



Institutions for People

Guarantees for Green Markets

Potential and Challenges

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Acronyms

ALIDE	La Asociación Latinoamericana de Instituciones Financieras para el Desarrollo (Latin American Association of Development Financing Institutions)	FIRA	Fideicomisos Instituidos en Relación con la Agricultura (Trust Funds for Rural Development, Mexico)
ARECA	Accelerating Renewable Energy Investments in Central America and Panama	FND	Financiera Nacional del Desarrollo (national development bank, Mexico)
BEERSF	The Bulgarian Energy Efficiency Renewable Energy Sources Fund	FOGAPE	Fondo de Garantía para Pequeños Empresarios (Guarantee Fund for Small Business Owners, Chile)
CABEI	Central American Bank for Economic Integration	FONAFOR	Fondo Nacional Forestal (National Forestry Fund, Mexico)
CAMBIO	Central American Markets for Biodiversity	FONAGA	Fondo Nacional de Garantías (National Guarantee Fund, Mexico)
CONAFOR	Comisión Nacional Forestal (National Forestry Commission, Mexico)	FONAGA VERDE	Fondo Nacional de Garantías de los Sectores Agropecuario, Forestal, Pesquero y Rural (National Guarantee Fund of Agriculture, Forestry, Fisheries, and Rural Sectors, Mexico)
CONAGUA	Comisión Nacional del Agua (National Water Commission, Mexico)	FONAGUA	Fondo Nacional del Agua (National Fund for Water, Mexico)
DFI	Development finance institution	FOSEFOR	Fondo para la Inclusión Financiera del Sector Forestal (Sustainable Forestry Fund, Mexico)
EE	Energy efficiency	GEF	The Global Environment Facility
ESCO	Energy service companies	IDB	Inter-American Development Bank
FI	Financial institution		
FINDETER	Financiera del Desarrollo (Financial Institute for Development, Colombia)		

IFD/CMF	Capital Markets and Financial Institutions Division of the Institutions for Development Sector of the IDB	SAGF	Rabo Sustainable Agriculture Guarantee Fund
LAC	Latin America and the Caribbean	SAGARPA	Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación (Secretariat of Agriculture, Livestock, Rural Development, Fisheries, and Food, Mexico)
LFI	Local financial institution		
NAFIN	Nacional Financiera (national development bank, Mexico)	SHCP	Secretaría de Hacienda y Crédito Público (Ministry of Finance and Public Credit, Mexico)
NDB	National development bank		
PCG	Partial credit guarantee	SME	Small and medium-sized enterprise
RE	Renewable energy	TA	Technical assistance

Introduction

This publication outlines the challenges of investing in low-carbon and climate-resilient technologies and activities (hereinafter “green market segments”) in the Latin American and Caribbean (LAC) region, explores how guarantees¹ can respond to those challenges, and provides various examples of guarantees used in region. It is the product of comprehensive desk research to collect data on existing guarantee facilities for green market segments globally and in the LAC region, interviews of officials who manage green guarantees (six in the region and two outside),² and a peer review conducted with relevant actors in the credit guarantee and green financing fields, following an October 2013 workshop hosted by the Latin American Association of Development Financing Institutions (La Asociación Latinoamericana de Instituciones Financieras para el Desarrollo, or ALIDE), the Inter-American Development Bank (IDB), and the Financial Institute for Development (Financiera del Desarrollo, or FINDETER), one of Colombia’s development banks, on the role of guarantees in climate finance.³

Current climate change investment inflows are much too low to address the global needs: annual additional investment needs between 2010–30 to reach the two-degree goal are estimated at US\$700 billion globally (WEF, 2012). For Latin America alone, the additional need per year is estimated between US\$20 and US\$33 billion (Figueroa de la Vega and Gomelsky, 2011). Despite the lack of differentiation between

climate-resilient and non-climate resilient technologies in the aforementioned studies, these numbers reflect the challenge to scale up climate finance.

The scarcity of funds currently available to finance green projects in the LAC region is the result of a combination of various financial and non-financial barriers that green market segments face, ranging from a lack of technical capacity on the lender’s side to adverse regulatory environments. If some of these challenges are specific to green investments, such as the uncertain rates of return or financial modeling issues, others—such as high collateral requirements—are general to all types of investment in the region. This publication aims to study how guarantee schemes can address some of these barriers and help unlock private investment in this area.⁴

¹ This publication focuses mainly on the use of credit guarantees for green market segments. It also analyzes the few examples of performance guarantees that could be identified, as they address risks perceived by private investors that are not necessarily covered by credit guarantees.

² FOSEFOR (executed by FND in Mexico); FONAGA VERDE; FONAFOR; and FONAGUA (executed by FIRA in Mexico); Cambio and Areca (executed by CABEI in Central America); SAGF (executed by Rabobank and covering Africa and LAC); and BEERSF (in Bulgaria and with in-house execution).

³ The objective of this publication is not to provide an academic analysis of guarantees, rather to open up a discussion within a community of practice. The theoretical elements provided herein, such as the short description of the types of guarantees, are only provided to explain and clarify concepts.

⁴ “Schemes” and “facilities” will be used interchangeably herein.

Various types of guarantees can be used to address different types of risks related to green projects. In some cases, guarantees may cover risks related to the lack of collateral and the credit risk perception on the part of lenders (credit guarantees, also called partial credit guarantees, or PCGs); in other cases, guarantees can cover uncertainty around the amount of cash flow that projects may be able to generate from their performance (performance risk guarantees).

This publication is based on an empirical analysis of examples of the use of guarantees, and thus focuses mainly on the use of credit guarantees for green market segments. It analyzes the few examples of performance guarantees that could be identified, as they address risks perceived by private investors that are not necessarily covered by credit guarantees.⁵

The publication also highlights the role that national development banks (NDBs) can play in structuring and funding credit-guarantee schemes for their domestic markets and the unique position and capacities at their disposal to design, implement, and promote investment in green market segments effectively. The case studies show that, because green market segments face multiple financial and non-financial barriers to investment, guarantees will only be successful if integrated into a multifaceted program. As public institutions, NDBs are in the best position to combine different tools, such as blended funding,

technical assistance, and guarantees. They are also best placed to coordinate different players around those tools (IDB, 2012). Furthermore, NDBs can convene private and public financial institutions (FIs) and financial and non-financial stakeholders. As shown by Christianson, Venugopal, and Patel (2013), NDBs can also maximize the crowding-in of private funds by playing complementary roles depending on their risk profiles and instrument offerings. Finally, drawing on the research and case study examples, the publication provides a number of recommendations that NDBs should consider when designing guarantee instruments for green markets. In particular, it stresses that guarantees, an implicit subsidy for private borrowers that gives them a contingent claim on government resources, have the potential to create market distortions. Such distortions are worthwhile only if the guarantee yields correspondingly high economic, social, and/or environmental benefits. Thus, no guarantee scheme should be designed without a thorough cost-benefit analysis.

⁵ There are still very few credit-guarantee schemes for green market segments in the region and even fewer performance guarantee schemes (only two were identified—one in Colombia and one in Brazil). See www.eegm.org. As the objectives, features, benefits, and potential flaws of both instruments are very different, the publications focus on credit guarantees, which seem to be easier to promote by financial institutions in the region.

Methodology

This publication was prepared based on comprehensive desk research, in-depth interviews, and a peer review. Specifically, the analysis included the following:

- A review of the literature on (i) the historical use, theoretical benefits, and pitfalls of credit guarantees, impact evaluations, and studies of best practices; (ii) the specific risks and investment barriers associated with green market segments; and (iii) the importance of NDBs in promoting investment in climate-change activities. Despite the broad use of general credit guarantees globally, few studies have identified best practices or assessed their impact (De Olloqui, 2013).
- Data collection on existing guarantees for green market segments worldwide. In order to appropriately assess and identify schemes in operation globally that might serve as suitable examples for the LAC region, the desk research focused on schemes that are (i) operating in middle-income developing countries or targeting investments in those regions, and that (ii) target green lending for smaller-scale projects. Public information on guarantee schemes dedicated to green market segments is scarce. The Frankfurt School of Finance and Management identified only 17 such schemes worldwide.
- In-depth interviews and reviews of eight green guarantee facilities.⁶ The selection was based on the quality of the available and accessible data. The reviews focused on a limited number of aspects in order to discover the best practices and lessons that the cases could offer to NDBs operating in the LAC region. Those aspects were the following:
 - a. The institutional structure or model: the source of funding, the stakeholders and their respective roles and involvement in the scheme, the execution processes, and marketing/promotion plans and channels.
 - b. Key features of the scheme: objective and rationale, geographic scope, eligibility criteria, coverage ratio, guarantee fees, and tenors.
 - c. “Achievement” factors: number of guarantees issued and volume, effective leverage, and utilization ratio.
 - d. “Integration” factors: provision of technical assistance, integration into a global offer with other instruments, and others.
- Peer reviews by relevant actors in both the credit guarantee and the green financing fields following an October 2013 workshop hosted by ALIDE, the IDB, and FINDETER on the role of guarantees in climate finance.

⁶ Six of the facilities were located in Latin America and the Caribbean and two were located outside the region.

3

Key Terms and Concepts

The purpose of this publication is to open a discussion within a community of practice on the benefits of guarantees for green market segments. For the sake of clarity, some theoretical elements underpinning the instruments will be defined.

The terms “green market segments” and “green lending” refer to all low-carbon and climate-resilient technologies and activities and the sustainable use of natural resources. These include energy efficiency (EE), renewable energies (RE), and sustainable agriculture, fishery, and forestry practices.

The basic principle of a credit guarantee scheme is that a third party (the guarantor) shares the credit risk of a project with the lender⁷ and takes all or part of the losses incurred by the lender in the event of default by the borrower⁸. The objective of the guarantee is thus to lower the residual credit risk for the lender. This is why guarantee schemes are often used to unlock cases where a market is underserved by the financial sector because of the real or perceived risks.

The guarantor signs a guarantee facility agreement with participating FIs, or lenders. The guarantor may specify certain terms and conditions for project appraisal (the eligibility requirements or eligibility criteria). Financial institutions are responsible for conducting due diligence and processing the loans.

The guarantee scheme may be offered for individual project guarantees or portfolio guarantees. In individual project guarantees, the guarantor is involved in

each individual transaction. In a portfolio guarantee, the guarantor covers all loans by the FI to a class of borrowers (the portfolio).

A guarantee will usually only cover part of a loan granted by the lender to its borrower, which is why most guarantees are “partial.”⁹ The portion covered is known as the coverage ratio. There are only a handful of credit guarantee schemes found globally that cover 100 percent of the loan (Levitsky, 1993).¹⁰ Thus, herein the terms “guarantee” and “credit guarantee scheme” connote a partial credit guarantee (PCG).

The guarantee can be *pari passu*—that is, losses are shared equally between the lender and the guarantor. But some schemes can also include a first-loss facility, which absorbs up to 100 percent of the losses up to a specified amount.

Leverage is one of the most widely used indicators when describing credit guarantee schemes. There are various methods of calculating leverage. In

⁷ This publication mainly uses the term “lender,” but “financial intermediaries” will sometimes replace it.

⁸ This publication mainly uses the term “borrower,” but the terms “final beneficiary,” “project owner,” and “project developer” may also be used interchangeably.

⁹ However, there is no “blind” protection. Guarantees contain clauses describing the conditions under which banks can draw down the guarantee and the proof that must be delivered to do so.

¹⁰ Eight guarantee schemes have been found which cover 100 percent of the risk. Examples are South Korea’s KiBo scheme, which is part of Korea Credit Guarantee Fund (KODIT), and some schemes offered through Japan’s Credit Guarantee Corporation.

line with the purpose of this publication to showcase where a guarantee spurred investment in green market segments, leverage is defined as the ratio between the amounts of lending agreed to by financial intermediaries, thanks to the guarantee, and those that are guaranteed. The leverage in this case—which will henceforth be referred to as “effective leverage”—refers to the total loans generated for projects that were granted the guarantee divided by the total amount of guarantees.¹¹ This definition highlights the financial additionality, or the amount of private money that was “unlocked” by the guarantee, and therefore seems to be the most appropriate for this publication.

Although the publication is targeted toward NDBs in the LAC region, it occasionally mentions development finance institutions (DFIs)¹² in order to share key messages, within the limits of applicability,¹³ with the

larger development finance community. For additional key terms and concepts used in this publication, see Annex 1.

¹¹ Leverage in finance can also refer to the amount of credit a firm or project has relative to its capital or equity: firms with a high debt-to-equity ratio and projects with a high level of debt relative to their unencumbered resources are considered to be highly leveraged. Some interpret the leverage rate from the guarantee scheme as the amount of guarantees issued by the scheme compared to its capital or equity, or as the amount of reserves or capital set aside for the guarantee facility in relation to the number of outstanding guarantee liabilities underwritten by the credit guarantee scheme. This is the “financial leverage” of the guarantee scheme.

¹² DFIs are multilateral and bilateral development agencies or banks outside of the LAC region. NDBs can be national or international. Technically, an NDB is a DFI.

¹³ Of all types of leverage, financial leverage is the most difficult for DFIs and NDBs to achieve, since, in many cases, regulatory restrictions and business practices do not allow DFIs to differentiate loans from guarantee exposures in their balance sheets.

Barriers to Green Market Segment Financing

Investments in green market segments face both financial and non-financial barriers. Many of those barriers are specific to green investments but, as will be shown below, they are not limited to them. All types of investments in the region face some of these challenges (e.g., hurdles linked to collateral requirements). Many characteristics of green market segments act as barriers for lenders, but the barriers can also affect borrowers—that is, the demand side: unfamiliar technologies or adverse regulatory or legal frameworks can dissuade project owners. Figure 1 lists the main barriers that were identified for green investments.

Financial Barriers

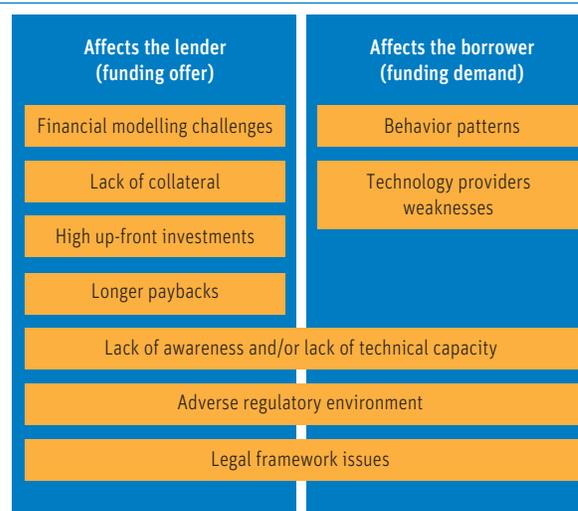
Financial Modeling Challenges

Some green projects may pose financial modeling or pricing issues to lenders. For example, energy efficiency projects are based on expected savings. Those savings are, however, rarely included in the projects' positive cash flow by lenders, due to their lack of technical capacity to change their financial models or because the savings are considered uncertain due to the lack of technical capacity to assess the technology

properly. The situation is improving and in some cases the savings are now recognized, assessed, and used as collateral.

The same issues apply to projects that aim to change business practices (e.g., sustainable agri-practices or organic farming practices), where the expected benefits of the projects in terms of business cash flows are often difficult for the lender to quantify.

FIGURE 1. Barriers to Green Investments



Source: Authors' elaboration.

Beyond additional cash flow, green projects often provide positive externalities or public goods to society, such as access to clean and reliable energy, higher productivity, preservation and restoration of productive lands and forests, access to alternative livelihoods, poverty reduction, increased food security, and others. However, aside from being hard to quantify, these benefits are rarely counted as profit or cash flow by lenders or private investors, although they may help compensate for higher perceived risk and increase financial viability. As a result, economically viable projects may often be left unfunded (Midler, 2008; Rezessy and Bertoldi, 2010).

In some cases and for some specific green market sub-segments, actual risks may be too high to be appropriate for traditional debt financing and may require venture capital rather than debt capital. This is sometimes true for forestry projects, such as Reducing Emissions from Deforestation and Forest Degradation (REDD+) projects. A combination of a guarantee scheme and traditional lending should never be seen as a cheaper alternative to venture capital or equity investments. That is, even if venture capital is scarce or nonexistent in many of these market segments, especially in developing countries, the guarantor should not push private sector lenders into non-bankable transactions.¹⁴

Lack of Collateral

Collateral may be lacking for a variety of reasons. The first derives from the projects themselves: green projects do not always have the necessary collateral. In EE projects, for example, the value of equipment purchased usually covers only 70 to 80 percent of the amount of the required loan, the remaining 20 to 30 percent being for “soft costs” that cannot be used as collateral, such as design, installation, and others (Econoler, 2014). Lenders will therefore request additional collateral, external to the project, which may be difficult to provide. Other reasons may come from the lenders’ side: due to their lack of technical capacity, lenders tend to increase their collateral requirements

to cover for their high perception of the risk of these investments compared to more traditional investments. The lack of collateral is even more acute, as many countries in the LAC region still rely heavily on collateral-based lending with restrictive eligibility requirements (e.g., “real estate and vehicles only” in some countries and high loan-to-asset values) (Shapiro, 2013).

Long Payback Periods

Most green projects have longer payback periods than normal activities funded by banks. Energy efficiency projects usually have terms of six to eight years, while forestry projects may have terms of ten years or more. This is often outside the norm for the region’s banking sector, where the lending portfolios consist predominantly of working capital type loans.

High Upfront and Monitoring Costs

Most green market segments across the spectrum, from small-scale EE projects in households to large-scale RE projects, such as geothermal projects, have high upfront costs. Another peculiarity of green market segments is the monitoring costs that they incur. Green projects often involve some kind of evaluation of the green benefits (e.g., energy savings, reduction of greenhouse gas emissions, reforestation, or slowed deforestation). Given the technical aspects and the complexity of the data collection needed, outsourcing may be necessary. The associated costs may sometimes deter private banks from using the scheme or may undermine the viability of the loans.

Scaling-up Challenges

Last but not least, FIs consider green market segments to be niche markets with higher risks and transaction costs and little scaling-up potential. This may account

¹⁴ A further discussion of venture capital is beyond the scope of this publication.

for their lack of appetite for financing these segments and their reluctance to address the other barriers of lending to green projects.

Non-financial Barriers

Lack of Awareness or Technical Capacity

Green projects often involve new technologies or new practices or, more broadly, new sectors of activity for which lenders, and sometimes borrowers, lack awareness or understanding. From the borrower's point of view, lack of comfort with the new technology may lead to a perception of high risk. For example, the cash flow that the project should provide might seem too uncertain, and the borrower may refrain from requesting credit and developing the project.

From the lender's point of view, credit may be denied or proposed at higher than market rates because there are aspects of the borrower's sector, business model, or target market that are, or are perceived to be, high risk according to the lender's normal credit risk assessment processes. For example, the green market segment has a limited track record and the lender often lacks the capacity to assess the project's technical aspects and hence its real risks and potential returns. For green market segments, perceptions of high risk can be attributed to the fact that they are new or unknown to most banks. Since banks typically engage less in the sector, they may not have adequate practices in place or in-house technical expertise to analyze the risk.

Legal Framework Issues

Green segments may lack the favorable legal environment they need: standard contracts for long-term electricity purchases, standard energy savings sharing agreements, and others. Legal barriers can also include loopholes in the land tenure framework that can impede forestry or agriculture projects.

Adverse Regulatory Environment

Non-financial barriers may include unfriendly, unstable, or even adverse regulatory frameworks. An example of an adverse regulatory framework is water or energy price subsidies that jeopardize the profitability of EE projects. Another example is the absence of regulated off-take contracts for RE. Uncertainty rather than adversity is sometimes the issue. The implementation of new public energy policies may delay the implementation of RE projects, even though most of them in the current environment are favorable to the increased use of RE. The implementation process takes time.

Behavior Patterns

Behavior and traditional business practices can sometimes go against the development of green market segments. Borrowers may not be aware or convinced of the benefits of a new technology or practice, or may simply be reluctant to change. It may be difficult to prioritize the green project over other funding needs of the borrower. For example, a survey completed for a study on the potential for energy efficiency in the fruit and vegetable packaging sector in Mexico showed that most of those interviewed were putting expansion projects before EE projects in their prioritization of financing plans. It may be difficult to convince economic actors that taking debt to save can sometimes be more beneficial than taking debt to expand.

Weaknesses of Technology Providers

Technology providers are important players in green market segment financing. In some cases, they may not exist in a particular country or sector. In other cases, they may not be able to demonstrate a long enough track record to generate the necessary comfort among borrowers.

Guarantees: Advantages and Caveats for Green Market Segments

Advantages of Credit Guarantees

The objective of a credit guarantee scheme is to encourage lenders to provide financing to a specific target group or to increase their exposure to such a group by sharing their credit risk. The objective over the medium to long term is to enable these projects to be financed without a guarantee after the program ends (a concept that will be called “transformationality” in this publication). For this purpose, the primary role of a guarantee scheme is to kickstart a lending business among FIs with the target group and move FIs along their learning curve. The guarantee serves to bridge the initial phase of uncertainty, where, in the absence of experience in successfully financing this sector, FIs may perceive the target group as too risky. In some cases, the guarantee may no longer be necessary once a banking relationship has been established with the sector. This is the case when the perceived risk mainly comes from lack of knowledge about a new technology. In other cases, a guarantee may still be needed to enhance the creditworthiness of certain borrowers and projects, mitigating structural barriers such as the absence of an asset-based lending framework. The role of technical assistance is crucial to success in accompanying FIs in the necessary learning curve.

A study by the World Bank (2009) concluded that credit guarantees are useful instruments where credit risk is perceived to be the key barrier to accessing finance. This is true in regions such as Latin America and the Caribbean, where most lending decisions are made based on the collateral provided by borrowers and their creditworthiness and track record (balance sheet lending), as opposed to specific risks associated with the projects themselves. In light of the barriers to green investments presented above, the study advocates the use of guarantees for green market segments. Since the perception of high risk is one of the major barriers to investment in green market segments, guarantees should be tailored to these segments.

An Efficient Use of Public Money

Guarantees are often used as a way to channel public intervention. Although some guarantees recover their costs through fees, most receive public support (Deelen and Molenaar, 2004). According to Levitsky (1993), all guarantee schemes contain some element of subsidy: either in the contribution (public, private, or external donor) to setting up the guarantee fund, or in some cases in the form of rent to cover some of the costs of administering the program. This appears

Box 1. Positive Medium-Term Outlook: Basel Framework Favorable to Both Guarantees and Small-Scale Green Projects

Basel I and II are recommendations on banking laws and regulations and rules for minimum capital requirements for banks. Their implementation is still incomplete in many LAC countries but is well under way. They should have a positive impact on green programs and the use of guarantees in these programs.

Most current domestic banking regulations in the LAC region do not particularly encourage the use of guarantees, as they are not favorably treated in the calculation of regulatory capital requirements. This should change when countries in the region progressively adhere to the Basel framework. Under Basel II rules, the guaranteed portion of a credit can be weighted according to the rating of the guarantor, potentially drastically reducing the capital cost of an operation for the lending bank. In Chile, for example, a guarantee by the state-owned Fondo de Garantía para Pequeños Empresarios (FOGAPE), a guarantee fund for small business owners, would be weighted at 20 percent guaranteed instead of 100 percent. This would reduce the bank's overall measured exposure.

In parallel, and independently of the guarantee theme, Basel II allows the capital requirements for retail portfolios—that is, portfolios of projects under US\$1 million—to be reduced from 100 to 75 percent. Chile is currently working on this particular change, which, if implemented, should open up the capacity and appetite of FIs for small-scale programs, such as those initiated by energy efficiency-targeting SMEs and residential sectors.

Banking regulations vary considerably from one country to another. Thus, regulatory capital requirements may be an important incentive or barrier to the development of one financial instrument versus another. The current evolution of regulation in the region and worldwide tends to favor guarantees as an efficient use of capital for banks.

Source: Interview with Banco Estado de Chile.

to be true regardless of a country's level of development. In the case of green markets, public intervention often comes in the form of promoting investments that generate co-benefits or non-monetized public goods. This begs the question whether guarantees are an effective use of public money. The costs incurred from any government intervention, either within or outside the financial sector, must be measured against the rate of return on each taxpayer's dollar compared to other interventions, such as credit lines or grants (Beck, 2007). Due to its ability to generate financial leverage,¹⁵ a well-designed and well-implemented guarantee scheme can be a more efficient use of public funds than other public interventions. It is potentially more attractive from a fiscal point of view than a second-tier lending program, which is the other primary vehicle that can be used to expand access to credit for constrained market segments (De Olloqui, 2013). Research also shows that if they are designed

and operated effectively, guarantee schemes do not require ongoing subsidies.

This benefit of guarantees appears in several studies. Even if LAC schemes tend to have less leverage than those of developed countries, reflecting greater prudence of financial policies and the usually higher basic default rates in the target sector, they still reach an average financial leverage of 3.3:1 (De Olloqui, 2013; Pombo, Molina, and Ramirez, 2013).

An Efficient Tool to Crowd in Private Investment

Due to their ability to generate effective leverage, guarantee schemes can be an efficient way to scale up private investment. Among the eight green guarantee schemes featured in the case studies, and considering the newness of the schemes (between one and five years), some

¹⁵ See Annex I for definition.

schemes have reached very attractive effective leverage levels of up to 10:1.¹⁶ In other words, for every US\$1 set aside for the guarantee, up to US\$10 of lending was generated. Guarantees aim to be transformational—that is, no longer needed in the long term—reinforcing their potential capacity to crowd in private investments.

Improving Access to Credit and Lending for Economic and Social Benefit

Effective leverage is demonstrated in the few rigorous evaluations of general credit guarantee schemes in the region, including Chile’s guarantee fund for small business owners (FOGAPE), Colombia’s National Guarantee Fund, and Mexico’s NAFIN. The impact evaluations reveal that where there is credit additionality and, therefore, a relaxing of credit constraints for firms, credit guarantees have a positive effect on business performance. Participating firms outperformed non-participating firms in sales and profitability, employment, and productivity. In Chile, companies that had access to the national guarantee scheme increased their access to credit by 40 percent more than similar non-participating firms (De Olloqui, 2013).

No evaluations of green guarantees in the LAC region have been conducted, but similar impact characteristics could be expected. Effective leverage may be used as a goal for green investments as much as for any subsidized investments, but the appropriate benchmark for judging whether the guarantee program is a success should be the measurement of a corresponding social benefit. This should always been considered when designing the guarantee program.

Caveats of Credit Guarantees for Green Market Segments

A well-designed and well-implemented credit guarantee for green market segments can address some but not all market failures faced by borrowers (see Figure 2). Indeed, guarantees cannot (or can only partially) overcome policy regulations that deter investment in green lending (e.g., energy subsidies that make

FIGURE 2. Barriers Faced by Green Market Segments



Source: Authors’ elaboration.

EE projects non-viable), nor can they compensate for lack of technical or financial capacity of the lender or the borrower. They cannot overcome the weaknesses of technology providers or solve legal loopholes.

Guarantees can share risks with lenders so that they can either begin lending or increase their lending to a target segment. They cannot (and should not) make non-creditworthy customers attractive, nor can they or should they induce lenders to take unnecessary risks. On a more general level, guarantees cannot address structural banking sector problems such as liquidity constraints or inadequate financing sources (including tenor issues and a mismatch between short-term deposits and long-term project lending), nor can they address time lags between financial flows and debt repayment.

The guarantee scheme must be seen as one element of a comprehensive program designed to tackle all of the identified barriers. The case studies included herein show that guarantees are usually more successful when combined with other instruments, such as (i) appropriately blended financial resources,

¹⁶ This is the case of FOSEFOR, a guarantee scheme executed by FND.

to provide more attractive loan conditions or tenors; (ii) capacity building programs for the lenders, designed to increase awareness and technical capacity on the supply side of financing; (iii) capacity building for borrowers, to help them design more bankable projects on the demand side of financing; and (iv) technical assistance to help overcome specific barriers.

The survey and case studies presented herein show that if other barriers are not addressed, the guarantee scheme is more likely to fail. It may not expand access to credit for the targeted segments: the guarantee scheme may simply not be used by FIs, which will keep restricting access to finance for the target. It may not play its supporting role in the forward movement of the learning curve: FIs will use the resources as long as they are available but will not get involved in the market segment without the support in a second phase. Markets will not sustain the guarantee program or be transformed by it so that guarantees are no longer necessary. Finally, if not properly calibrated, guarantee schemes may lead to adverse selection: if the coverage ratio is too high and the FI is not sharing enough of the actual project risk, guarantees can actually wrongly incentivize lenders to lend to excessively risky groups. This will lead to a higher default rate and cost of the scheme for the funding entity. In this way, the financial leverage achieved by the guarantee could backfire, increasing the potential losses and costs for the donor.

Performance Guarantees

Green programs involve new technologies, new financing models, new counterparts, and new stakeholders. From the lender's standpoint, all of these new elements lead to high perceived risks and therefore to credit restrictions or credit provision on unfavorable terms. Credit guarantees can help when the risks concern the creditworthiness of the counterpart or collateral requirements. When the barrier is not the credit risk of the borrower but rather the risk due to the new technology, new services, or new practices employed in the project, a performance risk guarantee can be a more effective financial instrument.

The certainty of the performance of a project can be an issue for the lender, the borrower or both, as shown in the examples below:

- **New technology:** in the case of the implementation of a bio-digester using farming waste to produce electricity, it may be challenging for both the borrower (farmer) and the lender to validate the expected output/cash flow (energy production).
- **New services:** in the case of the replacement of an engine or a refrigeration system in an industrial process, both the borrower (project owner) and the lender will need some reassurance about the expected energy savings.
- **New practices:** in the case of sustainable forestry management practices or sustainable agro practices, both the farmer and the lender will need to be reassured about the expected harvest performance.

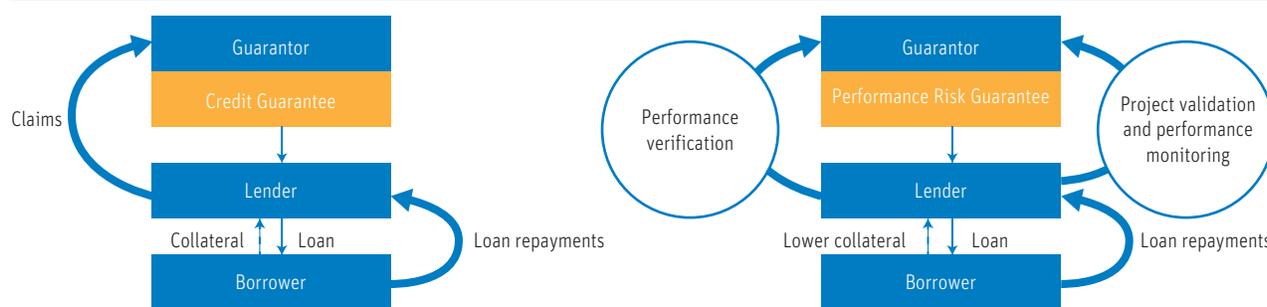
In a performance risk guarantee, a guarantor assumes all or part of the performance risk and ensures that the counterpart will receive the expected benefits in terms of physical results (performance) of the project itself. Expected performance can be measured in terms of energy savings, avoided greenhouse gas emissions, agricultural production, or renewable energy production. With these performance benefits ensured, the risks of not achieving the financial benefits of the project are reduced.

Characteristics

In comparing performance guarantees to credit guarantees, the main difference is the type of risk involved. The former addresses the capacity of the project to deliver the predicted physical benefit, while the latter addresses the credit risk based on the financial capacity of the borrower to repay the debt.

Another important difference is the number of parties involved. With credit risk, the parties include the borrower, the lender, and the guarantor. Both the lender and the guarantor have the necessary in-house skills to assess credit risk. With performance

FIGURE 3. Credit Guarantee vs. Performance Guarantee



Source: Authors' elaboration.

guarantees, the type and number of interested parties vary depending on the type of project and technology involved. Lenders and guarantors seldom have in-house skills to assess performance risks, and they often need experts to evaluate the project and later to assess performance completion.

For green projects using new technologies or practices, the guarantor is often a public institution. For projects that use more tested technologies, however, specialized private institutions can act as performance guarantors. These include external technical expert firms, energy savings companies (ESCOs), or guarantor institutions associated with insurance firms or subsidiaries of banking groups. Figure 3 depicts the stakeholders involved in a traditional credit guarantee and those that may be involved in a performance guarantee.

Benefits

The benefits of the performance guarantee are intuitive: the lender gets a higher level of comfort to integrate the expected performance (e.g., energy savings) into its analysis and pricing of the loan. The financial benefits of the savings are guaranteed whatever the performance of the project, which increases the perceived capacity of the borrower to service its debt, leading to a lower risk assessment and therefore a better pricing of the loan, including lower collateral requirements and improved financial terms. The ultimate goal of the performance guarantee is to have lenders accept performance cash flows as the primary collateral. As they

address a specific risk, performance guarantees can be cheaper than credit guarantees. This makes them more attractive, and also means that more projects can be financed with the same (limited) donor funding.

Limitations

Similar to credit guarantees, performance guarantees can help by reducing the gap between real and perceived risks or by allowing a larger financial institution to spread risk across a large number of projects. However, they will not help when the issues are non-financial (e.g., a regulatory framework that is not conducive or low demand). Performance guarantees are narrower than credit guarantees and do not solve credit risk issues. The borrower can still default even if the project itself performs as expected.

Another issue is complexity. Performance guarantees require specific expertise and involve more stakeholders, and thus they are more difficult to design and implement and can bear more execution risks.

Wide Potential

Besides their pitfalls and limitations, performance guarantees are useful for large-scale projects where borrowers are typically well established. The borrower could still find financing for the project in the absence of a performance guarantee supporting the initiative, but at a prohibitive cost. In those projects, performance guarantees can significantly reduce the financing costs.

Performance guarantees can also be useful in small-scale projects by stimulating credit demand, particularly if combined with other instruments. The performance guarantee aims to convince the borrower (project owner) by taking the cash-flow risk off the balance sheet. An example of the use of this type of guarantee for small-scale green projects is the program developed by the IDB with Bancoldex and SURA in Colombia. It was developed specifically for EE projects in hospitals and hotels where the EE savings are guaranteed by an insurance policy.¹⁷ In this case, a commercial insurer (SURA) has produced a performance guarantee policy for the development of EE using limited technology, based

on a standardized contract and third-party review. Bancoldex lends through commercial banks to project developers, and the loans include insurance premiums for the policy. Bancoldex also withholds some of the project loan to help align interests and reduce insurance losses. The insurance policy is one of the elements used to stimulate the demand for credit for those EE projects.

¹⁷ Guarantees can be issued in the form of insurance products, as in the Bancoldex example, the difference being the legal framework applicable to the contract and therefore to the recovery of losses, but the economic benefit is similar.

Green Guarantee Case Studies

Overview of Credit Guarantee Schemes in Latin America and the Caribbean

Credit guarantees have existed since the beginning of the 20th century (Bertoldi, Hinnels, and Rezessy, 2006; Green, 2003). There are an estimated 2,250 guarantee schemes for SMEs operating in 100 countries worldwide, with a wide variety of setups and structural elements (Green, 2003). Most studies on guarantees relate to their application to SMEs. In the LAC region, 15 countries have instituted public sector credit guarantee schemes for SMEs, 10 of which are operational. Brazil, Chile, and Mexico have more than one guarantee scheme. In a recent study, Pombo, Molina, and Ramirez (2013) mention that, although the LAC region has a fairly large share of the guarantees issued globally, their relative size and financial resources are limited in contrast to those in other regions of the world, such as Asia.

The same study shows that public spending in the LAC region for credit guarantee schemes for SMEs has increased in recent years and that the increase in guaranteed loans doubled in 2009–10 compared to 2007–08. The development has fostered increased access to credit, the results of which can be seen most strongly in the growing number of SMEs. Credit guarantee schemes were not always successful in the LAC region.

In the 1980s and 1990s, attempts were made to transfer global experiences with guarantees to the region. However, many financial systems lacked the basic prerequisites for successful implementation of credit guarantee schemes. These include, but are not limited to, the scope and depth of financial systems with regard to financial products and services, banking regulations, the ability to enforce contracts, and the efficiency of the judicial system in financial resource measures. Overall, levels of macroeconomic stability were low in most LAC countries. Research and trends suggest that sensible management of already established guarantee schemes was favored over the expansion and establishment of new ones (Llisterri, et al., 2006).

Public information on guarantee schemes dedicated to green segments is scarce. Due to the availability and accessibility of data, of the 17 guarantee schemes in LAC identified by the Frankfurt School of Finance and Management, this publication presents eight in detail. Green segments are still considered a new frontier for most financial institutions, and guarantees are not the first instruments to be used for new sectors or activities. In a recent IDB study of 40 EE financing programs in LAC, only three were guarantee schemes (IDB, 2014). This is in line with global trends, but the use of guarantee schemes for green segments is still in the early stages of development.

Box 2. An Example of the Increasing Interest in Guarantees: The IDB's Flexible Guarantee Instrument

In September 2013, the IDB recognized the potential of guarantees to scale up financing, mobilize investments, and help fill the investment gap identified in the LAC region. In addition to potential needs in infrastructure and its use in public-private partnerships, the potential for guarantees was identified in various sectors, such as climate change, energy efficiency, agricultural finance, and commodity price volatility risk coverage. To meet this need, the Bank added guarantees to its range of available financial instruments and established a new policy for a flexible guarantee instrument for sovereign-guaranteed operations.

Source: <http://www.iadb.org/en/idb-finance/english/guarantees,1983.html>.

Key Success Factors and Lessons Learned

In-depth interviews were conducted with five guarantors active in green market segments: (1) Financiera Nacional del Desarrollo (FND), one of Mexico's national development banks; (2) Fideicomisos Instituidos en Relación con la Agricultura en el Banco de México (FIRA), a second-tier development bank in Mexico that offers credit and guarantees, training, technical assistance, and technology-transfer support to the agriculture, livestock, fishing, forestry, and agribusiness sectors; (3) the Central American Bank for Economic Integration (CABEI), a multilateral development bank that promotes the economic integration and balanced economic and social development of the Central American countries; (4) the Rabo Sustainable Agriculture Guarantee Fund (SAGF), sponsored by the Rabobank Group, a worldwide food and agri bank located in the Netherlands; and (5) the Bulgarian Energy Efficiency and Renewable Energy Sources Fund (BEERSF), which provides financial and technical assistance for public and private sector energy efficiency projects in Bulgaria. Table 1 summarizes the eight guarantee facilities, including three schemes executed by FIRA and two by CABEI. For an overview of each case study, see Annex 1.

Each interview focused on a limited number of aspects to discover best practices and lessons that the cases could bring to NDBs operating in the LAC region. Some of the key areas assessed were the following:

- The institutional structure: source of funding, stakeholders and their respective roles and involvement in the scheme, marketing, and promotion plans and channels.
- Key features: objective and rationale, geographic scope, eligibility criteria, coverage ratio, guarantee fee, and tenors.
- Achievement factors: number and volume of guarantees issued, effective leverage, and utilization ratio.
- Integration factors: provision of technical assistance and integration into a global offer with other instruments.

The key findings and recommendations resulting from those interviews are presented below.

Key finding 1: The design phase is crucial.

Guarantee schemes have been criticized for being poorly developed. Some scholars report that many of the estimated 2,250 guarantee schemes have failed either because they are too small or too local or, more importantly, because they were not designed to be sustainable (Douette et al., 2012). The schemes should be tailor-made and should take the specificities of the project into account. The choice of the institutional model and setup, the eligibility criteria for the projects, the level and structure of the coverage ratio, the guarantee fee, the term, and the built-in flexibility of

these elements must be carefully calibrated to achieve a dual objective: unlocking private investment in the target sector while ensuring that the scheme achieves its sustainability target and does not create market distortions.

Defining eligibility criteria is a key step.

Most of the case studies analyzed in this publication showcase the importance of the design phase. For two-thirds of the cases studied, eligibility requirements were among the main factors in the scheme's success or failure. The eligibility criteria should be broad enough to attract enough creditworthy borrowers and efficiently increase access to credit and narrow enough to attract only the appropriate target group, thus advancing the policy or development objectives of the NDB or the government promoting the green guarantee.

All of the LAC green schemes analyzed herein promote green lending and sustainable development through their eligibility requirements. They do so by either covering a wide range of sectors (e.g., biofuels, renewable energy, energy efficiency, sustainable forestry, and sustainable water use) or a wide spectrum of borrowers (e.g., corporations, government agencies, and SMEs). Eligibility criteria were often mentioned to explain either the success or the limitations of the schemes. FIRA's National Guarantee Fund (Fondo Nacional de Garantías, or FONAGA) stands out with an impressive range of eligible projects and borrowers. The scheme covers biofuels, RE and EE, which includes bio-digestion systems, cogeneration, solar thermal and photovoltaic systems, wind energy, small hydro, and crops producing bioenergy inputs. There is no limitation on the project scale, and eligible beneficiaries may include individuals, companies, manufacturers, and suppliers of equipment and technology.

This broad scope was instrumental in the success of the scheme, leading to high acceptance among financial intermediaries and farmers associations, which in turn has resulted in a higher number of guarantees issued, compared with the other

green guarantee products. On the other hand, FIRA's FONAFOR eligibility requirements had a less positive impact on the success of the scheme. The scheme focused on large (more than 100 hectares) commercial forestry projects and provides guarantees to long-term loans for those projects. However, FIs' risk aversion for long-term financing, coupled with their lack of knowledge and appetite for forestry projects, has limited the use of this guarantee product. To reverse the trend and increase the number of beneficiaries, it was proposed to expand the eligibility requirements to include smaller projects. The proposal is being considered. FND's Sustainable Forestry Program (Fondo para la Inclusión Financiera del Sector Forestal, or FOSEFOR) targeted the guarantee to *ejidos* (areas of communal land used for agriculture on which community members individually possess and farm a specific parcel) only.¹⁸ The objective was to help improve the market failure resulting from Mexico's National Agrarian Registry, which determined that *ejido* land is communal. This prevented community members from being able to access financing because they could not use the land as collateral. However, its narrow design and scope also led to a much slower penetration and a dependency on capacity building efforts aimed at all stakeholders.

The eligibility criteria should also be adjustable to changing economic and market conditions. This is a lesson learned from the case studies as well as from the experience of major sovereign guarantee funds in the region. The BEERSF is a good example of the flexibility that should be built into guarantee schemes. The fund was first designed to act as a portfolio guarantee program, whereby FIs' EE lending portfolios were guaranteed. However, market conditions changed drastically during the fund's implementation phase, as a couple of commercial banks entered the same EE segment and did not need the guarantee. Thanks to its built-in flexibility, the fund could successfully adapt to these changes. Today, it acts as an individual project

¹⁸ *Ejidos* are registered with Mexico's National Agrarian Registry (Registro Agrario Nacional).

TABLE 1. Case Studies: Summary of Key Elements

Guarantee facility	FOSEFOR	FONAGA Verde	FONAFOR	FONAGUA	ARECA	CAMBIO	SAGF	BEERSF
Executing agency	FND	FIRA	FIRA	FIRA	CABEI	CABEI	SAGF	BEERSF
Funding	Public (CONAFOR)	Public (Energy Transition Fund for Sustainable Use of the energy)	Public (CONAFOR)	Public (CONAGUA)	Multi (GEF) and bi-lateral (Finland)	Multi-lateral (GEF)	Bi-lateral (Netherlands) & Private (Rabobank foundation, CordAid)	Multi (WB), Bi-lateral (Austria), Public (Bulgaria) and private (Corporates)
Geographical scope	Mexico	Mexico	Mexico	Mexico	Central America	Central America	Africa & LAC	Bulgaria
Effective Leverage rate **	1:10	1:7	1:1.3	1:4	1:5	1:3	1:4	1:6
Coverage ratio	10%	20% for investment loans and 14.29% for working capital	20%	Descending coverage from 40% to 10%	75% on loans up to 500,000 US\$- 35% on loans above	60%	Maximum 90% - Decreasing (phasing out) annually for Rabobank, while increasing (phasing in) for the FI	Up to 80% on loans up to 553,090 US\$
Eligibility criteria	Sustainable forestry projects carried out by indigenous communities 'ejidos'	RE projects, individuals and companies working in RE	Large (more than 100 ha) sustainable commercial forestry projects	Sustainable irrigation/water projects	Small RE projects (less than 100 MW)	MSMEs working in organic sustainable ventures	Small agricultural holders	Energy services companies (ESCOs) or project developers using ESCOs

(continued on next page)

TABLE 1. Case Studies: Summary of Key Elements

Guarantee facility	FOSEFOR	FONAGA Verde	(continued) FONAFOR	FONAGUA	ARECA	CAMBIO	SAGF	BEERSF
Is technical assistance provided?	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Is the guarantee a stand-alone product?	No: grants & loans available too	Yes	No: loans available too	Yes	No: loans available too			
Launch year	2011	2011	2011	2012	2009	2010	2006	2005
Resources available (mUSD)	7.6	18.79	82.89	19.16	7	NA	5	13.8 (for guarantee and/ or loans)
Utilization rate**	2.51%	17.80%	25.10%	7%	39%	NA	100% (revolving use over the Fund's period of activity)	18% (76% including loans)
Institutional model*	Full integration	Full integration	Full integration	Full integration	Hybrid model	Hybrid model	Full ad-hoc structure	Full ad-hoc structure
Guarantee fee	0%	0%	0%	0%	1.50%	NA	1.5 to 2%	0.5% to 2%

Source: Authors' elaboration.

*Definition of each type of institutional model: see section 7.2.5.

** Definition of effective leverage rate and utilization rate: see section 3.

guarantor for EE projects in sectors that are underserved by the private banking sector, namely, hospitals and the construction sector.

The eligibility criteria applicable to the FIs, that is, for FIs to qualify to apply for the guarantee, are also important. If the guarantor wants to reach a large portion of the actors in the target sector, it must ensure that the FIs authorized to provide the guarantee have a strong client base in that sector. Experts interviewed mentioned that this was a crucial success factor. It has been observed that borrowers are unlikely to switch banks to obtain credit. They prefer to obtain credit from a bank with which they have a relationship. Therefore, a sufficient number of FIs would need to offer the guarantee scheme for it to gain momentum and cover the sector properly. In this way, more potential clients can be reached and the impact of expanding investments in green market segments can be maximized.

The coverage ratio must be carefully calibrated.

All financial terms—specifically the coverage ratio—must be carefully set. The coverage ratio should be designed to ensure the success of the intervention while making sure not to jeopardize the scheme’s sustainability over the long term. The coverage ratio should be low enough to ensure that the lender retains a significant part of the risk in order to reduce the likelihood of adverse selection,¹⁹ but high enough to incentivize FIs by effectively reducing their residual risk exposure to a reasonable level. The objective is to create an appetite to lend to a new market. The coverage ratio to be chosen will depend on the FI’s first assessment of the risk and the attractiveness of the given market, and will be linked to the loss expected for the given sector.

According to Levitsky (1993) and Green (2003), a scheme should cover no less than 20 percent and preferably 30 to 40 percent. Most of the LAC schemes identified were in the range of 10 to 40 percent. FND and FIRA feature a reasonable coverage ratio (between 10 and 40 percent) to impart a real sharing of risk with the FIs and prevent adverse selection.

The only exception to the rule was CABEI’s ARECA program, which offered 75 percent on its renewable energy projects up to US\$500,000. This higher-than-average coverage ratio seemed to make sense for the targeted small-scale RE projects in the region, as both the credit supply and demand sides were standing at the very beginning of the learning curve and needed strong incentives to engage.

FIRA’s National Water Fund (Fondo Nacional del Agua, or FONAGUA) is another example of how to use the coverage ratio to orient investments toward the target. The scheme, which covers risk for legal entities engaging in sustainable irrigation water as part of their water concession under the National Water Commission, uses a graduated coverage ratio ranging from 10 to 40 percent, depending on the loan term and project location (i.e., the longer the term, the higher the coverage ratio). In this way, the scheme aims at motivating financial intermediaries to finance longer-term projects.

The scheme structure must allow the flexibility to review the coverage ratios over time. For example, in the case of CABEI-CAMBIO, the scheme’s managers noticed early in the implementation phase that the coverage ratio was not attracting enough FIs. They increased it to 60 percent and got a much better response without jeopardizing the sustainability of the scheme. The number of defaults on the guaranteed portfolio is still very low.

At the same time, the coverage ratio should accommodate the FI’s increasing familiarity with green lending, which often means that the ratio should decrease over time. When combined with technical assistance to impart skills for green lending, a decreasing coverage ratio for the guarantor and an increasing ratio for the FI over a period of years reflect a reduction in the

¹⁹ A higher coverage ratio reduces incentives for banks to screen and monitor loans appropriately, raising the risk of moral hazard and adverse selection; conversely, a lower coverage ratio gives the FI the incentive to conduct a sound credit appraisal. In the context of guarantee scheme, adverse selection occurs when a lender is more likely to include only higher-risk borrowers in the guarantee scheme. See Annex 1 for a definition of adverse selection.

perceived risk and a greater comfort on the part of the FI with the risks involved in green lending. The solution of decreasing the coverage ratio over time has been successfully used by broader, non-green sovereign guarantee funds, such as Corfo in Chile, which aims to ensure that the scheme has real transformational impact. By accompanying the FI through the learning curve, the objective is that at some point they will be able to assess risk properly and assume it on their own.

The SAGF features this type of dynamic model for its coverage ratio: it decreases (phases out) annually for SAGF, while it increases (phases in) for the partner FIs. After three to four years, the guarantee should be completely phased out. This model aims to allow the agricultural SME or cooperative to build a history with the FI, while the FI familiarizes itself with the new activity and, for example, with the specific collateral and contract enforcement procedures. The idea was that by fostering relationships between borrowers and the local partner banks, the banks would eventually be able and willing to provide financing at market prices without the use of the guarantee. This did not happen as much as expected. None of the banks lowered their interest rates to market price levels after the phase-out of the guarantee. The question raised, however, was not whether the guarantee was really effective in reducing perceived risk, but whether high perceived risk was the real issue or the only issue.²⁰

Built-in flexibility is a must.

When interviewing managers of the region's large sovereign guarantee funds, most confirmed that flexibility had helped increase the efficiency of the schemes as countercyclical economic tools. For green market segments, in particular, flexibility can be a crucial success factor, as the regulatory or economic environment can have a drastic impact on project profiles. Half of the cases reviewed in this study have changed their eligibility criteria over time. Bulgaria's BEERSF, for example, shows the importance of building in flexibility to allow a scheme to adapt over time to a new and rapidly evolving environment.

Key finding 2: There are different institutional models to choose from.

For segments in early stages of development, such as green segments, public support appears to be a key success factor: all of the schemes presented herein were funded either by governments or international donors. None of the executing agencies participated in the funding of the scheme. It is important to find the appropriate organizational setup for the guarantee scheme to ensure the lowest transaction costs, while providing the necessary technical skills, flexibility (capacity to adapt to changing market conditions by, for example, modifying the eligibility requirements), and reactivity (e.g., short project analysis and validation processes) to maximize chances of success. Of the eight cases discussed herein, three different models could be identified: Full Delegation, Full Ad Hoc Structure, and Hybrid.

- **Model 1: Full Delegation** (e.g., FND's FOSEFOR and FIRA's FONAFOR, FONAGUA, and FONAGA VERDE)

The relevant Mexican agency—the National Forestry Commission (Comisión Nacional Forestal, or CONAFOR), the National Water Commission (Comisión Nacional del Agua, or CONAGUA), or the Secretariat of Agriculture, Livestock, Rural Development, Fisheries, and Food (Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación, or SAGARPA)—assigns funds to a specific guarantee program, chooses an NDB to execute the guarantee (the executing agency), and designs the scheme (i.e., decides on the eligibility requirements, coverage ratio, etc.) in coordination with the executing agency. The executing agency manages the guarantee as another product of its portfolio. There are no dedicated teams for the guarantee scheme's promotion, execution

²⁰ See case study in Annex II.

Box 3. Lessons Learned from the Pioneers: Where are the Sovereign Guarantee Schemes Heading? The Case of Nacional Financiera

In Mexico, guarantees are fully integrated into the tools available to the government for the implementation of public policies. Nacional Financiera (NAFIN) has been successfully executing a sovereign guarantee scheme for SMEs. The fund has proven to be very helpful as a counter-cyclical instrument and has reached high levels of leverage (40 times). Over the years, NAFIN has been fine-tuning aspects of the scheme, which now works on a zero-paper, 100 percent online basis.

The implementation of dedicated guarantee schemes for green programs would greatly benefit from the practical experiences of these general schemes. Some new trends recently being considered for these schemes are interesting to consider when developing guarantees for green market segments:

1. **More sectoral schemes:** NAFIN is developing tailor-made guarantee schemes aimed at specific sectors of strategic value for the country, such as the software industry. Targeting public intervention increases its potential impact. As energy efficiency is moving to the top of the government's agenda, NAFIN will be ready to help in the implementation of any new policy. There have already been some successful programs in collaboration with the Trust Fund for Electricity Savings (Fideicomiso para el Ahorro de Energía Eléctrica, or FIDE) for the replacement of domestic appliances, such as *Cambio tu viejo por uno nuevo*. As Jorge Ochoa Velazquez explains, "Having a narrower sectoral focus increases your potential impact, but the program needs much more attention to its design, as the pitfalls are many. Barriers to the development of a particular sector can be numerous and of a very different nature than a mere access to credit issue."
2. **More conditions on the use of the global corporate schemes:** To maximize the impact of guarantee schemes, credit conditions are being improved. NAFIN is including restrictions on financial intermediaries, requiring them to reduce collateral requirements or loosen the financial conditions on loans granted with a guarantee.

Source: Interview with Jorge A. Velazquez, Deputy Director of Guarantees.

(project analysis, due diligence, investment decisions), or follow-up (claim process, asset recovering); all processes are integrated into the NDB processes (i.e., they have the same validation committees). FIRA and FND are responsible for conducting due diligence on the financial institutions that will be permitted to participate in the scheme. The project's analysis and due diligence then become the responsibility of the FIs, as do the execution and follow-up of the guarantee. When the guarantee is directly provided to the project (in the case of FOSEFOR only), FND and CONAFOR handle the due diligence and investment decisions. This model has the advantage of building on existing capacities. It should require fewer non-reimbursable resources for administrative support and/or technical capacity

building. The upfront setup costs should also be lower.

- **Model 2: Full Ad hoc Structure** (e.g., BEERSF and SAGF)

In this model, the donors create an ad hoc structure, usually a trust fund, for the scheme. There is no support from an FI. The structure has its own governing bodies to make investment decisions. The scheme hires experts to market and execute the guarantee in accordance with the investment guidelines and constitutional documents. This model provides for more independence and flexibility: specialized technical capacity to follow up on specific risks and issues associated with green markets could be easier and quicker to build in an independent structure. It is, however, a more

costly option, as it needs more non-reimbursable resources in the first phase to build and stabilize the structure. Additionally, it does not benefit from the capillarity of a network of local partner FIs, and acceptance by the local private banking sector may be more difficult to achieve.

- **Model 3: Hybrid** (e.g., ARECA and CAMBIO)
In this model, a donor provides the funding, and an ad hoc structure is created with its own constitutional documents and investment guidelines. The structure creates its own teams of experts. The guarantee scheme, however, still benefits from the strong support of an FI (in this case, CABEI). The FI supports the investment process (the CABEI credit committee is involved, and key staff in the structure are seconded from CABEI). This model may provide dedicated technical capacity and development of specific due diligence conditions for green markets, making use of the local financial system. The model implies higher execution costs and lower sustainability of the scheme over the long term, because it requires grant funding.

All three models have advantages and caveats. The choice of model depends on the specific situation: the presence, interest, and in-house capacity of local NDBs, the donor's relationship with local FIs, the target sector or activity, and the availability of the relevant technical skills locally.

National development banks are well positioned to showcase their competitive edge in the execution of guarantees (full delegation model). Some of the advantages that NDBs could build on are the following:

- Strong local outreach: execution through a well-established NDB would probably add to the scale-up potential. Guarantees executed by FIRA, for example, benefit from the deep capillarity of FIRA's network of 143 offices, partner FIs, and non-bank institutions.
- Increased transformational potential: even if the technical skills must be acquired, building

capacity within the NDB should add to the sustainability and the transformational nature of the program. Hiring local technical experts, which was a challenge in the ARECA project, would probably help to build capacity within CABEI itself and to disseminate those skills through the entire institution and toward the local private banking sector in the long term.

- Experience with the instrument: most countries in the region boast sovereign guarantee schemes, and NDBs have often been involved in executing those schemes.
- Capacity to structure the global financing program and integrate the guarantee scheme within a complete offer including non-reimbursable and blended funds.
- NDBs can play a pivotal role in structuring and executing a guarantee scheme, in the hybrid or full delegation models or any tailor-made structure in between.

Key finding 3: The guarantee scheme must be combined with other services and products.

Technical assistance (TA) is crucial for successful implementation of green guarantees.

Technical assistance helps overcome some of the most common non-financial barriers faced in green projects, such as lack of understanding and expertise on the part of lenders and lack of awareness or financial and technical readiness on the part of borrowers. An effective TA program can target the supply and/or the demand side of credit.

For the lender, TA can be offered to a financial institution to enhance its institutional capacity to appraise and process green loans. In the short term, the lenders will need the guarantee to enter the market segment. The TA can be used to build in-house capacity and skills so that over time, the perceived risks will decrease and the lenders may no longer require a guarantee to engage in green lending.

For the borrower, TA can be offered to green project developers and project proponents to help them build

financially viable projects that will attract adequate financing and raise awareness of the benefits to the market segment. Examples include training programs on sustainable agro-practices and the benefits and characteristics of energy efficiency projects, including enhancing skills on project siting, conducting energy audits or environmental impact assessments, working with local stakeholders, and developing a business plan.

Technical assistance should be tailored to the specific needs of the domestic market segment and can be used for many purposes, such as to finance the upfront costs of creating contract templates and to implement a validation/accreditation process. Overall, a well-designed TA program benefits the FIs, borrowers, and stakeholders by raising awareness regarding the social and economic benefits of green market segments and building acceptance of a guarantee scheme. These benefits in turn contribute to both short-term success, measured in terms of broad use by local FIs, and long-term success, measured in terms of its transformational potential as FIs lend to these kinds of projects, making less use of the guarantee over time.

All schemes discussed herein proposed TA except for SAGF, and all those interviewed acknowledged that TA had played a crucial role in the success of their respective schemes. Three of them mentioned increased TA as one of the key factors that could improve their program's achievements. The analysis also shows that TA needs depend on the market segment. In the case of the CABEI's ARECA project, training FIs and helping them to identify and evaluate small RE projects were the most important success factors. For FOSEFOR, the TA resources were mainly spent on building awareness and financial capacity among the beneficiaries (*ejidos*), which have proven to be key in creating demand and increasing the number of bankable projects.

The only program that was not proposing technical assistance—SAGF—did not achieve its objective of sustainably involving the private banking sector in providing working capital credit (via pre-export trade finance) to small and medium-sized producers of sustainable agricultural products in developing countries. One of the fund's managers did mention that the fund could

have included a TA component for FIs to further stimulate agricultural credits to sustainable agricultural smallholders. This might include trainings for banks to teach them about crop cycles, crop risks, and harvesting methods, which in turn would increase their comfort in lending to sustainable agricultural smallholders. Additionally, FIs could educate their borrowers on how to increase their productivity, which in turn would ensure timely loan repayment and lower rates of default.

Offering other financial products alongside a guarantee is another major success factor.

To scale up green lending more aggressively, a guarantee scheme should be combined with other financial services. Guarantees work to improve the risk position of lenders by addressing high levels of perceived risk. However, they cannot solve liquidity issues—particularly for medium and long-term lending—and they cannot overcome non-financial barriers such as lack of awareness or technical skills. They can be more successful if combined with non-reimbursable resources that can be used for TA or for blending financing resources and—when necessary—with concessional financing.

Combining the guarantee with other instruments increases the chances of success in scaling up private investments. If the scheme can propose either a credit or a guarantee, the sources of revenue are diversified and increased: the scheme can be more sustainable and less reliant on public money.

Most of the schemes analyzed herein directly or indirectly proposed other kinds of financial services, except for ARECA and SAGF. Because they fall under the larger agencies of FND and FIRA, which also offer financing, borrowers can access loans and/or grants for TA alongside a guarantee product. In fact, guarantees are a very small component of FIRA's funding allocations for green projects. Recognizing the importance of other incentives besides guarantees to improve the effectiveness of the National Guarantee Fund of Agriculture, Forestry, Fisheries, and Rural Sectors, Mexico (Fondo Nacional de Garantías de los Sectores Agropecuario, Forestal, Pesquero y Rural, or FONAGA

VERDE), FIRA has prepared an incentive program called BIOENERGIA, which will provide non-refundable resources to complement the investment when farmers do not have sufficient financial resources. To promote buy-in and ownership of the scheme, participating farmers need to put up at least 20 percent of the investment amount in cash or in goods.

The CABEI-CAMBIO program proposes funding, guarantees, technical assistance, and grants (the Cambio Prize) to SMEs that are willing to implement or modify production practices to be biodiversity friendly. The Bio Prize consists of the reimbursement of 20 percent of the loan amount. The condition to obtain it is accomplishing all of the biodiversity indicators set for each loan. The diversity of its offerings has been mentioned as a key element in the success of CABEI-CAMBIO.

The BEERSF offers flexible financial products to potential borrowers in addition to portfolio and individual guarantees, including loans tailored to the needs of the EE project developer.

The SAGF example illustrates well the profitability issue that guarantee schemes may face. Because the bank only offered guarantees and thus only received revenues from applicable guarantee fees, it was unable to raise enough external private funding to capitalize the guarantee scheme for a second tranche. The return offered by the stand-alone guarantee was too low for private investors.

Key finding 4: The guarantee scheme must convince and showcase its reliability.

Many of the interviewees highlighted the importance of a positive market perception of the guarantee scheme. The scheme needs to project a reliable image. Lenders must be convinced that the scheme will have enough financial resources to cover claims. They must also be confident that it is well designed and managed with a transparent and accountable corporate governance scheme and that it will be able to respond quickly to guarantee requests and claims.

The procedures for claims, payments, and recoveries must be set up ex ante. The forms and processes should be accessible and clearly presented. A scheme will quickly lose its credibility if its procedures for claims are unclear or too complicated. On the contrary, a scheme whose processes are streamlined will gain recognition and trust. This is valid for both green and non-green guarantees. For green guarantees, however, there is an even stronger need to convince all stakeholders due to the barriers described above. A green guarantee will need to be “sold” at each level to both the guarantor and the lenders’ teams (e.g., the relationship managers, credit analysts, product development staff, and others). One of the most efficient ways to do so is to show a strong strategic commitment from management, the board of directors, and shareholders.

7

The Role of NDBs in Promoting Green Guarantees

Due to their unique position and capacities, NDBs can play a strong role in the design, implementation, and promotion of green guarantees.

Public mandate: NDBs can usually handle investments with longer terms and different risk profiles if they fall within the mandate they have been given and in the public strategy that they are helping to implement. Therefore, they can often enter at earlier or riskier stages of the project cycle, and can take on the responsibility for monitoring and oversight of the schemes to ensure their long-term success. Building on this close relationship with the relevant public agencies, they can work with the governments they represent to create policy frameworks that encourage investment in green market segments, while helping to address some of the non-financial barriers mentioned above.

Structuring capacity: Most countries in the LAC region have sovereign guarantee schemes, and NDBs have often been involved in executing them. They can use these experiences and replicate them for green market segments. They are also well positioned to offer a combination of instruments (guarantees, TA, and loans).

International outreach: NDBs can channel international financial resources that may not be directly available to local FIs. They can also access these resources in hard currency on more favorable terms than those offered to local FIs.

Strong local outreach and credibility: Execution through a well-established NDB may add to the scale-up potential. Guarantees executed by FIRA, for example, benefit from the deep capillarity of FIRA's network of 143 offices, partner FIs, and non-bank institutions (see Annex 2). NDBs have strong relationships with their respective local financial sector and carry credibility and influence when promoting their mandates and activities. They can increase participation and coordination among many market players to ensure the success of a green credit guarantee scheme. NDBs have the capacity to build awareness and capacity among borrowers and FIs through education and technical support regarding green market segments, their barriers, risks, and rates of return. Additionally, NDBs understand regional, national, and local conditions. Hence, they are well equipped to promote green investments in local markets for their own operation—for example, solar-powered ATM machines and other projects that help shape a market.

Increased transformational potential: NDBs help create a local know-how. Even if technical skills are lacking, building capacity within the NDB should add

to the sustainability and transformational nature of the program. An example is the case of CABI's ARECA project mentioned above.

Conclusions and Recommendations

A guarantee scheme can be a powerful tool to unlock private investment in green markets if properly designed, and if other barriers to investment—financial or non-financial—do not prevent their uptake and use.

Most existing schemes are supported by public or international funds. Guarantees can be an effective use of public money to scale up private investments. The desk review analysis of existing green guarantees worldwide shows that most of the schemes identified were supported by public or international funding. Six of the eight case studies discussed herein were exclusively funded by either national or international public funds. Guarantees are praised as being an excellent use of public money because of their role in leveraging additional financing and their countercyclical efficiency. From the perspective of an NDB or the government, acting through it, guarantees can be effective tools to support policy objectives. They are typically more cost-efficient than other interventions, thanks to the effective leverage they provide. Even if the effective leverage is commonly used as a measure of the guarantee scheme's success, however, the appropriate benchmark for the evaluation of any subsidy, including a green guarantee, should include whether it yielded a corresponding social benefit. This always needs to be taken into account when designing the schemes.

Dissemination of best practices and lessons learned by the early promoters of green guarantee will be crucial to the increasing use of the instrument in the region. Some tools and initiatives have already been developed and are available in the region to be successfully used as platforms for exchanging and disseminating best practices. They include the following:

- ALIDE: A first event was held in October 2013 on “The Role of Guarantees in Structuring Environmental and Climate Finance.”²¹
- Finanzas Carbono: A knowledge e-platform developed by the Capital Markets and Financial Institutions (IFD/CMF) Division of the IDB and maintained by the Fundación Torcuato Di Tella of Argentina. The website brings together a dedicated community of practitioners from financial institutions, providing webinars, e-learning materials, online chats, information on events, and a library of studies and publications about FI experiences in the design and promotion of green financing instruments.²²
- KLAVE Green Finance: A knowledge product recently launched by the IDB, which provides useful

²¹ <http://events.iadb.org/calendar/eventDetail.aspx?lang=En&id=4200>

²² For more information, see <http://finanzascarbono.org>.

knowledge material for the community of FIs in the region.²³

Exchanging experiences with managers of broader sovereign guarantee funds in the region could also be valuable.

Although the instrument itself is not new, its use for green markets is. NDBs are ideally positioned to play a major role, and they are already embracing this responsibility. The LAC region's NDBs can play a major role in structuring and executing green guarantees. They frequently have experience with the instrument in broader-spectrum schemes, such as sovereign guarantee funds for SMEs, and they are ideally positioned to replicate those experiences in the green area. Thanks to their public mandate, NDBs provide a natural channel for public funds, and because of

their strong relationship with the local banking sector, they can achieve more effective leverage. They are also able to mix different instruments, such as non-reimbursable funds and concessional resources, to tailor solutions to the target sector financing challenges. The NDBs in the LAC region have been embracing the green market challenge in recent years, and they are already pioneering the design and implementation of green guarantees. Most of the schemes that have been identified herein have benefited from the support of an NDB. By increasing the exchange of information on good practices between institutions in the region and nationally between those involved with the wider sovereign guarantee funds, NDBs could accelerate the learning curve and make the best use of credit guarantees.

²³ For more information, see <http://kp.iadb.org/finanzasverdes>

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Annex 1. Definition of Key Terms

Adverse selection	In the context of a portfolio guarantee scheme, occurs when a lender lets too many high-risk borrowers into the guarantee scheme.
Asymmetrical information	When a lender has significantly less information about a borrower's business prospects and likelihood of repayment than the actual borrower does.
Claim	When the borrower becomes insolvent or defaults, the lender submits a claim to the guarantor to pay the lender for any losses incurred.
Collateral	A property or asset that a borrower pledges as security for the repayment of a loan. The borrower agrees that in case he or she fails to repay the loan, the lender has the right to seize and liquidate the asset or property to recover the debt.
Credit guarantee	Protection of an exposure provided by a third party to cover in full or in part the credit risk of a debtor. Types of guarantees are: "final loss sharing" (carrying amount of the debt after collateral recovery is shared between lender and guarantor) or "joint and several with the banker" (junior part of the loan at default is borne by both parties in accordance with the contractual guarantee percentage).
Coverage ratio	The value of the portion of the loan which is being covered by a guarantee, compared to the value of the entire loan.
Financial leverage	The amount of guarantees issued by the scheme compared to a guarantor's capital or equity, or the amount of reserves or capital set aside for the guarantee facility in relation to the number of outstanding guarantee liabilities underwritten by the credit guarantee scheme.
Effective leverage	In the framework of a guarantee scheme: the total loans generated for projects that were granted the guarantee (funding leveraged) versus the total amount of guarantees (guarantee volume).
Eligibility criteria	In the framework of a guarantee scheme: criteria that define who can apply for a credit guarantee or which types of projects or programs are eligible.
Energy efficiency	Improvements resulting in a reduction in the energy consumption used for a given service, such as heating, lighting, or some level of activity. The energy reduction usually occurs from a technological change but can also occur from non-technical factors (such as better management of a process).

Executing agency	Partner in charge of managing the resources allocated to the guarantee scheme, choosing projects and/or intermediaries, processing due diligence and project analysis as decided by guarantee schemes, governing rules, and others.
Green market segments, green lending	In this publication, low-carbon and climate-resilient technologies and activities such as: sustainable use of natural resources (including all the energy efficiency area), renewable energy, sustainable agriculture, fishery and forestry practices, and others.
Guarantor	The third party who promises to provide payment on a bond, loan, or other liability in the event of default.
Guarantee fee	Amount to be paid to the guarantor to obtain the guarantee.
Guaranteed loan	A loan for which the guarantor guarantees repayment to the lender if the borrower fails to repay.
Guarantee volume	In this publication, the total volume of guarantees issued for the sector in question.
Individual versus portfolio guarantee scheme	When a credit guarantee is issued for a loan, two different arrangements can emerge depending on the degree of the guarantor's involvement: (i) with an individual guarantee, the guarantor deals with each single borrower individually before issuing a guarantee; and (ii) with a portfolio guarantee, the guarantor merely contracts the characteristics of the overall loan portfolio and then grants loans automatically to all the borrowers included.
Market imperfections or failures	When the allocation of goods and services by a free market is not efficient. Market failures are often associated with, among others, public goods, asymmetrical information, and externalities.
Moral hazard	A tendency to be more willing to take a risk knowing that the potential costs or burdens associated with the risk will be borne by others.
Externalities	Costs or benefits that affect a party who did not choose to incur that cost or benefit. They can be positive (when third parties benefit) or negative (when third parties are damaged). Often it is society as a whole that is impacted by externalities.
Renewable energy	Energy resources and technologies that are not depleted or that are continually replenished, such as solar energy, wind, falling water, the heat of the earth (geothermal), plant materials (biomass), waves, ocean currents, temperature differences in the oceans, and the energy of the tides. Renewable energy technologies use power, heat, or mechanical energy and convert those resources either to electricity or motor power.
Available reserves	In this publication, the guarantee scheme's capital or equity, or the amount of reserves or capital set aside for the guarantee scheme
Sustainable agriculture	The efficient production of safe, high-quality agricultural products in a manner that improves the natural environment, the social and economic conditions of farmers, their employees, and local communities, and safeguards the health and welfare of all farmed species.
Utilization	In this publication, the amount of the scheme that was used. Calculated as guarantee volume/reserves available.

Annex 2. Case Studies

Mexico: Financiera Nacional del Desarrollo (FND) Fondo para la Inclusión Financiera del Sector Forestal (FOSEFOR)²⁴

Guarantee facility name	Fondo para la Inclusión Financiera del Sector Forestal (FOSEFOR)
Executing agency	Financiera Nacional de Desarrollo: since 2003, FND has acted as a first- and second-tier financial institution, offering financing and grant support to farmers and rural financial intermediaries, using both its own and federal funds.
Launched	2011
Geographic scope	Mexico forestal zones
Funding	Public (CONAFOR)
Type of guarantee	Partial credit: individual and portfolio Risk coverage to individual projects; portfolio coverage to financial intermediaries
Sector focus	FOSEFOR specifically addresses the guarantee needs of the beneficiaries of the national forestry program (Programa Nacional Forestal, or PRONAFOR ²⁵). FOSEFOR has two components: FOSEFOR-EMPRESARIAL to support any economic activities ²⁶ (timber and non-timber) in forested areas which help improve their sustainability and FOSEFOR-PFC to stimulate the investment for the establishment and maintenance of commercial forestry plantations, both components in the short and long term. Projects eligible to FOSEFOR-PFC are commercial forestry plantations under 100 ha. ²⁷
Risks mitigated/ aim of guarantee	In Mexico, most people use mortgages or land as collateral. But most rural land is owned under the ejido system. The ejidos and their members have restricted access to financing, as they cannot use their land as collateral: Mexico's National Agrarian Registry dictates that is communal land. FOSEFOR aims at addressing this market failure by providing the guarantee as a substitute to the required collateral.
Product features	A liquid guarantee fund: the guarantee is deposited into a commercial bank account and is administered by the Executive Directorate of Business Development with Rural Financial Intermediaries (DEPNIFR). As an additional incentive, if the beneficiary repays the loan on time, FOSEFOR will capitalize the guarantee, that is, transform it into a grant that is offered to the beneficiary. Coverage Ratio: liquid coverage of 10 percent of the loan amount and up to US\$15,000 for commercial forestry plantations (FOSEFOR-PFC) and up to US\$45,000 for sustain-

²⁴ Unless otherwise cited, all information contained in the FND case study was obtained through interviews with María Teresa Cuadra García and César Josué Poblano H., of the Directorate of Programs and Products, FND.

²⁵ PRONAFOR is a program under CONAFOR, which considers the granting of subsidies subject to operating rules, in order to incorporate forestry and forest surfaces preferably to restoration, conservation, and sustainable use of forest resources processes to maintain and increase the provision of environmental goods and services.

²⁶ This can include activities that reduce economic pressure on forests, such as settlement expansion, logging or mining, or those that make the forest more sustainable.

²⁷ To cover the credit risk of larger projects above 100 ha, FND applies to FONAFOR, a guarantee product developed by CONAFOR and administered by FIRA (see below).

able productive projects (FOSEFOR-EMPRESARIAL). Those limits can be exceeded upon special authorization of the Commission of Regulation and Follow up (CRyS). No guarantee fee is charged.

Key figures

Data as of March 2014; exchange rate US\$1.00 = 13.5 MXN

	FOSEFOR EMPRESARIAL	FOSEFOR PFC	Total
Available reserves	US\$151,528	US\$7,407,407	US\$ 7,558,935
Number of guarantees issued	14	0	14
Total funding amount leveraged by guarantees	US\$1,899,570	0	US\$ 1,899,570
Guarantee volume for sector in question	US\$189,953	0	US\$189,953
Effective leverage rate	1:10	–	1:10
Utilization		0	2.51 percent

Set-up/ organizational structure

FOSEFOR is a liquid guarantee granted by CONAFOR, and the entire Financiera Nacional staff is responsible for promoting and managing its guarantee product.

For second-tier guarantee: FND processes the request from the financial institution and approves the coverage amount. Financiera Nacional does not directly participate in the individual project evaluation. Portfolio guarantees are also available under FOSEFOR.

For first-tier guarantee: the procedure is longer, as it involves FND (in charge of the technical evaluation of the project) and the Commission of Regulation and Follow-up (which approves the guarantee). Only the projects receiving public grants and TA through CONAFOR programs are eligible. The guarantee approval process may take between three and four days, and credit evaluation and approval can take three to four weeks.

Marketing

The most effective promotional mechanism has been the training of FND and CONAFOR staff and reaching potential clients during the training sessions subsequently organized by CONAFOR.

Success factors

The objective was to target a specific niche market (the ejidos with projects under 100 ha) and to address the market failure that was impeding them from accessing financing on favorable terms. FOSEFOR has been well accepted by the targeted beneficiaries and financial intermediaries and has built a favorable environment for forestry investments and the development of other forestry-related economic activities.

Experience and lessons learned

Implementation has been much slower than expected. When the program was launched at the end of 2011, the expectation was to utilize 100 percent of the amount assigned to FOSEFOR (FOSEFOR EMPRESARIAL, US\$151,528; FOSEFOR PFC, US\$7,407,407) by the end of 2012, as 20 or so eligible projects were already iden-

tified and known to Financiera Nacional. But by 2013, only 2.51 percent had been utilized (US\$189,953) out of a total of US\$7,558,935 available. The communal ownership of the land and the democratic decision-making processes in the ejidos make it difficult to promote, plan, and approve a forestry investment project.

Technical assistance has been crucial, and more is needed to raise the forestry and financial management capacity.

The combination of two challenging goals: (1) support of ejidos, and (2) support for forestry has made it difficult to achieve good results. Focusing on one objective at a time might have facilitated implementation.

México: Fideicomisos Instituidos en Relación con la Agricultura (FIRA)²⁸

Common features of the three guarantee facilities FONAGA VERDE, FONAFOR, and FONAGUA

Executing agency	<p>Fideicomisos Instituidos en Relación con la Agricultura (FIRA)²⁹</p> <p>FIRA is a second-tier development bank that offers credit and guarantees, training, technical assistance, and technology-transfer support to the agriculture, livestock, fishing, forestry, and agribusiness sectors in Mexico. FIRA has an extensive network of 143 offices throughout Mexico, more than 40 percent of which are based in communities with fewer than 50,000 residents. FIRA’s field offices and headquarters include a staff of more than 1,150 agricultural and finance specialists with deep knowledge of Mexico’s farming conditions and producer capabilities. FIRA operates with four trust funds.</p> <p>In line with the government of Mexico’s national strategy to mitigate the effects of climate change through the promotion of green projects and to incentivize financial institutions to finance green market segments, FIRA developed three guarantee products in 2011 and 2012: FONAGA VERDE, FONAFOR, and FONAGUA.</p> <p>As of February 2014, the total guarantee volume of the three products was US\$25.5 million out of FIRA’s total guarantee portfolio of US\$2,412.18 million, or approximately 1 percent of FIRA’s total guarantee portfolio.</p> <p>The three guarantee schemes are financed with government funds with the aim of leveraging private funds.</p>
Set-up/ organizational structure	<p>FIRA does not have specific staff devoted to the promotion, management, and supervision of its three green credit guarantee products. FIRA is an administrator and has written agreements and a coordination agreement with the government organizations that provide the financial resources for each guarantee.</p>

²⁸ Unless otherwise cited, all information contained in the FIRA Case Study was obtained through interviews with Ana Paulina Marín Castillo, Co-Director of Investment Banking and New Products, FIRA.

²⁹ FIRA webpage: <http://www.fira.gob.mx/Nd/AcercadeNosotros.jsp>, accessed June 17, 2013.

FIRA signs coverage guarantee contracts for specific amounts with qualified financial intermediaries, covering both individual loans and total portfolio. The process of approval, formalization, monitoring, and payment processing of all three green credit guarantee products is mainly operated by the financial intermediaries registered with FIRA. FIRA's software can register and monitor all three types of green guarantees issued by the financial intermediaries.

Each guarantee application is registered online when the financial intermediaries receive or approve the loan funding and request the guarantee coverage. FIRA's online software monitors all phases of the guarantee process, from application to final payment.

Marketing	FIRA reaches the final target population for its three green guarantee products through the Business Promotion Area staff in its Regional Offices using different types of marketing mechanisms (brochures, radio broadcasts, magazines, workshops, and conferences). The financial intermediaries themselves are powerful dissemination channels.
Geographic scope	The three guarantee schemes are available in FIRA's zone of activity, that is, in communities with fewer than 50,000 residents.
Guarantee facility name	FONAGA VERDE Established within the National Guarantee Fund of Agriculture, Forestry, Fisheries, and Rural Sectors, which is one of FIRA's four trust funds.
Launched	February 2011
Funding	Public. The resources for FONAGA VERDE come from the Energy Transition Fund for the Sustainable Use of the Energy, a trust established by the Ministry of Finance and Public Credit (Secretaría de Hacienda y Crédito Público, or SHCP) with the Ministry of Energy (Secretaría de Energía, or SENER).
Type of guarantee	Partial credit: Portfolio
Sector focus	Biofuels, RE, and EE (among others bio digestion systems, cogeneration, solar thermal and photovoltaic systems, wind energy, small hydro, crops producing bioenergy inputs). Energy efficiency projects were included in late 2013 (see below). No limitation for project scale except for biofuels projects, which must be between 100 and 1,500 has. Beneficiaries: <ul style="list-style-type: none"> • Individuals and companies related to the production of biofuels and/or renewable energy, as well as the management of energy efficiency projects. • Manufacturers and suppliers of equipment and technology related to the production of alternative energies and that provide non-banking³⁰ financing to end users.
Risks mitigated/ aim of the guarantee	Aims to encourage financial intermediaries in financing investment projects related to the renewable energy sector by covering their loan portfolios.

³⁰ Refers to credit given to associations or any other non-banking financial institution

Product features Because FONAGA VERDE supports the public policy objectives of Mexico, no guarantee fee is charged to the financial intermediaries or the end users.

Coverage Ratio:

- 20 percent for medium to long-term investment loans
- 14.29 percent for short-term working capital loans

Key figures Data as of March 2014; Exchange rate: US\$1.00=13.27 MXN

Available reserves	US\$18,790,000
Number of guarantees issued	54 ^a
Total funding amount leveraged by guarantees	US\$23,910,000
Guarantee volume for sector in question	US\$A3,350,000
Effective leverage rate	1:7
Utilization	17.8 percent

^a Two are large projects: Caborca (<http://www.numerounoonline.com/main/caborca/genera-energia-limpia-agroindustria-de-caborca>) and Papalotes; the others are small-scale projects.

Success factors Its flexible design has enabled FONAGA VERDE to cover a wide range of projects, leading to a high level of acceptance among financial intermediaries and farmers associations, and resulting in a higher number of guarantees issued, compared with the other green guarantee products. FONAGA VERDE is so far the most accepted and widely utilized green credit guarantee product offered by FIRA.

The guarantee is accompanied by other financial products and services such as loan funding and technical support, which increases its sustainability and outreach.³¹

Low cost, no fee.

Experience and lessons learned To build on the scheme’s success and on the lessons learned, FIRA improved its offer in different ways:

- By widening the scheme’s scope: FIRA submitted to SAGARPA the inclusion of other types of sustainable projects. So far, energy efficiency projects had been included by late 2013, and the discussion is ongoing for other sectors/technologies such as ecotourism, biofertilizers, and others; and
- By widening the scheme’s impact, it was shown that covering the entire project, not just the sustainable part, could improve the use of the scheme, making it easier to implement. The discussion was initiated with SAGARPA and it was decided that if the green component represented more than 51 percent of the investment, the total amount could be considered for guarantee.

³¹ To improve FONAGA VERDE’s acceptance and effectiveness, FIRA designed an incentive program, which was approved by SAGARPA and launched in 2013. It is an independent project called BIOENERGIA, that provides non-refundable resources to complement the investment when farmers do not have all the resources, but farmers need to put at least 20 percent of the investment amount down in cash or in goods. This project will be managed by FIRA in coordination with the financial intermediaries.

- By adding parallel instruments to its offer, the guarantee was made more relevant. FIRA was designed and launched late 2013 in accordance with SAGARPA, the BIOENERGIA program that can offer non-reimbursable resources for some types of green investments eligible under FONAGA VERDE. This program broadens the number of potential projects that are then eligible for the guarantee scheme.

Guarantee facility name	Fondo Nacional Forestal (FONAFOR)
Launched	April, 2011
Funding	Public. The resources for FONAFOR come from CONAFOR.
Type of guarantee	Partial credit: Individual
Sector focus	Sustainable Commercial Forestry. Eligible projects include commercial forestry plantations that are between 100 and 1,500 hectares (ha), or up to 10,000 UDIS per ha. ³² Project types include those involving the establishment, maintenance, expansion or improvement of timber plantation areas; those which replenish trees cut down for timber exports or prevent land use change and, very importantly, those which improve the living standards of forest producers. Investors need to contribute 10 percent of the total investment amount.
Risks mitigated/ aim of the guarantee	Aims to encourage financial intermediaries in financing sustainable forestry investments in commercial forest plantations (PFC) by offering a partial credit guarantee.
Product features	<p>Because FONAFOR supports the public policy objectives of Mexico, the scheme does not charge a guarantee fee for the financial intermediaries or the end users.</p> <p>Two coverage components; the first reduces liquid collateral requirements by covering up to 20 percent of the loan principal (disbursed to the financial intermediary) and the second covers interest rates up to 10 percent (this is not disbursed to the financial intermediary), for up to seven years; after this period, the funds of the first component are reimbursed to CONAFOR.</p> <p>The eligibility requirements for loan terms is usually nine years, however there have been special cases where longer terms of up to 20 years have been allowed. The term and project amount can be increased only upon authorization of the Regulation and Monitoring Commission (Comisión de Regulación y Seguimiento, or CRyS), which is an internal body of CONAFOR where FIRA participates as a member.</p> <p>Coverage ratio: 20 percent/loan principal;³³ interest rate up to 10 percent</p> <p>Low cost, no fee.</p>

³² UDIS are investment units, established by the Mexican government in 1995, after the financial crisis. Initially, 1 UDIS = 1 peso. Currently, the Mexican Central Bank publishes the UDIS daily values twice a month, on the 10th and 25th of each month. Mexican Central Bank webpage: <http://www.banxico.org.mx/ayuda/temas-mas-consultados/udis--unidades-inversion-.html>, visited on June 25, 2013.

³³ This is a reserve or liquid guarantee.

Key figures

Data as of March 2014; Exchange rate: US\$1.00 = 13.27 MXN

Available reserves	US\$82.89 million
Number of guarantees issued	12
Total funding amount leveraged by guarantees	US\$23.63 million
Guarantee volume for sector in question	US\$20.869 million
Leverage rate (Total funding amount leveraged by guarantees/guarantee volume)	1:1
Utilization (outstanding guarantee liabilities/reserved amount for guarantee scheme)	25.1 percent

Success factors	<p>Supports long-term projects by minimizing risk and works to build trust on the part of both the financial intermediaries and investors; and</p> <p>Low cost, no fee.</p>
Experience and lessons learned	<p>Eligibility requirements were an issue: focusing on large projects only in addition to the risk aversion of the financial intermediaries for long-term projects and their lack of awareness or high risk perception of forestry proved to be too many barriers for a single product to address.</p> <p>To increase its flexibility and the number of beneficiaries, the eligibility requirements were expanded to focus not only on large (over 100 ha) projects; all projects above 10 ha have been eligible since 2013.</p> <p>It could be helpful to increase TA to FIs to improve awareness and reduce risk aversion.</p>
Guarantee facility name	Fondo Nacional del Agua (FONAGUA)
Launched	March, 2012
Funding	Public. Resources come from the National Water Commission.
Type of guarantee	Partial credit: Individual
Sector focus	<p>Sustainable irrigation/water. No limitation for project scale.</p> <p>The aim of this guarantee is to accelerate investments that improve the sustainable use of water. The guarantee also includes a sustainability criterion for watershed and aquifer management. Direct beneficiaries are not private companies but associations of water irrigation users, public interest limited liability companies, and any other legal entities. These entities must administer the irrigation districts and units which have a concession granted by the National Water Commission and which receive funding for construction projects for common use and community infrastructure related to irrigation water management.</p> <p>Eligible projects build irrigation infrastructure for communities and/or invest in equipment to improve the efficiency and use of irrigation water for agriculture.</p>
Risks mitigated/aim of the guarantee	The targeted projects have a lack of eligible collateral and much longer recuperation terms than other investment projects (15 to 20 years). Their access to financing is

therefore constrained. FONAGUA aims to provide a credit guarantee as a substitute for collateral for the needed term.

Product features	Descending coverage from 40 to 10 percent of the loan amount, depending on project location and loan term.									
	Low cost, no fee.									
Coverage ratio										
Loan term/type	Up to 7 years			>7 and up to 14 years			> 14 and up to 20 years			
	1 to 5	6	7	1 to 5	6 to 10	11 to 14	1 to 5	6 to 10	11 to 14	15 to 20
Irrigation District	25%	15%	10%	20%	30%	10%	35%	30%	20%	10%
Irrigation unit	30%	25%	15%	35%	25%	10%	40%	35%	20%	10%

Key figures	Data as of March and June 2014; Exchange rate: US\$1.00 = 13.29 MXN	
	Available reserves	US\$19.16 million
	Number of guarantees issued	18
	Total funding amount leveraged by guarantees	US\$4.85 million
	Guarantee volume for sector in question	US\$1.28 million
	Leverage rate (total funding amount leveraged by guarantees/guarantee volume)	1:4
	Utilization (outstanding guarantee liabilities/reserved amount for guarantee scheme)	7 percent

Success factors	Descending coverage ratio depending on project location and loan term: this feature reduces the likelihood of adverse selection but still provides an attractive risk-sharing mechanism in the initial years, when the execution risks are higher.
	Stakeholder alignment: there are many institutional synergies between FIRA, CONAGUA, the SHCP, water irrigation users, and financial intermediaries.
	Low cost, no fee.

Experience and lessons learned	<p>The scheme was not used as much as expected, due to the following reasons:</p> <ul style="list-style-type: none"> • Only the projects that get support from CONAGUA are eligible for the guarantee. CONAGUA's support program has experienced difficulties, especially in disseminating awareness of the resources. In 2014, CONAGUA and FIRA are working more closely to communicate the tools available to project owners and to look at projects together starting at an early stage. • The beneficiaries are not private companies but associations of water irrigation users and public interest limited liability companies. Those counterparts have been going through a lot of institutional changes in recent months (i.e., reelection of board members) which put the existing financing projects on hold and impeded the review of new projects. As those institutional changes are now
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complete and the structures stabilized, those projects can once again be placed at the top of the priority lists.

- Those challenges should only be temporary and should be resolved in the coming months. However, they highlight the impact of each element in the program on the success of the whole scheme.

Central America: Central American Bank of Economic Integration (CABEI)

Executing agency	<p>CABEI is the executing agency for ARECA and CAMBIO.</p> <p>Created in 1960, CABEI is a multilateral financial institution that aims to promote the integration and economic and social development of its founding countries: Guatemala, Honduras, El Salvador, Nicaragua, and Costa Rica. Working at the broader and international level, CABEI also has non-regional members: Colombia, Argentina, Panama, the Dominican Republic, Mexico, Spain, and Republic of China (Taiwan). Belize participates as an associate country. CABEI is headquartered in Tegucigalpa, Honduras, and has regional offices in each Central American country.</p> <p>In its 2010–14 strategy, CABEI listed environmental sustainability as a major goal. CABEI is working to achieve this goal through its two green partial credit guarantee programs, the first for renewable energy through the Accelerating Renewable Energy Investments in Central America and Panama project (ARECA); and the second for the promotion of biodiversity through its Central American Markets for Biodiversity project (CAMBIO).</p>
Guarantee facility name	Accelerating Renewable Energy Investments in Central America and Panama project (ARECA)
Geographic scope	<p>CABEI's geographic area of operations</p> <p>Regional outreach of guarantees issued: Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, and Panama</p>
Launched	2008
Funding	Multilateral. ARECA's resources come from the Global Environment Facility (GEF) administered by the United Nations Development Programme (UNDP). In 2012, the Ministry of Foreign Affairs of Finland joined ARECA as a donor.
Type of guarantee and risk coverage	Partial credit: Individual
Sector focus	Small renewable energy projects under 10 MW
Risks mitigated/aim of guarantee	The partial credit guarantee product offered by the ARECA project aims to increase the implementation of small renewable energy initiatives in Central America and Panama by mitigating the risk to commercial banks and facilitating access to funding.
Product features	<p>Coverage ratio:</p> <p>For loans up to US\$500,000: up to 75 percent of the loan amount</p>

For loans above US\$500,000: 35 percent of the loan amount with an additional base amount of US\$200,000 and not to exceed US\$1,000,000.

The annual cost for the partial credit guarantee is 1.5 percent of the balance of the loan amount covered. The fee charged to the final clients is paid to CABI through the financial intermediaries.

Utilization³⁴

Data as of March 2014

Available reserves	US\$7,000,000
Number of guarantees issued	3
Total funding amount leveraged by guarantees	US\$13,626,429
Guarantee volume for sector in question	US\$2,700,000
Effective leverage rate	1:5
Utilization	39 percent

Set-up/ organizational structure

A dedicated Project Coordination Unit is responsible for evaluating and pre-approving approving the guarantee applications and the agreement with qualified FIs. The CABI credit committee gives final approval. This Unit also approves and organizes training events at the regional level for the FIs and project developers. The ARECA Project Executive Committee is responsible for overseeing the Project Coordination Unit, as well as to develop and ensure compliance with the annual operating plan. Committee members are UNDP, CABI, Central American Commission on Environment and Development (CCAD in Spanish), representatives of the Ministries of Environment of the participating countries (rotary), NGO representatives from participating countries (rotary), and private sector delegates (FIs). The Ministry of Foreign Affairs of Finland it is not a member of the Executive Committee, but participates in all meetings.

The facility enters into a partial credit guarantee agreement with qualified FIs. Those FIs can then request the guarantee for eligible loans. ARECA analyzes each request and if approved (see above) issues the endorsement. This approval process takes an average of 20 days. ARECA's country facilitators monitor quarterly the issued guarantees, visiting FI's and projects.

Marketing

ARECA projects reach the target population mainly with three country facilitators, part of the project coordination unit staff, using marketing mechanisms such as brochures, TV programs, magazines, participation in workshops, and through FIs. ARECA's webpage (www.proyectoareca.org) publishes all the information about the project and facilitates the interaction with potential FIs and clients (project implementers). ARECA has created an enabling environment in the Central American region to foster investment in renewable energy projects, through symposiums, financial institutions, and investor training in renewable energy technology and the

³⁴ Source: Canales (2013) and ARECA webpage: <http://www.proyectoareca.org/>.

regulatory framework. Training events at the regional level for the FIs and project developers have been crucial in building capacity.

Success factors

The scheme came very early to support a sector that is very new in the region. Only recently did the energy sectors in the respective countries of the region open their legal and regulatory frameworks, leaving some space for private investment. They did so in most cases via long-term electricity purchase contracts at prices attractive enough to kick off the investments. The scheme has been a success even if its execution has taken more time than expected. The donors have decided to extend the program, and the fund will not close until 2015. The main success factors were the following:

1. Flexibility: the facility has proven its capacity to adapt to the specificities of a very new sector.
 - While originally set at 35 percent for all eligible projects, the coverage ratio was later increased for smaller projects to up to 75 percent in order to incentivize smaller-scale initiatives that needed even more support (see below).
 - In 2012, in order to address capacity building and technical assistance needs, a second dedicated fund (segregated from the guarantee facility but working in conjunction) was started.
2. Strong capacity building component: aimed at improving the identification and evaluation skills of small renewable energy projects through courses, seminars, and workshops, targeted at investors, financial institutions, and organizations and institutions that promote the electricity generation sector based on renewable sources.
3. Strong TA component: allocation of grant funds up to US\$80,000 per project to cover studies or legal needs.
4. Dedicated units (technical specialists and country facilitators) to support both the projects and the local FIs: the creation of independent organizational structures with specialized staff (technical specialists and country facilitators) and the integrated design of ARECA were essential factors in reducing the FIs' barriers in the region and in improving the capacity of renewable energy project implementers.
5. Relatively low fee compared with other guarantee products in the market: 1.5 percent compared to 3 to 4 percent.

Experience and lessons learned

Lack of supporting regulatory frameworks: in most countries of the region, renewable energy projects face complicated bureaucratic procedures to obtain the required licenses, taking usually six months to one year. This has been the greatest barrier faced by the ARECA project, the small projects being the most impacted.

Bulgarian Energy Efficiency and Renewable Sources Fund (BEERSF), formerly known as the Bulgarian Energy Efficiency Fund (BEEF)

Geographic scope	Bulgaria
Launched	2005
Funding	<p>Both public and private</p> <p>The fund was designed and funded by the World Bank in partnership with the Austrian and Bulgarian governments and private companies to demonstrate the financial profitability of investments in the EE sector. Founded through the Energy Efficiency Act adopted by the Bulgarian Parliament in February 2004. Partners in Bulgaria include the Ministry of Economy, Energy and Tourism, the Energy Efficiency Agency, and the Enterprise for Management of Environmental Protection Activities.</p> <p>In February 2014, the BEERSF was scheduled to receive a donation from the KIDS Fund in the amount of EUR 5 million, which will be used for Partial Credit Guarantees for ESCO projects. Although the terms and conditions are still being decided, the expectation is that this new capital will provide solid groundwork for bigger ESCO projects that will be financed by the Bulgarian banks.</p>
Type of guarantee and risk coverage	<p>Partial credit: individual and portfolio for energy service companies (ESCO) or project developers using ESCOs.</p> <p>The fund provides the following three types of instruments in both tier 1 and tier 2 financing, that is, either directly to a borrower or via co-financing with a commercial bank:</p> <p>Partial Credit Guarantees (PCGs): EERSF offers collateralized credit guarantees, covering up to 80 percent of the project value to secure loans for energy efficiency project contractors. Individual (per project) guarantee commitments shall not exceed BGN 800,000 or EUR 409,030.</p> <p>Portfolio guarantees: (two types)</p> <p>EERSF provides uncollateralized guarantee to a portfolio of receivables of an ESCO derived from energy performance contracts. EERSF guarantees that it will cover up to 5 percent of the total ESCO portfolio size. This attracts more ESCO companies by assuring them that the risk of their project beneficiaries will be covered by the guarantee.</p> <p>For the residential sector portfolio, guarantees are used to jump-start the market for EE by providing assurances to homeowners that their projects will be financially viable. For example, a group of homeowners implementing EE measures can receive a portfolio guarantee that covers 5 percent of the total portfolio size, in turn assuring due repayment to the ESCO.</p> <p>Loans: The loan conditions are the same for either direct financing from the fund itself or for co-financing with a commercial bank. The equity contribution required from the project developer is set at no less than 10 percent for co-financing via a commercial bank, or at least 25 percent for financing directly from the fund. The repayment schedule is structured to fit the needs of the project developer.</p>

Sector focus Small-scale energy efficiency projects that contribute to significant and measurable energy savings, resulting in a substantial reduction of greenhouse gases. Eligible are industrial projects, construction and building projects, district heating projects, municipal end-user projects, and other end-user projects, such as Bulgarian ESCO companies, hospitals, universities, commercial banks, EE related funds, associations of condominiums or cooperatives, and municipal entities.

Risks mitigated/ aim of guarantee To overcome the common barriers faced by energy service companies (ESCOs) often resulting in a lack of commercial financing, and including a lack of financial literacy on the part of the banks in commercial lending for EE projects, which are typically smaller than energy supply projects, require longer loan tenors and higher collateral requirements, and involve unfamiliar or new technologies.

As for the case of Bulgaria, the current banking sector is not a highly competitive market, meaning that banks could charge very high interest rates (between 10 and 18 percent) and require a high level of collateral for loans made (200 percent of the amount of the loan and higher), which was not conducive to EE lending.

Product features Coverage ratio:
 Partial credit guarantees will cover up to 80 percent of the project value.
 Portfolio guarantees for ESCO companies will cover up to 5 percent of the delayed payments.

Loan tenor:
 Between the time of the Beersf's founding in 2005 and February 2014, the maximum length of tenor was up to five years.

As of February 2014, the board changed the maximum duration of the loans provided by BEERSF to seven years, offered exclusively for RE projects or those implemented by ESCOs.

Guarantee fees:
 The BEERSF charges an annual fee of 0.5 up to 2 percent on the outstanding guaranteed portion of the loan (remaining exposure), payable by the beneficiary.

Key figures³⁵ Data as of March 2014

Available reserves	US\$13,800,000 ^a
Number of guarantees issued	32 ^b
Total funding amount leveraged by guarantees	US\$15,700,000
Guarantee volume for sector in question	US\$2,500,000
Effective leverage rate	1:6
Utilization	18 percent (76 percent including loans)

^a For the global program including loans and guarantees, no specific portion of the resources available was allocated to guarantees only.

^b All in energy efficiency; 29 portfolio guarantee on ESCO contracts; three partial credit guarantees on credit contracts.

³⁵ As of February, 2014.

Set-up/ organizational structure	The BEERSF has developed different sets of documents and application forms for different types of beneficiaries, such as municipalities, corporate clients and private individuals. The guarantee application takes approximately six weeks upon all necessary documentation accompanying project proposal received.
Marketing	Marketing for the BEERSF is done through conferences, direct marketing to potential clients, the Internet and media, business relations with professional organizations, consulting companies in the EE sector, and conferences and congresses.
Success factors	<p>Strong market assessment to determine the type of guarantee that should be used and the terms that will be realistic and acceptable to the market.</p> <p>Aggressive marketing and outreach policy and alignment of stakeholders, targeting municipalities, companies, and homeowners. This campaign not only helped inform people that guarantees are available, but it helped educate the public about the potential savings that can be achieved through EE investments. Strategic cooperation with other financial institutions to ensure co-financing of projects.</p> <p>Strong TA component focused primarily on training with financial institutions and project developers on project identification and development. This included training of managers and specialists with regard to energy auditing, project development, and project financing. It helps build an initial project pipeline among project developers and teaches banks how to better evaluate EE projects.</p> <p>Operational flexibility: allows it to respond quickly to significant market changes and competition that occurred between project inception and implementation. It is not part of the consolidated state budget and it is excluded from the procedures of the Municipal Debt Act, which saves about two months of procedural bureaucracy for municipalities interested in engaging the fund.</p> <p>Strong regulatory framework: the Energy Efficiency Act helped to foster an enabling environment and spur market interest in energy efficiency. However, increased government policies that support larger-scale EE measures were needed before the fund was able to tap into the building sector.</p> <p>Flexibility in its design: the BEERSF has been found to be especially favorable to municipalities, since it does not require municipal assets in the form of collateral but instead uses a pledge on the receivables of the municipality.</p>
Experience and lessons learned	<p>Low impact in expanding the ESCO market and EE know-how: Even though the BEERSF has helped to spur more investment in EE in Bulgaria, it has not increased the number of ESCOs. The ESCO market is still underdeveloped, with a limited number of projects and a relatively small size. The reason cited for this is that no ESCO company currently exists in Bulgaria that has the size and capacity for undertaking a large number of projects.</p> <p>In fact, only one ESCO company, ENEMONA, has been successful in the Bulgarian energy efficiency market. Why might this be the case, as one would assume that a guarantee facility would help to increase the number of ESCOs? The BEERSF</p>

staff explained that one reason is because most ESCOs do not have the scale of ENEMONA, and therefore they cannot start more than one or two projects at once and take advantage of the portfolio guarantee. But, BEERSF did do its part in building the business of the ESCO ENEMONA.

The contract with ENEMONA was signed in late 2007. The company was receiving TA through BEERSF to help identify and develop projects. During that same year and in 2008 and 2009 they were adding projects to their portfolio on their own. Currently, most of these projects are reaching the end of their repayment schedules, so by the end of 2014 the guarantee will most likely end. The company's assets have been built; it has its own funds and can use its balance sheet or assets as collateral for other loans.

Readiness of the banking system to finance energy efficiency projects must exist. The Bulgarian banking system is still very conservative and requires tangible collateral and high interest rates. Even though the fund has increased bank engagement in the EE sector, some banks still lack understanding of energy efficiency projects and the related risks.

Sustainable Agriculture Guarantee Fund (SAGF)³⁶

Geographic scope	Africa and Latin America
Launched	2006
Funding	Both public and private Rabobank International, ³⁷ Cordaid Foundation, ³⁸ and the Rabobank Foundation ³⁹ are the investors in SAGF. The fund was created as a public-private partnership, enabled by the Directorate-General for International Cooperation, a department of the Dutch Ministry of Foreign Affairs.
Type of guarantee and risk coverage	Individual and portfolio Individual partial credit guarantees on a transactional basis in the form of stand-by letters of credit ⁴⁰ : guarantees back export contracts. In some cases, if small loans are being issued with a well-known partner bank, a portfolio guarantee can be granted.
Sector focus	Small agricultural holders in the following agricultural commodities: cotton, coffee, cocoa, nuts, oil seeds, and horticulture.

³⁶ Unless otherwise cited, all information included in the SAGF case study was obtained through interviews with Ellen Bogers and Michael de Groot.

³⁷ https://www.rabobank.com/en/group/About_Rabobank_group/Profile/organisation/Rabobank_International.html

³⁸ www.cordaid.org

³⁹ <https://www.rabobank.com/en/rabobankfoundation/index.html>

⁴⁰ A payment guarantee issued by a bank on behalf of a client that is used as "payment of last resort" should the client fail to fulfill a contractual commitment with a third party. Standby letters of credit are created as a sign of good faith in business transactions, and are proof of a buyer's credit quality and repayment abilities. The bank issuing the standby letter of credit will perform brief underwriting duties to ensure the credit quality of the party seeking the letter of credit, then send notification to the bank of the party requesting the letter of credit (typically a seller or creditor).

The SAGF can be considered an example of value chain finance.⁴¹ Its objective of financial sector deepening, or improving access to working capital credit (pre-export trade finance), is targeted at small and medium-sized cooperatives and companies for purchasing, processing, and trading commodities in the international market on commercial and sustainable terms (Bogers, 2011). This included access to local formal finance from local commercial banks. The SAGF operates on the belief that smallholder sustainable agricultural producers should benefit from the fund since they are typically the underserved “missing middle” with little access to local commercial finance (Midler, 2009).⁴²

Beneficiaries: partner banks and financial institutions operating in the focus countries, which are engaged in agricultural finance for cooperatives and SMEs.

Risks mitigated/
aim of guarantee

Aims to improve access to working capital credit (pre-export trade finance) among SMEs and cooperatives and companies by providing guarantees backed by letters of credit. Developing country FIs are typically more risk averse due to the perception that rural markets are more unstable and investments usually yield below average returns. There is also a worry regarding legal issues over untitled land, which is difficult to foreclose on by banks in cases of loan default. Because of this, FIs that engage in rural areas try to mitigate their risks through excessive credit rationing and usually require higher levels of “hard” collateral (IFC, 2011). Additionally, rural SMEs and cooperatives typically lack fixed assets that can be offered as collateral,⁴³ or they have already pledged the assets they have to longer-term loans (FAO, 2010).

Product features

This guarantee is provided in addition to the sales contract from the off-taker.

Participating borrowers pay SAGF a small guarantee fee (1.5 to 2.5 percent p.a.), as well as paying the interest rate charged by the local bank (7 to 12 percent in the countries that participated).

Coverage ratio: Maximum 90 percent of the loan amount, sometimes 75 percent depending on bank agreement. Decreasing (phasing out) annually for SAGF, while at the same time increasing (phasing in) for the partner FIs.

Guarantees are offered for a short term or revolving, up to one year, and underlying loans can be renewed and increased on an annual basis. This benefited the agricultural clients using the guarantees, as they can receive several of them consecutively at different amounts, based on a new transaction, loan documentation, and sales contract.

⁴¹ Value chain finance refers to “the exchange of goods for payment along the value chain,” which can include such financial arrangements as loans repaid upon delivery of a product, or a third party financial entity providing credit which is securitized against warehouse receipts of goods delivered or future product deliverables.

⁴² These smallholders would be considered “commercial smallholders,” or farmers with some marketable surpluses in a particular crop. Land holdings may range from 2–20 hectares, and crop production often includes at least one cash crop. The annual farm net income after costs may range between 0.3x and 0.8x the annual earnings of a skilled laborer in that country or region.

⁴³ Even when access to finance is not an issue, collateral is viewed as an inadequate buffer against default due to covariant risks, and risk mitigation instruments besides guarantees such as crop insurance are not readily available.

The risk sharing is structured as follows:

Year	SAGF's maximum risk exposure	Local FI minimum risk exposure
1	90%	10%
2	70%	30%
3	50%	50%
4	0%	100%

The combinations above are the maximums/minimums. The actual combination and phasing in/phasing out scheme will depend on the initial assessment of the FI by SAGF. Typically it could start at 60–40 percent in year 1.

After a three to four-year period, the guarantee should be completely phased out, the borrower no longer pays the 2 percent guarantee fee, and the conditions for the buyer should not change. This allows the SME or cooperative to build a history with the LFI, while at the same time allowing the FI to familiarize itself with collateral and contract enforcement procedures.⁴⁴ The hope of the SAGF is that by fostering relationships between borrowers and the local partner banks, the banks will not increase interest rates because of the reduced perceived risk and thus a lower requirement of additional collateral.

Key figures

Data as of March 2014

Available reserves	US\$5,000,000 ^a
Number of guarantees issued	25
Total funding amount leveraged by guarantees	US\$22,000,000
Guarantee volume for sector in question	US\$5,000,000
Effective leverage rate	1:4.4
Utilization	100 percent

^a For the global program including loans and guarantees, no specific portion of the resources available was allocated to guarantees only.

Set-up/ organizational structure

The process of the SAGF starts with fostering a relationship with two to four banks in the host country. The banks enter into a risk-sharing agreement whereby the SAGF guarantees a portion of any losses from loans that pertain to the agreement. SAGF and its local bank partners each identify new borrowers, conduct due diligence, and approve loans in coordination through their respective internal processes. There is a 2.5 to three-month period from the time the application is received for the guarantee to issuance to the local FI. The FIs then offer commercial credit to the screened agricultural cooperatives and SMEs at commercial rates.

Marketing

Marketing for the SAGF to FIs and to a lesser extent to final beneficiaries is done through conferences, clients, and the network of Rabobank, the Internet and fairs like the Specialty Coffee Association of America and Biofach (the world's leading trade fair for organic food).

⁴⁴ FAO (2010).

Success factors

Stakeholder alignment: the SAGF fostered strong relationships with all of the players (the local FI, the international buyer, the local producer) involved in implementing the scheme.

Step-down coverage ratio for the guarantee provider, step-up for the FI: As the FIs became more familiar with international practices for pre-export financing (FAO, 2010), their perceived risk was reduced. Thus, they could take on more of the risk over time.

Credibility of the scheme: Rabobank is a first-tier bank with one of the strongest global networks for agricultural lending. Additionally, all sales contracts are with reputable international buyers originating from the Organization of Economic Co-Operation and Development (OECD), or countries that have a lower probability of default.

Strong eligibility criteria include those SME and cooperatives that have a good track record in the field of sustainable agriculture, that is, those that are producing and exporting as fair-trade, have a track record in exporting, and which boast a strong relationship with international buyers (FAO, 2010). Other factors include the emergence of organized value chains with strong buyers such as food processors, distributors, and commodity traders in many markets (Wiggins et al., 2010).

Experience and lessons learned

The aim of the SAGF was to administer US\$30 million in annual credit guarantees during an initial phase in 2008–10. This amount was not reached for the following reasons:

- Stand-alone product: It was not easy to find new investors for a fund that, at that time, was considered highly innovative. Besides this, the bigger investors were also looking for higher returns, and that was not the basis of the fund since it only provided guarantees and not direct loans. That is, the fund’s income depended on the guarantee fees and not the interest incomes earned on loans. To reiterate, the purpose of the Agri Fund (SAGF) was access to local finance, meaning “formal” access to the commercial local banks. This is as opposed to what most social lenders have as strategy: “access to finance” usually offered via direct loans, which carry higher returns gained through interest instead of guarantee fees. The new Rabo Rural Fund will issue loans in addition to guarantees, with the hope that it can attract more investors.
- Lack of TA: Another important lesson learned of the SAGF is that the fund could have included a technical assistance component to further stimulate agricultural credits to sustainable agricultural smallholders. This might include trainings with the banks to teach them about crop cycles, crop risks, and harvesting methods, which in turn would increase their comfort level to lend to sustainable agricultural smallholders. Additionally, FIs can educate their borrowers on how to be productive, which in turn ensures timely loan repayment and lower rates of default.
- Operational features: There are many lessons learned from the SAGF, which were used and applied to the “Rabo Rural Fund” BV (RRF). This was the outcome of the transformation of the SAGF, which began in late 2010 and was completed in early 2012. The Rabobank Foundation, Cordiad, and the Dutch Ministry of For-

eign Affairs support the Rural Fund. The decision to transform the SAGF into the Rural Fund was primarily because Rabobank realized that it needed to achieve scale and efficiency. The RRF is the result of a merger⁴⁵ of three former portfolios: the SAGF, a portfolio of Progreso Fund in Amsterdam, and a trade finance portfolio of Rabobank Foundation. The reasons for merging various entities into Rabo Rural Fund include:

a. Cost efficiency

- i. Scale or sizeable portfolio for maintaining lower overhead and transaction costs required; (i.e., guarantee fees are in general very low, between 1.75 and 2.5 percent, although there is an extra workload to inform partner FIs, which increases overall costs.
- ii. The small fund size combined with the lack of leverage through the guarantee (100 percent cash collateral as backing to the guarantee) might have rendered the SAGF unsustainable in the long term.
- iii. The SAGF was designed to only generate income from issuing guarantees, and it was not expected to generate commercial returns. Because of this, it might not have been the best model for engaging the private sector, and the operations require the input of subsidized grant funding.
- iv. Diversification (wider portfolio, different areas);
- v. Increasing (financial) and social sustainability by engaging with different products.
- vi. Diversifying the number of commodities, countries, and financial instruments (e.g., loans and guarantees), mitigates total risk and lowers the covariance of risks.

b. Internal processes

- i. More control of internal processes, such as due diligence and client compliance with laws and regulations (e.g., “know your customer” procedures, anti-money laundering regulations).

The latter is especially important, as more external regulation either by central banking authorities or by the U.S. government forces social funds to seek scale because they need to set up a separate control department, compliance officers, and so forth. An example of this is the U.S. Foreign Account Tax Compliance Act (FATCA), which targets non-compliance by U.S. taxpayers who have foreign bank accounts. Since most transfers of funds to local partner banks for Rabo’s guarantees go via correspondent banks in the United States, the United States requires much more detailed information and control.

⁴⁵ Decisions to merge these three portfolios were made at different board levels in the last quarter of 2010. The Rabo Rural Fund has been in operation since January 1, 2011. 2011 was a transformational year that brought together or aligned three back offices, procedures, controls, products and liquidated SAGF and Progreso Fund.

This publication outlines the challenges of investing in low-carbon and climate-resilient technologies and activities in Latin America and the Caribbean. It explores how guarantees can respond to those challenges and highlights the crucial role national development banks can play in structuring and funding credit-guarantee schemes for their domestic markets. Drawing on comprehensive desk research and case study examples, the publication provides a number of recommendations that national development banks should consider when designing guarantee instruments for green markets. The scarcity of funds available to finance green projects in the region results from a combination of various financial and non-financial barriers, some specific to green investments and others generic in the region. Only if properly integrated in comprehensive and well-designed programs can guarantee schemes help unlock private investment in green markets. As an implicit subsidy for private borrowers that gives them a contingent claim on government resources, guarantees have the potential to create market distortions. Such distortions are worthwhile only if the guarantee yields correspondingly high economic, social, and/or environmental benefits. Thus, no guarantee scheme should be designed without a thorough cost-benefits analysis.

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