



CASE OFFERING

Creating a Government-to-Government **Carbon Financing** Facility



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Cover image: UNDP Rwanda

Above: IDP green village model biogas. Photo: Alice Kayibanda/UNDP Rwanda

Context

To avoid a climate catastrophe, the world's nations have agreed to limit emissions of planet-warming greenhouse gases (GHGs) through transitioning to clean energy economies. However, funding this transition is a key challenge, especially for low-income countries such as Rwanda. In theory, the global carbon market offers a crucial source of finance for Rwanda's clean energy transition. In practice, that market has been out of reach due to the level of technical expertise needed, high transaction costs, and risks posed by volatility in the price of carbon.

However, the Government of Rwanda could unlock the potential of global carbon markets through creating a Government-to-Government (G2G) carbon financing facility. It would enable green businesses to tap into "carbon subsidies", increase access to goods and services for populations, and create decent jobs in new high-growth businesses.

Under its Nationally Determined Contributions (NDC) to reduce greenhouse gas (GHG) emissions, Rwanda has made bold climate commitments. Most significantly, it has committed to reduce 2030 carbon emissions by 38 percent¹.

Rwanda's NDC also outlines the share of reductions to be delivered through public versus private action in key climate-related economic sectors. Meeting these commitments will require significant resources, leveraging a combination of public, donor and private investment.

Rwanda is poised to be a leader in East Africa and among least-developed countries through learning and piloting Article 6 transactions. An umbrella G2G agreement would allow both Rwanda and its climate-financing partner to gain first-mover advantage in this emerging space while realising their NDC targets at minimal compliance cost to all stakeholders. Financial aggregation approaches and private-sector innovation hold further potential to achieve economies of scale and to avoid the high transaction costs normally associated with small-scale offset purchasing programs.

A G2G Carbon Financing Facility would enable green businesses to tap into carbon subsidies, increase access to goods and services, and create jobs.



Member of the SAM Cooperative waters plants at the Nyabugogo nursery.
Photo: Alice Kayibanda/UNDP Rwanda

1 Government of Rwanda, "Nationally Determined Contributions", 2020

Rwanda has a range of business models well positioned to deliver high impact for both GHG mitigation and the Sustainable Development Goals (SDGs). Their successful monetisation would enable many new businesses to achieve financial viability and accelerate the speed at which they scale.

To date, two key challenges have limited the ability of Rwandan businesses to monetise their carbon²:

- 1) Limited economies of scale and the **high degree of complexity and transaction cost** involved. The cost involved with securing an emission purchase agreement, including paying for technical and auditing services and registry fees, and having adequate internal human resources for negotiating complex legal agreements has generally outweighed the potential benefits to individual small businesses.
- 2) **Lack of pre-financing, high price volatility and unequal benefits sharing** characterised by the current voluntary carbon market limits projects' bankability using carbon finance. Most small businesses lack adequate capital to initiate projects based on "payment upon delivery" terms. Additionally, carbon offset prices vary significantly over time and across standards, with prices ranging from US\$1 to \$140 per ton of CO₂ equivalent, and with more than 75 percent priced below \$10 per ton. This creates too much cash flow uncertainty, discouraging sponsors from entering the carbon market and local financial institutions from banking the mitigation activities.

A better strategy for unlocking carbon value and climate innovation would be for the Government of Rwanda (GoR) to cooperate with another government in establishing a G2G carbon agreement.

This would address two critical needs: 1) accelerating implementation of the Paris Agreement and of Rwanda's progress towards a net-zero emission economy, by enabling greater access to climate finance among firms and institutions; and 2) driving a green and inclusive COVID-19 economic recovery.

While details would need to be worked out, a G2G carbon agreement would comprise **three main components**:

- 1) **Market-based transactions**
- 2) **Financing facility to service the pipeline**
- 3) **Institutional and capacity-building activities for broader market readiness.**

The G2G agreement would de-risk investment and bring sufficient certainty and economies of scale-key factors that have so far impeded individual carbon transactions. De-risking strategies would include fixed pricing per project type or asset class (or variable with a relatively high floor price); a high minimum guaranteed volume; and a medium-to-long tenor (5-to-10 years) that would facilitate pre-financing of individual mitigation projects.



Saplings from the Kimonyi tree nursery are helping to reforest Amayaga
Photo: Alice Kayibanda/UNDP Rwanda

2 For example, although a prominent Rwanda-based international NGO has planted over 40 million trees in past years, it has yet to tap the value of this carbon. By extension, Rwandan communities have missed additional funding to sustain and scale up these efforts. Many smaller organisations also see opportunity but lack the expertise to capitalise upon it.

Role of UNDP Rwanda

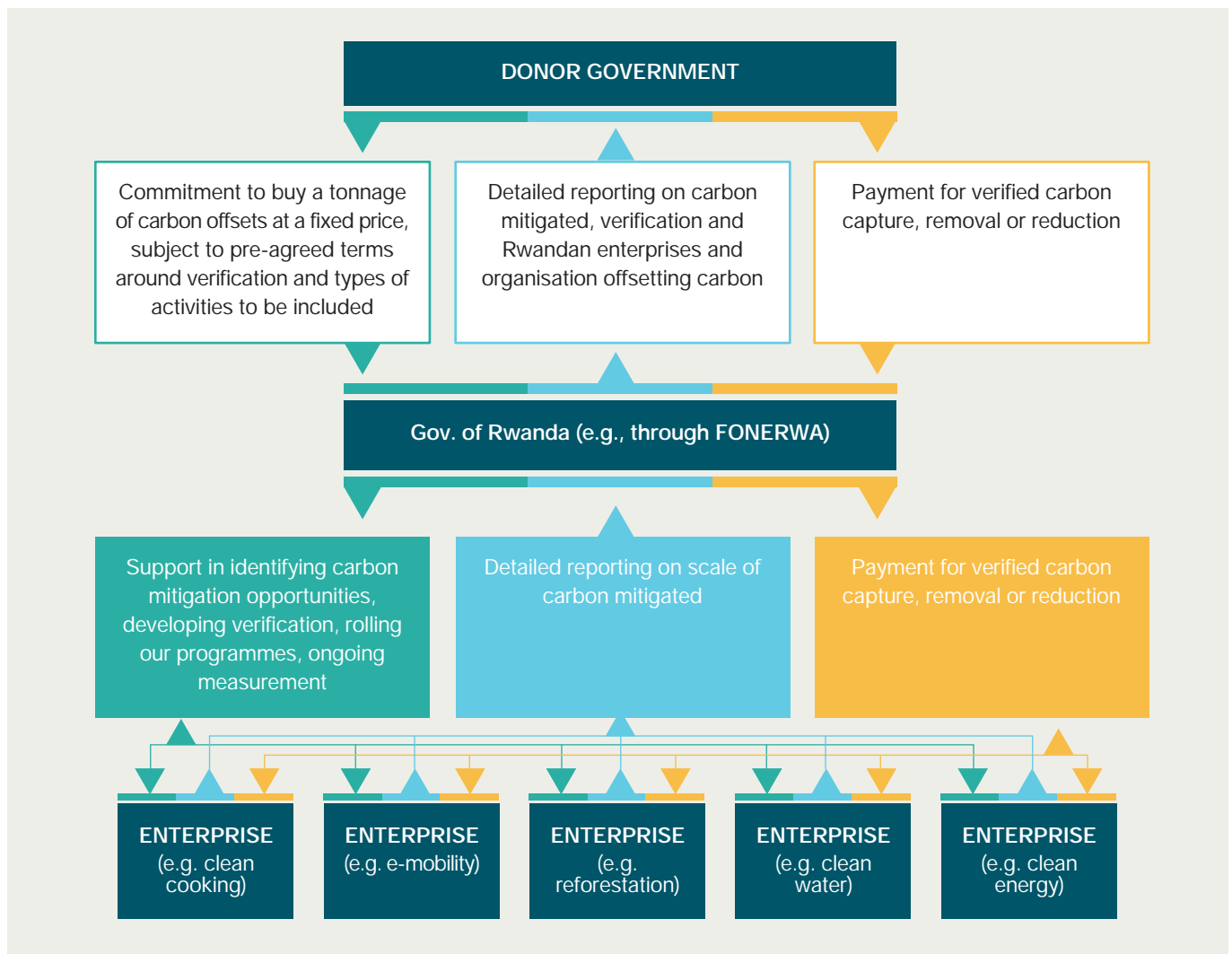
The G2G initiative would be anchored through three institutions supporting across all three components:

1. The **Rwandan Ministry of Environment**, who would steer the G2G agreement at political level and drive inter-agency coordination
2. A dedicated “**Carbon Bureau**” that would provide centralised, end-to-end management and financial and portfolio aggregation services across sectors and project sponsors. The Rwanda Development Bank (BRD) and/or Rwanda Green Fund (FONERWA) are well placed in this regard
3. **UNDP** would play a critical role in building capacity among market actors and participants, working across policymakers and regulators, businesses, associations, public or parastatal

institutions, and local organisations to advance the required legal and technical frameworks to successfully pilot and scale up the transaction.

Both UNDP and the Carbon Bureau would engage in activities to lower transaction costs and reduce the perceived risks of firm or institutional participation. UNDP already supports BRD and FONERWA on green financing, including the design and fund mobilisation for a Rwandan Green Financing Facility together with the African Development Bank, the Green Climate Fund, and Nordic Development Fund. UNDP is also supporting BRD to issue a green bond for a portfolio of climate-beneficial projects.³

The program may look something like this:



3 Under these efforts, a strong initial portfolio of investment projects having mitigation outcomes in various sectors can be efficiently identified, appraised and monitored.

A three-phased approach will be taken to operationalise the agreement:

- **Phase I - Structuring the mechanism**, including assessments and feasibility analyses on the most appropriate financing vehicles and methods for financial aggregation based on market scoping. **Such a mechanism could be set-up under a range of options and there are multiple instruments that could be used to achieve its objectives (e.g., guarantees, purchase agreements, etc.).** UNDP will consult with stakeholders and engineer a structure with the best chances of success.
- **Phase II - Pipeline development** that expands the portfolio of sectors and businesses with activities having potential to trade mitigation outcomes. Pipeline development will include support for businesses to innovate carbon subsidies and put in place measurement and verification processes that allow monetisation. UNDP will conduct a thorough

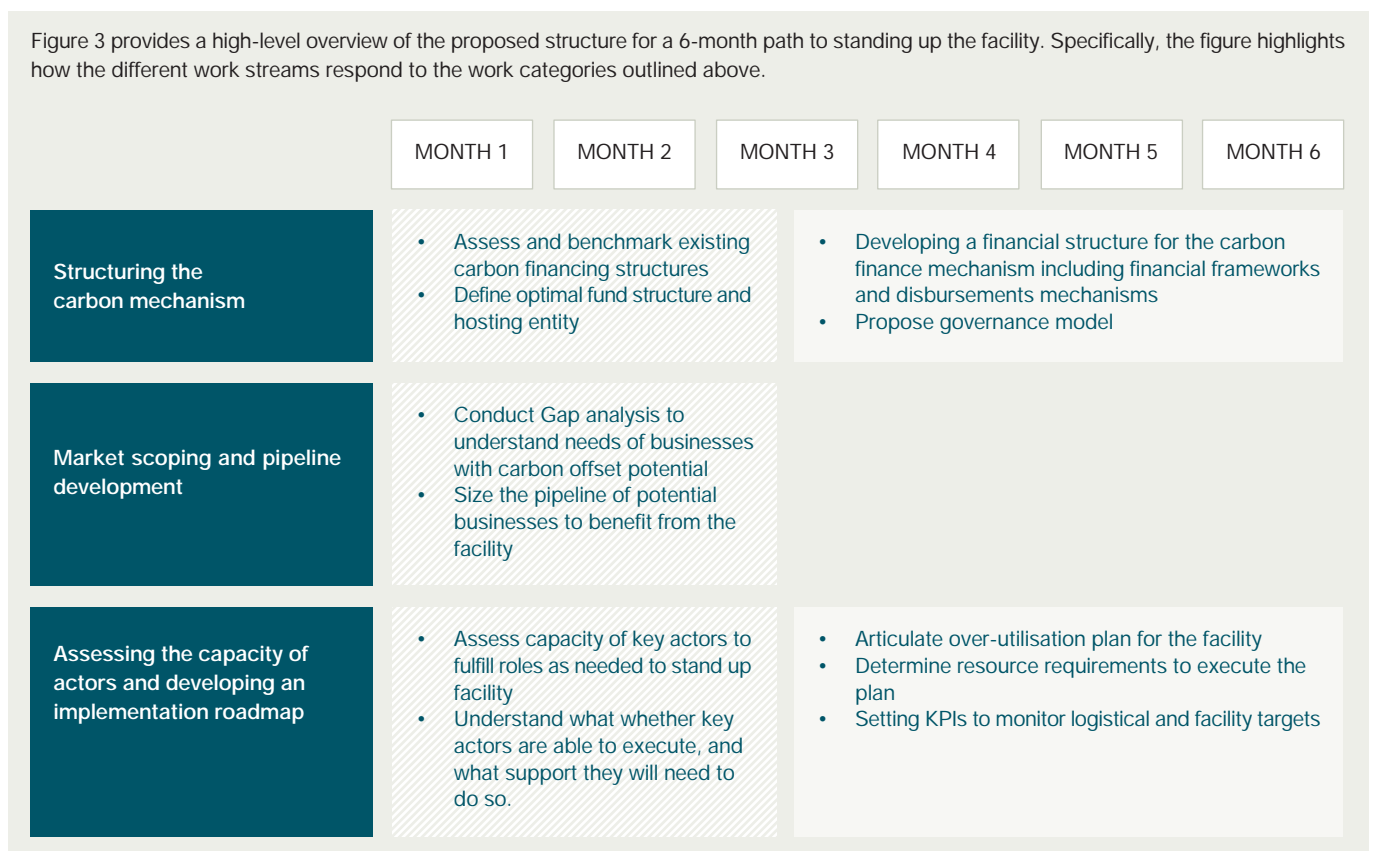
pipeline exercise and build a network of businesses that could benefit from a G2G agreement and carbon financing facility.

- **Phase III - Business planning and knowledge management**, including **building institutional capacity and setting appropriate legal and regulatory frameworks.** UNDP will develop a business plan and roadmap to operationalise the agreement and facility transactions. The plan will address financial sustainability and an exit strategy for the developed country partner. Another focus will be plans to scale the program through peer learning with other countries and using the facility as a blueprint for similar programs in other markets.

Critically, the two concerned governments and their respective regulators would first need to agree to standards for baseline setting, measuring, reporting and verification of carbon and ancillary sustainable development benefits.

Figure 3: Timeline for project design

Figure 3 provides a high-level overview of the proposed structure for a 6-month path to standing up the facility. Specifically, the figure highlights how the different work streams respond to the work categories outlined above.



Technical approach

Article 6 of the Paris Agreement provides an international framework for bilateral carbon trading, enhancing mechanisms started under the Kyoto Protocol. Article 6.2 provides an accounting framework for international collaboration for emission trading and Article 6.4 establishes a UN mechanism to trade mitigation outcomes generated by specific projects.⁴

Although such activities - particularly those related to government-to-government trading - remains fairly new, a few countries, such as Ghana and Senegal, have started to pilot new market mechanisms for **transacting carbon mitigation outcomes**. OECD and African countries that are developing the hard and soft 'infrastructure' to test approaches to Article 6 are proceeding through a "learning by doing" approach.

Design factors (in addition to those outlined above) also include governance arrangements, broader long-term market/ecosystem development, and knowledge management to capture and incorporate learnings (e.g., existing G2G agreements, including Sweden that has initiated six of these to date).

Rwanda has a range of established organisations that may have a role to play in developing the ecosystem (e.g., REMA, FONERWA, etc.), consultation and evaluation will be needed to understand each organisation's role and what capacity development will be needed.

Carbon pricing will be another important consideration. Differences in the type of carbon reduction/capture/removal activities typically fetch quite different market prices based on the co-benefits of the project, permanence of removal and other factors, and for this reason 'tiers' of pricing may need to be developed. Finally, it is critical that this instrument neither crowd out private sector activity nor distort carbon pricing, and for this reason a structure that accommodates private buyers should be considered.

UNDP value proposition

- **UNDP's broad mandate on the SDGs, focussing on poverty and inequalities**, enables the organisation to play an integrator role in the UN System. This is vital considering the broad range of stakeholders involved in the actualisation of a carbon trading market involving two or more sovereign states.
- **UNDP has strong relationships with the Central Government of Rwanda** and is committed to intensifying and accelerating its sustainable financing engagements at local, national, regional and global levels. In Rwanda, UNDP is a key partner in the implementation of the Integrated National Financing Framework which provides a framework for financing national sustainable development priorities and the SDGs.
- **UNDP's global network is on the ground** in some 170 countries and territories, which enables it to provide knowledge-based support to Rwanda grounded on her own solutions to carbon trading challenges and the development of national and local capacities through bringing in expertise, knowledge, experience and resources that help achieve Rwanda's NDC and its National Strategy for Transformation-1.
- At the global level, UNDP is Vice-Chair of the United Nations Sustainable Development Group (UNSDG), which includes the UN's key players in development. **The UNSDG serves as a high-level forum for joint policy formulation and decision-making** which guides, tracks and oversees the coordination of development operations at the country level.
- **UNDP's globally recognised name and impartial status provides convening power** to bring together a broad range of partners for development. Through its coordination and global reach, UNDP seeks to ensure integrated solutions and a comprehensive stakeholder engagement process to advance the implementation of national energy and climate-related targets in line with the NDCs and the SDGs, generating significant mutual benefits across the two development frameworks.

⁴ World Bank, 2018, Carbon Markets for Greenhouse Gas Emission Reduction in a Warming World an Evaluation of the World Bank Group's Support to Carbon Finance. World Resources Institute, 2019, What You Need to Know About Article 6 of the Paris Agreement

Methodology

WORKSTREAM 1: Structure the mechanism

Activities:

- Define the facility's vision, targets and impact framework
- Develop a financial structure for the mechanism, including financial aggregation frameworks and disbursement mechanisms
- Develop the business processes and operating structures and defining capabilities required

This phase would define an appropriate structure for a G2G carbon financing facility in Rwanda. Given the nascent nature of the carbon markets ecosystem in Rwanda, it will be necessary to assess potential financing structures and develop an appropriate facility agency agreement for aggregating carbon mitigation outcome payments. In addition, this phase would involve identifying a potential pipeline of businesses in Rwanda that could benefit from carbon financing. Finally, this component would involve appraising and contracting an independent entity to carry out monitoring, reporting and verification of the projects.

Setting up the structure will involve three steps:

- Determining an optimal financing mechanism that would effectively keep transaction and operational costs low, including solutions around aggregation and pre-financing
- Identifying the appropriate entity or entities to host and/or operate the facility
- Development of tools for carbon accounting as well as technical and regulatory capacity building

Figure 5: Illustration of funding mechanism and example case study⁵

Carbon Funds can leverage different funding mechanisms to finance mitigation outcomes

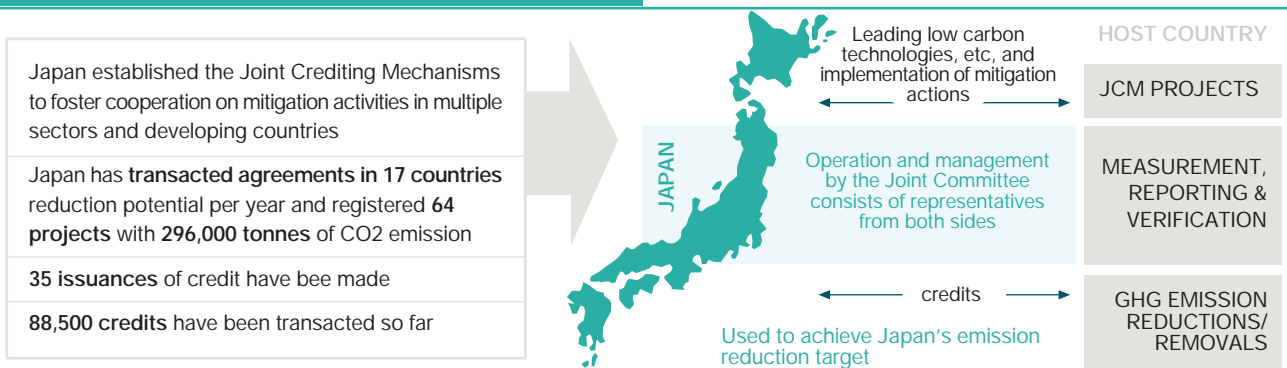
Examples of financing mechanisms include:

- Grants from DFIs
- Corporate funding
- Green bonds
- Concessional funding and patient capital, etc.

Existing funders for carbon finance include:

- AFDB Africa Carbon Support Programme
- Carbon Partnership facility by the World Bank
- EIB-KfW Programme II for selling and purchasing emission credits in Least Developed Countries
- UNDP MDG Carbon Facility sponsors targeting under-represented countries in carbon finance, etc.

CASE STUDY: Japan - The Joint Crediting Mechanism



Sources: Climate Finance Innovations, 2019, Moving Towards Next Generation Carbon Markets Observations from Article 6 Pilots

Once there is a clear plan for the facility structure, with key questions answered and roles fully understood, and assuming feasibility continues to look good based on pipeline and capacity assessments in other workstreams, a series of legal

agreements will need to be developed. The strategy and financial professionals who lead on the first step in this phase will need to work with implementing organisations and a legal team to develop these agreements.

⁵ Climate Finance Innovators, 2019, Moving Towards Next Generation Carbon Markets Observations from Article 6 Pilots; Climate Finance Innovators, 2020, Article 6 Piloting: State of Play and Stakeholder Experiences.

WORKSTREAM 2: Market scoping and pipeline development

Activities:

- Quantify mitigation opportunities to transact under a G2G agreement, building on existing NDC implementation and financing plans
- Assess carbon asset potential in various asset classes (e.g., clean water, clean cook stoves, mini-grids, solar and other renewable energy, e-mobility, etc.)
- Map carbon market trends and sector opportunities that would unlock carbon finance in Rwanda
- Assess the additionality of carbon finance for the Rwandan market and analyse past efforts to monetise carbon finance
- Conduct gap analysis for current businesses to tap into climate finance
- Identify high-impact potential businesses that would benefit from carbon financing

This phase would map existing carbon financing opportunities for Rwanda and validate the need for the new financing mechanism. It would leverage the knowledge of the climate action and carbon finance sectors in Africa and other emerging markets to assess the readiness of the climate finance market in Rwanda and identify appropriate opportunities for Rwanda's carbon market.

Market scoping and pipeline development will answer the following questions:

- Is there an initial pipeline of businesses that can undergo verification to sell carbon credits?
- What opportunities would be most additive given current and future activities within the carbon market in Rwanda? What innovative approaches can be employed towards standardisation and aggregation to reduce transaction costs and risks?
- What are the prevailing climate-action agendas and emission-reduction trends and how will this affect Rwanda's carbon market, including conditional and unconditional targets under the NDC?
- How many businesses can benefit from the carbon finance mechanism? How open would they be to working with a national entity to monetise their mitigation outcomes?

- How extensively have businesses explored monetisation opportunities? How interested would businesses be?
- How much faster could businesses scale, given access to carbon financing? What could the overall impact be in Rwanda - both economically and in terms of carbon benefits?

The intention of this phase is to build confidence that such a mechanism can meet its intended objectives - both social and environmental. Should it be found that few businesses would benefit, or that those who could benefit are already progressing faster than expected in accessing private carbon markets, or that the facility structure would not be attractive to those who are well positioned to generate credits, this work should not continue to progress.

The work in this phase will also provide the benefits of 1) ensuring that the views of potential beneficiaries help inform the design, and 2) building an initial pipeline of institutions that could sell carbon quickly once the facility is operational.

WORKSTREAM 3: Development and implementation roadmap

Activities:

- Assess the capacity of key institutions needed to stand-up the facility
- Articulate over-utilisation plan for the facility
- Determine resource requirements to execute the plan
- Set KPIs to monitor logistical and facility targets

The third workstream will focus on designing a business plan with iterative workflow processes to operationalise the facility. The first step will be to map existing capacity in key institutions and additional capacity needed. This will provide the basis of an operationalisation plan that addresses key functions and workflows at each stage in the transaction process. Finally, it will be important to estimate the resources required to execute the program and establish KPIs to track progress on goals and strategy implementation.

Step 1:

Conduct institutional capacity assessments

Determining who is best suited to play which roles in the facility will be critical and will depend on both an organisation's mandate and their capacity. Capacity assessments will be carried out of key organisations (Rwanda Environmental Management Authority, Rwanda Green Fund, and others), based on the efforts simultaneously underway in Workstream 1.

This process will assess considerations such as:

- An entity's key operational and functional needs, and current capacities
- The entity's capabilities regarding its new functions - both in the "as-is" state and a future "to-be" state, and the associated gaps and opportunities
- The role partnerships and collaboration in optimising operations
- Development of requisite processes to ensure the entity is "fit for purpose"

- The people and talent at the executing entity across key required competencies
- The entity's financial management and governance processes
- The entity's ability to grow to take on new tasks.

Step 2:

Develop an executive plan

Building on the structure of the facility as determined in Workstream 1, and the capacity assessments completed in Step 1, a full business execution plan will be developed. Specific activities to be carried out during this phase will include:

- Laying out an action plan with key milestones for the facility
- Defining roles and functions of each actor and unit within the facility
- Determining the human resource capacity required by the facility and whether talent can be sourced in-house or outsourced
- Estimating the financial resource requirements by outlining revenue and expense models
- Establishing risk mitigation strategies to reduce delays in establishing policy frameworks and obtaining required registrations

This six-month effort will reveal: 1) key feasibility parameters for this facility, main deal breakers and quantification of expected impact, 2) optimal institutional and financial structure, and 3) the timelines, targets, and costs to fully execute.

Figure 4: Illustration of required institutional capabilities

REQUIRED INSTITUTION CAPABILITIES	
Research & Development	<ul style="list-style-type: none"> Development of blueprints and generation of broader methodologies e.g. Mitigation Action Assessment Protocol tool)
Regulatory Processes	<ul style="list-style-type: none"> Bilateral agreements between buyer and seller countries Approval of Article 6 activities and authorisation of ITMO and AB transfers Determining responsible government bodies and alignment of Monitoring, Reporting and Verification (MRV) with NDC accounting
Information Exchange	<ul style="list-style-type: none"> Databases, publications, stakeholder engagement and side events
Carbon Market Infrastructure	<ul style="list-style-type: none"> Mechanism infrastructure (e.g. registries, governing bodies) Trading infrastructure (e.g. auction platforms)
Stakeholder partnerships and capacity building	<ul style="list-style-type: none"> Stakeholder alliances needed to push the facility forward Carbon market participants capacity building (e.g. project developers, auditors, financing institutions) and institutional capacity building (e.g. of host country institutions for authorising activities, ITMO transfers, etc)

The above figure represents capabilities that may be assessed for a particular entity.

Budget for establishing the G2G Carbon Financing Facility

	ACTIVITIES	BUDGET (\$)
Workstream 1: Structuring the mechanism	Defining the facility's vision, targets and impact framework	75,000
	Developing a financial structure for the mechanism including financial aggregation frameworks and disbursement mechanisms	170,000
	Developing the business processes and operating structures and defining capabilities required	150,000
Workstream 2: Market scoping and pipeline development	Refined quantification of mitigation opportunities to transact under a G2G agreement building on existing NDC implementation and financing plan	120,000
	Assess carbon asset potential in various asset classes (e.g. clean water, clean cook stoves, mini-grids, solar and other renewable energy, e-mobility)	100,000
	Map carbon market trends and sector opportunities that would unlock carbon finance in Rwanda	120,000
	Assess the additionality of carbon finance for the Rwandan market and understand past efforts to monetise carbon finance	85,000
	Conduct gap analysis for current businesses to tap into climate finance	140,000
	Identify high-impact potential businesses that would benefit from carbon financing	80,000
Workstream 3: Development and implementation roadmap	Assess the capacity of key institutions needed to stand-up the facility	1200,000
	Articulate over-utilisation plan for the facility	110,000
	Determine resource requirements to execute the plan	145,000
	Setting KPIs to monitor logistical and facility targets	85,000
	TOTAL BUDGET	1,500,000



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