

## THE CLIMATE CONUNDRUM: FINANCING SMALLHOLDER PRODUCTIVITY AND RESILIENCE IN THE AGE OF CLIMATE CHANGE

### EXECUTIVE SUMMARY

**Reducing global poverty and improving food security is largely dependent on smallholder farmers achieving major productivity gains.** They must do so, however, in the face of new challenges caused by climate change, including devastating crop loss and increased droughts.

Climate smart agriculture provides a framework of practices and interventions that enables smallholders to improve their productivity and adapt to climate change while, in many cases, also mitigating their greenhouse gas emissions. The approach has been effective in many cases, but more funding and proper incentive mechanisms are needed to channel investment in, and promote adoption of, climate smart agriculture for smallholders at scale.

Of the \$148 billion in public financing dedicated to combating climate change in 2014, only \$6 billion went to the agricultural sector. Increased public funding is critical, but it must also leverage private capital more effectively or its impact on addressing climate change will fall far short of global goals.

Bringing together the latest practices in the climate finance community with those of the agricultural finance community will allow for combined models that can boost returns and attract new investors, but more importantly bring more productive and resilient practices to smallholder farmers and the natural environment. Unlocking these models will require more activity in three key areas:

- 1. Funders need to become more sophisticated across domains:** Climate finance and agricultural development specialists must start communicating and collaborating more effectively.
- 2. Adaptation needs to rise as a priority objective:** When developing financing and technical assistance packages for smallholder farmers, more emphasis should be put on adaptation to the effects of climate change rather than mitigation of the root causes because farmers are exceptionally vulnerable to the effects of climate change, but are a relatively small contributor to greenhouse gas emissions.
- 3. Funders and investors need to use innovative finance structures to catalyze markets:** More patient design funds should be allocated towards creation and experimentation with blended investment structures that combine market-based returns with subsidies and monetization of natural assets.

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### ABOUT THIS BRIEFING

*The need for this briefing note arose from conversations with stakeholders in both the agricultural finance and the climate finance community. It was inspired by the recognition that the two domains are increasingly overlapping in their agendas. While the agricultural finance community typically focuses on smallholder productivity, the climate finance community often focuses on mitigation and adaptation. Increasingly, the means by which each community achieves its stated goals include overlapping activities, particularly when it comes to preservation of forested landscapes and farm resilience. This briefing note explores this nexus and articulates a framework for how inclusive financial structures can build on trends from each domain to help smallholder farmers both improve their productivity and adapt to climate change.*

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## OUR GLOBAL COMMITMENTS

**With the signing of the Sustainable Development Goals (SDGs), world leaders have adopted an ambitious global development agenda that, among other priorities, aims to end rural poverty and guarantee food security while also combating climate change.** The goals establish that environmental sustainability is no longer simply a development concept, but rather, lies at the heart of global growth and prosperity. The SDGs also intentionally promote interdependency among the goals; achieving them will require collaboration among governments, the private sector, civil society, and individuals. As such, the agenda reflects a growing global recognition that pressing issues like climate change, migration, population growth, urbanization, food production, energy, and natural resource management are interconnected – and consequently cannot be addressed in isolation

**Although donors across sectors have committed increased funding to achieve the SDGs, the global development infrastructure has been slow to connect traditional food security and anti-poverty programs with programs that address climate change.** Nowhere is this disconnect more evident than with programming that targets the rural poor, particularly smallholder farmers.

Traditional agricultural development institutions, practitioners, and funding structures recognize the scope and urgency of the challenge, but many organizations have struggled to incorporate scalable solutions that can achieve three of the goals – food security, poverty reduction, and climate adaptation – simultaneously. Meanwhile, newer institutions and mechanisms that have formed to address the effects of climate change on agriculture often lack experts who can combine deep technical expertise in both climate and agricultural issues. Both the climate change and agriculture domains involve complicated science, policy, and market dynamics, and the expertise for each domain often remains siloed in specialized departments, even if those departments are within the same organization.

### BOX 1

“There is increasing political will to prioritize sustainability, as demonstrated in global initiatives, such as the Sustainable Development Goals and the Paris Climate Change Agreement, as well as in regional initiatives such as the [20x20 initiative](#) or [AFR100](#). But agricultural development is falling behind on the sustainability agenda. At least in the group of developing countries, the sector remains focused on technical fixes that focus on improving yield and productivity.”

– Debbie Bossio, WLE Flagship Leader and lead CIAT Soil

## SMALLHOLDER AGRICULTURE: A BURNING PLATFORM

**The agricultural sector is a major contributor to climate change, and is also poised to become one of its principal victims.** According to the Intergovernmental Panel on Climate Change, the sector accounts for almost a quarter of annual global greenhouse gas emissions (GHGs), and is the top emitter of both methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O).<sup>1</sup> Deforestation and land-use change, livestock, rice paddy production, and synthetic fertilizers are among the most prominent sources of emissions for the sector.

**While the agricultural sector, as a whole, is a major source of GHG emissions, smallholder farmers' contribution to climate change is concentrated in select commodities and is relatively small overall.** Smallholders in several agricultural sectors – cattle farming, rice paddy, soy, and palm oil production – do produce significant GHG emissions, particularly methane.<sup>2</sup> However, those engaged in other sectors tend to have low levels of emissions, due in part to their limited use of chemical fertilizers and fossil fuels. Similarly, large-scale commercial farming – not smallholders – contribute most to deforestation in the developing world, though smallholders in certain geographies are linked to deforestation.

1 IPCC, 2014: Climate Change 2014: Synthesis Report.

2 Cruz, Amy. “Flipping the issue: agriculture contributes to climate change?” CGIAR. April 19th, 2016.

**Regardless of their contribution to climate change, smallholder farmers will be the most vulnerable to its consequences.** Without measures to help their agricultural sectors adapt to climate change, countries in Africa will face average crop losses between 10-50%.<sup>3</sup> One example of the effects of climate change is the increased occurrence of drought across the Horn of Africa over the past two decades. Those droughts – including one in 2011 that was the worst to hit East Africa in over 60 years – have contributed to food insecurity, migration, and hundreds of thousands of deaths.<sup>4</sup> Meanwhile, increased temperatures across Central America as a result of climate change have played a major role in devastating outbreaks of the coffee rust plague, which has decimated coffee production for smallholder farmers. Between 2013 and 2014, it led to the loss of over 500,000 coffee-related jobs and \$1 billion in revenue.<sup>5</sup>

**Achieving zero poverty, improving food security, and combating climate change will be impossible without significant measures to help smallholder farmers adapt to climate change and reduce their emissions.** Current funding to help smallholders achieve these goals is grossly insufficient to address the scale of both problems. Despite accounting for almost 25% of global GHG emissions, the agriculture sector received a mere 3% of public mitigation climate financing in 2014.<sup>6</sup> More alarming still, the sector received only \$3 billion for adaptation in 2014 although an estimated \$225 billion will need to be invested in adaptation between now and 2050.<sup>7</sup> Though exact figures are not available, presumably an even smaller proportion of that amount went toward smallholders. Meanwhile, global markets are expecting smallholder farmers to play a major role in

3 Jones and Thornton. The Potential Impacts of Climate Change on Maize Production in Africa and Latin America

4 Hoag, Hannah. "Ocean sediments suggest dry future for Horn of Africa." *Nature*, Oct. 9th, 2015.

5 Foote, Willy. "Coffee: The Canary in the Coal Mine for Climate Change." *Root Capital*, May 28th, 2014.

6 Climate Policy Initiative. *The Global Landscape of Climate Finance*. 2015.

7 Root Capital. *Issue Brief 3-A: Investing in Resilience: a Shared Value Approach to Agricultural Extension*. 2015.

meeting the 70% increase in global food production required to feed the estimated 9 billion people who will be alive in 2050.<sup>8</sup> Smallholders simply will not be able to do so without more climate smart investment in agriculture.

## CLIMATE SMART AGRICULTURE: A WAY FORWARD

**Climate change represents an unprecedented challenge to agricultural production in developing countries, but governments and the development community do have frameworks and policies for addressing it while also pursuing rural poverty and food security goals.** The most important of these is climate smart agriculture. As defined by the Food and Agriculture Organization of the United Nations (FAO), climate smart agriculture is "an approach to help the people who manage agricultural systems respond effectively to climate change."<sup>9</sup> It encompasses a broad range of practices and interventions that seek to achieve a triple bottom line:

1. Increase farm productivity and incomes sustainably
2. Help farmers adapt to climate change
3. Reduce greenhouse gas emissions where possible

Although climate smart agriculture aims to achieve the three goals simultaneously, this is not always possible. There are frequently inherent tradeoffs, as adaptation measures do not consistently result in reduced GHG emissions and mitigation activities do not always help farmers adapt to climate change or improve their productivity.

**"Mitigation" refers to activities that limit the emission of greenhouse gasses, whereas "adaptation" refers to building the capacity to adapt and prosper in the face of shocks and**

8 The World Bank. *Climate Smart Agriculture: a Call to Action*. 2012

9 FAO. *Climate Smart Agriculture*. < <http://www.fao.org/climate-smart-agriculture/overview/en/> > Accessed on Sept. 15th, 2016.

**FIGURE 1**

**Examples of Adaptation Practices**

**Proven practical techniques:**

- Agroforestry
- Intercropping and crop rotation
- Conservation agriculture
- Mulching
- Integrated crop-livestock management and improved grazing
- Improved water management

**Innovative practices and technologies:**

- Improved weather forecasting with updates sent to farmers via SMS messaging
- More resilient food crops
- Solar-powered irrigation pumps
- Weather index insurance

**long-term stresses caused by climate change.**

Both mitigation and adaptation measures are critical to limiting the adverse effects of climate change on agriculture. In the case of smallholder farmers, however, adaptation should be prioritized. Climate change has already begun to adversely affect smallholders' livelihoods. The occurrence and severity of extreme weather events, crop pests, and plagues is expected to increase despite the best mitigation efforts. Without measures to help smallholder farmers adapt, many will struggle to maintain current levels of productivity. Although adaptation should be prioritized over mitigation for smallholder farmers, mitigation still has an important role to play in reducing and sequestering GHG emissions. To be most effective, mitigation efforts should focus on smallholder farmers engaged in major GHG-emitting activities—cattle, rice, soy, and palm oil production—and on practices that can create additional revenue streams for farmers.

Innovative financing mechanisms, such as carbon credit markets and REDD+, are driving the adoption of mitigation practices in the agricultural sector, but these models generally do not reach smallholders. REDD+, for example, incentivizes landowners to conserve forested land by paying them for the environmental benefits of keeping their forests standing. The mechanism also provides them with training in sustainable development practices so that they can obtain multiple revenue sources from their forests. While an effective tool for promoting conservation and mitigation, REDD+ tends to target large-scale projects, not smallholders.

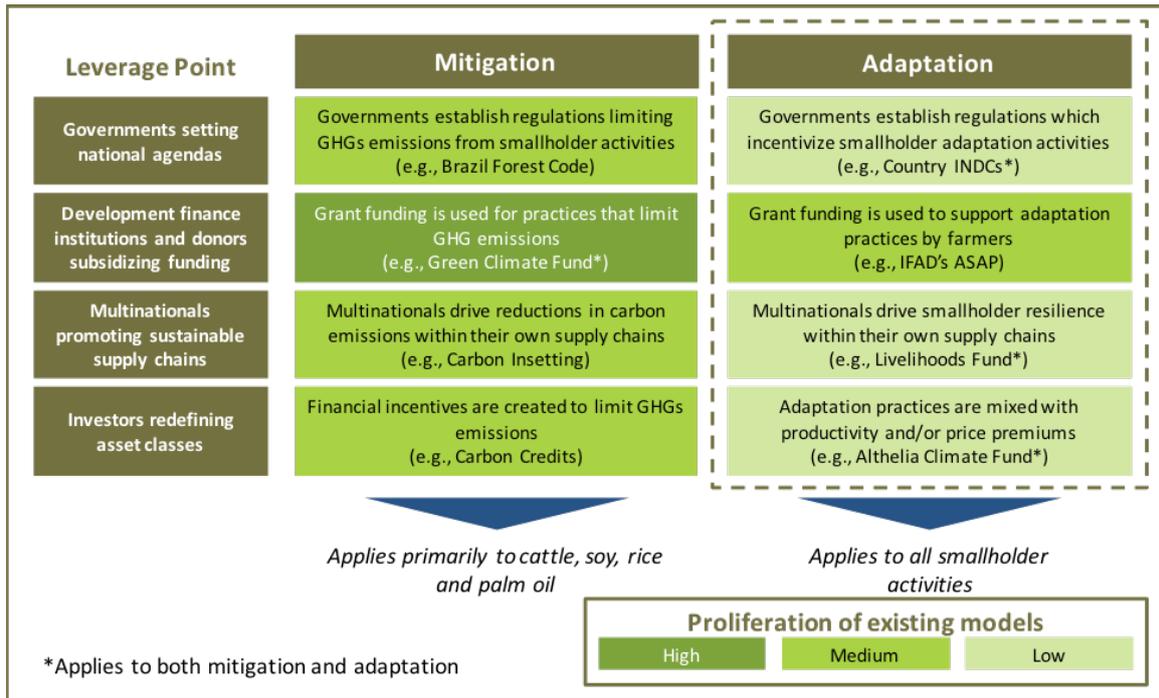
**A FRAMEWORK FOR CHANNELING FUNDING TO ADAPTATION AND MITIGATION FOR SMALLHOLDER FARMERS**

**As climate smart agricultural practices enable smallholder farmers to increase their productivity, improve climate change adaptation, and in some cases reduce their GHG emissions, more funding is needed to support these efforts.** Channeling increased investment in climate smart agriculture while guaranteeing that smallholders can adopt those practices will require sector alignment, investable opportunities, and incentive systems. Four leverage points, shown in the left column of the diagram below, can channel funding that incentivizes mitigation and adaptation practices by smallholder farmers.

**First leverage point: Governments setting national agendas**

**Governments can drive the adoption of climate smart agricultural practices by smallholders through a combination of well-designed regulations and financial incentives.** Governments can limit or prohibit certain activities that emit GHGs, and also require or incentivize activities that help businesses or individuals adapt to the effects of climate change. Under the Paris Climate Agreement of 2015, for example, countries agreed to submit Intended Nationally Determined Contributions (INDCs). These documents publicly outline the actions countries intend to take post-2020, under

**FIGURE 2**



the new international climate agreement. Although commitments are still voluntary, the documents have shown that most countries have adaptation on their radar. In fact, of the 113 countries that included adaptation goals in their INDCs, 102 included agriculture among their adaptation priorities.<sup>10</sup>

**CHALLENGES:** Most developing countries possess limited capacity for tracking compliance with adaptation and mitigation policies. Adaptation is especially hard to track, as isolating and measuring the effects of farm practices (i.e., adaptation) is more difficult than measuring and regulating emissions (i.e., mitigation). Monitoring progress will be an ongoing challenge as developing countries implement their INDCs.

**PATH FORWARD:** Partnerships with a variety of actors including NGOs, impact investors, and local banks will allow governments to address measurement and enforcement challenges more

efficiently. Such partnerships will allow governments to reduce the burden of scaling the regulatory agenda, thereby allowing adaptation or mitigation activities to grow more rapidly once a model has been proven. In addition to their regulatory function, governments can also serve as a key source of financing for the rest of the sector (e.g., through concessional loans).

**CASE STUDY: THE BRAZILIAN FOREST CODE**

Brazil's Forest Code illustrates how a well-designed regulatory approach, combined with incentives, can drive adoption of sustainable agricultural practices. The code requires that landowners in forested areas conserve a certain percentage of forest cover, dependent on the biome. To help farmers meet the costs of compliance, as well as the opportunity costs of leaving forests standing, the government has partnered with local banks to provide concessional credit for adopting climate smart agricultural practices allowed under the Forest Code. The government has also been able to leverage satellite imagery to track deforestation cost effectively and in near-real time.

10 Meryl Richards, et. al., "Info Note: Agriculture's Prominence in the INDCs." Climate Change Agriculture and Food Security. Nov. 2015.

This combination of regulation, incentives for alternative productive activities, and effective enforcement has resulted in positive economic spillover effects. For example, as a result of improved farmer compliance with the code, McDonald's recently resumed purchasing beef from Brazil after a 30 year no-buy policy. The fast food giant had previously suspended beef purchases from Brazil under pressure from consumers and NGOs over the role cattle raising plays in deforestation in the Brazilian Amazon.<sup>11</sup>

### **Second leverage point: Development finance institutions (DFIs) and donors subsidizing funding**

Development finance institutions and donors can drive the adoption of climate smart agricultural practices by providing various types of funding, including credit guarantees or concessional loans for financial institutions that extend loans to farmers. Funders also provide technical assistance grants for farmers and grant funding to help impact investors or NGOs develop and scale their models. Beyond these approaches, several mechanisms focused specifically on adaptation to climate change have started to appear; primary examples include the Adaptation Fund and the International Fund for Agricultural Development's Adaptation to Smallholder Agriculture Program. Additionally, prominent mitigation funds, such as the Green Climate Fund, have started dedicating funds to adaptation, and have plans to rapidly scale these allocations.

**CHALLENGES:** The principal challenge is the lack of sufficient funding. Of the \$148 billion in public financing dedicated to combating climate change in 2014, only \$6 billion went to the agricultural sector.<sup>12</sup> Increased public funding is needed, but it must also leverage private capital more effectively; otherwise, its impact on addressing climate change will fall far short of global goals.

**PATH FORWARD:** The high risks and upfront costs of investments in climate smart agriculture can make

them risky for both the lenders that finance them and the farmers that adopt them. Development finance institutions can reduce risk for both groups by providing a combination of credit guarantees, concessional capital, and grants for project design, management, or technical assistance. Going forward, blended public and private finance should be incorporated into smartly designed subsidy programs that incentivize farmers to adopt resilient and productive practices.

### **CASE STUDY: GREEN CLIMATE FUND**

Operating under the framework of the [United Nations Framework Convention on Climate Change](#), the Green Climate Fund provides a combination of grants, debt, equity, and credit guarantees to help developing countries adapt to and mitigate climate change. Launched in 2014, the fund has focused heavily on mitigation efforts in the energy sector, but aims to dedicate at least 50% of its financial resource toward adaptation. The fund doesn't invest directly in projects but rather in accredited entities. It lacks specific funding targets for agriculture, but two of its four adaptation targets are food security and improved livelihoods for the most vulnerable communities – suggesting that smallholder farmers could become an important beneficiary of funding.

The Green Climate Fund also recognizes that public financing alone will be insufficient to meet the adaptation and mitigation needs of developing countries. As such, when evaluating projects for investment, the fund weighs the degree to which its funding can leverage private sector capital.

### **Third leverage point: Multinationals promoting sustainable supply chains**

A number of multinational companies have made commitments to improve the sustainability of their supply chains, and several are beginning to fulfill their commitments by making direct investments. For example, companies have trained farmers within their supply chain on how to use less intensive production practices. A combination of factors has driven this movement: most notably, pressure from consumers in developed countries who are

11 Interview with Carlos Souza, Senior Researcher at Imazon.

12 Climate Policy Initiative. Ibid.

increasingly demanding traceable, sustainably-produced goods, and a growing recognition by companies that the \$7 trillion global food and beverage industry cannot continue to deliver the financial returns it expects without investing in improving smallholder productivity in the face of climate change. Several companies are also beginning to experiment with offsetting their GHG emissions by supporting mitigation activities by actors, particularly farmers, within their supply chain. This emerging practice is called “carbon insetting.”

**CHALLENGES:** The scalability of this approach is limited to specific supply chains and usually to those of multinational companies. Unfortunately, this leaves out the vast majority of smallholder farmers; according to CGAP, only around 7% of smallholders operate within organized supply chains.<sup>13</sup> An additional challenge is that many multinational companies have limited visibility beyond the first two tiers of their multi-tiered supply chains. As a result, implementing adaptation or mitigation programs directly with farmers can be difficult and costly.

**PATH FORWARD:** Companies can address the latter challenge by working with NGOs and local partners who are able to reach farmers more efficiently and effectively. By forming partnerships and pooling their resources, companies can create initiatives dedicated to this task. In some cases, philanthropic funding may be available to support these efforts.

### **CASE STUDY: THE LIVELIHOODS FUND FOR FAMILY FARMING**

Launched in 2014 by Mars and Danone, the Livelihoods Fund for Family Farming is a platform through which companies co-invest in improving the productivity, reliability, and sustainability of their supply chains at the farm level. The fund provides upfront financing to a project developer, often an NGO that aggregates smallholder farmers and assists them in adopting sustainable farming practices or technologies. The fund recovers its

<sup>13</sup> CGAP. Segmentation of Smallholder Households: Meeting the Range of Financial Needs in Agricultural Families. Focus Note No. 85, April 2013.

investment through a combination of fees paid by the companies, grants from donors, and monetized ecological assets (e.g., carbon credits or watershed management fees). The companies that participate in the fund benefit from improved productivity and reliability of their supply chains, plus positive environmental externalities that offset carbon emissions in their supply chain (i.e., insetting). Meanwhile, donors benefit from private sector leverage on projects that would have been more expensive to fund on philanthropic capital alone. The result is a win for all parties, generating cost-effective results.

The fund aims to invest €120 million in projects covering 200,000 hectares of farmland in various supply chains across Africa, Asia, and Central America. A recent €4 million project in Kenya helped 30,000 dairy farmers working on 20,000 hectares adopt agroforestry practices that allowed them to double their revenues over 10 years while also sequestering 1 million metric tons of CO<sub>2</sub>. Those certified emission reductions were then sold in the voluntary carbon market.<sup>14</sup>

### **Fourth leverage point: Investors redefining asset classes**

**Investors can combine multiple revenue streams to invest in climate smart agricultural practices for smallholder farmers.** Several impact funds and social enterprises – such as Althelia, Livelihoods, and Komaza – are developing models that benefit from multiple sources of revenue in order to deliver returns that can attract investors. In addition to using a portion of the revenue from sales of the underlying commodity, these enterprises use mechanisms such as carbon credits that monetize environmental benefits.

**CHALLENGES:** Creating additional revenue streams for the environmental benefits of mitigation or adaptation measurement requires markets where those activities can be monetized. Such markets exist for GHG emission reductions and certain conservation practices, but are less developed for

<sup>14</sup> Livelihoods. 3F: The Livelihoods Fund for Family Farming [Brochure]. 2015

adaptation activities. In the absence of government or donor support, investors that aim to support climate smart agriculture for smallholders may have a hard time recouping their investment.

**PATH FORWARD:** Investors and their partners can mitigate risk by supporting climate smart agricultural practices that generate higher yields or price premiums, sharing revenue streams with other value chain actors and monetizing ecological assets. When monetization schemes are not readily available (e.g., for adaptation activities) success will depend on grant-based incentives, public policy incentives, or clear identification of productivity gains from adopting such practices.

### **CASE STUDY: KOMAZA – TRANSFORMING THE TREE PLANTATION MODEL**

Operating in Kenya, Komaza is a social enterprise pioneering a “micro-forestry” model that helps reduce deforestation and improve rural incomes for smallholder farmers on semi-arid lands. Komaza provides farmers with training and financing to plant and commercialize hybrid eucalyptus and indigenous *Melia volkensii* trees. Farmers manage the land and labor while Komaza manages the wood processing and sales operations, ensuring a fair price is paid to the farmers. The model can help address the growing wood deficit in sub-Saharan Africa, reduce the use of unsustainable slash and burn methods, and bring efficiency gains to the production of charcoal. Komaza’s 7,000 farmers have planted over 2 million trees, which collectively makes them one of Kenya’s largest commercial tree planters.

Komaza has evolved from a nonprofit that was primarily grant-funded into a social enterprise that has raised capital from impact investors. Going forward, Komaza wants to create a special purpose vehicle that will finance the planting of trees for smallholder farmers. The trees would be the underlying asset and collateral for a fundraise that includes debt and guarantees from various types of investors, including climate investors. Over time,

Komaza also intends to monetize carbon credits through the model.<sup>15</sup>

### **CASE STUDY: ALTHELIA CLIMATE FUND**

The Althelia Climate Fund finances agroforestry and sustainable land-use projects that conserve landscapes and reduce deforestation. Their approach begins with a business strategy to address deforestation – in most cases, this strategy involves working with smallholder farmers. Althelia typically enters into a master agreement with a local partner (e.g., an NGO) along with farmer cooperatives and off-take companies (e.g., cacao traders). Althelia provides concessional loans upfront to pay for technical assistance, fertilization, post-harvest processing centers, and other related infrastructure. Repayment comes from a portion of future revenues generated by increased production and from monetization of ecosystem assets (e.g., carbon emissions reductions).

For every investment, Althelia negotiates an upfront benefit share arrangement that determines how the value generated by the project will benefit local stakeholders. The benefits come from a mix of i) pre-financing from Althelia for livelihood activities, ii) a portion of carbon revenues, and iii) incremental revenue from investment in productive activities. The projects typically include a farm management plan with integrated cash and food crops that generate multi-stream revenues for the farmers.

Althelia offers investors market-rate returns. Operating in Africa, Latin America, and Asia, the fund has invested over half of the €101 million committed by the fund’s investors. Although the fund offers loans at concessional rates, it also includes an upside profit and risk sharing structure to align incentives.

A portfolio guarantee from USAID covers up to 50% of total losses and provides further protection to investors.<sup>16</sup>

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15 Komaza website and interview with Tevis Howard, CEO of Komaza

16 Althelia website and Interview with Juan Carlos Gonzalez Aybar, Director of Latin America for Althelia.

## A CALL TO ACTION

Smallholder farmers must become a more central focus of global efforts to adapt to and mitigate climate change. It will be impossible to meet the SDGs of ending poverty, guaranteeing food security, and combating climate change without significant investments in climate smart agricultural practices for smallholders. Current levels of investment and activity in all four primary leverage points are inadequate when compared to the scale of the problem.

A number of crosscutting actions are particularly important if programming and investments aim to make optimal use of climate smart agriculture funding:

- 1. Funders need to become more sophisticated across domains: Climate finance and agricultural development specialists must start communicating and collaborating more effectively.** In particular, agricultural development specialists and climate scientists must collaborate to understand how climate change will affect different crops and regions, and what agricultural practices can increase productivity for smallholder farmers under normal and extreme weather conditions. Improving communication and collaboration will require multi-disciplinary teams, inter-departmental working groups, and dedicated knowledge networks that bring these two sets of professionals together for knowledge sharing opportunities.
- 2. Adaptation needs to rise as a priority objective: When developing financing and technical assistance packages for smallholder farmers, more emphasis should be put on adaptation rather than mitigation.** Climate change has already started to affect smallholder farmers' livelihoods and will do so increasingly over the coming decades regardless of the success of mitigation efforts. Outside of a few critical commodities, smallholders have a relatively minor effect on GHG emissions, but

they stand to be the most devastated by changes in climate. Meeting the world's collective food security and livelihood challenges will require a greater emphasis on publicly funded programs for climate smart agriculture practices. But recognizing that public funding alone will not solve the problem, grant capital needs to be used as a complementary incentive blended with private sector investment to strengthen productive supply chains and create more resilient systems.

- 3. Funders and investors need to use innovative finance structures to catalyze markets: More patient design funds (e.g., grants) should be allocated towards creation and experimentation with blended investment structures that combine market-based returns with subsidies and monetization of natural assets.** Smartly designed initiatives will incorporate all four of the leverage points described above. First, smart initiatives will anchor around the INDC agenda of governments as a framework of regulations and a map of desired adaptation and mitigation measures for the agricultural sector, along with available incentives for implementing them. Development finance institutions and donors can complement those incentive structures with additional funding, in the form of grants, concessional lending, and guarantees. With this foundation of regulations, incentives, and public financing, the risks and costs of multinational companies and investors supporting finance adaptation and mitigation programs for smallholder farmers will go down.

The climate finance community has deep experience in defining and capturing value from ecological assets. On the other hand, the agriculture finance community has experience aligning supply chains to boost productivity while distributing costs and risks. Both communities have become increasingly savvy at combining public funding with private capital, but both operate on razor-thin returns in the face of high risks. Integrating a forward-thinking approach within these two domains will allow for combined

revenue streams that can boost returns and attract new investors. More importantly, it will bring more productive and resilient practices to smallholder farmers and the ecosystems in which they live.

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## AUTHORS

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## ABOUT THE INITIATIVE FOR SMALLHOLDER FINANCE



THE INITIATIVE FOR  
**SMALLHOLDER FINANCE**

The Initiative for Smallholder Finance (ISF) is a multi-donor and investor platform for the development of financial services for the smallholder farmer market. It was launched in May 2013 with the intention of making marked progress toward closing the gap between the over \$200 billion in smallholder financing need and the current \$50 billion supply in Latin America, sub-Saharan Africa, and South and Southeast Asia.

The ISF's primary role is to act as a "design catalyst." The emphasis is on mobilizing additional financing for smallholders and seeding replication of innovative models in new markets.

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