCF offers concessional loans, guarantees, and equity to de-risk investment. Example: "GCF will provide a concessional loan to seed a green investment facility targeting climate-resilient SMEs."
- Public-Private Partnerships (PPPs): Propose PPPs in infrastructure (e.g. e-mobility, waste management), aligned with Pillar 3 of Rwanda's PSMP-CA. Even partial PPP models, such as private contractors or service providers, can be integrated early.
- Engaging Local Enterprises: Include Rwandan SMEs as service providers or suppliers. This not only supports local economic development but builds sustainable delivery ecosystems and supports the "green jobs" agenda. Not all private sector involvement is about big finance – including local small and medium enterprises (SMEs) can be equally important. For example, in an agriculture project, involve agro-dealers, irrigation equipment suppliers, or micro-enterprises in maintenance.
- Governance Participation: Include the Private Sector Federation (PSF) or sectoral associations in project governance to institutionalize engagement.

If private sector engagement is still exploratory, state that the PPF or proposal phase will include private sector and investor outreach.

Example: "During the PPF phase, the project will conduct investor consultations to co-design components A and B."

A checklist for assessing and enhancing private sector engagement is provided in Section 11.

10 REGIONAL PROPOSALS

Rwanda, through REMA as the National Designated Authority (NDA), is occasionally asked to endorse regional or multi-country proposals submitted to the Green Climate Fund (GCF)—such as the Africa Climate Finance Mobilization Programme (ARCAFIM)—even when it is not a direct implementing country. These proposals are typically managed by regional or international Accredited Entities and span multiple countries. While they can contribute to regional public goods or systemic reforms, Rwanda's endorsement should be based on a demonstrable benefit to the country.

This section provides guidance on how REMA should assess regional concept notes from a national interest perspective—verifying alignment with Rwanda's climate strategies, assessing potential direct or indirect benefits, and ensuring that Rwanda's role is clearly defined, adequately resourced, and appropriately reflected in governance and monitoring arrangements.

10.1 ASSESSING RWANDA'S ROLE IN REGIONAL PROJECT CONCEPT NOTES

For a multi-country programme, no activities or investments can be undertaken in a country without obtaining a NOL from the NDA. Each country will decide on its own nationally appropriate process for ascertaining no-objection.[1] Before endorsing any regional concept note, REMA should conduct a structured assessment to ensure that Rwanda receives a fair share of benefits, funding, and decision-making power. This sub-section outlines key considerations for verifying alignment with national priorities, clarifying Rwanda's role, and ensuring the proposal delivers meaningful and measurable value for the country.

1. Alignment with National Priorities
    - ◊ Confirm that the regional proposal aligns with Rwanda's climate strategies, including the NDCs, GGCRS, NST1, CNFS, or relevant sectoral policies.
    - ◊ Identify whether the project's focus (e.g. finance mobilization, infrastructure, resilience, or capacity building) addresses Rwanda's specific development and climate gaps—even if Rwanda is not a major direct beneficiary.
    - ◊ Encourage inclusion of national planning references (e.g. "This project supports Rwanda's Green Growth Strategy…") to demonstrate clear country alignment.
2. Clear Country Role and Benefits
    - ◊ Evaluate whether Rwanda is named as a direct participant or beneficiary. If listed, insist on clarity regarding:

1 *Green Climate Fund.* ***GCF Programming Manual: Guidelines for Developing a Funding Proposal****. Incheon, South Korea: Green Climate Fund, 2020. https://www.greenclimate.fund/document/gcf-programming-manual.*

- ◊ Budget and Activity Breakdown: Request country-level allocations. Rwanda's share should reflect vulnerability, population, or sectoral relevance. If Rwanda contributes significantly (e.g. 30% of a basin), a proportional share of activities and funding is expected.
- ◊ Key Outputs: Are assets or pilots (e.g., weather stations, training, infrastructure) physically located in Rwanda?
- ◊ Institutional Benefits: Will Rwandan institutions benefit from capacity-building, data access, or technical support?
- ◊ Disaggregated Results: Ensure metrics (e.g., people benefited, GHG reduced) are disaggregated by country and included in the logical framework.
- ◊ Funding Equity: If Rwanda provides co-financing, it must be proportional to expected benefit. Avoid subsidizing other countries' components.
- ◊ On-the-Ground Investment: Push for direct investment over disproportionate administrative or overhead costs in lead countries.
- ◊ Intangible Benefits: Ensure Rwanda receives training, knowledge products, and policy support—not only indirect or symbolic inclusion.

3. Rwanda-Specific Data and Assumptions
   - ◊ Economic and financial analysis should reflect Rwanda-specific inputs (e.g. GHG factors, cost data, productivity figures).
   - ◊ Reject reliance on generalized regional averages when national data is available.
   - ◊ Share benchmarks from national programs (e.g., Green Gicumbi, RGIF) to inform economic rationale.
4. Governance and Decision-Making
   - ◊ Clarify Rwanda's institutional role:
     - o Will REMA or other institutions be part of the project steering committee?
     - o Is a national coordinator or focal point proposed and funded?
   - ◊ Conditional Endorsement: If Rwanda's role is limited, REMA should request structural changes before issuing the No-Objection Letter (NOL).
5. Capacity for Future Engagement
   - ◊ Assess whether Rwanda can benefit in future phases:
     - o Is there a pathway for scale-up, replication, or inclusion in Phase II?
     - o Does the project include local institutional capacity building?
     - o Will pilots tested regionally be deployable in Rwanda?
6. Endorsement Protocol for REMA
   - ◊ REMA should document its internal assessment prior to issuing a NOL.
   - ◊ Where Rwanda's role is marginal or undefined, REMA may:
   - ◊ Condition support on increased allocation or clarity.
   - ◊ Request inclusion of governance roles or technical leads.
   - ◊ Require improved benefit articulation.

7. Country-Level EFA and Cost-Benefit Analysis
    - ◊ Request country-specific economic metrics:
        - o Rwanda's FIRR, EIRR, or $/beneficiary.
        - o Co-financing levels and viability gaps.
    - ◊ Highlight if Rwanda's segment has stronger economic justification or faces trade-offs compared to other countries.
8. Benefit-Sharing and Monitoring
    - ◊ Insist on tracking indicators by country:
        - o Emissions reduced, people reached, hectares restored in Rwanda.
        - o Budget spent or committed in Rwanda.
    - ◊ For shared resources (e.g. upstream-downstream), propose:
        - o Co-investment or cost-sharing mechanisms if Rwanda bears disproportionate responsibility.
        - o Transparent acknowledgment of inter-country dependencies.
9. Coordination and Communication Mechanisms
    - ◊ Proposals should include:
        - o A regional PMU plus national-level coordinators.
        - o A Rwanda-based liaison officer funded through the project.
    - ◊ Budget lines should exist for national implementation, stakeholder engagement, and reporting.

10.2 ECONOMIC AND FINANCIAL CONSIDERATIONS IN MULTI-COUNTRY PROJECTS

While regional and multi-country proposals can unlock economies of scale and mobilize substantial climate finance, they often present challenges in economic and financial attribution at the country level. For REMA and Rwanda's NDA, it is essential that these proposals provide country-specific economic and financial analysis to justify Rwanda's endorsement and ensure equitable participation.

GCF proposals must not rely solely on regional aggregates or generalized assumptions. Instead, they should include Rwanda-specific inputs, cost structures, and impact estimates to demonstrate clear national value and alignment with local economic conditions.

Key recommendations include:

- Country-Specific EFA Metrics: Request Rwanda-level analysis of key indicators, where available, such as:
    - ◊ Financial Internal Rate of Return (FIRR) and Economic Internal Rate of Return (EIRR)
    - ◊ Cost per tonne of CO_2e avoided

- ◊ Cost per direct beneficiary
- ◊ Benefit-cost ratios and payback periods (where applicable)

This ensures that Rwanda's contribution and expected benefits are transparent and measurable.

- Disaggregated Budgets and Results Frameworks: Require a breakdown of project budgets and results by country. For example, total GCF funding, co-finance contributions, number of beneficiaries, and emissions reductions should be clearly attributed to Rwanda where relevant. This helps assess the proportionality of benefits relative to Rwanda's inputs.
- Local Benchmarking: Compare proposed costs, impacts, and financial structures against known benchmarks from Rwanda's existing GCF and climate finance portfolio—such as Green Gicumbi, the Rwanda Green Investment Facility (RGIF), or sector-specific cost data from past investments.
- Adjust for Local Cost Structures and Capacity: Ensure that economic assumptions—such as unit costs, wage rates, adoption rates, and productivity changes—reflect Rwanda's context rather than regional proxies. Where relevant, provide national data or sources to inform these parameters.
- Assess Trade-Offs and Opportunity Costs: Evaluate whether Rwanda is incurring opportunity costs (e.g. environmental services, hosting pilots) for the benefit of regional outcomes. Where such trade-offs exist, advocate for compensatory financing or policy benefits (e.g. increased technical support, leadership roles, or visibility).
- Use EFA as a Negotiation Tool: Leverage strong national data and EFA experience to negotiate greater influence, improved allocation, or targeted benefits. For example, if Rwanda has higher expected impact or stronger project readiness, this should be reflected in funding shares or implementation roles.
- Justify National Relevance: Even if Rwanda is not a direct recipient of infrastructure or pilot activities, the EFA can demonstrate indirect economic value—e.g. through regional market access, knowledge spillovers, or policy harmonization. These benefits should be identified, quantified where possible, and clearly stated in the concept note.

By embedding economic and financial analysis into its review of regional proposals, REMA can ensure that Rwanda's climate finance interests are not diluted in multi-country initiatives. Rwanda's endorsement should only proceed when national value is clear, adequately resourced, and supported by credible data. GCF concept notes that fail to meet this threshold should be revised prior to issuing a No-Objection Letter.

When properly structured, regional projects can offer Rwanda significant advantages—including access to larger climate finance pools, shared infrastructure, and knowledge transfer. However, these benefits must be demonstrable and supported by Rwanda-specific data, clear roles, and proportional resource allocation. REMA should assess each proposal through the lens of national interest: *"Does this project deliver tangible value for Rwanda, and are we gaining more through regional cooperation than we would independently?"* If not, endorsement should be conditional upon revisions that ensure Rwanda's development and climate objectives are appropriately served.

A practical checklist to guide REMA's review of regional and multi-country proposals is provided in Section 11.

11 TEMPLATES AND TOOLS

To ensure a transparent, consistent, and nationally relevant review of Green Climate Fund (GCF) concept notes, the Rwanda NDA and National Coordination Team (NCT) apply an adapted evaluation framework rooted in GCF's six investment criteria but tailored to Rwanda's policy priorities and institutional context. This framework guides evaluators in systematically assessing proposals based on their strategic alignment, climate rationale, financial logic, development co-benefits, and implementation readiness. It also incorporates specific filters for regional and private sector proposals to ensure Rwanda's interests are adequately represented. The scoring approach combines both quantitative (weighted) and qualitative (evidence-based) assessment, enabling the NDA to make informed, equitable recommendations during the no-objection process.

11.1 PROPOSED EVALUATION CRITERIA FRAMEWORK FOR RWANDA NDA (CONCEPT NOTE STAGE)

Strategic Alignment and Country Ownership (25%)

This section ensures the project is embedded in Rwanda's development and climate priorities, and reflects genuine national ownership.

Sub-Criteria:

- Alignment with GGCRS, NDC, NST1, and relevant sector strategies
- Reference to specific national targets or priority sectors (e.g. ADAP, MIT, CCUT)
- Engagement of relevant national stakeholders (e.g. REMA, MININFRA, sector leads)
- Rwanda-specific activities, metrics, and institutional context clearly defined

Encourage proposals to include citations of specific national policy targets and identify key line ministry roles during implementation.

Impact Potential and Climate Rationale (20%)

This assesses whether the project delivers measurable climate results and whether the rationale is grounded in Rwanda's specific climate risks and emissions profile.

Sub-Criteria:

- Quantified GHG reductions (for mitigation) or number of beneficiaries reached (for adaptation)
- Clear, evidence-based climate rationale with linkage to national vulnerability or emissions sources
- Use of Rwanda-specific climate data, including risk maps or vulnerability assessments
- Fit within one or more GCF results areas (e.g. buildings, infrastructure, livelihoods)
- Demonstrates replicability, scalability, or innovation in the Rwandan context

This section often lacks rigor. Encourage use of local emissions baselines, hazard maps, and projected climate scenarios.

Economic and Financial Case (20%)

Evaluates cost-effectiveness, financial viability, and justification for concessional finance.

Sub-Criteria:

- Estimated cost per tCO_2e avoided or cost per beneficiary
- FIRR/EIRR or qualitative justification of economic benefit (e.g., avoided flood damage, time savings)
- Level and sources of co-financing clearly presented
- Why GCF is needed: concessionality, risk mitigation, de-risking private investment, or overcoming affordability barriers
- Financial sustainability and clear exit strategy
- Statement on Rwanda's climate finance needs and relevance as an LDC

Sustainable Development Co-Benefits (15%)

Assesses how the project supports inclusive development and non-climate SDG outcomes.

Sub-Criteria:

- Direct and indirect job creation, especially for youth, women, and informal actors
- Gender action plan or gender-responsive project design
- Health, education, biodiversity, or other SDG-related benefits
- Contribution to a green or inclusive economy (e.g., sustainable value chains, SMEs)
- Technology transfer or local capacity development

Encourage quantification or monetization where possible (e.g., number of jobs created, avoided healthcare costs, training delivered).

Implementation Readiness and Risk Management (20%)

Tests institutional capacity, safeguards compliance, and implementation feasibility.

Sub-Criteria:

- Accredited Entity and implementing partners identified with relevant experience
- Feasibility study, Theory of Change, costing, or logframe included
- Environmental and Social Safeguards (ESS), Gender, and Indigenous Peoples policies addressed
- Risks identified (e.g., financial, political, climate) with mitigation measures
- M&E approach described, aligned with GCF's IRMF
- Baseline data and targets included

Project

DATA SHEET	Information provided
Project Promoter:	
Type of entity:	
Name of specific project:	
GCF results area:	
Foreseen accredited entity/NIE:	
Project size category:	
Project life span (years):	
Co-financers:	
Other partners:	
Brief description:	
Do you need support for project preparation? (Yes or No):	

Scoring Table

Section	Sub-Criterion	Weight (%)	Score (%)	Reviewer Comments
Strategic Alignment and Country Ownership (25%)	Alignment with GGCRS, NDC, NST1, sector strategies	5		
	Reference to specific policy targets or sectors	5		
	Engagement of national stakeholders (REMA, MININFRA, etc.)	5		
	Relevance to Rwanda's identified investment needs or climate finance gaps (e.g., mitigation, LDCs), including cross-cutting national priorities	5		
	Clear demonstration of country ownership and institutional capacity (e.g., lead agencies, AE, NIE)	2.5		
	Stakeholder consultations conducted and reflected in design — e.g., workshops, community engagement, private sector inputs	2.5		

Impact Potential and Climate Rationale (20%)	Quantified GHG reductions or adaptation benefits	5		
	Clear and evidence-based climate rationale toward low-emission and climate-resilient sustainable development?	4		
	Use of Rwanda-specific climate data	4		
	Alignment with at least one GCF results area and evidence of strategic impact in Mitigation and/or Adapation	3		
	Demonstrates innovation, replicability, or scalability in the Rwandan context	3		
Economic and Financial Case (20%)	Cost-effectiveness or abatement cost metrics provided	4		
	FIRR/EIRR/ENPV provided or approximated	3		
	Cofinancing level and sources clearly identified and justified	4		
	Concessionality rationale and financial additionality clearly explained	3		
	Financial sustainability and exit strategy articulated	3		
	Rwanda's financial needs or LDC-specific barriers addressed	3		
Sustainable Development Co-Benefits (15%)	Local job creation or livelihood improvements (esp. women/youth)	4		
	Gender action plan or gender-responsive design	3		
	Health, biodiversity, or other co-benefits	3		
	Contribution to inclusive green economy or just transition	3		
	Technology transfer or capacity building (where applicable)	2		

Implementation Readiness and Risk Management (20%)	AE identified and has relevant experienced	4		
	Implementing partners named and role described	4		
	Feasibility, ToC, or cost estimates included	3		
	ESS, gender, or IP policies addressed	3		
	Risks identified and mitigated	2		
	Baseline data and measurable targets included	2		
	M&E framework described	2		

Additional Considerations (Optional)

- These are not scored but offer additional insight into project readiness, innovation, and risks

Descriptive Questions:

- How many local staff will be employed, and at what levels?
- Will your project enable technology transfer? If yes, specify the technology and how it will be transferred.
- Who are your local partners, and how are they engaged in the project/programme?
- Is this the first project of its kind in Rwanda? If yes, provide rationale.
  Or is it scaling up/replicating another initiative? What were the lessons learned?
- Describe any foreseen challenges to implementation.

Confirmations (tick box or short explanation):

- No discrimination in project area (attach local authorities' statement if possible)
- Cultural heritage and local knowledge are preserved or used where appropriate
- No child labour involved; workers' rights are respected

11.2 REGIONAL AND PRIVATE SECTOR PROPOSALS

This section outlines additional checks that must be completed for proposals that are either regional in scope or involve private sector actors. These do not contribute to the main evaluation score but are required to ensure Rwanda's interests are clearly defined, protected, and aligned with national priorities.

Regional Proposal Checklist

Section	Review Question	Yes / No	Comments
Alignment with National Priorities	Is the project aligned with GGCRS, NDC, NST1, or sector strategies?		
	Are Rwanda's national priorities explicitly referenced?		
Country Role and Benefits	Are Rwanda's activities, outputs, and budget clearly defined?		
	Are benefits disaggregated for Rwanda (e.g., GHG, beneficiaries, training)?		
	Does Rwanda receive tangible (infrastructure, finance) and intangible (skills, data) benefits?		
Investment and Visibility Commitment	Is there a clear commitment or ring-fencing of resources for Rwanda (e.g., for private sector TA, stakeholder engagement, or preparation support)?		
Economic and Financial Analysis	Does the proposal apply Rwanda-specific benchmarks (e.g., cost per tCO_2e, EIRR)?		
	Is the climate rationale supported by Rwanda-specific GHG baselines or risk assessments?		
	Is Rwanda's co-financing level (if any) justified and proportional?		
Governance & Ownership	Is REMA or another national institution in the governance structure or steering committee?		
	Is there a Rwanda-based focal point or coordinating role with funding?		
Benefit Sharing Mechanisms	For transboundary projects, is Rwanda's share of benefits documented and proportional?		
	Does Rwanda's share of benefits align with its share of the risks, responsibilities, or financial contributions?		
Future Engagement	Is there a clear pathway for Rwanda to influence future phases or project expansion?		
	Will the project help build national institutions or local capacity for implementation?		
Monitoring, Evaluation & Learning	Are indicators disaggregated by country, and are Rwanda's results tracked separately?		
	Will Rwanda have access to M&E data, learning platforms, and knowledge products?		

Coordination & Communications	Are resources allocated for stakeholder engagement and communication in Rwanda?		
	Have stakeholders in Rwanda (gov't, private sector, CSOs) been consulted during design?		
Safeguards & Inclusion	Are grievance mechanisms accessible to Rwandan beneficiaries?		
	Are vulnerable groups (e.g., women, youth) included in benefits or project planning?		
No-Objection Protocol	Has REMA/NDA reviewed and proposed any NOL conditions for Rwanda?		

Rwanda reserves the right to conditionally withhold a No-Objection Letter (NOL) for regional proposals where national benefits are not clearly defined, quantified, and proportionate to the country's role and contribution. The NDA will prioritize regional investments that demonstrate strong alignment with Rwanda's climate priorities, provide disaggregated impact metrics, and include meaningful stakeholder engagement.

Private Sector Proposal Checklist

Area	Guiding Question	Yes / No	Comments
Existing Involvement	Are private companies, banks, or SMEs listed as co-financiers, contractors, or implementing partners?		
Investment & Finance	Does the funding structure include private co-finance or viable commercial revenue streams?		
Implementation Role	Are private actors involved in delivery or operations (e.g., leasing, construction, service provision)?		
Market Development	Does the project develop or expand a climate market (e.g., solar, CSA, e-mobility)?		
Barriers to Investment	Are private sector barriers (e.g., risk, ROI, policy gaps) clearly identified and addressed?		
Exit Strategy	Is there a roadmap for private sector continuity post-GCF (e.g., business model, PPP, commercialization)?		
Local Inclusion	Are Rwandan SMEs or financiers actively involved or targeted in the proposal?		
Risk Allocation	Does the structure allocate risks appropriately between public and private actors?		
National Oversight	Is there a mechanism for Rwanda to monitor or regulate private sector compliance?		

12 CONCLUSION

These Economic and Financial Analysis (EFA) Guidelines are designed as a practical tool to strengthen Rwanda's climate finance proposals and improve alignment with the Green Climate Fund (GCF) investment criteria. By applying the recommended steps, metrics, and structuring approaches early in the proposal cycle, Rwanda's project developers, implementing partners, and reviewers can:

- Demonstrate cost-effectiveness and climate impact using data-driven assumptions.
- Strengthen the justification for GCF support and concessionality.
- Align projects with national policies and sectoral priorities.
- Improve the likelihood of concept notes being approved and fast-tracked for full proposal development.

Importantly, these guidelines do not impose a one-size-fits-all model. They are adaptable to different project sizes, sectors, and proponents. Where data is limited, qualitative logic supported by proxies or comparable case studies is acceptable. The emphasis should be on clarity, consistency, and strategic alignment with GCF and Rwanda's climate goals.

As Rwanda's climate finance landscape evolves, REMA and the National Coordination Team (NCT) are encouraged to regularly revisit these guidelines, update benchmarks using real project data, and refine methodologies in line with emerging best practices.

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