



GGGI TECHNICAL REPORT NO. 9

Review of GGGI's Experience to Design and Operationalize National Financing Vehicles to Finance Climate and Green Growth Policy Implementation

DECEMBER 2019

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Executive Summary

Climate finance has become a hot topic. While the volume of committed climate finance is growing rapidly, it is far less than what is needed to achieve the Paris Agreement targets. There are also well-documented challenges in accessing climate finance. In particular, those most in need (i.e., smaller organizations in least developed countries, small island developing states, and Africa), experience barriers in dealing with a complex international architecture that is not necessarily responsive to national priorities or cognizant of country-specific constraints.

National financing vehicles, such as national climate and green funds, may be a solution to some of these challenges. In the 1990s, many national environment funds were established to accelerate the flow of financial resources to environmental policy priorities. The experience with such funds is mixed; many of these funds did not manage to recapitalize and become sustainable after their initial establishment. The current generation of national climate funds and related financial vehicles and instruments established to finance climate priorities, as well as associated green growth or sustainable development priorities, should learn from this experience.

GGGI has identified national financing vehicles (NFVs) as a potential solution to overcome some of the known disadvantages of international climate finance. In particular, NFVs have the effect of creating (1) stronger alignment with national priorities, (2) reduced barriers to access for smaller organizations and even individuals or households that do not have the capacity to access international climate finance directly, (3) the rapid deployment of climate funds into projects in sectors of strategic national importance, and (4) an expanded capital base for scale-up following the initial phase of NFV. NFVs are defined broadly as funds that are public or public-private entities and are set up within or, in some cases, outside government.

In nine countries—Colombia, Costa Rica, Ethiopia, India, Jordan, Mongolia, Rwanda, Senegal, and Vanuatu—GGGI has worked on the design, or redesign, and operationalization of new or existing NFVs. This paper reviews GGGI's experience, considers lessons learned for future NFV projects that GGGI expects to undertake, and shares the organization's experience with others active in the climate finance space. It is recognized that the majority of the NFVs reviewed are at an early stage, and the experience analyzed concerns the development stage, rather than operation. This implies that the conclusions drawn here will need to be revisited as more experience is gained

during operation. For each of the nine NFVs, the analysis has looked at the design, build, and operational stages in NFV development as well as the special conditions and issues that can affect the success or failure of NFVs.

The key conclusions of the review are the following:

1. The NFV process is largely demand-driven, with strong political support required from the national government. Most governments see the NFV as an innovative mechanism to attract and accelerate access to climate finance. This facilitates the institutional mobilization, including the often-required specific legislation or exceptions to standard policy, needed during the different stages of the design and operationalization.
2. The effort to design and build an NFV is significant and can easily be underestimated at the outset. In GGGI's experience, it takes at least two to three years before an NFV becomes operational.
3. The development and design stages are likely to cost facilitating agencies no less than USD 0.5 million; the cost could easily exceed USD 1 million for more complex funds. Development costs are high as a successful launch of an NFV requires market assessments, legal advice, development of an initial pipeline of projects, and design and structuring of the NFV through a process of close engagement and coordination with national, bilateral, and even international stakeholders and funders, such as global climate and/or development funds.
4. Whether an NFV reaches the operational stage, including initial capitalization, is closely linked to the level of sustained political support—not only at the national level but also at the equally important international level, as initial capitalization usually requires at least international co-funding from climate or development sources.
5. NFVs are, in all cases, well aligned with national policies and priorities, which is a significant advantage for NFVs over international climate funds and facilities, where other factors often take a front seat.
6. Effective NFVs can significantly lower the barriers to access for public and private entities at the national level and can be an effective mechanism to “retail” international climate finance. International funds cannot afford to finance projects at the USD 100,000–300,000 scale, because of their high transaction costs, while NFVs can.

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The Green Climate Fund, for example, considers a project at a scale of USD 5–20 million to be small, but it is too large - beyond the absorption or management capacity- for the majority of players at the national scale.

7. The sustainability of NFVs beyond their initial phase and first capitalization is critical as many national environment funds have not managed to recapitalize effectively.
8. While NFVs are mainly public or public agency dominated funds, they can facilitate the engagement of the private sector, either as partners or co-investors, in an NFV. The private sector is also the likely “end-user” or beneficiaries of smaller-scale climate financing—the retail function of NFVs. Many NFVs, though not all, are specifically designed to provide not only grants but also debt—and even equity—funding to private sector entities in climate and green growth areas, such as off-grid renewable energy projects where the traditional project funding through private banks has not yet adjusted to new or innovative technologies and business models.
9. Working with the private sector, NFVs can be designed to deliberately mitigate risks that hold back private (co-) investments in climate and green growth projects, and, while their track record is still limited, early experience shows that these funds can be effective.
10. NFVs, as national entities, can adapt more quickly to the changing needs within their national environment than international mechanisms can, dialing back support as private sector funding increases within a sector.
11. The governance structure of the NFV plays a crucial role in the successful operationalization of the fund. Clear definitions of roles and responsibilities regarding governance and the management structure of the fund will determine its efficient operation. This is also the case for any external fund managers that may be needed to ensure the right capacities and expertise are brought in.
12. Technical advisory assistance represents a crucial support for NFVs on an ongoing basis. This supports the governing bodies and fund managers as there are often needs around fundraising strategies and sources, linkages to other resources and financing mechanisms, reviews and advice on operating procedures, and provisions for periodic reviews and suggested guidance on the scope and fund implementation.

Based on this review, the following recommendations for future NFV design, development, and set-up, as well as operationalization, are as follows:

1. Political commitment at the highest level and across government departments is critical for operationalization.
2. A shared understanding within governments that the role and purpose of the NFV is needed to ensure cross-party/ ministerial support down to the public's understanding as to what funds (possibly gained through taxation) will be used for.
3. Including national domestic sources of finance in the initial capitalization of NFVs is important for their longer-term sustainability (as a necessary but not sufficient condition).
4. It is essential to understand what any funds would be used for in order to ensure the NFV is structured according to needs and that the aims can be clearly laid out to funders.
5. Independence from standard government processes and policies (such as civil service salaries) are necessary to work effectively across public and private entities.
6. Linkages with the private sector, including other forms of finance beyond grants (i.e., debt and equity), are key considerations from the start to draw in the private sector and leverage public finance.
7. When operating on a national scale, especially in new project areas (green) or in developing countries and emerging economies, the role of technical assistance funding is important, not only initially but also continually, to ensure constant development of project pipelines.
8. An NFV should be the toolbox from which a multitude of financial instruments can flow according to the needs of the activity pipelines identified.
9. There should be a space and a budget for technical advisory assistance on an ongoing basis as this is often needed to determine how an NFV can best adapt to changing needs from both a demand and supply perspective.



01

Introduction

Climate finance is a critical part of the Paris Agreement. Developed countries have committed to providing at least USD 100 billion in climate finance annually to help developing countries take climate action that includes both the mitigation of greenhouse gas emissions as well as adaptation to climate change. With the completion of most of the rulebook that governs implementation of the Paris Agreement, at the 24th Conference of the Parties to the UNFCCC (COP24) in December 2018 in Katowice, the attention is now shifting to implementing climate projects to achieve the Nationally Determined Contributions as submitted by the contracting parties (countries) to the UNFCCC.

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Introduction

Lundsgaarde et al. (2018), in a comprehensive overview of the international climate finance architecture, concluded that coordination challenges have arisen at the global level due to the emergence of numerous multilateral funds for climate finance delivery. The wide variety in rules used by these funds to govern access to climate finance forms a burden for recipients, particularly national governments in the most vulnerable countries. While larger international organizations and even large private sector entities can afford to build the in-house capacity to overcome these barriers to access, national governments and, even more so, subnational public organizations, as well as smaller non-governmental organizations (NGOs) and private sector entities, find it difficult or even impossible to access international climate finance.

In other sectors, such funding challenges for situations where markets are not providing effective solutions have been addressed in different manners. For the health sector, where many of the players providing solutions, such as vaccines or medicine, are large multinational corporations, solutions have tended to focus on the creation of global funding mechanisms, particularly Gavi, the Vaccine Alliance, and the Global Fund to Fight Aids, Tuberculosis and Malaria. These mechanisms have been able to change global market conditions, such as reduced vaccine prices for developing countries, as well as create capacity in developing countries through national-level public institutions.

For the environment sector, where the primary implementation actors tend to be smaller local entities and NGOs, a large number of national-level environment funds were established in the 1990s to accelerate the flow of funding to environmental projects, primarily through small-scale projects to local environmental organizations.

In our analysis, the climate finance architecture has emphasized multilateral global solutions—not least due to the link to the global climate change negotiations through the UNFCCC. The majority of the actions and actors needed to implement effective climate strategies, however, are at the subnational level. The involvement of a wide variety of public and private subnational actors is needed, such as cities, and sub-sectoral actors, such as construction companies, transportation agencies, or food processing plants, among others. The vast

majority of these actors do not have the expertise and capacity to access international climate finance and therefore become dependent on a wide variety of— mostly international—intermediary actors that are able to access climate finance.

There is thus a mismatch between the largely multilateral climate finance architecture and the majority of climate action implementers at the subnational level. The result is that climate finance tends to flow through large projects implemented by international organizations or large private companies. While there is a place for such projects, the consequences are an underfunding of smaller projects and lack of engagement of smaller actors other than infrequent subcontractors to the international players.

Recognizing this situation, a key component of the design of the GCF is that it allows for “Direct Access.”¹ Amongst climate funds, direct access has only been included in the design of the Adaptation Fund and, to a lesser extent, the Global Environment Facility (GEF). Other climate funds provide exclusively for “international access,” which allows for the provisions of funds to a recipient country via international entities. Direct access permits fund transfers directly to recipient countries via subnational, national, or regional Accredited Entities (AEs). One of the goals of incorporating direct access into the design of the GCF is to increase country ownership.

GGGI is an international, intergovernmental organization focused on supporting its Members to deliver the Sustainable Development Goals and their Nationally Determined Contribution targets under the Paris Agreement by using the green growth approach. Recognizing that there are many international organizations accredited to access climate finance but a dearth of active and effective nationally accredited entities with an effective project pipeline, GGGI elected not to become accredited itself but rather focus efforts on supporting direct access in its Members. To this end, GGGI has become the nominated delivery partner for the Readiness and Preparatory Support (Readiness) program, currently for 25 countries, and is implementing GCF readiness projects in 15 countries. GGGI’s engagement focuses on supporting enhanced capacity for direct access with national governments and national and subnational direct access entities, including the development of a pipeline of climate action projects.

¹ <https://www.gcreadinessprogramme.org/sites/default/files/Comprehensive%20Guidebook%20for%20NIE%20Accreditation%203.0.pdf> (accessed on October 12, 2019).

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introduction

This support for direct access to climate finance is a key component of GGGI's support to its members to facilitate a transformative shift to a green growth economic development pathway, or green transition. The two key areas in which GGGI provides support to its Members are:

1. The development of green growth planning and policies, from national green growth strategies to specific policy instruments to advanced green growth priorities.
2. Green investment services that include the development and structuring of bankable projects and obtaining commitment from green and climate finance investors.

As part of its green finance work and in line with supporting enhanced direct access to climate finance by national- and subnational-level actors, GGGI has prioritized the development of national finance vehicles (NFVs) as an instrument to enhance the flow of green and climate finance to high-priority projects.

This paper documents and analyzes GGGI's experience with the design and operationalization of NFVs in nine countries. It draws conclusions about the factors necessary to develop successful NFVs and the conditions and risks that affect the success or failure of the efforts and formulates a number of recommendations that the authors believe will lead to more effective NFV design and development going forward.



02

The Problem: Finance Is Not Flowing to High-Priority Projects in Vulnerable Countries

While the overall volume of climate finance has grown rapidly, it has also led to a rapidly growing, complex multilateral architecture of international climate funds that is not easy to access, particularly for subnational or local entities in the most vulnerable countries (Lundsgaarde et al., 2018).

For example, regarding the Green Climate Fund, while half of the 88 entities that have been accredited are direct access entities,² the amount of direct access funding that has been approved by the GCF Board is only 23% of the total. Watson et al. (2017) concluded that GCF *“project approvals and approved funding continue to be dominated by international agencies, with UNDP, EBRD and IDB managing 54% of GCF approved projects and programmes by the 2017-year end.”* Going forward, the intent of the GCF Board is to allocate at least half of all GCF funding to direct access entities, but that will require a significant increase in the capacity of direct access entities to manage such funds and, most importantly, develop a robust pipeline of bankable projects.

Bird et al. (2011) set out the rationale and definition for direct access to climate finance. They state that *“direct access is widely understood as a short-hand term for developing countries directly accessing international public financing in order to implement national and local actions to address climate change.”*

² <https://www.greenclimate.fund/how-we-work/getting-accredited/ae-composition> (accessed on October 12, 2019).

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The Problem: Finance Is Not Flowing to High-Priority Projects in Vulnerable Countries

Bird et al. (2011) also recognized that direct access is not always feasible and quoted a discussion paper on the governance of climate finance that the governments of the United Kingdom, Mexico, Norway, and Australia circulated at COP15 in Copenhagen in 2009, which states: *“There should be direct access to international finance where fiduciary standards allow and country level trust funds should be considered, among other alternatives, where direct access is not possible”*. In this presentation, country-level trust funds were not considered as synonymous with direct access, as these funds tend to be set up and managed by international organizations, such as multilateral development banks (MDBs), and subject to their rules and regulations. The standards set by MDBs for accessing such funds are high and costly to comply with for national- or subnational-level entities, particularly in small countries. Bird (2017) also suggested that there is a gap between national priorities and climate finance, as his analysis shows that large NDC-related projects are heavily dependent on international support via multilateral development banks rather than from multilateral climate funds.

The GCF Board acknowledged the need to actively support the participation of micro, small, and medium-sized enterprises (MSMEs) in developing countries and to design modalities to that end (decision B.04/08, paragraph (c)).³ Consequently, it set up an MSME pilot program under its Private Sector Facility to which it initially allocated USD 200 million. However, the review of the first phase of the pilot program concluded that only about USD 22 million of this was disbursed by mid-2019 due to a number of challenges. Two key challenges recognized in the review were as follows:

1. Many of the project proponents were not GCF Accredited Entities (AEs) and had difficulties in achieving accreditation or partnering with existing AEs, despite the secretariat’s efforts in actively seeking to connect them with suitable AEs.
2. A lack of diversity, as well as innovation and quality of the proposals received, as those received related predominantly to energy for mitigation and agriculture for adaptation.

The gap between demand-driven finance in line with national priorities and the international climate finance architecture has been recognized and analyzed at multiple fora. The G20 Finance Study Group, for example, published a report in 2016



with a number of detailed recommendations to improve the effectiveness and efficacy of climate finance (G20 Finance Study Group, 2016).

Based on the issues outlined above, GGGI has mounted an effort to establish green and climate finance-related national vehicles to overcome these challenges. The idea is directly based on what has been a very popular tool to mobilize resources for biodiversity and ecosystem services since the 1990s.⁴ Despite their popularity and relative success, several environmental funds appeared undercapitalized, particularly in Africa, due to several reasons:

1. The original capital base fell short of expected needs or was intended as a first infusion with the intention that additional funds would flow to the funds.

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2. Demand for conservation support exceeded initial estimates.
3. Endowment returns failed to keep pace with inflation, or the funds suffered a decline in asset base due to negative returns.

reporting requirements weighed heavily on the operation costs and stopped the environmental funds from being as flexible as they should have been.

Another evaluation (Oleas and Barragan, 2003) concluded that areas in which environmental funds needed strengthening included:

- Fundraising and institutional sustainability
- Advanced financial management
- Evaluation of the impact of initiatives supported
- Building stronger governmental bodies (boards, assemblies, etc.)

It was GGGI’s intent to learn from this experience and apply it to the twenty-first-century green and climate finance priorities of its Members, as vehicles to develop direct access. It is, therefore, important to learn the lessons from the establishment of this earlier generation of environmental funds. Bayon et al. (1999) reviewed the experience with environmental funds set up in the 1980s and 1990s, mainly in Latin America and the Caribbean and generally funded through debt swap structures, for the Global Environment Fund (GEF). They concluded that critical success factors were fund governance, which included, but were not dominated by, government (i.e., having a degree of independence from the government), a robust project pipeline, and continued sustainable financing. Interestingly, they noted that donors’

³ https://www.greenclimate.fund/documents/20182/1674504/GCF_B.23_12_Add.04_-_Review_of_the_initial_modalities_for_the_Private_Sector_Facility_Addendum_IV_Review_of_the_micro_small_and_medium_sized_enterprise_pilot_programme.pdf/357beda9-499f-fc2f-9a71-c1d1b9b60288 (accessed on 12 October 2019).

⁴ Convention on Biological Diversity <https://www.cbd.int/financial/0006.shtml> (Accessed on October 12, 2019).

03

NFVs as a Potential Solution

A strong focus of GGGI is green investment: increasing the flow of green and climate finance to countries in order to fund the work needed to attain the SDG and NDC goals of countries. This requires the organization's involvement in a number of activities:

- Identifying and shaping projects within countries to become more “bankable”—more attractive to commercial finance by structuring the project and blending with a concessional finance contribution.
- Supporting governments to identify sources of finance that may assist them to meet their national growth visions and goals.
- Providing the pathway for finance to flow to where it is needed.

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NFVs as a Potential Solution

Not only does this include identifying what needs to be financed but also how the money will move from international organizations down to national ones. This will involve efforts in (a) strengthening fiduciary management, (b) meeting environmental and social safeguard standards, (c) setting up or improving monitoring and reporting methods, (d) strengthening capacities, and (e) determining how to do all of this in a cost-effective manner.

Working with governments on these activities led GGGI to the concept of national financing vehicles (NFVs). In order to establish the skill sets needed nationally for the financial management of climate finance flows and the monitoring and reporting of such, it is much easier to aggregate and have the skill set in one place, be it a fund, facility management, or others. This also allows costs to be kept at a minimum as a similar number of people are often required, whether managing USD 10 million or USD 50 million.

GGGI has been helping its members access climate finance since its inception, but its activities have not focused on NFVs as such, and the categorizing of this function only fully emerged in late 2016. It started with GGGI's work in Rwanda with FONERWA (which was already established but considering restructuring) as well as CRGE in Ethiopia. From here, the government of Vanuatu requested advice regarding what they should do with funds collected from tariffs on electricity that were intended to assist with rural electrification but were dispersed, sitting in various accounts and agencies. This led to a discussion which gradually shaped itself into the National Green Energy Fund (NGEF).

At the same time, in discussion between GGGI and partners in India, an NFV was also seen as a solution to the issue of access to working capital for Indian solar power suppliers, which evolved into the development of the ACE Fund. A further leap came when an idea being discussed in Mongolia between GGGI and the private sector's Mongolian Bankers Association became the Mongolian Green Finance Corporation (MGFC), which aims to raise finance from the Green Climate Fund, government, and commercial banks to help address climate change mitigation and air pollution reduction in its first phase and, later, the overall green development needs of the country. This bridged the gap to incorporate the private sector within GGGI's NFV model.

The Renewable Energy & Energy Efficiency Fund (REEF), developed by GGGI and partners in Senegal, together with the

African Development Bank, is another example of public and private sector finance blending. The initial national design for Senegal was subsequently extended by the AfDB to include four more West African countries, which adds the further dimension of a regional, rather than only national, NFV.

The shape of NFVs is changing. As the urgency for implementation of climate change measures accelerates, the flow of climate finance to countries in need and the mechanisms to accommodate these flows must be scaled up. The idea of a green bank has recently developed, both from the perspective of commercial banks pulling away from funding fossil project investments and from the view of accessing global climate finance to target mitigation and adaptation projects. Riding on the back of the success of models such as the United Kingdom's Green Investment Bank (GIB), recent additions—supported by international funding sources like the Green Climate Fund—can be found in South Africa, including the Development Bank of South Africa (DBSA). In order to attain the investment volumes needed to achieve the 2-degree target, GGGI's work is expected to encompass more activities in this direction, allowing for the scaling up of climate finance where possible.

Other organizations and national governments have more recently worked on national climate funds as well, as reviewed by Nakhooda, Watson, and Schalatek (2013). They concluded that several developing countries have established national funds with a variety of forms and functions, resourced through international finance and/or domestic budget allocations and the domestic private sector. The Indonesian Climate Change Trust Fund was one of the first of these institutions to be established. Brazil's Amazon Fund, administered by the Brazilian National Development Bank (BNDES), is the largest national climate fund, with a commitment of more than USD 1 billion from Norway.

There are also national climate change funds in Guyana, Bangladesh, the Philippines, Rwanda, Kenya, and Mexico (Nakhooda, Watson, Schalatek, 2013). Many more countries have proposed national climate funds in their climate change strategies and action plans. In many cases, UNDP has acted as the administrator of national funds, increasing donor trust that good fiduciary standards will be met. Data on the capitalization of national climate change funds is not consistently available. National climate change funds attracted early interest. As they were established with

independent governance structures that met high levels of transparency and inclusiveness, they could channel finance to projects suited to national circumstances and aligned with national priorities. Working through coordinated national systems could also improve transaction efficiency. In practice, however, the impact of national trust funds on strengthening national ownership and coordination remains to be seen.

In 2018, the UNFCCC concluded that: *“National climate funds contribute to building national capacity for the development and implementation of climate projects, and can benefit from sustainable, predictable and accessible financial and technical support. Challenges remain in meeting the criteria and requirements of resource providers in mobilizing financial resources to replenish national climate funds.”*

GGGI defines National Financing Vehicles, or NFVs, as: public, public-private funds or facilities that have the function, assigned by national government, and the fiduciary management capacity to receive and hold international and national green and climate financial resources, and redistribute these funds towards national priorities, established by government, through eligible national and subnational public and private entities to implement and monitor green and climate action projects through grants, debt and equity financing, and risk reducing instruments.

It is important to unpack this definition in order to understand the different components. Firstly, an NFV is designed to expand national ownership of climate finance to achieve emission reduction ambitions. For any country, emission reduction activities should be seen as part of a larger set of actions aimed at country priorities, such as access to services, green jobs, and/or improved air quality. It also enables aspects, including the just transition⁵ of economies to low-carbon growth pathways. It is, therefore, important that governments are included in the decision making of where and how climate finance flows nationally to ensure wider goals are also met. Aligning NFVs with governments, either through ownership or assignment, increases the possibility that public funds are invested in them—the “skin in the game” aspect, which reassures the international finance community that the government is committed to the success of an NFV.

⁵ <https://climatejusticealliance.org/just-transition/>.

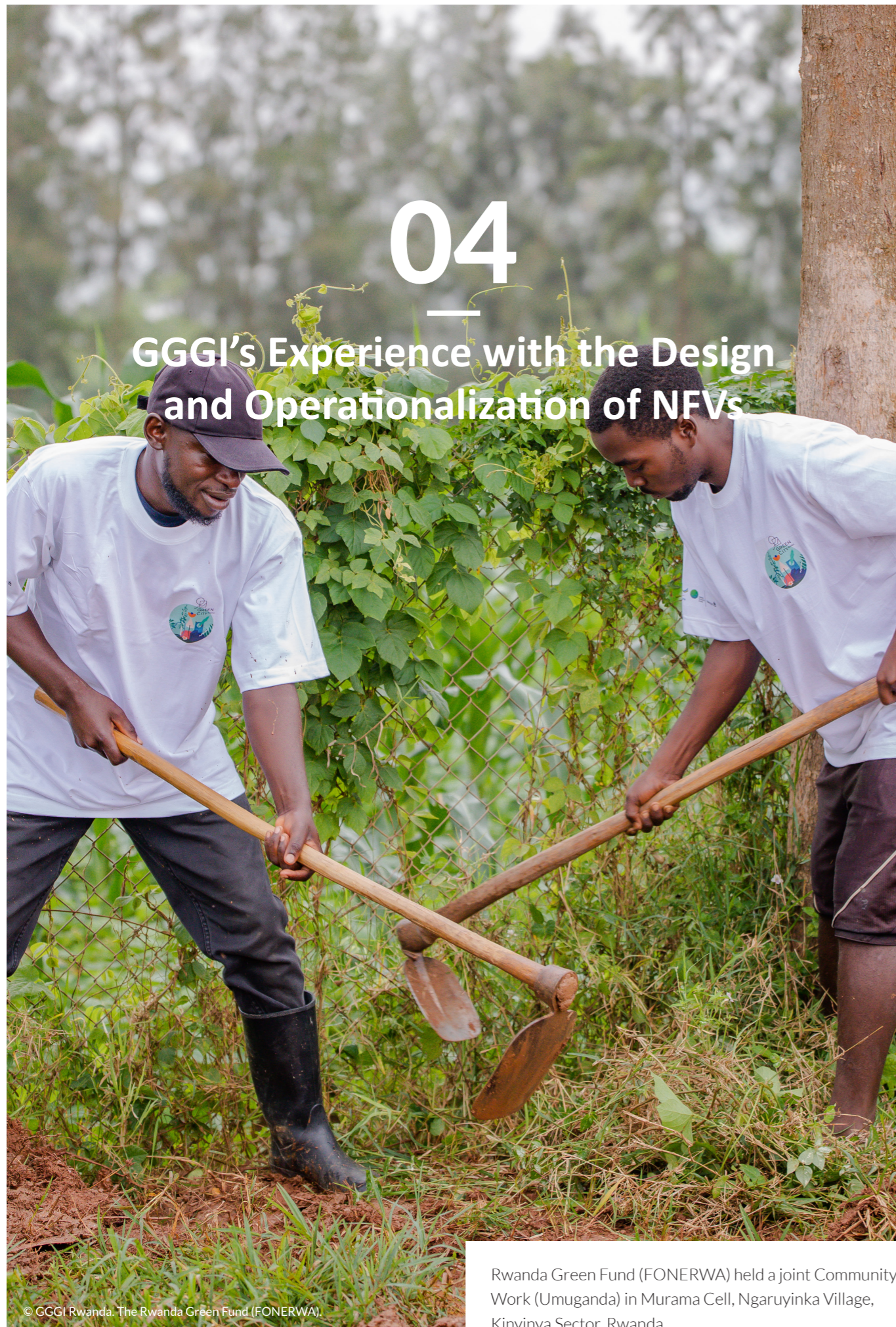
⁶ https://www.greenclimate.fund/documents/20182/953917/GCF_B.19_29_-_Policy_on_fees_for_accrued_entities_and_delivery_partners.pdf/11f35fd8-ce50-4688-9b48-591c28a28009.

understanding of green, beyond an international minimum. The concept of “green” is a spectrum, sometimes referred along the color spectrum of dark to light green.

Finally, and tied to the capacity aspect, is the instrument offering. An NFV should be the toolbox, from which a multitude of instruments can flow, according to the needs of the activity pipelines identified.

As outlined by Torvanger et al. (2016) multiple financial instruments are available to de-risk or reduce costs related to climate mitigation measures and projects in developing countries. The financial instruments can be divided into several categories: revenue support, credit enhancement, direct investments, and insurance. Torvanger et al. (2016) conclude that “More of these instruments are suited for de-risking than for cost reduction, and especially for reducing market and commercial risks. In terms of cost reduction, the majority of instruments affect transaction costs or the rate of return. Not all financial instruments are suited for all situations. Assessing financial instruments with the help of leverage ratio (amount of private finance raised per unit of public finance spent), scaling-up potential, and reliability, we find that the most suitable or promising instruments are significantly dependent on the context, foremost the ‘climate’ for investments in a country and the sectors invested in.”

In the case studies below, it is clear that, initially, due to international standards set for fiduciary governance and the capacity available in-country, a gradual path is often established. Starting with grants or the initial use of international professional fund management firms, capacity can be built to allow a gradual growth of corporate understanding within an NFV in order to build to more sophisticated instruments that not only spread within the NFV but outwards to the private sector financial institutions of the country. This path has already been set by developed countries as evidenced by national funds or facilities growing into green banks. GGGI perceives NFVs as the adaptation of that model for developing countries and emerging economies. The case studies that follow show GGGI’s experiences in nine countries on this path.



04

GGGI's Experience with the Design and Operationalization of NFVs

Rwanda Green Fund (FONERWA) held a joint Community Work (Umuganda) in Murama Cell, Ngaruyinka Village, Kinyinya Sector, Rwanda.

© GGGI Rwanda. The Rwanda Green Fund (FONERWA).

04

GGGI's Experience with the Design and Operationalization of NFVs

4.1

Mongolia – Mongolia Green Finance Corporation (MGFC)

Context

Air pollution levels in Mongolia represent some of the worst in the world, particularly in the capital Ulaanbaatar. In the vast and sparsely populated country, over half of the three million inhabitants are now based in the city. The chronic air pollution is caused largely by the use of low-quality raw coal used for household space heating in the informal housing sector—where (former) rural residents live in felted tent structures, or gers,⁷ and in small, poorly insulated individual houses—and in the heat-only boilers in public buildings and private (off-grid) apartment buildings. Alternative technology is available for space heating and boilers, as well as to increase the energy efficiency of buildings, but although finance is available through private banks, interest rates are high, putting out of reach the ability for most households to switch. As attention was drawn to climate issues and the government drew up their NDC, private banks were also becoming aware of the availability of international climate finance being made available via routes such as the Green Climate Fund. Several actors have taken a pioneering role in jumpstarting green financing projects in Mongolia with significant assistance from the GCF, such as XacBank (GCF Accredited Entity) and the Asian Development Bank. But these efforts alone cannot meet Mongolia's targeted goals. A larger, independent institution is needed to mainstream green financing projects to the scale necessary to make transformational impact and support Mongolia in reaching its national emission reduction targets. The Mongolia Green Finance Corporation was designed and developed to meet this need.

GGGI's Role

In almost all cases, to access international climate finance, there must be a clear link showing how the funding is addressing national climate issues, and the government must be fully engaged in the process. Acting in silos has rarely led to the successful deployment of funding. The Mongolian government and commercial

banks acknowledged this issue, and GGGI was tasked by the government to support a working group in 2016 to develop a solution. The government recognized its lack of capacity and agreed that the Mongolian Bankers Association, which comprises all 12 national banks active in Mongolia, could identify a solution with government support.

GGGI's role was to offer technical assistance to the working group as they progressed to develop a solution. Initially, a study was completed to identify possible models for funding. This incorporated market assessments, possible institutional frameworks, and options for financial offerings. With one of the highest carbon footprints per capita in the world, energy efficiency was a clear target for Mongolia, both at the household and industrial levels. The Green Climate Fund (GCF) was identified as a potential source of funding along with others. GGGI supported the working group to apply for and deliver GCF readiness funding, and this was used to undertake a number of market assessments to understand the potential project pipeline along with the structure required to make the switch to energy efficiency measures and technologies suitably attractive for households and industry. Operational frameworks were designed to understand how foreign exchange exposure, on-lending, and the blending of concessional finance could be deployed successfully with robust monitoring. The results were fed into a full feasibility study and investment proposal that was submitted to the Green Climate Fund by the accredited entity XacBank. Governance of MGFC is important to note. Although an independent asset management entity will run the NFV, both the Ministry of Finance and Ministry of Environment and Tourism will be represented on the Steering Committee, ensuring the strategies and goals of the government are considered going forward and providing leverage for additional policy support in MGFC's targeted markets.

The Green Climate Fund wanted to use its funds to leverage further funding from others, so more work was carried out to acquire additional sources of funding from,

⁷ <https://en.wikipedia.org/wiki/Yurt>

for example, the government, to help cover foreign exchange exposure. With this support, the structure of the Mongolian Green Finance Corporation was devised, as a wholesale lending institution that any commercial bank could access and blend with their own funding in order to make concessional lending lines for green energy solutions. Commercial banks, matching with the required eligibility criteria, will be able to access MGFC. This will be blended with commercial lending, bringing down interest rates for borrowers, from market rates of 20–30% to around 13.5%. Lending will be targeted at (1) thermal-retrofitting solutions for individual houses in the ger areas, (2) energy efficiency measures for large energy users, and (3) green mortgages for green and affordable new houses for ger area residents.

Collectively, these solutions are designed to reduce carbon emissions in the country, helping the government to achieve its NDC as well as address the chronic air pollution in Ulaanbaatar that results from fossil fuel use.

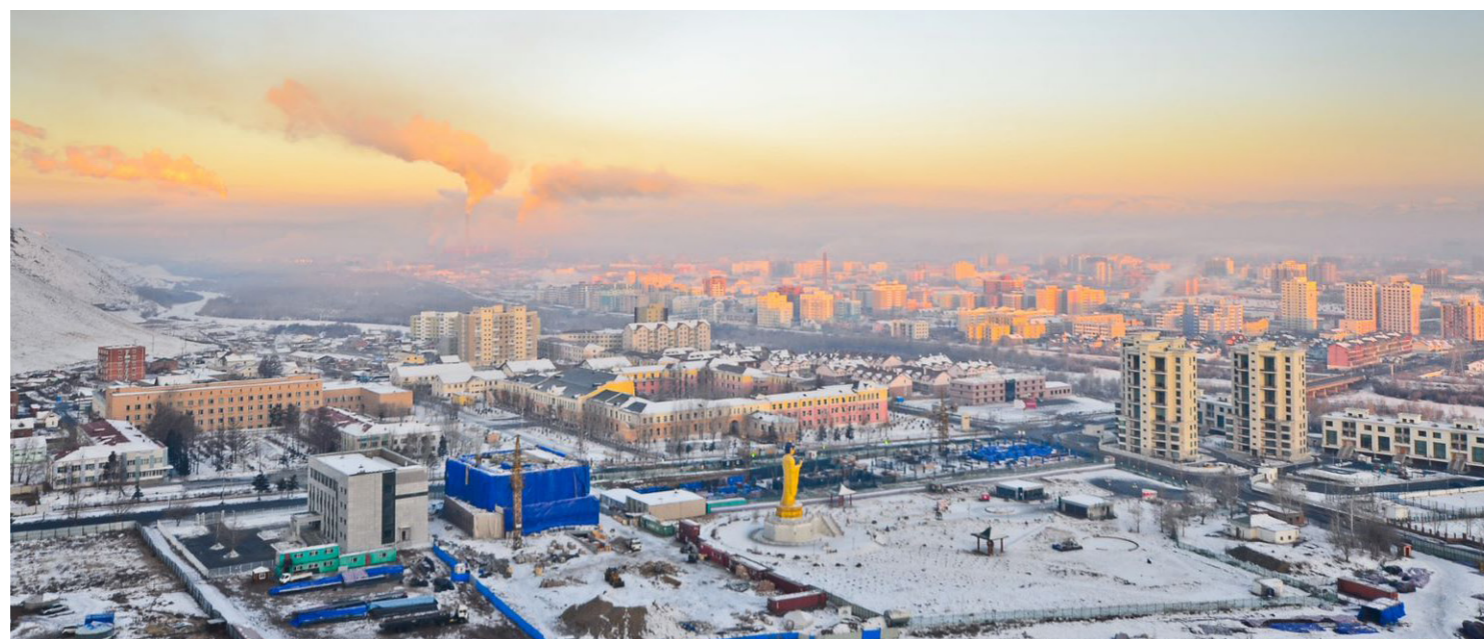
The sustainability of the NFV has been addressed in the structure. Part of the collective funding for MGFC—both through the concessional lending, government contribution, and equity capitalization from international finance institutions and national commercial banks—will be used to fund operational costs. As a lending institution, it is expected that part of the funding will revolve, allowing continued replenishment.

Despite the design process starting in 2016, MGFC is still not operational. The structure is continuing through the lending assessment process with climate financiers, with a proposal submitted to GCF. The time taken is not surprising given that:

- i. Investment in a new financial institution with no track record is difficult to secure.
- ii. As a public-private partnership institution operating in a developing country, investors (in particular, GCF) want to be confident that all necessary safeguards are put in place when it comes to governance and

that the management team to be recruited is trustworthy.

GCF has rarely invested in equity and not yet into a new institution, which leads to extra caution.



Summary

If the public-to-private involvement in NFVs is viewed as a spectrum, MGFC would be positioned towards the right-hand end, with strong private sector involvement but still enough inclusion of the government (via the Steering Committee and the capitalization structure⁸) to ensure that national climate goals are the focus of the fund, rather than commercial returns. This is a good example of how international climate finance can leverage the private sector.

MGFC is, however, still not operational, three years on from start. International climate finance and the rules/guidelines and collective knowledge of how this would be disseminated was in its infancy in 2016. Initial market assessments carried out needed to be repeated in further depth as more rules and guidelines were developed. Some pathways for finance took longer to understand; for example, how to overcome a potential

conflict of interest in a structure where a single private bank accredited entity with GCF channels the funding for a national independent entity, representing the interests of multiple banks.

Also, co-funding for such an NFV by international finance institutions is difficult as a new institution without a track record is difficult to assess from a credit risk perspective. An important lesson to take from the MGFC development process is that technical assistance funding, in many forms, through multiple layers of the process, is vital. Without the ability to offer time and funding for studies to the Working Group, given the additional costs involved in the development of a greenfield project like MGFC, the initial idea and shape of the fund would not have progressed. Subsequently, project preparation funding was needed to complete more detailed and wider-ranging assessments, including safeguarding and gender. Without this, smaller countries with less capacity have little hope in accessing and, importantly, attracting the private sector to leverage climate finance.

It is clear that MGFC is targeting the goals of the government, both through addressing the implementation of its NDC and an urgent issue affecting the health of the population (air pollution), and is attractive enough to engage the private financial sector within its own country.

4.2

Ethiopia – Climate Resilient Green Economy Facility (CRGE Facility)

Context

As one of the least developed countries globally, 34% of Ethiopia's population is living in poverty. Over 90% of energy usage is based around biomass, largely wood and charcoal. Only 27% of the population is grid connected, largely sourced from hydro power. Carbon emissions are generated mainly by agriculture and deforestation. Economic growth is strong, at about 10% since 2005, and related power demand is expected to increase by 10–14% over the next 20 years. Climate change and extreme weather events have an increasing effect on agriculture, power supply, and human safety. The issues facing Ethiopia are, therefore, more related to managing the effects of

climate change and building mechanisms to reduce these effects (climate resilience), as they are to addressing mitigation efforts to reduce emissions.

Ethiopia's Growth and Transformation Plan aims to see the country reach middle-income status by 2025, through the use of a net-zero carbon pathway and building climate resilience. The Climate Resilience Green Economy Initiative (CRGE) was created as the path to achieve the plan. The initiative was developed and deployed within the government, led by the prime minister's office, with the Ministry of Finance (MOF) and the then Environment Protection Agency (EPA). Two components emerged from the initiative: the CRGE Strategy, which was implemented by the CRGE institutions (ministries and bodies within the

⁸ Govt: 5M equity, 13M debt; Banks: 5M equity; GCF: 5M equity, 20M debt, 2M grant

government), and the CRGE Facility to mobilize the climate finance needed to support the strategy. The facility, a form of NFV, was designed to mobilize resources and ensure deployment of these resources in the best way to achieve the plan.

solution. This creates the dilemma of whether a solution should be given for free or subsidized so heavily as to be almost free, resulting in a high requirement of funding and the risk of the solution having little or no worth to the recipient.



Rweru Model Green Village in Bugesera, Eastern Province, Rwanda.

Challenges

Unlike other NFVs, many of the CRGE resources have been focused on adaptation to climate change and climate resilience. Projects within this sphere are often focused on the poorest and most vulnerable in society who are least able to pay for services, thereby not providing any potential return to investors. International donors are, therefore, often turned to for funding, and without a commercial return, it is difficult to bring in the private sector to further leverage this funding. Dealing with poor rural communities brings a further set of challenges when trying to implement projects. Often, a project will require behavior changes to, for example, farming practices or cooking methods. For those with means, switching to new practices could result in an expensive failure but is unlikely to be life-changing. For those with very little, a failure could be devastating, so many are resistant to change unless proven success can be shown. This means change takes time and money, hence the impact can be slow to show. Lastly, even when change will save communities money and improve lives in the long run, household funds are so minimal that it is impossible to put down even a small payment for a

GGGI's Role

GGGI has been working in Ethiopia since 2010, supporting the government in the shaping of the CRGE Strategy and the associated CRGE Facility. In recent years, it has supported the CRGE Facility in methodologies to calculate what funding is needed for projects, designed the business cases for particular projects related to water supply, and is currently studying mitigation activities in industrial parks. A large effort has also been placed on reducing deforestation and forest degradation as well as the creation of forest livelihoods programs. These programs, under the management of the CRGE Facility, have successfully obtained financing directly from developed country governments, such as Norway and Denmark for forestry, or through government-supported infrastructure finance; for example, the water supply in Mekele was funded under the Chinese Belt and Road Initiative. Alternatively, the programs have obtained funding from collective donor funds, such as the Green Climate Fund and Adaptation Fund. In all cases, funding was directly to the government, which then channeled the funding to a project or region using the CRGE Facility to apply the robust monitoring and reporting requirements needed by the funding provider.

Summary

The CRGE Facility is different from some other NFVs in that it does not hold a separate legal entity status but is embedded within the Ministry of Finance (MOF), with clear functions elaborated in the *Operations Manual of the CRGE Facility*. The facility administers climate finance mobilized from bilateral and international climate finance institutions under the umbrella of MOF. In the absence of separate institutional and legal status, it is difficult to decide whether the facility or the government should be congratulated on accessing over USD 200 million in funding for climate resilient and mitigation projects. Regardless, the CRGE Facility plays a vital role in fiduciary management and the coordination of projects

and programs financed from the facility's account. The facility appears to have more of a resource mobilization, monitoring, evaluation, reporting, and assessment function rather than operating as an NFV, albeit still successful. Taken from another viewpoint, the needs of Ethiopia are different from other countries. Although every developing country would like to have a burgeoning private sector, there are more pressing requirements—with known less attractive returns—that must first be addressed. Growth rates are strong, so the government should focus on helping its rural poor and addressing its Paris Agreement commitments to reduce deforestation and fund climate resilience programs.

4.3

Rwanda – Rwanda Green Fund (FONERWA)

Context

Rwanda is one of the smaller countries in Africa, at less than 27,000 km², a population of just over 12 million people, and a GDP of approximately USD 9 billion. Ensuring climate finance, at scale, reaches projects on the ground in-country is a challenge. In 2000, the Rwandan government published Vision 2020, an ambitious plan targeting middle-income status for the country, mainly by increasing per capita income and reducing poverty rates. A series of medium-term plans to achieve this are shaped as the Economic Development and Poverty Reduction Strategies (EDPRS). Prior to EDPRS in 2012, Rwanda also developed a Green Growth and Climate Resilient Strategy (GGCRS) which envisioned Rwanda to become a low-carbon, climate resilient economy by 2050. To help finance and coordinate achievement of this vision set out in the GGCRS, an Environment and Climate Change Fund (FONERWA) was established. Within the EDPRS II period (2013–2018), the opportunity of support for socially inclusive and environmentally sustainable growth, or green growth, offered by the international community created the challenge of how finance could be channeled from international sources into nationally prioritized areas while still maintaining national ownership. The

international finance community was keen to finance large infrastructure projects, where risks could be easily quantified and managed, but these were scarce in such a small country. Vision 2020 and the related EDPRS II were focused strongly on alleviating rural poverty—a mismatch with the multilateral finance community. Consequently, the idea of a fund, nationally owned, that could disseminate funding to projects on the ground was created. It was important, however, that such a fund complied with strict international standards of fiduciary management and environmental safeguarding—through the robust assessment and monitoring of funding disbursed—so that it could attract international donor funding.

Accordingly, in 2012, the government embarked on setting up a green fund within the Ministry of Environment (then, the Ministry of Natural Resources) to address the issue by becoming the channel through which international and domestic finance could be disseminated into the smaller amounts needed by individual projects. Supported by funding from the UK government, the fund was designed around the following parameters:

- Grant based
- Demand led: in order to truly answer the needs of Rwandans, it should answer to requests for funding

- Focused around thematic windows of conservation, R&D, climate mainstreaming, and MRV
- Public and private sector applicants could apply

Importantly, a robust and transparent process was established for applications, measuring against clearly defined criteria. A further monitoring and reporting system was put in place to assess progress once funding was granted.

The fund reached an initial capitalization of USD 50 million, receiving funding from the UK and German governments and international organizations such as UNDP. Most importantly, the Rwandan government gave an initial grant and additionally agreed to channel all environmental charges and fines, collected from environmental infringements within the country, to the fund.

Within the first three years, the fund received over 1,300 applications for funding, through six monthly calls for proposals. With the robust eligibility criteria and strict monitoring requirements, the fund has, to date, funded 42 projects. This has helped create green jobs, support people to cope with the effects of climate change, protect watersheds and forests, and protect land against soil erosion.⁹

Challenges

The fund was successfully reaching projects, but the overall impact was limited compared with the ambitious plans of what the country had wanted to achieve overall. It needed to focus more on targeting impact—by focusing on the root cause of issues—than just answering calls for single project issues.

It was also clear that the administrative burden of managing such a high volume of applications could not be sustained without additional fee retention. Moreover, the robust international standards set for governance and eligibility were not matching the capacity of project proponents, the amount of funding reaching the private sector needed to be accelerated, and the fund required replenishment. The fund secretariat itself, being based

within the government and thereby restricted by limited compensation structures, was finding it difficult to attract the requisite staff skills it needed.

There were a number of alternative institutions within the country, although not focused on climate funding, through which international donors could channel finance—again, often without the supportive technical assistance funding fees. This had the potential to dilute the effectiveness of FONERWA, diverting the much-needed supportive administrative funding for operational costs away from the fund, either for themselves to fund or to be the hub point to assist other national institutions to set green criteria for their funding.

GGGI's Role

At the request of the government of Rwanda, GGGI assisted FONERWA in a restructuring between 2016 and 2018 to support addressing the challenges identified above. The continued strong support and contributions from the government were vital to show sustained national commitment to the fund, but in order to recapitalize with international climate finance successfully, it was felt the fund could be clearer on what it would target in the country to create impact. In addition, the structure being based wholly within the government hampered its ability to attract strong national talent for the increasingly complex monitoring and reporting as well as expanding the offering needed to structure solutions for projects to leverage private sector funding wherever possible.

The fund was redesigned under a grant hybrid model: part demand driven while also able to target funding to specific outcomes and activities. This created the ability to match finance to targeted windows of the fund. With this new focus, additional funding was brought in from the Swedish government, focusing on further social inclusion goals and poverty alleviation. For the governance, a new FONERWA law was passed in 2017 which allowed the fund to become more independent from the government, thereby allowing it to grow its

GGGI's Role

in-house capacity and have an independent board (with representation from the private sector) with a clear mandate to match government strategies and goals. Also, an outreach program was developed to educate project proponents on how to structure applications, set up monitoring systems, and complete governance and reporting requirements.

During this period, EDPRS II came to completion, and it became clear that one of the focus areas to address going forward was the leveraging of the private sector into Rwanda. FONERWA remains a grant-giving fund only, due in part to its limited fiduciary capacity and size. An expansion to include a focus to private sector activities and a wider instrument offering is ongoing, seeking ways to attract further climate finance that may be leveraged with commercial investment. For example, in 2018–2019, GGGI developed the Green Incubator and Accelerator Facility (GI AF) to contribute to the development of the innovative early-stage SMEs in strategic priority sectors in Rwanda that have the potential to contribute to CO₂ mitigation and adaptation to climate change in Rwanda. Fiduciary governance

remains a challenge, although now independent, to become an entity offering more complex financial solutions.

Summary

Within Africa and beyond, FONERWA has been seen as the success story of NFVs. Set up with strong national government support and commitment, donors were confident contributions would be correctly directed towards impact, in a well-governed and transparent manner. It has successfully funded projects that have made real impact in the country. Its robust monitoring and reporting is applauded but has perhaps come at a cost. Operational costs are high, with some currently still being funded by international ODA. Programmatic funding is currently directed to other longer-standing institutions with fiduciary capabilities beyond FONERWA (i.e., lending). The fund is addressing this by turning its attention to areas such as the private sector and looking to partner with other institutions to be able to offer lending and guarantees, among others. It has yet to be seen whether the costs associated with partnering and bringing in external expertise are manageable for fund sustainability.



Rwera Model Green Village in Bugesera, Eastern Province, Rwanda.

⁹ <http://www.fonerwa.org/>.

4.4

Senegal – Renewable and Energy Efficiency
Fund (REEF)

Context

Senegal is one of the most politically stable African countries, with a growth of 6%¹⁰ and around 60% of the population having access to electricity. Below these headline figures, a tougher story emerges. Half of the population is based in rural areas, where electricity access drops to 17%. Over 80%¹¹ of the grid-connected power is sourced from fossil fuels, mainly imported diesel, which is sold at a fixed domestic price. In 2016, the average electricity tariff was high, at USD 0.19 per kWh. Despite the decrease in world oil prices since mid-2014, electricity prices remained relatively high compared to Sub-Saharan Africa (SSA) averages. This leaves the government managing the price fluctuations of international oil markets, putting strain on the fiscal balance. The government is only too aware of the situation and has been addressing it in a number of ways. The Plan for Emergent Senegal (PSE) aims to increase diversity in the energy mix, become 20% solar by the end of 2020, and promote independent power production. Progress has been positive, and the country will have nearly 200 MW¹² of installed solar capacity by the end of 2019. However, the majority of projects have been funded by consortiums of international financiers, along with the government, by way of the sovereign wealth fund FONSI. This level of funding does not reach the smaller projects—those that will be needed in order to address rural energy access. Despite many national initiatives spearheaded by the Ministry of Energy, there are very few medium- to large-scale RE or EE projects under development that aim at tackling the issue of low levels of energy production capacity and very low coverage of the energy grid in rural areas. In addition to the several technical barriers, banks are unwilling to lend to solar companies due to lack of experience and lack of balance sheets of the solar companies themselves, amongst other reasons. GGGI, FONSI and AfDB came together to design a financial solution that would address the key sectoral challenges and help finance the huge but so far untapped RE, EE, and solar off-grid capacity in Senegal. This solution would have two major components:

GGGI's Role

- A fund for financing renewable energy (RE) and energy efficiency (EE) projects with an initial focus on solar energy companies.
- An associated technical skills and market development component for building local capacity.

GGGI's overall role consists of leading the design and structuring of the fund based on the needs of the sector, investment interests of potential investors, and the needs of the government to the extent that this endeavor meets the country's electricity generation ambitions and NDC goals. This is structured around supporting the government to shape an NFV that may address how funding can be made available to smaller renewable energy and energy efficiency projects. A market assessment was carried out to initially identify the barriers to funding and therefore the shape of NFV required. It identified that although the government had put in place suitable enabling facilities, barriers persisted in the financing of such. As with many developing countries, the lack of long-term money within the banking system (provided by savings and insurance markets) resulted in a lack of availability of long-term lending, which was needed for capital projects such as power supply. Additionally, commercial banks attempted to minimize risk by restricting lending to large established businesses operating in proven technology areas. This all meant that new operators trying to borrow to implement new technology solutions were either unable to borrow or given prohibitive rates and unmanageably short tenors.

The needs were becoming clear, but where to position the NFV was the next question. In 2013, the government established the sovereign wealth fund FONSI, with a board of directors and complete autonomy. Its aim is to support government long-term development plans by offering equity to aligned projects. A sister fund, FONGIP, offers guarantees to projects with same alignment guidance. The funds have highly expert staff, operating under an independent compensation structure from the government. The Ministry of Finance feared that a



new NFV would overlap with these funds, especially as FONSI had been instrumental in supporting larger solar projects in-country.¹³ A structure was agreed that would see a “green window” of FONSI developed, focusing on renewable energy and energy efficiency (REEF). The Renewable & Efficient Energy Fund (REEF) was created to source subordinated debt (or assume an alternative structure based on an independent market assessment) for RE, with a focus on on-grid solar in its first phase, to cover the risks of debt capital that is currently unwilling to enter this market. Capacity within FONSI was restricted to equity investments, in line with their mandate, but REEF would need to offer debt financing in order to address the funding shortfalls in-country as well as assess projects against green criteria in which FONSI did not have experience. To address this, it was agreed that an independent expert fund manager should be appointed to co-manage REEF, allowing for capacity transfer to FONSI over time.

Capitalization of REEF was to be from multiple sources. FONSI itself would contribute, illustrating the all-important national buy-in for the fund, then supportive capital would likely be from the African Development Bank (AfDB) with a first loss or similar tranche sought from the Green Climate Fund (GCF). Technical assistance funding for project preparation would also

be required with the supportive capital. Above this, further institutional investors could also add funding. It should be noted that lending from the fund would be at commercially competitive rates, in order to attract blending with commercial banks rather than competing against them. The blockage in finance was the tenor, technology risk, and corporate track record of the borrower, which could partially manifest itself in the interest rate offered, but the level of rates was not, per se, the issue. If the risks were removed or reduced, by say a first loss guarantee or co-lending, interest rates would be reduced to manageable levels, enabling blending.

In order to attract the supportive international financing institution (IFI) funding, scale has become a focus. Although there is great interest in support from the African Development Bank, a regional program may be needed in order to reach the scale required for such an MDB-specific program. On further analysis, the amounts requested and the scope of impact were questioned by IFIs. This concluded in the fund being again reshaped into a regional proposal, the African Renewable Energy and Energy Efficiency Fund (AREEF). The aim of the fund in each country remains the same, namely enabling renewable energy power producers, energy efficiency operators, and suppliers of household-level solutions such as solar home systems.

¹⁰ <https://www.worldbank.org/en/country/senegal/overview>.

¹¹ https://energypedia.info/wiki/Senegal_Energy_Situation.

¹² <https://www.pv-magazine.com/2019/07/22/engie-secures-financing-for-60-mw-of-solar-in-senegal/>.

¹³ <https://www.pv-tech.org/news/engies-60mw-scaling-solar-duo-hits-financial-close-in-senegal>.

Projects will still be assessed against green criteria before looking at the commercial risk and returns assessment. A regional approach, however, creates challenges for other international funding institutions that have a strict national mandate.

Sustainability of such a fund is important to ensure that not just some initial projects are funded but that there is also transformational change in energy access in the country. In its advantage, the fund is lending at commercial rates but is using concessionality to cover risks associated with the deployment of new technology and supporting newer operators, perhaps over longer tenors. The fund could, therefore, initially manage a higher default rate than national commercial lenders. Expert fund management, understanding the technology due to its deployment in other countries, and rigorous analysis of forecast returns and fiduciary management within operators should keep the default rate to a minimum. The co-management structure should allow for knowledge transfer to FONSIS over time, eventually allowing for in-house fund management and an associated lowering of costs. The nature of lending, as well, should allow for some revolving of funds to recapitalize (A)REEF. Lastly, the need for funding—supporting the risks associated with bringing in new businesses and technology to a country—should diminish over time, as demonstrated with structures such as the UK Green Investment Bank, which has been sold off to the private sector and now operates under completely commercial terms.

Below are the main anticipated impacts:

1. **300MW of renewable power** installed in projects facilitated and/or financed two years after the closing of the fund; this is roughly equivalent to one third of the country's current installed capacity of 860 MW and 73% of the NDC targets of 440 MW of wind and solar electricity injected into the grid by 2025 and 550 MW by 2030. REEF intends to attract additional financing ranging approximately from USD 200 million to USD 1 billion.
2. **Green jobs** creation with capacity building sessions to develop a skilled workforce (technicians) for an efficient solar sector.

Summary

3. **GHG emission reductions** of 1.5 million tCO₂e/year and 31, 300 000 tCO₂e/year during the lifetime of the program (twenty years).
4. **Institutional capacity development** - market development/ project proposal and structuring expertise to better access debt. Risk sharing with local banks.
5. **Yearly reduction of 3,6 million barrels of oil imported** for electricity generation;
6. **Annual reduction of US\$200 million on spending on oil imports** (at a fuel price of US\$55 per barrel);
7. Reduction of the average electricity generation cost if passed on to customers should lead to an **average decrease in tariffs from US\$0.19/kWh in 2017 to US\$0.11/kWh** (at a fuel price of US\$55 per barrel).

It is not possible to assess the success or otherwise of REEF as it is still being structured, but it is clearly aiming to address a gap in the market in Senegal for renewable energy and energy efficiency solutions. It has the required government buy-in, has addressed capacity issues, and should be sustainable given the aims and funding structured as described above. The only potential drawback is whether the added complexity of making it a regional program will delay set-up or necessitate a further layer of fund management, adding to costs. This is yet to be seen, but government strategy remains strongly directed at increasing rural access to energy and, if possible, doing this by using renewable sources.

4.5

Vanuatu – National Green Energy Fund (NGEF)

Context

Vanuatu's economy features a low inflation rate and a relatively stable real GDP growth rate (~3% expected through 2017). Despite favorable macroeconomic conditions, approximately half of the population, or one in three households, lives below the international poverty line of USD 2 per day as the economy struggles to keep up with population growth. Moreover, the country is extremely susceptible to the impacts of natural disasters; in 2015, Cyclone Pam resulted in an estimated USD 450 million in damage and losses, equivalent to 64% of GDP.

Vanuatu is highly dependent on imported fossil fuels to power its economy. Volatility associated with fluctuations in the price of imported fuel has made it difficult for the government to meet its economic growth objectives. Moreover, with its population distributed over dozens of remote islands, the provision of energy services is both logistically challenging and costly. As a result, energy services are currently available to only a small share of the overall population and at a very high price.

To address these issues, the government of Vanuatu (GoV) launched in 2013 and updated in 2016 the Vanuatu National Energy Roadmap (NERM), a strategy which focuses on five priorities: energy access, affordable energy, secure and reliable energy, sustainable energy, and green growth with measurable targets for the 2016–2030 period. The final target of NERM is to increase the percentage of electricity generation from renewable sources to 100% by 2030.

Within the NERM, it was proposed that, in order to fund some of the initiatives needed, additional financial flows into the energy sector would be critical, and a fund, the NGEF, should be established within the government in order to offer a part of this supportive finance. The government of Vanuatu had been collecting taxes and fees via the price charged for grid-connected electricity in addition to other sources. These monies were sitting in various accounts, being held for the purpose of assisting rural electrification but with no clear direction or mandate or transparent method for disbursement. It was proposed this funding be used to initially capitalize the NGEF and to leverage international finance in the future.

GGGI's Role

GGGI identified within the NERM the potential for creation of an NFV. The road map had been clear that the NGEF would be within the government and would target projects to help deliver the goals of the NERM, especially the goals of 100% rural electrification and 100% renewable energy. It was proposed and agreed on by the government that GGGI could assist in designing and structuring the fund as an NFV—fitting the requirement for national control and management. An initial analysis gave the government options for the structure with more or less government involvement, and once the desired option was selected, operations manuals, agreement templates, environmental and social safeguarding frameworks, and the management structure were set up.

To ensure the funding instruments offered and requests to co-finance from international donors would fit the pipeline of projects needed to achieve the NERM goals, extensive market assessments were carried out to identify the willingness to pay by potential beneficiaries.

In order for the highest level of transparency, it was agreed that the fund would be established as an independent body under law, but this would take considerable time to legislate. Accordingly, in 2016, a task force was appointed within the government to support the initiative and guide it through to establishment as a legal entity. In 2017, the fund was established as a unit under the Department of Energy. This was followed by its formal independent establishment through the National Green Fund Act No. 10 of 2018. The task force then transitioned to become the official management board, with representatives from across ministries, as well as civil society, including the Ministry of Women's Affairs. The fund is being capitalized by the consolidated monies collected via various routes by the government for the purpose of sustainable energy access. This consolidation process, including necessary changes to the electricity concessions to channel a levy per kWh sold to the NGEF, has taken some time, and certain parts of the consolidation process are still underway. Nevertheless, since 2017, the fund has already received USD 0.37 million from the government of Vanuatu as an initial capitalization, and from 2020, the NGEF will receive USD 0.2 million annually from the electricity levy. In addition, the government is planning a one-off USD 4.3 million payment from the government budget to the NGEF in 2020, in the form of a loan.

The NGEF has become operational, with the management board meeting regularly, two staff members (a manager and a finance officer), and the first project for disbursement of funds presented to the board and expected to be approved in 2019 and commence in 2020. GGGI continues to provide significant management and technical advisory support.

The capacity to run a fund has been one of the fundamental barriers for the NGEF. By running it as a national vehicle, even an independent one, identifying the right skill sets within a country is difficult. Technical assistance is essential to train and upskill those involved to be able to manage the process of identifying and assessing projects, disseminating funding—including structures with risk management requirements such as loans—and then ensuring monitoring is carried out in a country with multiple islands and thus access difficulties. Ideally, in line with the pathway thinking outlined as part of the NFV definition in section 3, technical assistance funding should be made available for international skills to be temporarily brought in by way of an external dedicated fund manager that can then transfer the required corporate knowledge to the fund.

Sustainability for the fund has been factored in through the NGEF law, allowing for a charging of management fees against funding provided to ensure operational costs are covered going forward. The levy on the electricity tariff also ensures a modest annual income for the fund. This still means international resources must be found before the fund can tackle larger investments as current government consolidated funds would only reach these operational costs and smaller projects (under USD 0.5 million). For this

purpose, GGGI has assisted the government to develop an application for the GCF for further capitalization of the fund. For small island developing states (SIDS) like Vanuatu, the amount of funding needed to achieve targets is relatively small on the international scale but still challenging to source at the domestic level, even after consolidation of domestic funding into the NGEF. Despite being the most in need of assistance, the sheer lack of scale creates an administrative burden that IFIs battle to overcome, often only partially successfully.

GGGI first began working on the NGEF with the government in 2016. Resources were available first from GGGI and then by GCF Readiness funding also delivered through GGGI; these were very much needed for the extent of work described above. Support from GGGI has continued in 2019 and is foreseen at least until 2020. The fund was enshrined in law in 2018 and capitalized to the extent possible by the government, including an annual income. The hope is that the commitment shown by the government in committing domestic funding will assist in leveraging identified international funding, which will be signed and disbursed to the NGEF before the end of 2020. The project pipeline has already been identified through a market assessment and business plan, and the GGGI-supported NERM Implementation Plan and a sustainability plan have been designed around the charging of a management fee. A first small-scale project using the government capitalization has been planned and will soon commence. Therefore, providing continued technical assistance can be offered to ensure smooth initial operations, until knowledge transfer has been proven through track record—the fund should be able to support the government to reach its development goals.



4.6

Colombia – FENOGE

Context

Colombia is an upper middle-income country with abundant natural resources and a growing population. In 2016, the Colombian government and the FARC rebel group reached a peace agreement that ended many decades of civil conflict, which the government expects will contribute to stronger economic prospects going forward. In 2019, Colombia's GDP will grow above its regional peers; however, many socioeconomic and political challenges remain, such as high levels of poverty, increasing unemployment, and sustained underemployment, among others.

As stated in the Green Growth Policy,¹⁴ Colombia requires an increased contribution of non-conventional renewable energies in its energy matrix. In 2017, hydropower provided between 70% and 80% of electricity generation while non-conventional renewable energies, such as wind and solar, only generated 2.71%. Colombia aims to add 1,500 MW of renewable energy installed capacity by 2022, to reduce its vulnerability to climate change and meet its NDC targets.

Colombia has a relatively low per capita level of carbon emissions. Of these emissions, 30% come from agriculture, 10% from deforestation (land use change), 49% from energy (the largest share is from transport), and 11% from waste and industrial processes. The large share of hydropower, 70% of installed capacity, makes the power sector one of the least carbon-intensive in the world. However, Colombia's high dependence on hydropower has left the country exposed to the effects of climate change. Most recently, in 2015, the El Niño event (and associated drought) brought Colombia to the verge of a series of programmed blackouts. Despite sufficient installed capacity, a series of unforeseen events, operational problems with backup thermal plants, and water levels down 60–70% compared to normal years left the system barely able to meet power demand.

Colombia's abundant hydro resources and the historic lack of recognition of the benefits of renewable energy generation have limited the call for government

incentives in sectors like wind, geothermal, and solar. Until recently, the perception that additional hydro capacity was the best solution and that wind and solar energy generation were not economically competitive were a heartfelt belief within the energy sector in Colombia. Due to the perceived financial and technological risks of renewable energy technologies, the government of Colombia has been slow in committing sufficient public funds for the development of new and innovative mechanisms to incentivize investments, making the lack of funding a key constraint in the development of alternative renewable energy and energy efficiency projects.

In 2014, the Colombian government passed Law 1715, which aims at reducing GHG emissions, driving economic development, and providing increased energy access to rural areas through energy efficiency and the adoption of renewable energy (RE). The new law introduced fiscal incentives, created the legal basis of the development of RE support initiatives, and established a dedicated fund—FENOGE—to support the diversification of Colombia's energy mix and incentivize private capital investments in renewable energy integration.¹⁵

In addition to funding projects and programs, the fund can serve to leverage additional resources from other sources to support the alternative energy and energy efficiency policy of the government of Colombia. In order to facilitate its capitalization, FENOGE was designed as a trust account, enabling it to receive resources from other sources and donors.

GGGI's Role¹⁶

GGGI provided support to the Ministry of Mines and Energy in the establishment of a national financing vehicle in Colombia for renewable energy and energy efficiency (FENOGE) with the expectation that this would lead to a significant reduction in GHG emissions, greater energy access in rural areas, and better quality of life for Colombia's citizens. GGGI supported this by contributing to the following outputs:

¹⁴ CONPES 3934 of 2018: <https://colaboracion.dnp.gov.co/CDT/Conpes/Econ%C3%B3micos/3934.pdf>.

¹⁵ Law 1753/2015 established a permanent source of capital for FENOGE earmarking US\$0.40 of the US\$1.90 charge per kilowatt-hour dispatched to the Energy Wholesaler Bourse to FENOGE. More in: <https://www.minenergia.gov.co/fenoge>.

¹⁶ <https://ggi.org/project/non-conventional-energies-and-energy-efficiency-fund-fenoge/>.

- Finalize the decree that creates FENOGE as a legal entity;
- Finalize the FENOGE *Operations Manual*;
- Support the selection of the fiduciary agency that will administer FENOGE; and
- Prepare the FENOGE Business Plan.

During implementation, GGGI continues to play a role in supporting the pipeline development, structuring projects that not only meet the eligibility criteria but can also leverage significant finance and help with strategic projects.

To date, FENOGE has been able to accrue revenue of over USD 32 million since it was launched in 2017, including funds from multilaterals and the earmarked government FAZNI funding. The fund has also advanced on receiving cooperation from various donors to support its development. Most importantly, FENOGE has the capacity to unlock public and private resources directed towards EE and RE. So far, with one project, it was able to leverage USD 20 million, from a fund investment of USD 1.5 million. Investments in 2018 and 2019 have been directed mostly to EE measures for lower-income households through lightbulb substitution and refrigerator replacement, energy audits in public buildings, and interconnection of off-grid areas.

Despite these positive outcomes in FENOGE's implementation so far, the fund presents clear challenges if it were to serve as a driver of rapid transformation for sustainable energy in Colombia, as intended when created. While the fund operates as a private entity, constituted as a trust ruled under private sector law, the public nature of its main funding base creates a suite of limitations. For instance, the fund cannot currently lend or invest in equity, limiting its operation to grant-based schemes of finance.

Another key challenge for the fund lies in the lack of a clear strategy and funding niche it aims to fill. Many projects that meet the eligibility criteria are requesting funding from FENOGE, with demands for resources above available funding. Nonetheless, the current governing body and

operational documents do not provide a clear vision or strategic approach on to how the pipeline should be focalized, creating a stalemate in terms of decisions on where to channel the funding to. Focalization should be a priority for the next year of the fund's operation.

Colombia's Non-Conventional Renewable Energy and Energy Efficiency Fund (Fondo de Energías No Convencionales y Gestión Eficiente de la Energía -FENOGE) is charged with financing, managing, and



implementing programs and projects aligned with the government of Colombia's renewable energy and energy efficiency targets. In 2019, FENOGE's capitalization reached COP 100,000 million (USD 32.5 million), up from COP 34,000 million (USD 9.9 million) in 2018. In 2018, FENOGE disbursed COP 34,000 million, with a 64/36 split between energy efficiency and renewable energy projects. FENOGE is clearly aligned with government policy and has government funding that illustrates clear commitment. It has also shown great success in leveraging other sources of finance to maximize its impact.

The fund is in high demand with many calls on its financing abilities. This may require some refinement of the business to assist the funding selection process, and a widening of the financial instrument offerings could further help the fund in assisting the government reach its ambitious RE targets.

4.7

Costa Rica – FUNBAM

Fundación Banco Ambiental (FUNBAM) was established under Law 8640 in 2008, marking the approval of a USD 30 million loan from the World Bank and a USD 10 million grant from the Global Environment Facility (GEF) to the government of Costa Rica as part of the Eco-markets II initiative. The same law made amendments to the operation of Costa Rica's Payment for Environmental Services (PES) Program. With this approval, FUNBAM

Context

Challenge

As of 2016, when GGGI was invited to intervene, there was direction from the government (specifically from the Ministry of Environment and Energy – MINAE) to upgrade FUNBAM's role. After GGGI's assessment, it was found that FUNBAM has relied on in-kind support and technical assistance from the government institutions (i.e., members of its Administrative Board to manage FBS). The Administrative Board of FUNBAM is comprised of representatives from the Ministry of Environment and Energy (MINAE), the Ministry of Agriculture and Livestock (MAG), the National Forestry Financing Fund (FONAFIFO), the National System of Conservation Areas (SINAC), and Banco Nacional de Costa Rica. FUNBAM has been operating through resources loaned to it by FONAFIFO under an agreement to do so without dedicated staff on its payroll. Administration has been limited to potential project appraisals and recommendations on where funds are to be spent. Due to its lack of dedicated staff, mainly derived from budget constraints, FUNBAM appears to be restricted in its own operational and growth capabilities. FUNBAM was unable to offer any service as an independent organization to potential investors and beneficiaries due to the following reasons:

1. Insufficient financial resources: the only source of income was 15% of yield per annum generated by FBS's trust.
2. Weak knowledge assets: no staff on FUNBAM's payroll as of 2016.
3. Limited administrative capacity.

GGGI's Role

Based on the discussion with the Costa Rican government, GGGI was invited to provide technical advisory support to FUNBAM with an aim of upgrading the institutional capacity and maximizing its potential role entitled by the law while playing a proactive role in the sector (i.e., as the country's specialized financing entity for sustainable development). GGGI's role was to assess the status quo and recommend (1) a new vision, (2) revised objectives, and (3) a business plan based on a technical/market analysis. GGGI also originated a pipeline of projects and submitted these to FUNBAM.

¹⁷ <https://fenoge.com>.

GGGI's recommendations were formally agreed to by the Administrative Board of FUNBAM in 2017 and include the following:

- 1. Vision:** The government of Costa Rica intends to utilize the establishment of FUNBAM to act as the financing entity for sustainable development across the country. The expectation is that FUNBAM becomes the country's specialized financing entity for sustainable development, capable of managing projects, making investments, and designing innovative financial mechanisms to scale up sustainable development actions and help achieve national targets established in the Nationally Determined Contribution (NDC) to the Paris Agreement and the country's domestic 2021 Carbon Neutrality target.
- 2. Revised objectives:** The strategic objectives of FUNBAM 2.0 are as follows, in line with the Strategic Plan 2016–2017.
 - Establish mechanisms for the inter-institutional coordination and administration to promote public and/or private alliances focused on sustainable development.
 - Promote a project pipeline for biodiversity, sustainable productive landscapes, water resources protection, and sustainable cities.
 - Structure innovative projects by engaging project developers, investors, entrepreneurs, corporations, and small- and medium-sized enterprises (SMEs).

- Mobilize domestic and international capital committed to sustainable development from both public and private sources.
- 3. Business plan:**
 - Resource requirements: Because FUNBAM has a limited base to start with, it is important to have governmental commitment as a starting point. Usually, seed capital considered necessary for such national initiatives are in the USD 1 million range by the government. It is necessary to show accountability and the government's commitment to scale FUNBAM.
 - Initial projects: FUNBAM is set to become the implementing entity for (1) the Emission Reduction Payment Agreement (ERPA) under the Carbon Fund of the World Bank Forest Carbon Partnership Facility (FCPF) and (2) the Forest Plantation Usage Program (PPAF), currently being managed by FONAFIFO. Other project pipelines will be explored in 2017.

Summary

GGGI and the government of Costa Rica partnered to upgrade FUNBAM to the level of a specialized national financing entity for sustainable development, and GGGI's initial assessment and business plan were adopted by the Administrative Board of FUNBAM. During the process, GGGI contributed to the capacity of existing FUNBAM staff. Unfortunately, after a change in government, the new government has not yet prioritized the further development of FUNBAM with GGGI.



4.8

India – Access to Clean Energy (ACE) Fund

Context

India's INDC has committed to electricity for all by 2019 and a 33–35% GDP emission intensity reduction by 2030. However, a continuously growing population and high cost of supply means that there are still unserved areas that are catered for by the off-grid energy (OGE) sector. A lack of capital that prevents OGE sector growth stems from the banks' unwillingness to lend on account of the nascent sector, with high upfront capital requirements, irregular payment cycles, and high-risk perception due to customer composition. Apart from other factors, such as financial institutions' lack of familiarity and limited engagement with the OGE sector, their limited capacity for risk assessment, due diligence, and pipeline development also hampered the flow of capital. Additionally, an absence of market information—due to the absence of an “off-grid sector hub” in India to streamline data and information, limited performance data for OGE companies, and a lacking track record for new revenue and business models—blocked capital to the sector. As a result, while GGGI's estimation showed that the OGE sector required USD 6–8 billion in debt capital over five years, mainly short-term capital was available for only about USD 62 million. Even this was a high cost of capital, where the serviceable rate of interest ranged between 9–11% while debt, if available, carried interest rates of 12–18% along with stringent credit requirements from banks (e.g., 100% collateral).

GGGI's role

GGGI designed the ACE Fund structure to address market failures and to scale debt financing for OGE in India. It has an exclusive focus to boost private sector participation in OGE for last-mile energy access. It is a blended finance facility that will not only reduce the cost of finance but will also have innovative financing mechanisms, such as the First Loss Facility and Delayed Payment Facility, to mitigate risks. Along with technical assistance for capacity building, the aim is to educate the financing sector on lending to OGE. Currently under GCF consideration, ACE would blend the debt raised through bonds by IREDA¹⁸ with concessional

climate finance from GCF, thereby bringing down the overall lending cost for OGE. Viewed to be operated as a lending facility within the energy NFV of IREDA, ACE can be viewed not as an NFV but as a tool within the toolbox IREDA.

Challenges

Having a clear target market, the OGE sector—with very specific financing barriers addressed—should contribute to the success of the facility. The proposed structure, however, might become restricted, being housed within IREDA and thereby having to comply to all of that institution's requirements and standards. Such a narrow and specific facility could also suffer if there are additional failures in this specific market related to other funding or operational areas. The facility does not have the flexibility to refocus if needed.

Summary

The ACE Fund is still in the design phase, with discussions continuing with the GCF and other potential sources of international climate finance. It is recognized that since the fund concept was first discussed with potential funding sources, other structures have also appeared, so there is a threat of overlap. The ACE Fund was designed as a blended finance model that needs an existing host such as IREDA. Being a specific facility, it has a rigid and targeted remit. This may create difficulties when trying to reshape the fund around others now in a similar space. The structural rigidity and inflexibility of the model could be addressed by creating an exclusive NFV for sectors such as MSME, energy efficiency, and ESCO financing, which have similar financing and market development challenges as OGE but more flexibility in terms of target customers; these aspects are currently under discussion.

¹⁸ www.ireda.in.

4.9

Jordan – Jordan Environment Fund

Context

While Jordan has high economic growth potential, it is facing equally significant environmental challenges and an unstable political regional situation that is directly impacting the efforts to take the intended growth forward. A rapidly expanding population—as a result of the surrounding political conflicts—and industrial pollution have taken a toll on Jordan's environment.

Jordan is considered as one of the poorest countries worldwide in terms of the availability of natural resources needed for economic growth, especially oil and water; for instance, in the last decade, Jordan imported around 96% of its energy needs, in the form of crude oil and natural gas, which is one of the main loads that Jordan's GDP has to manage. Also, Jordan's water resources are among the lowest in the world, on a per capita basis, with an average of around 135 m³–145 m³ per year.

In order for Jordan to address its socioeconomic challenges, the government of Jordan has developed a comprehensive set of national strategies and plans, including Jordan's Vision 2025, Jordan's Response Plan to the Syrian Crises, the National Energy Strategy, and the Water Sector Capital Investment Plan, among others, where the successful implementation of these plans is a top priority for the government.

Jordan's Vision 2025, as one of the main documents that Jordan has developed in the past five years, is a medium- to long-term national vision that provides an integrated framework through a set of economy- and society-oriented goals. It intends to achieve real economic growth rates up to 7.5% in 2026, at an average rate of 5.7% within the vision period, while the baseline scenario represents an economic growth rate of 4.8%. With regard to poverty and unemployment, the target scenario aims to reduce poverty and unemployment rates to about 8% and 9.17% respectively, down from the baseline scenario of 10% and 11.7% respectively. The target scenario seeks to reduce the ratio of public debt to GDP to 47%, down from 60% in the baseline scenario.

GGGI's Role

Jordan's National Green Growth Plan (NGGP) adopted environmentally sustainable economic development as a critical policy goal as reflected in the six green economy sectors. One of the main action points suggested by the NGGP was to revitalize some of the national funds, including the Jordan Environment Fund (JEF), as a catalytic tool for extending finance to green growth projects across the abovementioned sectors.

In 2009, the Ministry of Environment established JEF, with the intention to have a national fund that could provide financial support through various forms of subsidies for projects in the broadly defined fields of "environmental protection and preservation." The fund also aims to drive technological and process improvements across select sectors and complement existing environmental expenditures in Jordan.

At present, JEF faces existential crisis due to future capitalization needs and current staffing constraints. The opportunity of sustainably managing the environment and shifting towards a green economy, as a stimulus for increased job creation and growth, is a key rationale for reviving the JEF. Rather than reinventing the wheel and/or creating another parallel fund, the objective should be to strengthen the JEF with better design features as well as boosting staffing and management capacity.

GGGI worked very closely with the Jordanian government to develop a National Green Growth Plan for Jordan (NGGP) as a high-level roadmap for Jordan's transition to green growth, which has been adopted by the Jordanian Cabinet of Ministers in 2017.

The NGGP assesses Jordan's six key green economy sectors: energy, water, transport, agriculture, tourism, and waste. The plan unpacks the barriers facing Jordan's economy, especially the causes for weak project implementation, and provides an understanding of the driving principles of green growth in Jordan. The NGGP provides specific action points that would lead to a stronger green finance and green investment environment in Jordan.

¹⁹ <https://www.greengrowthknowledge.org/national-documents/jordan-2025-national-vision-andstrategy>

In 2016, GGGI also completed a scoping assessment for NFV support in Jordan, with a clear focus on the JEF. As a result of this assessment, GGGI has proposed supporting the fund through the following:

- Upgrading the design features of JEF to make it more strategic (rather than focusing on environmental protection only).
- Broadening its scope from focusing primarily on environmental protection.
- Scaling up investment through blending and leveraging financial sources.
- Raising its relevance and visibility to mobilize resources, including exploring the option to be an accredited entity of the Green Climate Fund, as a strategy to leverage resources.
- Linking the fund with Jordan's commitments to implement the NGGP, Sustainable Development Goals (SDGs), and Nationally Determined Contributions (NDCs) for the Paris Agreement under the UNFCCC.

As preconditions to a successful redesign to scale up the JEF, GGGI requested that the government address some key challenges regarding autonomy of the fund and its staffing, described hereafter. As the government has not yet taken such actions, further GGGI engagement is paused.

Challenges

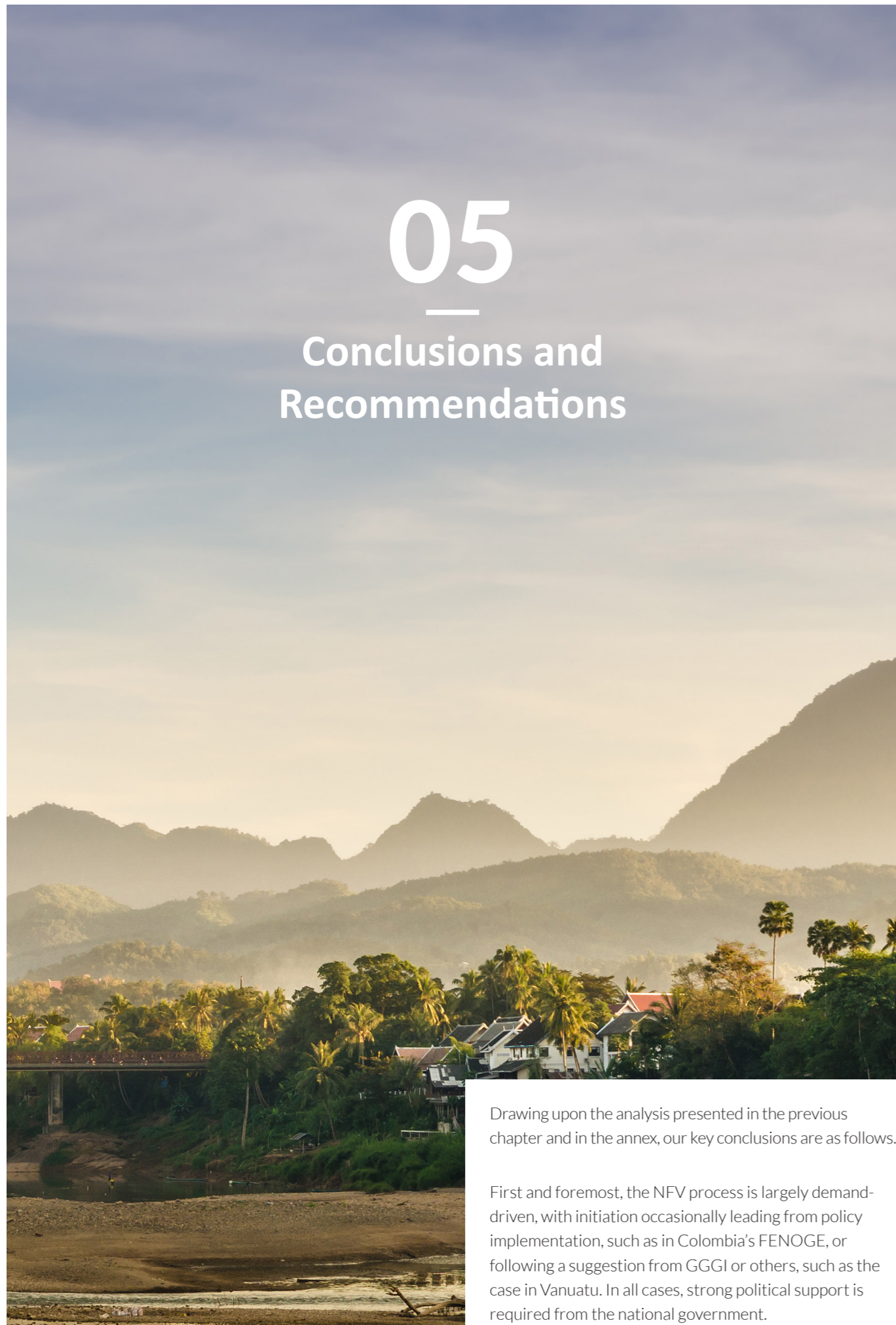
A low level of autonomy is considered as one of the main challenges that faces JEF's efforts towards playing a role as an NFV, which can be recognized by international funds and donors. The current bylaws of the fund make it difficult to demonstrate that the fund has the required degree of institutional and operational independence from the government, which is needed to demonstrate consistency and transparency in decision making.

Staffing challenges are also very impactful in the case of JEF, as the director of JEF has been the only official employee of this national fund since its establishment,

which is one of the main reasons for its slow growth. Staffing challenges resulted in other relevant challenges, such as a lack of technical capacity, which impacted the ability of the fund to carry out certain essential activities, such as resource mobilization, pipeline identification, projects development, risk assessment, due diligence, and deal structuring.

Summary

The fund is successful in that it is carrying out its mandate as a mechanism within the Ministry of Environment. However, facilitation of a deeper collaboration between ministries to create a wider, more overarching green growth mandate could increase its impact. Greater transparency is necessary, and mandates must be clearly published. Within its remit, the fund could consider expansion by identifying further opportunities to leverage finance. Capacity may create a hurdle, but as operational costs are small and covered by the government, expert fund management could be contracted to operate more complex lending instruments.



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Conclusions and Recommendations

Drawing upon the analysis presented in the previous chapter and in the annex, our key conclusions are as follows.

First and foremost, the NFV process is largely demand-driven, with initiation occasionally leading from policy implementation, such as in Colombia’s FENOGE, or following a suggestion from GGGI or others, such as the case in Vanuatu. In all cases, strong political support is required from the national government.

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Conclusions and Recommendations

Most governments see the NFV as an innovative mechanism to attract and accelerate access to climate finance. This facilitates the institutional mobilization, including the often-required specific legislation or exceptions to standard policy, needed during the different stages of the design and operationalization. This can be seen, for example, in the remuneration of fund managers outside civil service salary scales, as was the case for FONERWA in Rwanda, and as a factor for the Jordan Environment Fund. In cases where government priorities shift following elections, NFV (re) development may no longer be a policy priority, as was the circumstance with FUNBAM in Cost Rica. Sustained support across ministries is also a key factor; the ACE Fund in India was delayed considerably as a result of a divergence of views among sectoral stakeholders and, as a consequence, lost considerable momentum.

Second, it is worth noting that the efforts to design, develop, and capitalize an NFV are significant and can easily be underestimated at the outset. In GGGI’s experience, it takes at least two to three years before an NFV becomes operational, and the development and build stages likely require a minimum of USD 0.5 million and can easily exceed USD 1 million for more complex funds. In particular, greenfield NFVs have their own legal structure (i.e., not a facility inside the government; have their own governance and fiduciary management) and therefore need to be established by law and capitalized from blended national and international sources. Successful NFVs will take several years to become operational. This is the case for the Mongolia Green Finance Corporation, Vanuatu Green Energy Fund, Senegal Renewable Energy and Energy Efficiency Fund, and India Access to Clean Energy Fund—all four of these were initiated in 2016–17 and have been proposed to the Green Climate Fund for partial funding. Two to three will most likely become operational in 2020.

Third, whether an NFV reaches the operational stage, including initial capitalization, is closely linked to not only the level of sustained political support at the national level but also at the international level, as initial capitalization usually requires at least international co-funding from climate or development sources. This can be seen in the initial capitalization of FONERWA, which would not have had the success it did without an initial injection from the United Kingdom and other external sources, as well as REEF with funding being sought from AfDB, Vanuatu currently seeking international finance, and MGFC with funding from GCF.

Fourth, an important strength of NFVs in all cases discussed in this review is that their priorities are well aligned with national policies and priorities. This is a significant advantage for NFVs over international climate funding mechanisms, where other interests than the national priorities of the developing country in question are at play, by the very nature of international finance organizations that have governance mechanisms in which many stakeholders with different agendas are represented.

Fifth, effective NFVs can significantly lower the barriers to international climate finance access for public and private entities at the national level and can be an effective mechanism to “retail” international climate finance. International mechanisms cannot afford to finance projects at the USD 100–300 thousand scale, because of their high transaction costs, while NFVs can. Conversely, while a USD 10–20 million project is small for the Green Climate Fund, it can be too large to absorb or manage for the majority of players at the national scale, especially if blending of finance is required. A large part of the success of Rwanda’s Green Fund, FONERWA, is that it can afford to award projects at the USD 200–300 thousand scale to the public and organizations, as well as NGOs, that would not have been able to access international climate finance sources, such as GCF, directly.

Sixth, sustainability of NFVs beyond their initial phase and first capitalization is critical as many NFVs do not manage to recapitalize effectively. GGGI has not seen an example of an NFV being re-capitalized by the same international donor financing source, making the exercise or resource mobilization very costly for NFVs. The need for funds to become self-sustaining is logical but sometimes misplaced if they are offering the concessionality required to implement projects nationally. After all, international organizations offering similar concessional funding are continually supported by donors, either through fees linked with finance or technical assistance.

Seventh, while NFVs are, for the most, part public mechanisms or public agency-dominated mechanisms, they do facilitate the engagement of the private sector, either as partners or co-investors, into an NFV, or, more likely, as the beneficiaries of smaller-scale climate financing—the retail function of NFVs.

NFVs should be designed to provide instruments which will help address country-specific capital shortfalls. NFVs under a Public-Private-Partnership model, like MGFC in Mongolia, are designed to mitigate political interference risk. Governance and independent commercial management can help keep the

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Conclusions and Recommendations

government at arm's length in operational decisions. However, success and effective market development still depends on policy support from the government to a certain extent (e.g., in the form of incentives or disincentives for specific technologies). Many, though not all, NFVs are specifically designed to provide debt—and even equity—funding to private sector entities in climate and green growth areas, such as off-grid renewable energy projects, where the traditional project funding through private banks has not yet adjusted to new or innovative technologies and business models. It is worth noting that some of the early NFVs that GGGI was involved in, such as CRGE in Ethiopia and FONERWA in Rwanda, were (initially) established inside governments. Existing NFVs or funds that GGGI has supported to recapitalize, such as FUNBAM in Costa Rica and the Jordan Environment Fund, were also established inside governments. More recently, GGGI has designed and developed NFVs that more deliberately focused on private sector engagement, such as MGFC in Mongolia, the ACE Fund in India, and REEF in Senegal.

Working with the private sector, NFVs can be designed deliberately to address risks that hold back private (co-) investments in climate and green growth projects, and while their track record is still limited, early experience, as detailed earlier, shows that these mechanisms can be effective.

Finally, the governance structure of NFVs needs to be clearly laid out to ensure the purpose, role, and direction of the fund is given to the governing body and that management has clear guidance to direct funding as desired in the strategy. GGGI has often worked on completing operational documentation for NFVs in examples such as Vanuatu, CRGE, and MGFC and restructuring of strategies to better fit desired strategies—for NFVs such as FONERWA. In cases where it is not sufficiently clear or NFVs have altered from their original guidance, it can be difficult for management to know where funds should be allocated—FENOGE, in some aspects, is an example. Technical assistance is also indicated as necessary not only at the origination stage—as with MGFC, Vanuatu's NGEF, CRGE, and India's ACE Fund—but also throughout, as with the restructuring of FONERWA and FUNBAM.

GGGI first coined the phrase “NFV” in 2016 as it worked with national funds in Ethiopia and Rwanda that supported smaller national green projects, and commonalities were found within GGGI's work in two countries. NFVs worked as a toolbox, offering funding in various forms to projects that aligned with national priorities but were often too small for international climate finance.

GGGI's work has adapted over time, taking into account that “one size fits all” is not possible as NFVs have to adapt to what is already operating in the country—whether it be



GCF-accredited entities, development banks, or a vast void. Accordingly, GGGI must remain nimble and flexible to fit the needs of every country. However, certain aspects remain constant: the need for government buy-in, market assessments to identify the project pipelines and funding gaps, and the setting up of robust business plans and operational structures.

This review addresses primarily the experience gained during development of NFVs, as the majority of the nine NFVs reviewed is not yet operational. While valuable, it is recognized that this is rather early, and the conclusions drawn here are preliminary. It will be important to reconsider these conclusions when more experience is gained during operation.

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Conclusions and Recommendations

Based on this review, the following recommendations for future NFV design, development, as well as operationalization, are as follows:

5. Independence is needed from standard government processes and policies (such as civil service salaries) to work effectively across public and private entities.
6. Linkages with the private sector, including other forms of finance beyond grants (i.e., debt and equity), are key to account for in the initial stage to draw in the private sector and leverage public finance.
7. When operating on a national scale, especially in new project areas (green) or in developing countries and emerging economies, the role of technical assistance funding is important, not only initially but continually, to ensure constant development of project pipelines.
8. An NFV should be the toolbox from which a multitude of financial instruments can flow, according to the needs of the activity pipelines identified.
9. There should be a space and budget for technical advisory assistance on an ongoing basis as this is often needed to study how an NFV can best adapt to changing needs from both a demand and supply perspective.

GGGI continues its work on NFVs within the countries of its 36 Members and Partners. It is currently working with Morocco to set up a suitable vehicle and will soon assist Mozambique on the already established FNDS fund through GCF Readiness. Initial conversations continue with a number of other African and Southeast Asian countries.

1. Political commitment at the highest level and across government departments is critical for operationalization.
2. A shared understanding within governments that the role and purpose of the NFV is needed to ensure cross-party/ministerial support down to public understanding, as to what funds (possibly gained through taxation) will be used for.
3. Including national domestic sources of finance in the initial capitalization of NFVs is important for their longer-term sustainability (as a necessary but not sufficient condition).
4. It is essential to understand what any funds will be used for in order to ensure the NFV is structured according to needs and the aims can be clearly laid out to funders.

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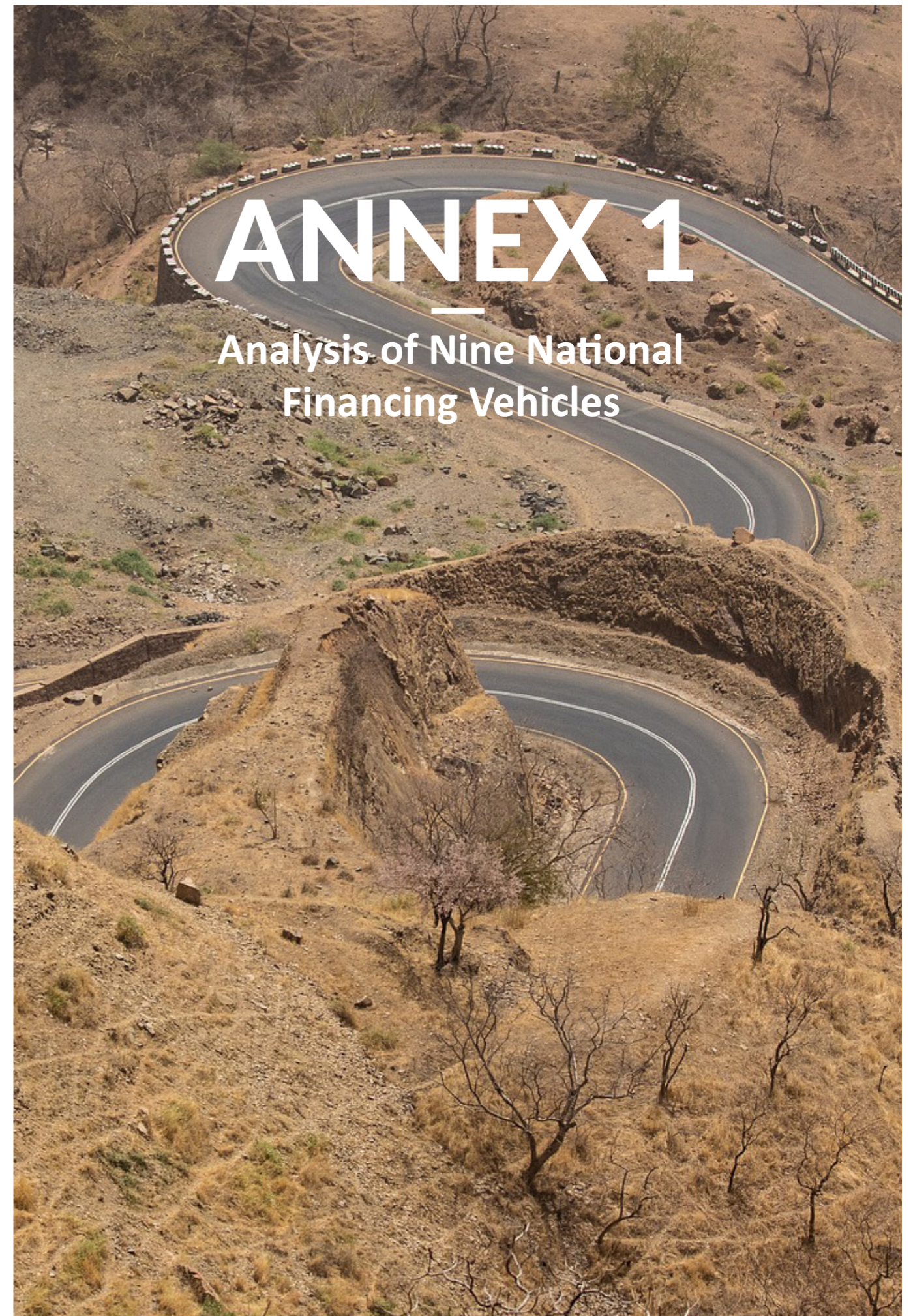
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ANNEX 1.

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Rwanda — FONERWA

Function	Evaluation	Comment
Design	<p>Through government strategies, including Rwanda Vision 2020 and Rwanda's Economic Development and Poverty Reduction Strategy (EDPRS II) 2013–2018, there was clear justification and broad support from the highest level and across multiple ministries for establishment of the fund.</p> <p>Tasks included mobilizing and managing resources used in financing activities from the public and private sectors, through a bilateral and multilateral partnership, to achieve the country's objectives to advance national priorities in the field of environment and climate change; namely, the preservation and protection of environmental and natural resources and in the fight against climate change and its effects.</p>	<p>Close ties with government strategy helped to gain cross-ministerial support. The fund was designed to support projects across all areas of Rwanda, and not as a single ministry's mission.</p>
Build	<p>Originally wholly within the government—with a Fund Management Committee comprised of representatives from multiple ministries, development partners, and, to a lesser extent, civil society.</p> <p>In 2017, the new FONERWA law established a board of directors that could be appointed from the public and/or private sector (30% women), and the Executive Organ (management board) to run the day-to-day operations.</p> <p>Capitalized through a contribution from the government of Rwanda, including onward contributions from environmental charges and taxes. This was supplemented by larger bilateral ODA donations from international governments and development partners.</p>	<p>FONERWA found limitations in hiring and retaining talented staff whilst part of the government and therefore restricted on salary structure.</p> <p>The FONERWA law of 2017 enabled it to become a legally independent entity with financial and administrative autonomy.</p> <p>The contribution from the government of Rwanda was vital to show commitment nationally, thereby attracting international sources in addition.</p>
Operate	<p>FONERWA operated as a basket fund with six monthly calls for proposals. Clear guidelines were determined for the eligibility of project applications (thematic windows), and robust and transparent selection criteria was supported by external technical experts.</p> <p>More recently, to achieve higher impact, targeted calls, and outward project identification, the fund has focused further on identifying other funding sources for outcomes in line with government strategy.</p> <p>Monitoring and reporting criteria were set at high levels, ensuring compliance with donors' requirements and good transparency. This widened the potential funding sources.</p>	<p>A low success rate in the initial three years resulted in only approximately 3% of concept notes succeeding to funding. A high administrative burden and inconsistent impact in any one area motivated the move towards targeted funding.</p> <p>The high bar set on monitoring and reporting also increases operational costs.</p> <p>The capacity of project proponents to complete all required application documentation is poor, creating bottlenecks in project pipelines.</p>
Conditions	<p>A revision of the business plan in 2016 moved the fund away from a pure demand-led project fund to a hybrid model where over 50% of funding would be targeted more directly to specific sectors to increase impact.</p> <p>A greater focus on the private sector is also being developed. To increase financial sustainability, a management fee was applied to ensure operational costs could be covered.</p> <p>Political support remains strong.</p>	<p>Implementation of the business and sustainability plan to engage the private sector has started with the design of the Green Incubator & Accelerator Facility, Green Guarantee Fund, and Green SME Fund.</p>

ANNEX 1.

Analysis of Nine National Financing Vehicles

Rwanda — FONERWA (cont.)

Function	Evaluation	Comment
Risks	<p>FONERWA has funded 42 projects through its Calls for Proposals; though spread across the thematic windows, few have been from the private sector. Capacity constraints both within FONERWA and with applicants/recipients of funding have meant delays in disbursements, hampering results.</p> <p>Capacity and regulatory issues have caused larger programmatic funds (and their associated management fees) to be allocated to other institutions (GCF and SREP funding). This reduces the pool of resources available for FONERWA to access, which includes fees for financial sustainability.</p> <p>Increased independence and the appointment of the management team in 2018 has begun to address these constraints, focusing funding further to the private sector and leveraging partners for capacity building.</p>	<p>Risks will be the same as for any new institution, offering lending in new areas.</p>

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Analysis of Nine National Financing Vehicles

Mongolia — Mongolia Green Finance Corporation (MGFC)

Function	Evaluation	Comment
Design	<p>MGFC derived from the desire for private sector banks to access cheaper capital for lending to green projects and the government's need to attain NDC goals and address the chronic air pollution.</p> <p>Government counterparts (the Ministry of Finance and Ministry of Environment and Tourism) and the Mongolian Bankers Association (representing private sector banks) established the Working Group, which included international organizations, to drive forward the idea of a fund to access cheaper international climate finance.</p> <p>The resultant design was a new financing institution with government and private sector participation that was managed and operated independently by a professional asset management entity, similar to a Green Investment Bank model. It would act as a wholesale lender to participating commercial banks to reach the retail market, with blended lending for business entities and household green energy solutions.</p>	<p>Strong project leadership originated from the Mongolian Bankers Association and their sustainable finance initiative with member private sector banks which had a strong green focus. This helped progress the initiative on a national basis.</p> <p>The Mongolian government was aware of its lack of capacity and resources to solve the environmental issues of the country alone and were therefore happy to work with the private sector to identify a solution.</p>
Build	<p>MGFC will be capitalized by equity contributions split between the national government, private sector banks, and international climate finance sources. Debt will likely be provided by international finance institutions and the private sector bank's lending at project level.</p> <p>Financial management capacity within the private sector was seen as stronger than the government in the short term. As the government was attracted to the leverage capability of the MGFC structure, they agreed to support the institution set-up and were represented by the Ministry of Finance (MoF) and Ministry of Environment and Tourism on the Steering Committee of MGFC.</p> <p>Considerable technical assistance and support are needed for both government and private sector banks to identify potential markets to finance and build green projects' pipelines.</p>	<p>As a new initiative in-country, much time was spent with stakeholders to agree on the capitalization structure, market segment, and product development. As a consequence, the build phase has been lengthy and has gone beyond just structuring the fund to also building up green projects' pipeline in selected market sectors.</p> <p>International technical assistance was needed to finance this work.</p>
Operate	<p>The MGFC is yet to become operational. It is expected that MGFC will act as wholesale lender to participating private banks who will on-lend to be co-financed (30%) with their own funds to end beneficiaries, blending the concessional finance (70%). All participating banks that comply with MGFC criteria will be eligible to access the concessional funding on a continual basis. The use of proceeds should be in accordance with a Participating Bank Agreement to be signed between MGFC and banks.</p> <p>In order to combat air pollution in Ulaanbaatar, MGFC targets the mainstreaming of green, affordable, and gender-inclusive financial products for (i) thermo-retrofitting solutions of existing houses in ger areas, (ii) energy efficiency measures for large end users, and (iii) green mortgages for ger area residents.</p>	<p>With a clear and urgent issue to address—air pollution in the capital city—a pipeline has been directly identified to address this, and therefore support both nationally and internationally is strong.</p>
Conditions	<p>Upon funding approval from investors, the MGFC will be formed as a legal entity and capitalization will be effective; it will start its operations.</p> <p>The blended nature of funding provided by the multiple parties means that a portion of the funding may revolve whilst others will be run down.</p> <p>As funds continue to support solutions that help the country to achieve NDC goals and address urgent environmental issues, government support remains strong.</p>	<p>Further work is ongoing to examine financial sustainability, but as lending continues and technology risk dissipates, the need for concessionality reduces.</p>
Risks	<p>It is too early to assess performance as the fund is still in the set-up stage. As a private sector finance corporation, conditions are being set by funders that competent management are appointed to ensure robust fiduciary and operational management.</p>	<p>Risks will be the same as for any new institution, offering lending in new areas.</p>

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Analysis of Nine National Financing Vehicles

Vanuatu — National Green Energy Fund (NGEF)

Function	Evaluation	Comment
Design	<p>The government of Vanuatu wished to utilize and leverage funding gathered from charges on the price of electricity and other sources to scale up rural electrification and the greening of current household power use. Funds had been accumulated nationally to address this but resided in a number of different government initiatives. Technical assistance provided by GGGI proposed to consolidate funds under an NFV, supplement with international climate finance if possible, and target them to the desired cause in line with governments' planning, including the National Sustainable Development Plan (NSDP) and National Energy Road Map (NERM).</p> <p>Options on structure were proposed, and a fund was established in law, with a board structure representing multiple ministries and civil society.</p> <p>The fund was initially established by the government as a unit under the Department of Energy in 2017, followed by its formal independent establishment through the National Green Fund Act No. 10 of 2018.</p>	
Build	<p>Due to the time that would be required to pass legislation, a task force was set up in 2016 which later became the official board of the fund in 2018. There is strong political support across the government for the fund.</p> <p>Capitalization of the fund has been via the consolidation of government funds set aside for such, and currently, further international climate finance is being sourced to supplement the government's contribution.</p> <p>An issue remains over the capacity available within country to manage the breadth of its mandate to not only give grants but to also offer loans, guarantees, and equity.</p>	<p>Implementation of an interim task force allowed activities for set-up to continue whilst awaiting the Green Fund Act to be passed.</p> <p>The NGEF board is cognizant of capacity issues within the fund and therefore built in technical assistance and capacity building requirements for any international funding requests.</p>
Operate	<p>The fund is focused on renewable energy and energy efficiency solutions for households and MSMEs.</p> <p>The initial support tool offered by the fund will be loans provided to intermediaries, both financial (banks) and non-financial (ESCOs, etc.). The operational manual indicates limitations in lending to different types of institutions to ensure diversification and the criteria required for beneficiaries.</p>	<p>Extensive market assessments were carried out to identify the willingness and ability to pay by potential beneficiaries to ensure the fund focus was fit for the purpose.</p>
Conditions	<p>The NGEF is currently seeking international capital to leverage the current amount contributed by the government; funding arrangements are in progress.</p> <p>The NGEF law has factored in the ability to charge a management fee against funding provided, so if international capital can be sourced to supplement national funding, charges should be sufficient to allow for good financial sustainability. National government contributions alone cover only the operational costs of the fund.</p>	<p>Despite the fund providing a bundling function for household lending, the overall needs of such a fund in a SIDS is small in comparison to elsewhere, creating a challenge to access international climate finance, which tends to have a hurdle size due to the administrative burden.</p>
Risks	<p>As the fund is not yet operational, disbursement and impact performance are not yet available.</p> <p>The majority of governance and management is within the government, which provides central control. This can create some tension when trying to also comply with potential donor requirements on issues such as gender.</p> <p>Political support for the fund remains strong across ministries as objectives continue firmly within the aims of the government around NDC targets and renewable energy goals.</p>	<p>Support could wain if international funding and expanded capacity to manage the fund is not identified soon, as domestic resources only cover operational costs—not project funding.</p>

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Analysis of Nine National Financing Vehicles

Ethiopia — Climate Resilient Green Economy (CRGE) Facility

Function	Evaluation	Comment
Design	<p>Ethiopia's Growth and Transformation Plan aims to see the country reach middle-income status by 2025, using a net-zero carbon pathway and building in climate resilience. The path to achieve this was put within the Climate Resilience Green Economy Initiative (CRGE). The initiative consisted of three parts: the CRGE Strategy, CRGE institutions (the government was tasked with the formulation and implementation of the components of the CRGE strategy), and CRGE Facility designed in 2012 to mobilize climate finance to support the implementation of the strategy.</p> <p>Included is an MRV system to monitor all climate activities, seen as supporting access to international climate finance. A CGRE Registry was also set up as part of the plan.</p>	
Build	<p>CRGE creation was led by the Prime Minister's Office (PMO) with the then Environment Protection Agency (EPA) and Ministry of Finance and Economic Development (MOFED). These two institutions were mandated to govern the CRGE initiative with differentiated roles and responsibilities. The EPA supervises and regulates implementation of the technical components of the CRGE initiative. The MoFED, in collaboration with the EPA, will solicit financial support from international sources and channel the available funds in the form of advance support or ex-post payment. The creation of the CRGE Facility emanated from the resource mobilization mandate given to MOFED in the CRGE Strategy.</p> <p>A Ministerial Committee chaired by PMO governs the facility, setting overall policy and operational directions and guidance. The Management Committee, co-chaired by the State Minister of Ministry of Finance and the Commissioner of the Environment, Forest and Climate Change Commission (EFCCC), provides oversight of the CRGE Facility in accordance with the Inter-Ministerial Steering Committee Decisions. State ministers and senior experts from each CRGE Executing Ministry at the federal level are represented in the CRGE Facility Management Committee, which also makes funding decisions for projects and programs. The CRGE Facility Management Committee is assisted by the CRGE Facility Secretariat, which is comprised of Technical and Finance Teams housed in the EFCCC and Ministry of Finance respectively. The head of the CRGE Facility is assigned by the State Minister of External Economic Cooperation of the Ministry of Finance. The secretariat is responsible for the overall coordination of the facility's portfolio, including resource mobilization, program management, MRV, etc. The design is such that national funds can leverage international sources of climate finance for projects and programs that implement CRGE actions. To date, the facility has leveraged USD 200 million in international finance from sources such as the Green Climate Fund, the Adaptation Fund, and the governments of Norway, the United Kingdom, Denmark, and Austria.</p>	

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Analysis of Nine National Financing Vehicles

Ethiopia — Climate Resilient Green Economy (CRGE) Facility (cont.)

Function	Evaluation	Comment
Operate	<p>The CRGE Facility exists to support the implementation of the CRGE Strategy. Strategies/investment plans are identified at the regional or national level with line ministries (by the CRGE Implementers) and then submitted to the CRGE Facility for approval. Proposals from non-state actors can be submitted to the CRGE Facility through the relevant Sector Ministries for funding. The Technical and Finance Team of the CRGE Facility review and appraise project proposals in line with the review and appraisal criteria of the facility and present to the Management Committee for funding decisions. During the review and appraisal process, the Facility Team receives technical support from the CRGE Facility Advisory Board, which is comprised of bilateral contributors, academia, NGOs, the private sector, UN agencies, and MDBs. These are then approved through the programmed or responsive window funding. The Programmed window channels funds subject to Strategic Agreements (i.e., conditions aligned with the CRGE Strategy), and the Responsive window channels funds subject to Targeted Agreements (i.e., funds subject to geographical or technical earmarks).</p>	
Conditions	<p>The facility is well embedded within the government and operates as part of the Ministry of Finance (MOF), and as such is therefore treated under central government costs, which also applies to the decision-making management, technical, and ministerial committees. Technical expertise from donors and technical assistance partners have been funded internationally. MOF is able to access funding directly from the Green Climate Fund (GCF)—thereby allowing it to access fund administration fees that accompany any funding.</p> <p>Political support across high-level ministries remains strong.</p>	
Risks	<p>Currently, the CRGE Facility solely manages climate finance resources mobilized from international climate finance institutions, such as the Green Climate Fund, Adaptation Fund, and Bilateral Development Partners. Most of the bilateral climate finance resources have sectoral preferences and are influenced by the overall bilateral cooperation agreement priorities and focuses. Consequently, there is a risk of under-financing in some sectors, and the facility faces unpredictability of climate finance flow.</p> <p>Ethiopia is the first developing country to receive direct access funding of USD 45 million from GCF (supplemented by USD 5 million of government funding) for adaptation.</p> <p>There are performance (results), governance (management), and political risks.</p>	<p>Expansion of the resource mobilization frontier of the facility, including direct allocation of parts of the government budget for climate change-related actions through the CRGE Facility.</p>

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Senegal — The Renewable and Energy Efficiency Fund (REEF)

Function	Evaluation	Comment
Design	<p>The GoS Plan for Emergent Senegal (PSE) aims for a diversified energy mix (20% renewable by 2020) and promotion of independent power production. This seeks to increase access to electricity to 60% in rural areas and 95% in urban areas.</p> <p>A market assessment found that, despite enabling policies, barriers persisted in the financing of renewable energy projects, with access to debt ranking highest. There are 27 financial institutions operating in-country, 22 of these being commercial banks (only one being owned 25% or more by the government). Lending is restricted due to high default rates on loans, a lack of access to long-term deposits, and Central Bank regulations imposing very high coverage ratios. Altogether, this has meant that lending is short term and restricted to long-established businesses with a track record.</p>	<p>Low-income countries will often be restricted by a lack of savings within the banking system—and a resultant shortage of longer tenor money to lend.</p> <p>A consequence of only lending to businesses with an established track record is that new technology struggles to access capital as they are often held within new market entrants without such credit history.</p>
Build	<p>FONSIS was established in 2013 as the sovereign wealth fund of Senegal, with a board of directors and complete autonomy. It mainly offers equity to projects within Senegal in line with government long-term development plans. A sister fund, FONGIP, offers guarantees to projects. The Ministry of Finance was keen to ensure there was no duplication of fund strategic focus in the country, thus as FONSIS had already been instrumental in investing in the first two solar projects in Senegal, it was decided to establish a green window within FONSIS that focused on renewable energy and energy efficiency: REEF.</p> <p>FONSIS has a strong capacity for equity investment, with highly expert staff operating under an independent compensation structure from the government. Capacity around debt offerings or green criteria setting is less strong.</p> <p>Capacity issues are apparent in project development, with applications for lending often of poor quality.</p> <p>It is planned for the fund to be capitalized by FONSIS, institutional investors, the African Development Bank (AfDB), a first loss debt tranche from the Green Climate Fund, and a small technical assistance tranche provided by the latter two lenders for project preparation assistance.</p>	<p>REEF is now part of a regional program: AREEF (Africa Renewable Energy and Energy Efficiency Fund). This increases the size of the funding requests to both AfDB and GCF, bringing down the proportion of grants required for the project preparation.</p> <p>As a further development of the REEF window for Senegal, FONSIS is seeking accreditation to the GCF, allowing it direct access to climate finance.</p>
Operate	<p>The fund is aimed at renewable energy power producers, smaller household-level offerings (solar home system suppliers), and energy efficiency operators.</p> <p>Projects will be assessed against green criteria set for the fund, followed by commercial risk and return assessments.</p> <p>REEF will be co-managed by an independent international expert fund manager.</p>	

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Analysis of Nine National Financing Vehicles

Senegal — The Renewable and Energy Efficiency Fund (REEF) (cont.)

Function	Evaluation	Comment
Conditions	<p>As renewable projects are financed with the help of the fund, the technology risk for Senegal reduces on green solutions. Developers also build a track record. Sustainability for green projects will thus partly come from the reduction in need for the fund going forward. The lack of long-dated savings and therefore ability for lending at lengthier tenors will take longer to solve. Therefore, it is expected that as the fund is focused on equity and subordinated debt (with the same interest rates as the senior loan to attract national banks and financial institutions, without constituting competition), there will be a level of ability to revolve lending volumes.</p> <p>As further projects are approved, more applications are completed and assessed and knowledge is built within the fund for debt offerings—allowing a smooth handover at the appropriate time to FONSIS. FONSIS is working with FONGIP, the national guarantee fund, to set up a mechanism that will support the development of the REEF's portfolio over the long term.</p>	<p>Knowledge sharing for project developers on how to complete high-quality applications may be slower as past applications are unlikely to be made public due to the commercial sensitivities. This could result in only a small number of skilled developers gaining access to funding.</p>
Risks	<p>The fund is not yet operational and therefore risks are perhaps not yet fully discovered.</p> <p>Risks regarding support by the government are unlikely to change in the short, medium, or even long term as the GoS has made long-term commitments to the Paris Agreement and are aware that full access to electricity is essential for their development path.</p>	<p>There is a risk that in order to bring in further institutional investors, the risk appetite for the fund drops, and project origination becomes difficult.</p>

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Jordan — Jordan Environmental Fund (JEF)

Function	Evaluation	Comment
Design	<p>The Jordan Environment Fund was originally designed to support projects and activities that help to protect the environment and safeguard national resources. It is considered the key project financing arm of the Ministry of Environment.</p> <p>Its focus is to implement projects to assist the ministry to achieve its objectives, which revolve primarily around solid waste management, environmental protection and conservation, climate change mitigation and adaptation (including NDC implementation), and green growth.</p>	<p>JEF is not formally mandated to support climate change/NDC implementation projects, Sustainable Development Goal projects, or green growth or other cross-cutting agendas. However, since the Ministry of Environment is the lead on green growth and climate change, JEF by default is oriented in this direction.</p> <p>The Ministry of Planning and International Cooperation (MOPIC) is the lead on implementing the SDGs, so care is taken between ministries to ensure no overlap.</p>
Build	<p>Established in 2009, JEF is governed by a board of directors with cross-ministerial representation, along with civil society and the private sector, and headed by the Minister of Environment.</p> <p>Below the board, a fund director manages a small team of independent consultants (mainly university professors), covering project cycles and development, technical assistance, and administration. According to the bylaws, JEF is not allowed to directly hire staff other than its director. However, the ministry has allocated three of its staff members to provide some support to the fund (administration, financial, and technical) for a defined period. Bylaws also restrict payment to independent consultants.</p> <p>JEF capitalizes on the fees gathered by the Ministry on Environment Impact Assessments, hazardous waste, etc. In addition, international donors and the private sector offer support and grants, including USAID, GGGI, GIZ, and NDC Partnership/ UNDP.</p>	<p>GGGI's primary suggestion after reviewing the bylaws and regulations of JEF was to pass reforms that would increase autonomy of the fund so that international donors would be more likely to capitalize. However, this was rejected by the then minister.</p> <p>Since then, two different ministers have led the ministry, and a new fund director has taken leadership. While the new director claims to have addressed issues of autonomy and transparency, no written changes in the bylaws or regulations have been made, and no noticeable steps toward autonomy and transparency have been completed.</p>
Operate	<p>Projects are selected in two streams: one stream is by the call for proposal process at least once a year, with themes that are in line with national environmental priorities. The second stream is the ability of the board of directors to support activities ad hoc that are aligned with the fund's mandate and national priorities. Caps for both streams are captured in the annual budget approved by the board.</p> <p>The pipeline has shown that much funding has been aimed at awareness raising of environmental issues with the public, through grant funding to NGOs.</p>	<p>While the mandate of JEF would allow it to support projects across a wide range of environmental areas linked to green growth, in practice, JEF has tended to focus on NGO engagement and support, awareness raising, and campaigns. More recently, JEF's director has prioritized "blended finance," attempting to contribute a small percentage of project costs (10–30%) from JEF to demonstrate government buy-in and mobilize additional resources for projects.</p>
Conditions	<p>The fund is well supported within the ministry but is not seen as a government-wide initiative. Financial sustainability for operational costs is the responsibility of the minister as all staff are ministry employees or are provided by international donors for fixed periods to offer technical support.</p>	<p>It is difficult for the fund to attract the necessary talent; any skilled/experienced staff will likely need to be hired by development agencies and embedded within JEF.</p> <p>Recent efforts to increase the profile of the fund have largely been due to the new dynamic CEO.</p>
Risks	<p>The fund is successfully carrying out its mandate, but the impact is relatively low. Political risk is low as the fund is embedded within a single ministry tasked with using income generated to carry out the tasks of the ministry.</p> <p>There are at least seven different NFVs in Jordan. Therefore, there is the risk that JEF will become irrelevant if other NFV mandates are widened.</p> <p>Expanding the mandate of the JEF must be done with stakeholder buy-in to ensure no loss of trust.</p>	<p>In order to access further international streams of climate finance, the fund would likely need to increase transparency and inter-ministry coordination. A recent change in ministry leadership makes this more likely going forward.</p>

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Colombia — FENOGE

Function	Evaluation	Comment
Design	<p>In 2014, the Colombian government passed Law 1715, which aimed at reducing GHG emissions through energy efficiency and the adoption of renewable energy (RE). The new law introduced fiscal incentives, created the legal basis of the development of RE support initiatives, and established a dedicated fund—FENOGE—to support the diversification of Colombia's energy mix and incentivize private capital investments in renewable energy integration.</p> <p>FENOGE was designed as a fund to help promote energy efficiency and sustainability using non-conventional renewables, such as wind, solar, and small hydro energy use.</p>	<p>Law 1753/2015 established a permanent source of capital for FENOGE, earmarking USD 0.40 of the USD 1.90 charge per kilowatt-hour dispatched to the Energy Wholesaler Bourse for FENOGE.</p>
Build	<p>FENOGE was created under Art 190 of Law 1753 of 2015.</p> <p>The law allows for the fund to be designed as a private sector vehicle, to allow for multiple sources of funding to flow into it.</p> <p>GGGI supported this by contributing to the following outputs:</p> <ul style="list-style-type: none"> Finalize the decree that identifies FENOGE as a legal entity. Finalize the FENOGE Operations Manual. Support the selection of the fiduciary agency that will administer FENOGE. Prepare the FENOGE Business Plan. 	
Operate	<p>Projects can be submitted for evaluation and funding under three windows:</p> <ul style="list-style-type: none"> Submission to UPME and IPSE for grid-connected and off-grid projects respectively. UPME/IPSE reviews projects and resubmits prioritized projects to FENOGE twice throughout the year. Call for proposals from the Ministry of Mines and Energy. Projects of strategic importance submitted by public sector actors. 	<p>In 2019, FENOGE's capitalization reached COP 100,000 million (USD 32.5 million), up from COP 34,000 million (USD 9.9 million) in 2018. In 2018, FENOGE disbursed COP 34,000 million, with a 64/36 split between energy efficiency and renewable energy projects.</p>
Conditions	<p>Despite these positive outcomes in FENOGE's implementation so far, the fund presents clear challenges if it were to serve as a driver of rapid transformation for sustainable energy in Colombia, as intended when created. While the fund operates as a private entity, constituted as a trust ruled under private sector law, the public nature of its main funding base creates a suite of limitations. For instance, the fund currently cannot lend nor invest in equity, limiting its operation to grant-based schemes of finance.</p>	<p>Set up more as an energy fund rather than a "green" fund, FENOGE sits firmly linked with a single ministry and therefore is somewhat restricted in its mandate to achieve all "green growth" goals.</p>
Risks	<p>The fund has successfully passed grants to public projects, including renewable energy street lighting, solar power for rural schools, and replacement of expensive diesel generation for a town. It has successfully leveraged finance by blending its grants. However, the project reach remains limited, and projects are financed on an individual basis rather than programmatically through blended streams with the private sector.</p>	<p>The current structure of the fund—based within the ministry—has hampered the instrument offering and limited it to grant offerings against energy projects. On the positive side, the continual fee income from fees gathered through electricity sales allows for a sustainable management structure.</p>

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India — Access to Clean Energy Fund

Function	Evaluation	Comment
Design	<p>Despite India's current electrification rate being almost 100%, supply is intermittent; therefore, the Indian government's goal is to provide 24/7 access for all by 2019.</p> <p>There are around 40 off-grid energy enterprises operating in the country, but none have been able to reach an impactful scale. This is due to a lack of access to debt capital at appropriate terms and conditions from domestic lenders.</p> <p>Consequently, the idea of creating a debt fund that could be accessed by domestic lenders—such as a wholesale lending line—might resolve the situation. After a legal analysis, it was decided that the most cost-efficient way to establish this fund would be by hosting it as a facility within IREDA (instead of as an independent, new entity).</p>	<p>Domestic lenders indicated that a lack of performance data and risk assessment skills and manpower internally made lending to the sector difficult. The answer was to add a concessional portion to the fund that could be called upon by the banks in the event of late or non-payment. This effectively "raised" the credit worthiness of the sector.</p>
Build	<p>The facility is to be housed within a wholly owned government agency, IREDA, managed by the Ministry of New and Renewable Energy. The agency has been highly successful in lending to boost the renewable energy sector of India through borrowing via international capital markets and MDBs. For FYE 2015, it reported a profit of USD 40.5 million.</p> <p>IREDA will offer to capitalize the fund by up to USD 60 million and will manage any FX hedging. Other institutional investors (including potentially GCF) will enter with USD 40 million. GCF will provide a USD 17 million loan loss cover, which can be called upon by any of the banks utilizing the lending facility should a borrower pay late or in the event of non-repayment. The GCF shall also provide a USD 3 million TA grant to create a dedicated "off-grid sector hub" within IREDA.</p>	<p>Funds would be channeled from GCF to NABARD as the AE and then onwards to IREDA. IREDA will further on-lend to other banks as well as directly lend to some projects.</p> <p>The arrangement to "channel" monies from GCF to IREDA through NABARD resulted in complex institutional arrangements to be undertaken between the two large financial entities that delayed the project. Had IREDA been a GCF AE, the project would potentially have had a shorter development period.</p>
Operate	<p>The project pipeline will include mini-grid operators, solar pump providers, and solar home lighting suppliers. Each market segment will have different lending tenors—2.5 and 8 years.</p> <p>Within the facility, a USD 3 million TA funding will be set aside for a technical facility within IREDA for the off-grid energy sector. This team will build up experience and expertise in this sector, help domestic banks to understand the sector, and build a performance history for this sector with regard to risk management on lending.</p>	<p>Creating sufficient TA amounts to run a department within IREDA requires a large facility. As the cost of staff, desks, etc. are fairly fixed, it restricts the countries in which this financing model will work as there would need to be sufficient funding requirements to justify a large facility.</p>
Conditions	<p>It is expected that the fund will revolve as the loss cover runs down at a slower rate. The expected exit for the fund is after 20 years. At this time or sooner, there will be sufficient data available in the market to allow domestic lenders to accept the risk profile of potential borrowers.</p>	
Risks	<p>The facility is not yet operational.</p>	<p>It took a significant amount of time to gain support from the NDA for GCF in India, since GGGI's "counterpart" for the project from inception was MNRE (a different ministry).</p>

ANNEX 1.

Analysis of Nine National Financing Vehicles

Costa Rica — Environmental Bank Foundation (FUNBAM)

Function	Evaluation	Comment
Design	<p>Fundación Banco Ambiental (FUNBAM) was established under Law 8640 in 2008, marking the approval of a USD 30 million loan from the World Bank and a USD 10 million grant from the Global Environment Facility (GEF) to the government of Costa Rica as part of the Eco-markets II initiative. The same law made amendments to the operation of Costa Rica's Payment for Environmental Services (PES) Program. With this approval, FUNBAM was mandated to "administer" the Sustainable Biodiversity Fund (FBS), a trust fund providing financial resources for areas relevant for biodiversity conservation purposes. The initial donation for FBS was approximately USD 16 million in total—composed of grants from GEF (USD 7.5 million), KfW (EUR 6 million), Conservation International (USD 0.5 million), and Osa Conservation (USD 0.5 million)—and the size of the FBS was approximately USD 22.5 million as of 2016. Since 2008, FUNBAM has been solely focusing on strengthening FBS's financial capital and from mid-2015, implementing the Biodiversity Conservation Program (BCP), a program designed to disburse a financial incentive per hectare to those areas relevant for biodiversity conservation purposes in Costa Rica.</p>	<p>The "trust fund" model was used extensively in the 1990s in Latin America to create sustainable funds to help biodiversity projects.</p> <p>The legal establishment of FUNBAM affords it more flexibility, beyond "administering" a fund.</p>
Build	<p>The FUNBAM 2.0 concept was designed to strengthen the core operations, have a dedicated staff, and have a clear strategy with strong projects. The administrative board of FUNBAM put forward project areas they wanted to expand into: sustainable productive landscapes, biodiversity conservation, protection of water resources, and sustainable cities. The administrative board of FUNBAM, which is composed of multiple national ministries, committed to capitalize the fund with USD 1 million to help operationalize a new concept by funding a secretariat.</p>	<p>The implementation of the new business model was perceived as unclear due to a change of government in 2018.</p>
Operate	<p>A pipeline of potential project streams was identified as including (1) a credit financing scheme to incentivize agro-businesses to plant trees and (2) a sustainable timber management program that aims to create a marketplace by designing a payment scheme that contracts with timber producers and buyers in markets, among others.</p> <p>As FUNBAM had no full-time staff, the priority was to consider operationalizing the fund.</p>	<p>A change of government created a modification of focus areas with GGGI, which, in 2018, halted the implementation of FUNBAM 2.0 with GGGI.</p>
Conditions	<p>The core FUNBAM operations are covered under the trust fund structure, but expanded operations to cover credit-financing, etc. would need further staff; therefore, a management fee would need to be charged. This was built into the project models where possible.</p>	<p>A change of government created a change of focus areas with GGGI, which ground to a halt of implementation of FUNBAM 2.0 with GGGI, at the time of 2018.</p>
Risks	<p>The expanded FUNBAM was not fully tested during the project period with GGGI, thus no results are available. Management runs within the Ministry of Environment and Energy, although the administrative board has representatives from the Ministry of Environment and Energy, Ministry of Agriculture, Forestry Financing Fund, National System of Conservation Areas, and National Bank of Costa Rica.</p>	<p>A change of government can change priorities, which has prevented the implementation of FUNBAM 2.0.</p>





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