



Crowdfunding for Climate Change

A new source of finance for
climate action at the local level?

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EXECUTIVE SUMMARY

The urban and rural poor in developing countries, the so-called 'Base of the Pyramid' (BoP), will play a crucial role in a successful transformation towards a low carbon and climate resilient development paradigm. They are most affected by climate impacts and should be the focus of adaptation; they hold a large mitigation potential today and as the future middle class; and they can support or reject national climate policies.

In this policy brief, we focus on the role microfinance and crowdfunding can play to support climate action at the BoP. Microfinance is a well-established financial service that was first pioneered in the 1970s and 80s by organizations such as the Grameen Bank in Bangladesh, Accion, and Opportunity International.¹ Crowdfunding is a relatively recent phenomena whereby a large number of individuals pool their often relatively small financial resources to support efforts, projects or campaigns initiated by other people, typically via an internet-based platform, also called a 'crowdfunding platform'. The largest such platform in the international development field, Kiva.org, has channeled over US\$ 400 million from about 900,000 micro-lenders (most likely mainly from OECD countries, although there is no statistics available on their nationality) through about 190 affiliated field partners (with the majority being microfinance institutions) to over a million micro-borrowers in developing countries.

Energy development is one example where improved access to financing for micro and small decentralized renewable energy solutions could make a significant difference for the over 1.5 billion people currently still without access to modern energy, while reducing emissions cost-effectively and locking into a low carbon development path. While we explore the potential of these financing models mainly in the context of mitigation in this policy brief, it recognizes that they hold also significant potential for adaptation investments, such as making homes more climate resilient.

We recognize the limitation of microfinance in terms of loan size, maturity and risk aversion, and the constraints of crowdfunding in terms of overall funding size, risks for the crowd-lenders (for instance, foreign exchange), and the hitherto limited focus on climate change.

To overcome some of these constraints, we recommend the new Green Climate Fund (GCF) should consider creating a microfinance and crowdfunding window as part of its Private Sector Facility. Under this window, the GCF could support countries that create an enabling environment for Micro Climate Finance, through accredited National Financial Entities or competent private or non-governmental entities in the country. The GCF could also offer risk-reducing measures (such as first loss guarantees) to crowdfunding investors; bring down the cost of green technologies (for instance through concessional funding), and back green climate investment bonds to finance small and medium size clean energy solutions, such as mini grids.

Through such support, the GCF (and other climate finance mechanisms) can nurture the growth of a bottom-up climate finance stream from the crowd in OECD countries (or, in a variation to the concept, the "base" of climate finance composed of many individuals or smaller donors), to the base of the pyramid in developing countries. This will complement the more traditional (and very necessary) top-down funding streams from large public and private sources to relatively large public and private climate actions.

I. INTRODUCTION

Challenges of climate finance

Concern about climate change has led to a broad consensus for the need for low carbon and climate resilient development pathways, as evidenced by a broad global consensus to limit temperature increase to 2°C. Moving towards such a pathway at the speed demanded by science needs clear policy direction from the international level, which may be in the form of a new international agreement where all countries must cut their emissions.

Undertaking emission reductions poses an extra challenge for developing countries – in particular Small island developing states (SIDS) and Least Developed Countries (LDCs) – that also confront the need for poverty eradication and job creation for a growing population while facing the added cost of adapting to climate change. Mitigation efforts often require higher upfront investments for more costly green technologies compared to existing technologies,² notwithstanding the savings that households may generate over the lifetime of the product.

The concept of furthering a ‘Green Economy’ has gained traction among political leaders as an approach to address both development and climate change in a holistic way.³ Such an approach relies heavily on the successful inclusion of the private sector. Both developed and some developing countries have strong private sectors that are able to contribute significantly to stabilizing global temperatures. But the private sector needs an enabling environment with proper incentives to channel its funds towards climate change mitigation and adaptation efforts.

As climate change presents a global environmental problem that exceeds the financial capacity of most developing countries, there is a call for international climate finance to flow to developing countries in an order of magnitude that matches their public and private external funding needs for mitigation and adaptation.

While there is still much debate about what the required amount of funding would be, in order of magnitudes it is clearly larger than the amounts provided as Official Development Aid (ODA) today by multilateral (including the World Bank) and bilateral funders.⁴ The international commitment for US\$ 100 billion per year in climate finance by 2020 and the creation of the GCF, made at the Copenhagen climate change conference in 2009, serve as first steps in the direction of scaling up climate finance.

However, putting in place a climate finance architecture of that magnitude requires unprecedented and sustained political commitment to establish a credible governance structure and to address major challenges, including the following four:

- **Sourcing adequate volumes of funding.** Estimates for climate finance needs of developing countries differ substantially, but by far exceeds current rates of spending on mitigation and adaptation. One study puts the need at over US\$ 500 billion per year between now and 2050 in additional investments for the transformation of the energy sector alone.⁵ This will only be feasible with an unprecedented effort to leverage private sector investments with limited public resources and the identification of new and additional sources of funding.
- **Ensuring access for those who most need, and can effectively use, climate finance.** Given the relatively large scale and official nature of the envisioned resources to be channeled via the GCF, it is safe to assume that a majority of the resources will be directed towards larger scale public and private investments. Although the principle of direct access is part of the international climate finance discussion, access by smaller and micro-entrepreneurs, and the question of how to effectively channel resources to them, has received little attention so far despite their potential to foster green economy development in urban informal and rural sectors of developing countries, sometimes also referred to as

the Base of the Pyramid (BoP).⁶

- **Accelerating the speed of funding.** Urgency of climate action to avoid exceeding the 2 degree target demands that any intergovernmental fund or systems of climate finance should operate with greater speed, efficiency, and lower transaction costs than typically seen in ODA.
- **Encouraging risk-taking in fund allocation.** Climate action requires innovative solutions and scaling up of pilot approaches that by their nature involve higher risks than business as usual. To be effective, climate finance will have to demonstrate willingness to tolerate higher risks than financial markets and ODA typically offer, and develop instruments to reduce the risk of payment defaults and project failure to manageable levels.

Need for bottom-up climate finance

This policy brief argues that the role of micro and small climate investments and the relatively new phenomena of crowdfunding have been largely ignored in the current climate finance discussion. Microfinance has become a well-established mechanism that was first pioneered in the 1970s and 80s by organizations such as the Grameen Bank in Bangladesh, Accion, and Opportunity International⁷. Crowdfunding refers to a recent development, where a large number of individuals pool their often relatively small financial resources to support efforts, projects or campaigns initiated by other people, typically via an internet-based 'crowdfunding platform' (CFP). As a variation of the term 'Base of the Pyramid', a crowdfunding platform for climate finance that rallies a wide range of smaller formal and informal funding sources, i.e. the crowd, could be called the 'Base of Climate Finance'.

Massively scaling up micro and small-scale financing in developing countries and crowdfunding in OECD countries would make a positive contribution to address each of the above mentioned challenges:

- **Sourcing:** crowdfunding represents a new and largely untapped source of private sector financing.
- **Access:** microfinance and small-scale financing institutions can play a critical role to give direct access to micro and small entrepreneurs and community organizations otherwise excluded from formal finance, and enable them to undertake sustainable small-scale climate actions, with significant mitigation potential in the aggregate.
- **Speed:** Mobilizing funding through crowdfunding and disbursing it through microfinance institutions (MFIs) can be a matter of days or weeks, considerably faster than ODA and lower in transaction costs.⁸
- **Risk taking:** Crowdfunding can tap into a more risk-tolerant segment of individual donors/lenders/investors in OECD countries and enable MFIs and small-scale financing institutions to venture into new business fields, such as marketing novel renewable energy products like solar photovoltaic, which still need to be tested in large scale application and pose additional risks to the lender. The risk tolerance is in evidence, for instance by the willingness of Kiva lenders to assume the full project and foreign exchange risk at zero interest rate.

Taken together, crowdfunding linked with micro and small-scale finance holds the potential to form a 'base to base' climate finance stream, complementary to the 'official' (and very necessary) stream, on which most of the current climate finance discussion is focused on, i.e. from large public and private sources to relatively large public and private climate actions.

The GCF, under its Private Sector Facility, as well as other climate finance mechanisms, should catalyze the growth of this complementary 'base to base' climate finance stream through a range of instruments further developed in this report. This approach would assist the GCF to quickly adopt a financing model that is capable of channeling resources directly towards small-scale mitigation and adaptation, and address climate change from the bottom up, to complement larger top-down projects.

In this policy brief, section 2 addresses the role of micro and small scale financing for climate change. Section 3 looks at the new phenomena of crowdfunding and explores the possibilities of its application to address climate change. Section 4 explores how the GCF and other financial mechanisms can encourage a complementary bottom-up climate finance stream involving crowdfunding and micro and small-scale finance, while section 5 offers some conclusions.

2. MICROFINANCE AND CLIMATE CHANGE

Financing needs at BoP to address climate change

According to one definition, the BoP comprises an estimated 4 billion poor people earning between US\$ 1 to US\$ 8 in purchasing power parity per day, with limited or no access to essential products and services such as energy, clean water, transportation and communication.⁹ Providing reliable and affordable access to those services and products is a high priority enshrined in the sustainable development strategies of most countries. At the same time, energy (as well as transport and water supply) are sectors which account for the bulk of greenhouse gas (GHG) emissions in developing countries, hence calling for clean energy solutions, such as promoted by the Sustainable Energy for All Initiative,¹⁰ which aims at reaching the estimated 1.5 billion people who do not currently have access to modern energy in both off-grid and on-grid locations.¹¹

Satisfying the potential demand for clean energy solutions at the BoP represents an enormous market opportunity for the private sector that can offer solutions that are cost-effective, represent tangible savings for the household (for instance, compared to diesel generated electricity or kerosene lighting), while reducing GHG emissions. There is no reliable estimate of the global size of this potential market, but one study focusing only on clean energy in rural India has estimated an annual demand for US\$ 2 billion.¹²

While over the lifetime of the product or service, the poor household enjoys savings, it often cannot afford the higher upfront investments costs of clean energy solutions, which can be 3 to 8 times higher than conventional solutions (see Box 1). This calls for financial services and products which are sensitive to the fluctuations and volatility of household income at the BoP or adjust payments to the cost savings compared to the 'dirty energy' solution.

Financing barriers

Micro and small entrepreneurs face significant barriers in their access to financing for businesses in general and even more so for climate related business with its associated comparatively high cost of technology and innovation risk. These barriers can often be linked to: risk averse behavior of local financial institutions, not familiar with the new climate related technologies (such as solar home systems) and business models (such as public private partnership arrangements for mini grids); high transaction costs reaching a large number

BOX 1: Financing Clean Energy at the BoP in rural India

A 2010 study by WRI estimates that India's 114 million rural households at the base of the pyramid generate a potential aggregate annual market demand for clean energy products and services of US\$ 2 billion. However, this requires financing upfront investments that can be 3 to 10 larger than for traditional, and often subsidized, kerosene and firewood. Clean energy encompasses solar lights, solar home systems, energy efficient cooking stoves, and decentralized electricity generation (small hydros and biomass). BoP is defined to include households that spend less than US\$ 2.5 per day on goods and services. Unlocking this market represents both an enormous opportunity and a financing challenge to offer products and financing options appropriate for this group of customers.

Source: Bairiganjan, S. (2010). Power to the People: Investing in Clean Energy for the Base of the Pyramid in India. Washington, D.C., World Resources Institute

of customers for relatively small amounts; lack of traditional collaterals among BoP clients; and policy and legislative obstacles, such as burdensome financial reporting requirements for very small loans.

Microfinance and the BoP

MFIs have played a critical role in developing products and services customized to the needs of the poor at the BoP and to fill the niche left by the established formal banking system. Microfinance has evolved since it was first pioneered in the 1970s and 80s to reach an estimated 200 million borrowers in 2010.¹³ MFIs have found ways to make the poor bankable and to demonstrate that their repayment performance in well-designed programmes is above average. Over time, the MFI sector has diversified into a range of services including savings, insurance, education loans, and money transfers, and has adopted innovative technologies, such as mobile banking, to reduce transaction costs.¹⁴ They offer a wide range of payment options customized for clients, such as seasonally adjusted amounts reflecting cash flow fluctuations before and after agricultural harvests.

These characteristics make MFIs interesting as intermediaries for financing climate action at the BoP. The microfinance sector has started to address climate change mitigation to a limited extent, with early pioneer efforts made by Grameen Shakti (see Box 2). Certain success has been achieved – for instance, in the Bangladesh Solar Home System Programme, that has sold over 1 million units to BoP households. But these success stories remain exceptions rather than the rule and the climate related portfolio of MFIs, for instance renewable energy investments, represent a small share of less than 5 percent in the portfolio of Bangladesh's 22 largest MFIs.¹⁵

BOX 2: Grameen Shakti

Grameen Shakti was established as early as 1996 as a not-for-profit company in Bangladesh to promote renewable energy solutions in rural areas of Bangladesh. The company has grown beyond its original focus on micro-credit and has become a broad renewable energy company which had installed 25 MWp of solar systems, 11,000 biogas digesters, and about 400,000 improved cookstoves as of 2010, while providing financing, training and after sale services.

Source: www.gshakti.org

Beyond microfinance

Microfinance is by no means a panacea for climate financing at the BoP. There are at least two significant limitations that need to be addressed when considering scaling up microfinance for climate change: the need for larger loan sizes and longer maturities for critical climate investments; and the need to 'green' MFI portfolios.

Need for larger loan sizes and longer maturities

Microfinancing is well suited to small projects with financing needs of say less than US\$ 1500 and a maturity of about one year. It holds significant potential to help scale up new and growing technologies that are mature (such as solar stoves, energy efficiency lighting and maybe even solar PV systems) and to finance the startup of related micro-businesses, such as installation and maintenance services.

With some technical assistance and capacity strengthening, MFIs may be able to increase the upper limit for their micro-loans to, say US\$ 3000-5000, to reflect the higher cost of technologies. Some countries may allow MFIs to still treat these loans as micro-finance, and thereby keep continue enjoying certain privileges awarded to micro-finance, such as reduced financial reporting requirements.

However, many mitigation and adaptation technologies and solutions have significantly higher upfront costs and require longer payback periods to make monthly payments affordable. Larger credit amounts are needed to finance activities such as community level mini-grid energy solutions, the cost of which can easily range from US\$ 10,000 to millions, depending on size. This often exceeds the capacity of MFIs and calls for commercial financial institutions to serve this market segment by expanding existing small-and-medium enterprise lines of credit or developing new business lines for green investments. National and international development banks can support this trend by offering lower cost credit lines to commercial banks to re-finance their 'green loans'.

Need to 'green' the portfolio of MFIs

Microfinancing currently often provides funds to purchase conventional technologies such as charcoal for cooking, and thereby contributes to embarking households onto higher cost solutions and higher GHG emissions¹⁶. In addition to higher upfront costs, it is the perceived risk of unfamiliar new green technologies that deter MFIs and borrowers from clean solutions. A 'greening' of MFI portfolios can be done in a number of ways:

- Adjust the existing programme to reduce its carbon footprint, for instance by raising awareness of advantages such as lower life cycle costs, linking up with national subsidy programmes to bring down the cost of green alternatives, or phasing out high carbon lending for technologies such as charcoal or kerosene, where alternative technologies such as efficient cookstoves or solar lamps are financially and technologically viable.
- Offer payment conditions that make low-carbon options affordable by increasing the maturity period and adjusting repayment to seasonal income streams.
- Pilot and offer innovative green products or income generating activities, e.g. related to renewable energy installation and maintenance.¹⁷ The 'Eco-Micro' Programme of the Multilateral Investment Fund of the Inter-American Development Bank (IADB) is a good example of a programme working on the greening of MFIs. Co-financed by IADB and the Nordic Development Fund, the programme selects through a competitive process about four MFIs each year with innovative ideas for green finance products and for reducing the climate vulnerability of their portfolio and then supports scaling them through technical assistance.¹⁸

Enabling environment to scale up microfinance for climate action

Some countries are taking concrete steps to help scale up microfinance for climate action and overcome the barriers mentioned above (see Box 3). National institutions will often consider policies and programmes that offer subsidies to compensate for higher upfront costs of nationally and internationally agreed technologies that are appropriate for mitigation and adaptation. Once the technologies are sufficiently established, such subsidies can be reduced – but governments have to be prepared that the removal of subsidies, particularly if put in place specifically to promote climate action at the BoP, are likely to be resisted and have a political fallout. The first priority should therefore be the removal of perverse incentives favoring fossil fuel solutions – once this is done, lower subsidies will be needed for green solutions.

A second important focus of national enabling policies is risk reduction. Notwithstanding the national and international steps taken to reduce risks and to ensure that funds are directed towards mitigation, no financial systems are without risks and this should be discussed openly and management responses developed to address them when it happens. Guarantee facilities can sometimes help to reduce risk to a manageable level. But the development of bureaucratic systems to reduce risks in the MFI business process may inadvertently introduce inefficiencies and high costs and should not be contemplated without consultations with the experts in the micro-financing community, and local and regional financial agencies.

A third function of national entities is the development of practical Monitoring Reporting and Verification mechanisms to capture financial flows using nationally appropriate indicators.

BOX 3: The Antigua and Barbuda Climate Change Trust Fund

In Antigua and Barbuda, the government is establishing a trust fund for biodiversity and climate change projects and programmes. The fund and its provisions will be embedded within an overall Environmental Management Bill responsible for the setting of climate change targets.

The fund will be designed to purchase assets and sell services such as energy generated from renewable energy technology. It will be empowered to own and sell ecosystem services generated within protected areas. These services include energy, water and carbon sequestration.

Micro-lending will be part of the business model of the fund, which will be developed over the next two years. Assistance to design and build the fund will be provided by the Global Environment Facility and other donors. At its onset, the trust fund is expected to provide funding for projects generating up to 1 MW of electricity. The micro-lending window of the national fund will face several barriers to technology uptake – including the low cost of conventional technologies, the high cost of green technology, and high interest rates.

The Green Climate Fund may consider entering into arrangements with the national fund or national entities to assist in providing necessary incentives required to change technology choices, such as low interest rates. In Antigua and Barbuda, an interest rate of 3-5 percent will be considered low enough to encourage the uptake of adaptation and mitigation technologies. This fund will be legally established by the end of 2013 and implementation will begin once the Business Plan is completed by the end of 2014.

Source: Government of Antigua and Barbuda – Environmental Management Bill 2013

Caution when scaling up MFIs with external funding. Any effort to scale up MFI through external concessional funding will have to carefully balance the legitimate need of MFIs for grant or concessional funding during start up and during expansion into new development fields, with the risk of creating donor dependency or over-expansion of microfinance supply in an already saturated market. The microfinance sector, like its much bigger counterpart, has gone through a crisis in recent years, triggered by factors of declining economic growth and internal structural problems linked to excessive commercialization in overly saturated markets with limited regulation to prevent over-indebtedness of borrowers.¹⁹ Countervailing policy measures, such as restrictive regulation of private MFIs in Andhra Pradesh, India, and caution by funders has slowed down growth in the number of borrowers and assets in the microfinance sector.²⁰ Hence, any schemes designed to scale up climate change-related microfinance will have to ensure a robust delivery system, capable of maintaining high portfolio quality while increasing the volume of funding and the number of borrowers.

3. CROWDFUNDING FOR CLIMATE CHANGE (CF4CC)

The origins of crowdfunding

Crowdfunding (CF) describes the process of several individuals pooling their financial resources to support efforts, projects or campaigns initiated by other people, typically via an internet-based online “crowdfunding platform” (CFP).²¹ The term crowdfunding appeared first in 2006,²² although the first crowdfunding like events can be traced back to 1997, when a group of fans raised funds for a tour of a music band using an internet platform.²³ Since then, CF volume has exponentially grown in the last 4 years from US\$ 530 million in 2009 to an estimated US\$ 2.8 billion in 2012.²⁴

CF exists for a variety of funding modalities including donations, in-kind rewards, lending, and equity investments.²⁵ The link between the individual crowd-funder and the recipient can be direct as Person-to-Person (P2P) or ‘in-direct’, for instance through an investment fund. The motivation of the funders can range from pure philanthropic to pure financial, with the majority finding themselves in the middle expecting a

'dual return', i.e. some combination of a social and financial benefits. Contributions of individual funders are typically too small to finance the entire project; hence a need to pool resources of several individuals, i.e. the 'crowd'.

Crowdfunding and international development

In about 2005, crowdfunding entered the field of international development, initially with a focus on microfinance for poverty reduction and gradually expanding to more general financing for small and start-up businesses, and equity funding. The perhaps best known crowdfunding platform (CFP) in the international development field is Kiva.org, which started operations in 2005 (*see Box 4*).

BOX 4: Kiva.org and other Crowdfunding Platforms

Kiva.org is an internet-based platform that connects willing individuals (typically in OECD countries) who want to make a small loan to a micro-entrepreneur in a developing country. An example could look like as follows: Juan in Colombia seeks a credit of US\$ 385 to invest in a bicycle with a cart to sell his products. He is confident that he will be better off owning such bike, even considering the cost of the credit, than continue renting it. His local Microfinance Institution (MFI), which is an official Kiva field partner, posts his request on the Kiva website and within few days five individuals from four different countries have offer to lend differing amounts ranging from US\$ 25-100 to Juan (always at a zero percent interest rate), and transfer their contribution via Paypal to Kiva.org. The MFI then disburses the credit to Juan and also collects his repayments which are passed on through Kiva to the original lenders. Juan pays the usual interest to his MFI. Kiva.org does not charge any commission, i.e. 100 percent of the microcredit goes to Juan, but encourages lenders to add a voluntary donation of up to 15 percent on top of their microloan to cover Kiva's operating costs.

This way, Kiva has already channeled over US\$ 400 million in loans from about 900,000 microlenders (who are most likely to come from OECD countries, although there are no statistics available on their nationality) through about 190 affiliated field partners (in their majority micro-finance institutions to over 1 million microborrowers in developing countries. The individual microlender, and not Kiva, carries the loan risk, which is moderate with an overall repayment rate of almost 99 percent.

Kiva is transparent about the fact that the transaction may not be strictly person-to-person, but that the MFI might have already disbursed the microloan to Juan in the above example – in other words, that it uses Kiva as a source of re-financing its portfolio at a zero interest rate.

Other crowdfunding platforms offer products that do pay an interest to the crowd investor – for instance, Microplace.com typically offers an interest of 1-2 percent per annum on bonds dedicated to microfinance investments and issued by established companies such as Calvert or FINCA.

Source: www.Kiva.org

National CFPs, such as Rang De, focus on a single country. Rang De's mission is to lower microfinance interest rates in India and has set a ceiling of 8.5-10 percent for what field partners can charge borrowers. The lender (called 'social investor') receives a flat 2 percent for regular microbusiness loans and up to 4 percent for more risky micro-ventures. Rang De retains a commission of up to 2 percent.²⁶

Crowd financing and climate change

With few exceptions, CFPs have paid only little attention to climate change issues in developing countries. For instance, until recently CFPs did not offer, or refer directly to, investments in areas such as clean energy, low-carbon development or climate resilience oriented businesses. This does not mean that under the established categories, such as service, retail, manufacturing, agriculture, MFIs did not support climate relevant and friendly activities (for instance, by lending for non-motorized transport such as bicycles), but the CFPs financing them did not market them as such.

Only recently, Kiva introduced a 'Green Project' category under the heading 'Protect the planet and support sustainable lifestyles'. In early 2012, Kiva cooperated with 19 different field partners who provide green loans, including for microprojects that are explicitly described as climate change mitigation actions (such as building

materials for better insulation). A brief survey of 10 CFPs in developing countries listed in a 2009 study,²⁷ showed that only one other CFP, MicroPlace, had a 'Green' Category.

But some recent developments and innovations point to a potentially much larger role for crowdfunding in addressing climate change concerns at the BoP.

- **New CFPs are emerging which are explicitly focused on clean energy.** Sunfunder, for instance, is a commercial CFP with the purpose of connecting individual crowd investors with solar businesses that are working on the ground in developing countries to bring solar energy solutions to the BoP.²⁸ Investors do not earn interest, but instead get 'impact points' which they can reinvest but not withdraw in cash.
- **Lend larger amounts to non-MFIs, including private companies:** Kiva.org has started partnering with organizations working on activities such as the distribution of clean energy products to a BoP clientele, instead of only MFIs, to overcome the difficult 'last mile' in the distribution network. One such company is Barefoot Power, whose mission is to distribute solar systems, lanterns and renewable batteries to poor segments of the population while creating jobs for micro-entrepreneurs to sell, install and maintain them.²⁹ For example, Martin, a Barefoot Distributor in Tanzania, fundraised successfully through Kiva.org for a loan of US\$ 49,525 to upfront finance a stock of solar lighting kits and then sell them at the peak season after the harvest, when farmers had income to pay for them.³⁰
- **Lending for bulk purchases by cooperatives:** Kiva has also partnered with organizations such as BrazAfric to offer vendor credits to cooperatives for bulk purchases of energy efficient cooking stoves and solar lanterns (with a ceiling of US\$ 10,000/client) as well as to individual retailers, to allow them to stock up their inventories and increase revenues (with a limit of US\$ 2000/client).³¹

Opportunities and risks of crowdfunding

Crowdfunding represents a new source of (re-)financing for MFIs, full of opportunities but also risks. MFIs draw on a number of financing sources, ranging from straight donations, refinancing through banks, to institutional investment bonds such as the Calvert Community Investment bond. The total volume of such institutional investments through institutions called Microfinance Investment Vehicles (MIV), is estimated at US\$ 5.3 billion in 2011.³² The total volume of crowdfunding to MFIs to date is uncertain, but as a reference, Kiva.org, considered the largest CFP in this field, funded about US\$ 80 million in 2011. This would make CFPs currently a small source of MFI funding compared to institutional investors and donors, but one which likely will expand fast, judging by the exponential growth of CFPs and CF funding volumes overall.

The expectation of MFIs for crowdfunding is twofold: lower cost refinancing; and access to more risk-tolerant debt or capital. In particular for expanding into a relatively new field, such as climate mitigation and adaptation, MFIs will be looking for this type of softer funding, beyond the limited grant funding they will be able to mobilize.

However, relying more on crowdfunding also poses risks for MFIs including: higher transaction costs to satisfy reporting requirements of CFPs (in particular, preparing profiles and updates of micro-credits for person to person, or P2P, lending); foreign exchange risks where the CFP currency is different from the local currency; unpredictability of funding streams because the crowdfunders are an anonymous and not well understood group; and CFPs themselves may be unpredictable as more CFPs enter the field with varying degrees of management quality, operational standards, and commitment to social and financial returns.³³ In the absence of independent rating agencies for CFPs, MFIs will have to do their own due diligence and maintain a diversity of funding sources to manage exposure risk.

Crowdfunders investing in climate-related microfinance are also likely to face risks. Their concerns include a shortage of viable (micro-)investment opportunities which satisfy their financial, social, and climate-related

(e.g. emission reductions) expectations. There is a risk that as a result of successful fund mobilization, the volume of available funding may exceed demand from high quality projects, which in turn may induce MFIs to lower their portfolio quality standards and thereby increase lenders' risk. Crowdfunders typically do not have the capacity to assess the investment risk because they are neither professionals nor familiar with the local circumstances of the micro-business, exacerbated by a lack of standardized or verified reporting from microprojects. They are therefore relying on the CFP and affiliated MFI, and are vulnerable to fraud because as individuals they have few possibilities to supervise geographically (and culturally) distant organizations. This is to some extent compensated by the relentless feedback from the online community, which would spread any suspicion of fraud immediately and alert investors.

Enabling environment to scale up crowdfunding for climate change

For crowdfunding to develop to its full potential as a new and additional source of climate funding, and in particular for climate action at the BoP, national and international development organizations may consider a number of measures to overcome barriers and support growth of CF4CC:

- Expand demand for CF4CC by helping MFIs develop a healthy climate portfolio (like Eco-Micro discussed above),³⁴ and reducing the risks by offering foreign exchange risk hedges (such as those offered by MFXsolutions.com) and developing an independent rating of CFPs. CFPs, meanwhile, may be more willing to expand into CF4CC if the risk of engaging with new partners (MFIs or climate-related businesses such as solar companies) can be reduced through a 'first loss insurance' for the first loan or investment. After that, CFPs are in a better position to judge the partner risk themselves.
- Expanding supply of CF4CC by attracting potential new social crowdfunders – for instance by establishing a CF4CC Portal which provides an independent overview of the different platforms and their different products, with a standardized reporting format for better comparability among CFPs.
- Expanding the circle of crowdfunders beyond the 'social investor' to include people with stronger financial returns and security expectations – for instance, by offering crowdfunding products whose interest rates are competitive with bank interest rates,³⁵ and reducing the financial risk through backing by a guarantee facility or by using a well established financial organization such as Calvert or FINCA in the case of MicroPlace. As a further step, CF4CC could be mainstreamed into regular banking business, by offering clients tools and products that make it easy for them to invest in CF4CC on a regular basis, such as 'green accounts' or credit cards that invest a certain percentage in CFPs on behalf of the client.
- Legislation regulating the crowdfunding industry needs to be balanced and 'light touch' to ensure a minimum of investor protection without discouraging access by new social investors for smaller investments.³⁶

4. PROPOSAL FOR A NEW GREEN CLIMATE FUND MICROFINANCE AND CROWDFUNDING WINDOW

At the intergovernmental level, considerable effort is going into creating North-South financial transfer mechanisms to support 'Green Growth'. The GCF is one such mechanism. The instrument of the GCF has been given a broad mandate to design financial instruments and windows for both public and private financing. It also provides opportunities for 'National Financial Entities' to assist in the management of its financial products; the design of international policy frameworks to encourage investments; and access to national financial systems.

We would like to propose that the GCF should make improved access to climate finance by the BoP for local-level climate action a strategic pillar of the financial architecture of the Convention. The pioneering role of the GCF should be to leverage significant amounts of private and public resources to bring down costs of climate

friendly technologies for use at the BoP, to increase access to affordable finance by the BoP, and to reduce risks to lenders and funders investing in climate-related microfinance. It can do so by strengthening existing financial institutions that have proven effective to reach the BoP, including MFIs, but also commercial banks and smaller local financial institutions or, where necessary, support the creation of new financing schemes. It can also help encourage the growth of new and additional sources of private funding, such as the hitherto little-known option of crowdfunding.

This should be attractive to the GCF for several reasons: it would leverage potentially large amounts in private funds for micro-businesses in developing countries; it may encourage the private sector and technology owners to partner with the Fund to provide technologies at concessionary prices; contributors to the Fund can provide incentives to companies and investors that participate in this window and countries can include these as contribution to their commitment under the climate convention; and it would reduce emissions and lock the BoP into a low-carbon development path.

To give focus and continuity to such a role, the GCF may consider creating a 'Microfinance and Crowdfunding Window' under its Private Sector Facility. This paper will not attempt to be prescriptive as to the design and approach to such a window, but instead provides below suggestions for building blocks and instruments that the GCF may want to consider.

Enabling environment to improve access to climate finance by the BoP

The key responsibility for creating an enabling environment for climate-related microfinance lies with national and local institutions, such as national climate trust and revolving funds which have at their disposition regulations such as tax incentives, import duty exemptions, and subsidy programmes.

The GCF could support these national efforts in at least three ways:

- Grant funding for capacity development and knowledge exchange on good practices for support policies for climate-related microfinance. This would include technical assistance to MFIs and local investors who pilot viable climate business models and are greening their portfolio.
- Grant funding to co-finance national subsidies that make climate friendly products affordable for the BoP.
- Guarantee funding for MFIs to partly offset the risks of venturing into new and innovative business fields which are relevant to climate change mitigation or adaptation, and thereby attract institutional investors to (re-)finance these MFIs, including through some form of green climate investment bonds.

This GCF window will have to rely heavily on in-country and regional institutions for implementation and monitoring, reporting and verification, in order to keep transaction costs at acceptable levels. National entity design should of course be nationally driven to meet the financial needs of national climate change strategies.³⁷ Before channeling resources to a specific country or group of countries, the GCF would therefore have to ensure that it is satisfied with the country's own efforts to support climate-related microfinance, to address risks, and to establish an adequate monitoring and reporting mechanism.

The country may choose to create or appoint a Funding Entity with the specific responsibility of overseeing climate-related microfinance support. This Funding Entity may come from the private or non-governmental sector, to ensure a good understanding of the climate-related microfinance business and the necessary operational flexibility to collaborate effectively with the sector. SIDS and countries with small economies will need to have significant government assistance or direct involvement. After accrediting such Funding Entities,

the GCF would channel resources through this institution and hold it responsible for the use of funds, while the funding entity can play a significant and necessary role in the development of a microfinancing window.

Scaling up crowdfunding and other new sources of climate finance

The GCF can play a role in scaling up new and additional climate finance by encouraging additional crowdfunding directed towards mitigation and adaptation efforts at the BoP. As we have seen in Section 3, crowdfunding is just beginning to get into green investments, including climate action at the BoP. The GCF could support this scaling up in several ways:

- Give visibility to CF4CC – for example, by setting up a CC4CC Portal that gives access to a range of crowdfunding platforms and offers a variety of climate-relevant products, such as concessional credits at zero percent interest (like Kiva), loans to solar business (like Sunfunder) or investment bonds (like Microplace).
- Give credibility to crowdfunding platforms through a mechanism of evaluation and accreditation based on transparent, standardized reporting formats and, in future, independent rating of the growing number of CFPs. Such accreditation could become a prerequisite for support by the GCF.
- Reduce investment and lender risks through a ‘de-risking’ instrument, such as a first loss guarantee facility. CFPs could apply to such a facility, and if approved, could attract new investors and lenders looking for a double financial and social return on investment but with a lower risk. The GCF Facility would make sure the CFPs and its investors or microlenders always share some of the risk to maintain high quality standards in the use and allocation of credits and investments.
- Reduce the foreign exchange risk of MFIs using CFP resources to finance or refinance their climate portfolio, by supporting foreign exchange risk insurance schemes and covering part of the cost.
- Offer matching or challenge funds that leverage private resources mobilized by CFPs from individuals as well as from institutional investors. Challenge funds would not substitute for mobilizing funding from ‘the crowd’ but would magnify its impact and draw them into funding climate-related projects. One CFP already has practical experience with challenge funds and uses them to attract new micro-lenders.

Climate mitigation focus and adaptation funding

This policy brief has drawn primarily on examples from climate mitigation, where business models for financing micro (and small) mitigation actions, such as solar home systems or investments in mini-grids for smaller communities are more advanced than in the adaptation field. However, there is a wide field of possible applications of microfinance in adaptation as well. For an overview see the paper by the OECD on microfinance and climate adaptation.³⁸

At the same time, the GCF should help explore new avenues for mobilizing funding for adaptation actions at the BoP, such as micro-insurance schemes to cover risks from more frequent natural disasters or investments in more resilient housing. Suggestions include a very small transaction fee on GCF-guaranteed microfinance bonds (‘green bonds’) and a small percentage charge on the sale of carbon credits from GCF supported microfinance programmes in the voluntary, and where appropriate, compliance market.

CONCLUSIONS

Climate action at the local level, the BoP, is crucial for a successful transition to a low carbon and climate resilient future for a number of reasons: the BoP holds a large mitigation potential today and as the future middle class; it holds the power to support or reject national climate policies; and the BoP is most affected by climate impacts and hence this is where adaptation needs to focus on. To the extent that climate action is generating tangible benefits (sometimes misleadingly called co-benefits – they are core benefits!) in terms of

income, jobs, and better services for the BoP (such as access to clean energy), the willingness to support strong climate policies will increase. In most countries, such broad support will be indispensable to engage in, and sustain, ambitious climate policies.

Improving access to finance for climate action by the BoP is therefore an important task for the climate community and one that has been largely neglected by the formal financial institutions and the international climate finance discussion.

Microfinance institutions have, by comparison, a better track record in reaching the BoP, but have focused on climate change action only to a limited extent so far. With crowdfunding, a new source has emerged for re-financing MFIs, but again so far with very limited focus on climate action.

The GCF has a role to play in catalyzing climate action at the BoP. This paper suggests it can do so, *inter alia*, by supporting microfinance and crowdfunding to focus more strongly on climate action. This could benefit the GCF in at least three ways:

- Nurture a bottom-up climate funding stream, so to speak from the Base (the crowd in OECD countries) to the Base (of the pyramid in developing countries), to complement the more traditional (and very necessary) top-down funding stream.
- Lower the transaction costs and increase the speed of delivering climate finance compared to official ODA and government processes, by using existing, or creating new, microfinance and crowdfunding platforms involving person-to-person financing or green investment bonds managed by the private sector.
- Learn from the MFI and crowdfunding sectors in order to pilot efficient approaches for the GCF Private Sector Facility and National Entities which could be further facilitated through a regular forum organized by the climate change convention's Standing Committee on Finance.

In all well intended efforts by the public sector to support MFIs and CFPs, it is critical not to undermine the very nimble and agile nature and the lower transaction costs of these institutions through excessive burdens of reporting, approval processes, and mandates. This will be best assured through an active involvement of MFIs and CFPs in any design of support mechanisms from an early stage.

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