

Research by
Dalberg Global
Development Advisors



THE INITIATIVE FOR
SMALLHOLDER FINANCE



Rural & Agricultural Finance 
LEARNING LAB

INFLECTION POINT:

Unlocking growth in the era of farmer finance



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Dalberg Global Development Advisors led this research under guidance from the Initiative for Smallholder Finance (ISF), which is incubated by the Global Development Incubator (GDI), and the Rural and Agricultural Finance Learning Lab, which is jointly implemented by GDI and Dalberg.

This research draws on interviews with representatives from nearly 80 different organizations. Furthermore, the following individuals contributed to the report’s Collaborative Research Group: Miriam Cherogony (ISF), Mark Adams (One Acre Fund), Tim Strong and Genzo Yamamoto (Opportunity International), Matt Foerster (Root Capital), Jane Abramovich (TechnoServe), and Azeb Fissaha (World Bank AgriFin).

Finally, this study was authored by Laura Goldman, Michael Tsan, Radoslava Dogandjieva, Clara Colina, Sanat Daga, and Virginia Woolworth of Dalberg Global Development Advisors. Contributions from the Initiative for Smallholder Finance and the Rural and Agricultural Finance Learning Lab included advisory support from Tom Carroll, Matt Shakhovskoy, Martin Slawek, Jason Wendle, and Dan Zook; and communications support from Malia Bachesta and Sara Wallace. Jesse Lichtenstein provided editorial support and Vejby & Associates designed and laid out this study.



FOREWORD



The 2012 report titled **Catalyzing Smallholder Agricultural Finance**, produced by Dalberg with support from the Citi Foundation and the Skoll Foundation, characterized the smallholder finance market and identified growth pathways to address the largely unmet demand for finance. In the years since, the smallholder finance sector has made significant strides in understanding the challenges of serving smallholders. As a result, new providers and models have entered the market, supported by new technologies and investments that are overcoming critical barriers to expanding access to finance for smallholders.

Following the 2012 report's call to close the financial inclusion gap for smallholder households, we launched the **Initiative for Smallholder Finance (ISF)** in 2013 and the **Rural and Agricultural Finance Learning Lab** for The MasterCard Foundation in 2015. The ISF's primary role is to act as a "design catalyst" to mobilize additional financing for smallholders and seed replication of innovative models in underserved markets. The Learning Lab fosters learning and collaboration that leads to better financial solutions provided to more smallholder farmers and other rural clients.

This study represents one product of the ongoing collaboration between our initiatives, as we view the transaction-focus of the ISF and the knowledge-focus of the Learning Lab as highly complementary. Recognizing the rapid pace of change since the 2012 report, this study sets out to give a fresh look at the state of the sector and also establish a clear agenda for future investment and learning. In the process, we hope to accurately reflect the far greater degree of sophistication in understanding and approach we're seeing in the market.

We are now in a new era of smallholder finance that requires collaboration across the sector to realize solutions that will benefit millions of smallholder farmers and their families. We are proud to be part of an increasingly engaged and dynamic community of practitioners who each have a key role to play in unlocking expanded access to finance for smallholder households.

This study incorporates each of those roles and presents an ambitious new call to action that can only be achieved through our collective contributions – we hope you will join us.

Yours in continued collaboration,

Matt Shakhovskoy,
Executive Director
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Director
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The Learning Lab is committed to actionable and collaborative learning, and we invite the engagement of our readers, including feedback on this report, contributions of additional data, or input on future areas of study. At our website, www.raflelearning.org, users can contact the Lab directly or comment on this or any other publication. We are on Twitter @raflelearning, or the Rural and Agricultural Finance professional group on LinkedIn.

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1. INTRODUCTION

The idea itself is not new: access to financial services can improve the lives of smallholder farmers and their families. A host of development actors in emerging markets have spent more than 60 years experimenting with approaches to providing farmers with access to financial services. Starting in the 1950s, many governments established agriculture development banks or capitalized commercial banks, both with mandates to lend to smallholders at below market interest rates. In the 1970s, fueled by the failures of both directed credit and subsequent laissez-faire policies, microfinance institutions and some commercial banks began providing microfinance in rural areas. This approach faced challenges, too, as most microfinance providers (with the exception of some in Asia) did not ultimately maintain a sustained reach to smallholders.

However, a renewed drive at the beginning of the 21st century to connect farmers to financial services has ushered in a new “era of farmer finance.”¹ Stakeholders from the separate silos of agricultural development, financial inclusion, and information and communication technologies for development have found common ground in bringing the tools of financial empowerment to smallholder farmers. These collaborations have encouraged development and testing of new financing models and experimentation with new technologies. At the same time, a number of global efforts—including the Council on Smallholder Agricultural

Finance and the recently launched microfinance institution farm finance association, Propagate—are strengthening the research base and contributing to actors’ understanding of both the supply and demand sides of financial services for smallholder farmers. The precursor to this publication—Dalberg’s 2012 *Catalyzing Smallholder Agricultural Finance* report—became an important contribution to this research base, estimating for the first time the gap in smallholder finance and sparking the creation of the Initiative for Smallholder Finance.

Even with these developments, however, the gap between the financial needs of smallholders and the supply of financial services is anticipated to remain significant. Credit provided by informal and formal financial institutions, as well as value chain actors, currently only meets an estimated USD 50 billion of the more than USD 200 billion need for smallholder finance in the regions of sub-Saharan Africa, Latin America, and South and Southeast Asia.² In addition, agricultural insurance reaches just 10% of smallholders and fewer than 15% have access to a formal savings account. Projected growth of 7% per year from formal institutions and value chain actors will not make a meaningful dent over the next five years.³

Closing the gap will require harnessing the power of today’s diverse and dynamic ecosystem to fundamentally change the sector’s growth trajectory. It will require

1 Refer to Annex A: Evolution of smallholder financial services.

2 Refer to “Current snapshot of financial service provision” section and Annex B for market sizing details and assumptions; this report contains a more sophisticated snapshot than its 2012 predecessor, preventing direct sizing comparisons.

3 Refer to “Marketplace gaps” section, including Figure 10 and Figure 14, for data on insurance, savings and projected growth. incl. Figure 10 and Figure 14

concerted activity around three main themes: *customer centricity*, *progressive partnerships*, and *smart subsidy*. Specifically, the smallholder finance industry must move towards a future in which financial service providers (FSPs)⁴ engage closely with customers to design and offer appropriate, desirable products through integrated and innovative partnerships supported by more and smarter subsidy. Achieving this future through a coordinated effort across actors will address today's most binding constraints: a gap between farmer need and demand for financial products, elusive business model returns for financial service providers, and a mismatch between FSP capital needs and the type and volume of capital available from investors.

All actors have a critical role to play in moving the sector towards this new vision of financial inclusion for smallholder farmers. FSPs should strive to become pioneers in designing relevant products and services, while forging creative partnerships throughout the ecosystem. Public and private funders, meanwhile, should become champions of smart subsidy, seeking out the most effective ways of blending capital to substantially increase the total flow of funding to smallholder finance. Market and research platforms can support sector growth by playing the role of connected savants, sparking learning around actors' most pressing questions and promoting the findings widely to encourage action. Technical assistance providers also have a critical role to play as specialized educators

across the ecosystem, arming farmers and FSPs with the knowledge they need to grow. Finally, policy makers have the opportunity to become ecosystem enablers, creating the policies and investment frameworks to enhance service provision to smallholder farmers.

This report captures the way the smallholder finance space currently operates by describing the key actors and the nature of their interactions, and by conceptualizing these in a new "industry model;" **identifies market frictions** across the major components of the "industry model" that continue to inhibit smallholder farmers' access to financial services, and opportunities for removing them; and **rallies sector actors** around the need for more collective action than ever before.⁵

With insight and coordinated action, the smallholder finance industry has an unprecedented opportunity to unlock new levels of financial access and empowerment for the 450 million smallholder farmers across the developing world. **To fulfill the promise of the era of farmer finance, now is the time for action to push the sector toward an ambitious new trajectory.**

⁴ This report uses "FSP" in the broadest sense, to refer to any entity that provides a financial service to smallholders

⁵ Pursuing these objectives with a global focus, this report does not delve into distinctions between country-level ecosystems, but contextual factors will be critical to precisely identifying barriers and opportunities. As such, the individual and collective action required within the broad categories highlighted by his report must be tailored to specific opportunities in each setting. In addition, this report focuses specifically on the actors and efforts working to increase access to financial services for smallholder households and the farmer organizations to which they belong. While the efforts to provide finance to other, non-farmer owned agribusinesses—e.g., input suppliers, traders, and processors—play an essential role in enabling the smallholder agriculture industry, these efforts are out of scope for this study. A full discussion of methodology and key assumptions is found in Annex B.

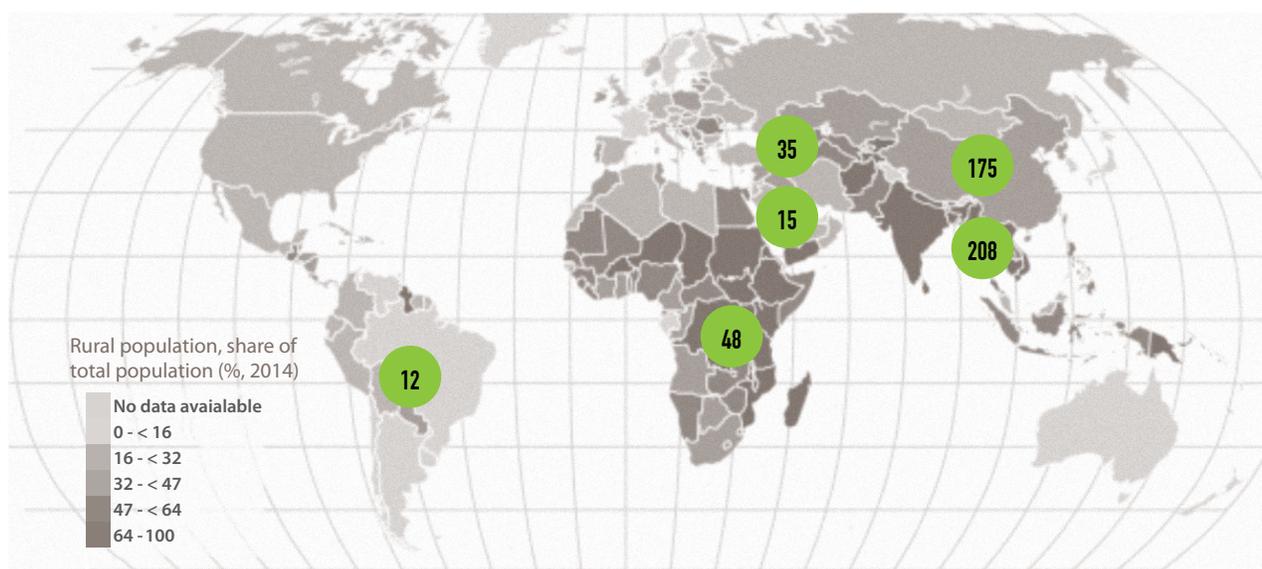
2. THE FINANCIAL SERVICE NEEDS OF SMALLHOLDER FARMERS

There are an estimated 450 to 500 million smallholder farmers in the world; as many as 2 billion people live in smallholder farm households.⁶ Even though smallholders are generally characterized by limited resource endowments—particularly in terms of land—and dependence on household members for farm labor, they represent a critical part of food systems in developing countries.⁷ The vast majority of smallholder farms are in Asia, followed by sub-Saharan Africa (see Figure 1);⁸ in both regions, over 90% of farmers are smallholders.

Not surprisingly, smallholder farmers are a very diverse group. The Consultative Group to Assist the Poor (CGAP) categorizes smallholders into three high-level

segments distinguished primarily by the nature of their relationship with buyers: noncommercial, commercial in loose value chains, and commercial in tight value chains.⁹ Noncommercial farmers generally grow staple crops for subsistence and supplement their farm income with wages earned from casual labor. Commercial smallholder farmers have a more business-oriented approach to farming and regular sales to buyers and traders; those in tight value chains typically have contracts with buyers, which often provide access to improved inputs, financing, and other support (see Figure 2). This variation in characteristics among smallholder households in turn drives differences in their financial needs.

Figure 1: GEOGRAPHIC DISTRIBUTION OF SMALLHOLDER FARMERS



Source: FAO, "Statistical Pocketbook: World food and agriculture", 2015; FAO ESA Working Paper No. 14-02, Dalberg Analysis.

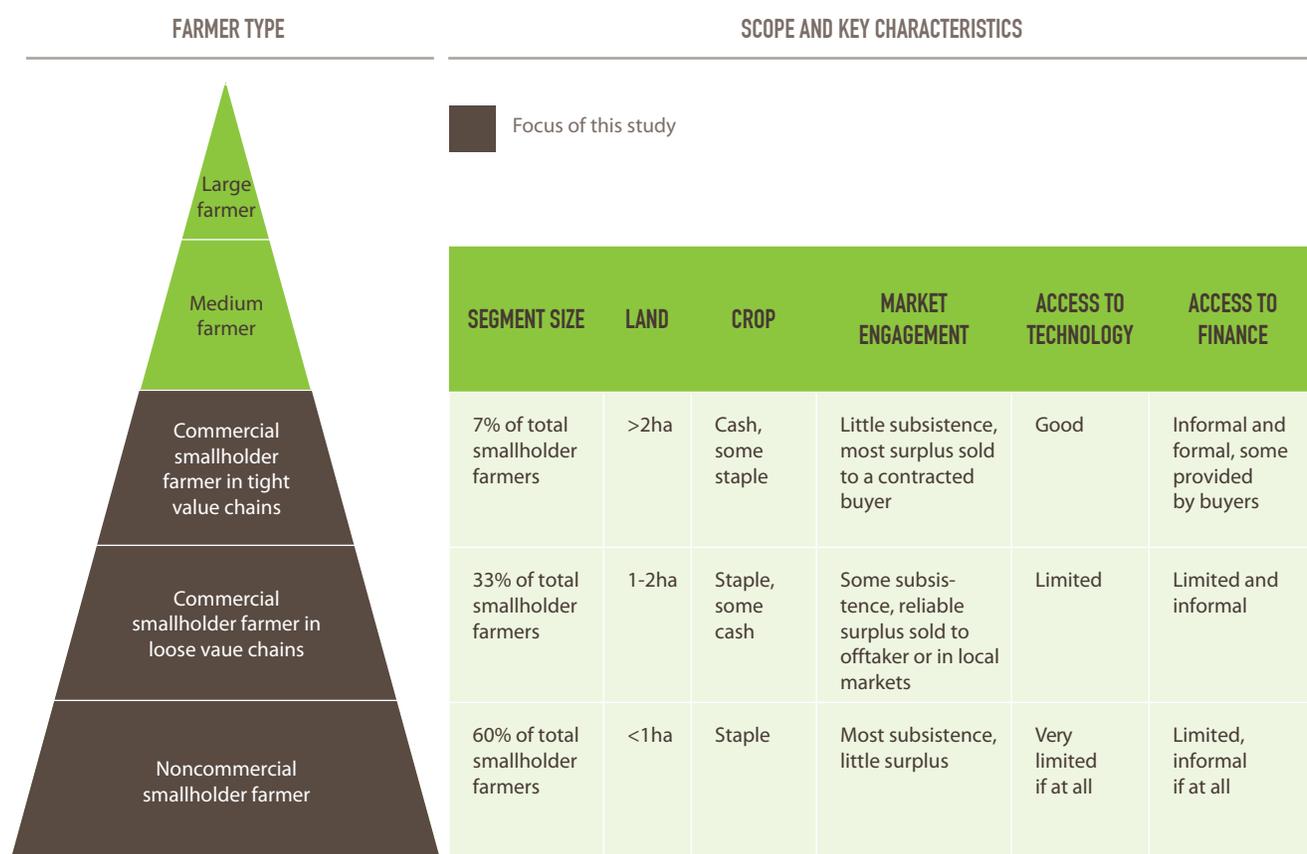
6 Christen, Robert Peck and Jamie Anderson, "Segmentation of Smallholder Households: Meeting the Range of Financial Needs in Agricultural Families," CGAP, Apr. 2013.

7 Thapa, G., "Smallholder Farming in Transforming Economies of Asia and the Pacific: Challenges and Opportunities," International Fund for Agricultural Development (IFAD), Feb. 2009.

8 Lowder, Sarah K., Jakob Skoet and Saumya Singh, "What do we really know about the number and distribution of farms and family farms in the world?" Food and Agriculture Organization of the United Nations, Apr. 2014.

9 Christen and Anderson (2013).

Figure 2: CHARACTERISTICS OF SMALLHOLDER FARMER SEGMENTS



Source: CGAP. Segmentation of Smallholder Households. 2013

The agricultural and non-agricultural financing needs of the roughly 270 million smallholder farmers in Latin America, sub-Saharan Africa, and South and Southeast Asia¹⁰ are estimated to exceed USD 200 billion (Figure 3).¹¹ Financing can empower farmers to make investments in their farms and households. For commercial smallholders, key farm finance needs are i) short-term working capital for inputs such as seeds and fertilizer and ii) long-term capital¹² for crop renovation, irrigation systems, or other large investments. To realize the full potential of their agricultural operations, commercial smallholders in tight value chains typically require approximately USD 1,500 in short-term financing and USD 1,500 – 2,000 in long-term financing amortized over multiple years. The amount is generally lower for smallholders in loose value chains, with farmers typically requiring approximately USD 500 in short-term capital and a similar amount in long-term capital; lower needs are driven by smaller plot sizes, as well as more limited capital requirements for staple crops versus cash crops (e.g., crop renovation is relevant primarily for cash crops such as cocoa, coffee, or palm oil). Noncommercial smallholders, too, could

benefit from access to carefully designed credit products (typical need estimated around USD 100); even though their farms rarely generate a marketable surplus, these households have access to additional income streams that can support loan repayment.¹³

Quantifying the need for agricultural financing assumes that farmers can convert financing into income increases (cash or in-kind) that justify the cost of such financing. The potential for such income increases among smallholders is well documented, though may require effective intervention. A 2015 Hystra study of successful cases of improving farmer income found that interventions built on productivity-enhancing technologies (quality fertilizers, better seeds, improved livestock, and micro-irrigation) yielded 80-140% income gains whereas those focusing on value chain inefficiencies registered in the 20-60% range.¹⁴ These productivity-enhancing technologies typically require finance and are precisely the target of many agricultural financing solutions for smallholders.

¹⁰ Excludes China, Central Asia, and the Middle East and North Africa. For more information, consult Annex B.

¹¹ Please see Annex B for a full explanation of the sizing methodology and assumptions. This sizing does not include financing needs for other actors in smallholder value chains, such as agro-dealers, processors, etc.

¹² Long-term financing here refers to terms longer than one year.

¹³ Anderson, Jamie and Wajiba Ahmed, "Smallholder Diaries: Building the Evidence Base with Farming Families in Mozambique, Tanzania, and Pakistan," CGAP, Feb. 2016.

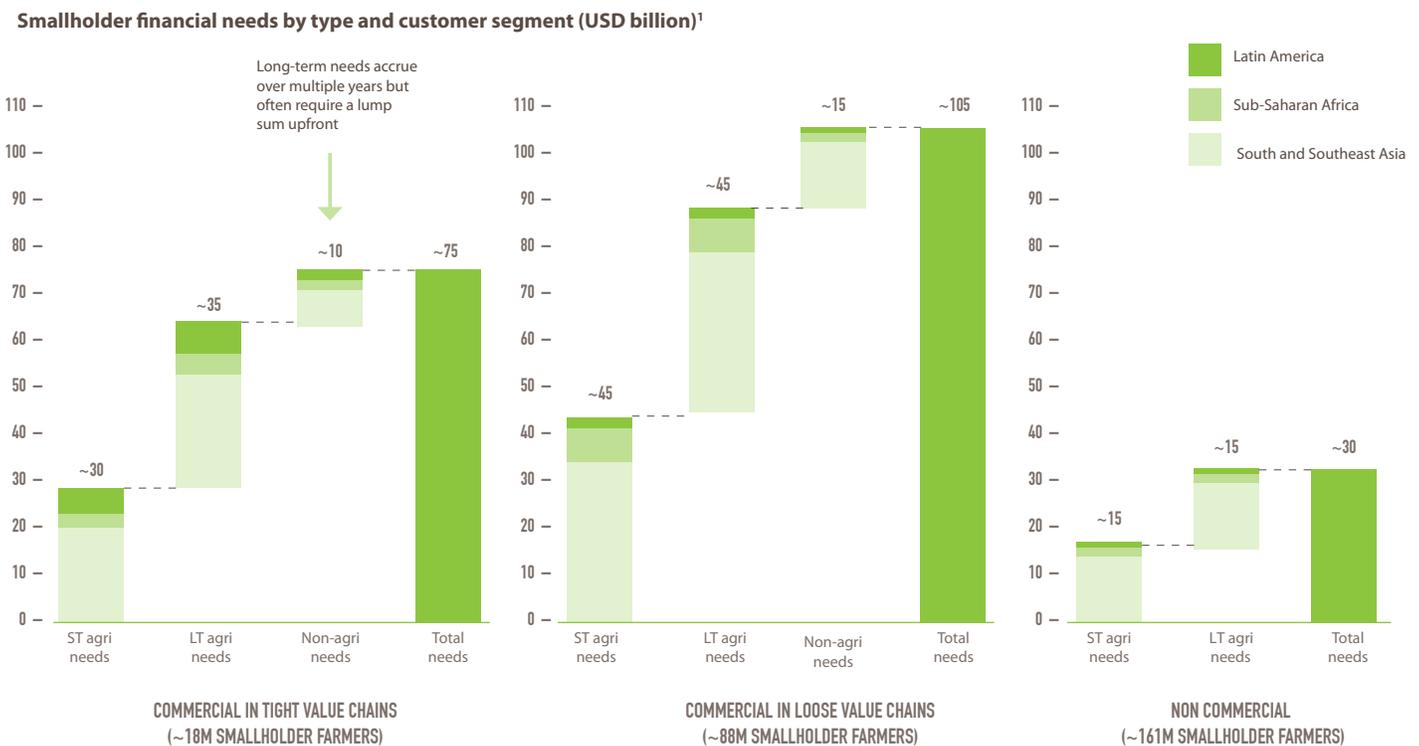
¹⁴ "Smallholder farmers and business: 15 pioneering collaborations for improved productivity and sustainability," Hystra, 2015.

BOX 1: THE COMPLEXITY OF FARMER CATEGORIES

In reality, some characteristics of farmers may vary significantly within the three categories proposed by CGAP. Practitioners have observed, for instance, that many smallholder farmers involved in tight value chains produce some volume of a cash crop for export, but dedicate most of their cultivation to staple crops for home consumption. As a result, income level may vary across categories. For example, in a survey of 3,000 farmers affiliated with 11 agricultural businesses across four countries in Africa, Root Capital found similar levels of poverty among farmers in tight value chains (75% likelihood of living under USD 2.50 per day) and farmers in loose value chains (71% likelihood of living under USD 2.50 per day). Clearly, commercial smallholder status does not imply that a farmer does not require support.

In addition, smallholder segments are fluid. A 2011 International Fund for Agricultural Development (IFAD) Rural Poverty Report showed, in nine countries in Asia, sub-Saharan Africa, and Latin America, that 10-20% of the population moved into or out of poverty within a period of 5-10 years.¹⁵ While the smallholder segments are distinguished by the nature of farmers' relationship with buyers, rather than poverty level, they, like any descriptive demographics, are only a snapshot in time; the Marketplace Gaps section will revisit this idea in the context of market growth.

Figure 3: SCALE OF SMALLHOLDER FARMER FINANCIAL NEED¹⁶



1 Excludes China, Central Asia, Middle East and North Africa, and Eastern Europe. Latin America refers to Latin and Central America. Excludes producer group financing needs.

2 ST agri needs refers to short-term financing needs of less than a year (typically for inputs, harvest and export).

3 LT agri needs refers to long-term financing needs of more than one year (typically for renovation or equipment).

4 Non-agri needs refers to general needs not specific to agriculture (e.g., large purchases such as furniture, health-related expenses, or family events such as funerals). Based on the average of "large" purchases for smallholder farmers participating the CGAP financial diaries in Mozambique, Tanzania, and Pakistan and the average bank consumption loans to smallholder farmers (25% of inputs need).

Source: CGAP Segmentation of Smallholder Households; CGAP Smallholder Diaries 2015; Dalberg, "Catalyzing Smallholder Agricultural Finance", 2012; FAO ESA Working Paper No. 14-02; expert interviews; Dalberg analysis.

15 "Rural Poverty Report 2011: New realities, new challenges: new opportunities for tomorrow's generation," International Fund for Agricultural Development (IFAD), Nov. 2010.

16 Regional totals are available in Annex C.

It is worth noting that farmer organizations have financing needs beyond the individual needs of their members.

These needs are extremely varied depending on the size of the organization, the crop it focuses on, and its level of service provision to its members. They include, for instance, harvest finance that enables the organization to purchase crops from its members and asset finance for the purchase of large scale processing equipment. However, given the dearth of information on the number and type of farmer organizations worldwide, this need has not been included in the sizing.

All smallholder farmers also need financing for non-agricultural investments and expenditure smoothing.

This can be used to pay for school fees, home improvements such as replacing the roof, important events such as weddings, or family emergencies. The estimated volume of need per household ranges between USD 100 and USD 600 depending on the type of farmer. It is worth pointing out that savings accounts can help smallholders cover a portion of their financing needs (as well as create a buffer against shocks); however, very poor households frequently face obstacles to accumulating substantial savings, so the need for credit to make larger purchases and investments—or to bridge losses—often remains.

In addition to credit, many smallholder households stand to benefit significantly from access to savings accounts, insurance, and mobile transactions. These tools can help smallholder farmer households mitigate risk and engage in

essential agricultural and non-agricultural transactions. As indicated previously, **savings accounts** can help households put aside money for large farm and non-farm expenses. Formal savings accounts offer the added advantage of security; they can also serve as collateral should a household decide to borrow.¹⁷

Different kinds of **insurance**, (e.g. health, agriculture) can help to protect farmers' investments in their farms or help them overcome unexpected shocks—research on microinsurance has found positive impacts on investment in inputs, household income, and household resilience to health-related consumption shocks.¹⁸ Given smallholder farmers' high risk exposure and limited fallback options, insurance is a critical financial tool for these households. As an illustration of this, consider evidence from CGAP's financial diaries research: in some months, up to 38% of households in the sample were forced to forego medical care since they had neither money to spare nor health insurance to fall back on.¹⁹

Smallholder farmers can also benefit from **mobile money accounts** that facilitate seamless money transfers from buyers or government programs and to input providers or laborers, depending on the nature of farming activities. Such accounts also provide smallholders with a secure place to store money.²⁰ Furthermore, mobile money makes it easier for smallholders to receive remittances from family members; remittances can be a critical source of supplemental income for poor rural households, particularly during the hunger season, right before harvest.²¹

BOX 2: A NOTE ON SIZING²²

The 2012 *Catalyzing Smallholder Agricultural Finance* report estimated a USD 450 billion financing need for smallholders; the current report estimates USD 210 billion. While the need remains on the same order of magnitude, here is a glimpse into how this figure has been refined:

- The sizing presented here focuses on Latin America, sub-Saharan Africa, and South and Southeast Asia; this means subtracting nearly 200 million smallholder farmers in China, Central Asia, and the Middle East and North Africa from the 2012 calculation, reducing the scale of calculated need by as much as USD 200 billion;
- This report also takes a more granular view of analysis conducted for the original report by
 - Applying CGAP's segmentation of smallholders, which estimates that 40% are commercial farmers, as opposed to the 50% used previously; and
 - Distinguishing, within that 40% of commercial smallholders, between those in tight value chains and those in loose value chains; the latter have smaller financing needs and represent a larger proportion of the commercial segment, thereby reducing the total estimate of need.
- The updated calculation also accounts for the non-agricultural finance needs of households.

17 Lasse Brune, Xavier Giné, Jessica Goldberg and Dean Yang, "Commitments to Save: A Field Experiment in Rural Malawi," Policy Research Working Papers, World Bank, Jan. 2011.

18 "Understanding the impact of rural and agricultural finance on clients," Learning Lab Technical Report No. 2, Dec. 2015.

19 Anderson and Ahmed (2016).

20 "Multiplying Agriculture by the Power of Mobile," The World Economic Forum, 2011.

21 More broadly, remittances have been linked to greater human development outcomes across a number of areas such as health, education, and gender equality: Ratha, Dilip, "The Impact of Remittances on Economic Growth and Poverty Reduction," Migration Policy Institute, Sep. 2013.

22 Please refer to Annex B for more details on the sizing methodology and geographic scope.

BOX 3: MEET THE FARMER



Photo by Neil Palmer at CIAT

On one hectare of land, **Faustina, a widowed noncommercial farmer in Rwanda**, grows just enough maize, as well as small amounts of millet and peanuts, to feed her family. She doesn't use financial instruments and has no insurance; when crops fail, she must either consume less or work more. "I used to save a little in a box at home," she says. "I would use it for food or health in times of need. But now it's difficult for me." She hopes one day have enough land and yield to both sustain her family and be able to send her four children to school.

Elijah is a Ghanaian farmer operating in a loose commercial value chain. He is married with two children. On his two hectares of land he grows cocoa and plantains (his main sources of income) as well as yams; he does not belong to a cooperative, so he sells his surplus production to local traders. His access to inputs is limited and he doesn't yet use improved seeds, but he plans to grow more cash crops. Elijah's access to financial instruments is also limited; he primarily relies on current income and short-term savings. He aspires to increase his land and yield and eventually access larger markets; he would also like his children to receive an education.

Wahabu is a commercial farmer in a tight value chain. He lives in Pakistan with his wife, five children, and extended family. On his four hectares of land, Wahabu grows cotton and a small amount of rice. He is part of a farmer cooperative that finances his inputs and buys his cotton. He has access to a variety of financial instruments—he uses mobile money to both send and receive remittances, and obtains credit from *arthis*, or local agricultural agents. "I wish there were more options for credit with greater flexibility," he says. Wahabu sends his children to private school—his top priority is making sure they get the best education they can. He has told them he does not want them to become farmers.

These profiles are composites drawn from interviews with numerous smallholder farmers, including by the Design Impact Group or as part of CGAP's Smallholder Financial Diary research.



Photos by Jennifer Huxta for The MasterCard Foundation

3. CURRENT SNAPSHOT OF FINANCIAL SERVICE PROVISION

A range of financial service providers (FSPs) are currently working to address the needs of smallholder farmers; they, in turn, rely on various capital providers to finance their activities. All of these actors form a complex and dynamic industry operating within a broader enabling environment that includes technical assistance providers, market and research platforms, and **agricultural and investment policymakers** (see Figure 4).

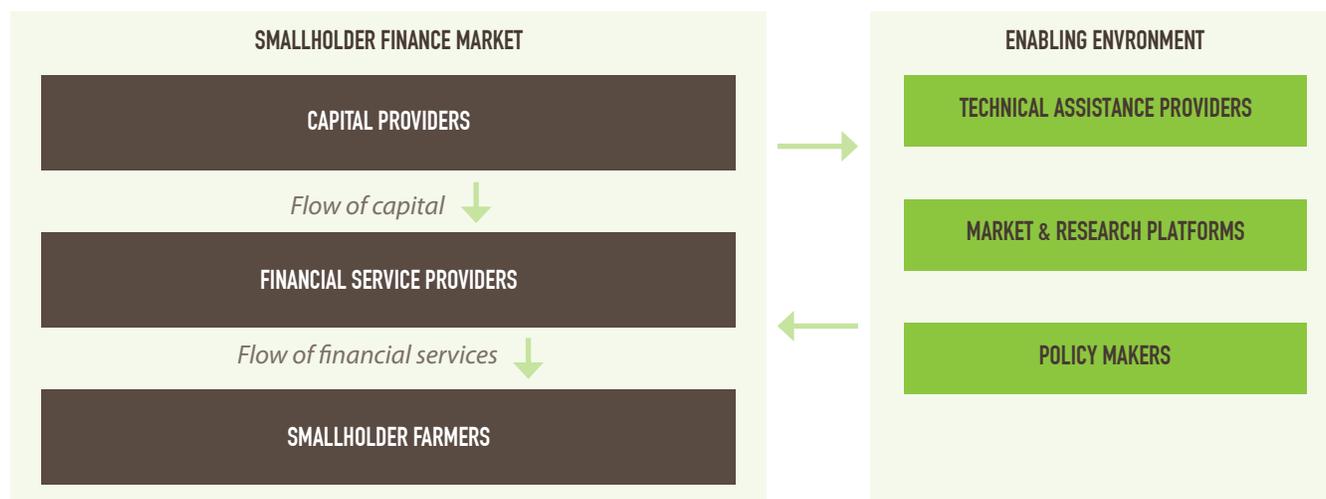
CHANNELS OF FINANCIAL SERVICE PROVISION

A diverse set of FSPs currently offer their services to smallholders, channeling over USD 50 billion of credit to smallholder farmers each year and providing other services such as insurance and mobile payments to

millions of farmers. They range from formal financial institutions, including state banks and microfinance institutions (MFIs); to non-financial institutions, including mobile network operators and value chain actors; to informal or community-based financial institutions, including village savings and loan associations (VSLAs) and savings and credit cooperative organizations.²³

Some types of FSPs have operated in smallholder finance for a relatively long time and operate in multiple regions; for purposes of this report, they are labeled as “**established**.” Another set of FSPs are relatively newer to the space and typically target specific pieces of the market, be they geographies, customer segments, or need; they are beginning to scale and are labeled as “**emerging**.”

Figure 4: SMALLHOLDER FINANCE INDUSTRY MODEL



BOX 4: (ANOTHER) NOTE ON SIZING

Readers familiar with previous publications from the Initiative for Smallholder Finance may remember a supply sizing of approximately USD 10 billion. Unfortunately, the ~USD 50 billion presented in this report is not the result of rapid growth in smallholder

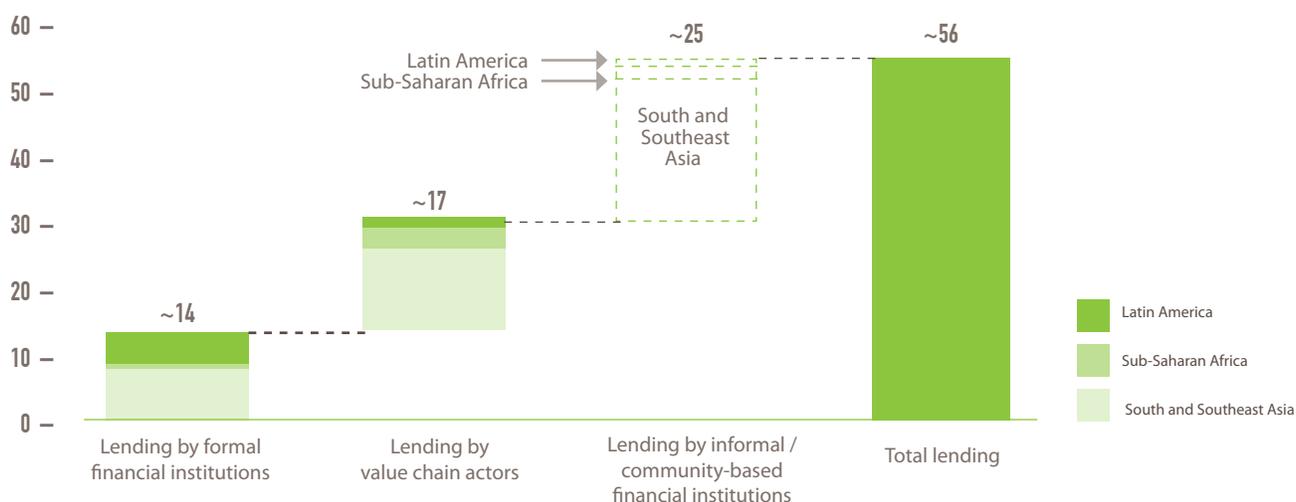
finance. Rather, it is a reflection of a broader definition of supply that includes informal and value chain channels, which are estimated to contribute around USD 20 billion in smallholder finance.

²³ Annex D describes the FSPs in greater detail, while Annex B contains sizing assumptions.

Supply of credit

Figure 5: TOTAL SUPPLY OF SMALLHOLDER FINANCE

Smallholder lending in South and Southeast Asia, sub-Saharan Africa, and Latin America, by source (Annual disbursements, USD billion)¹



¹ Excludes China, Central Asia, Middle East and North Africa, and Eastern Europe. Includes financing to producer groups by state banks and commercial banks. Includes agri and non-agri lending. Source: ISF Briefing 1, "Local bank financing for smallholder farmers," Oct. 2013; Rural and Agricultural Finance Learning Lab Smallholder Financial Solutions Database; annual reports; expert interviews; Dalberg analysis.

Formal financial institutions currently supply an estimated USD 14 billion in financing, of which 80% is agricultural and 20% is non-agricultural financing.

Established providers account for nearly 90% of the total:

- The lion's share of lending—around USD 9 billion—comes from **state banks**, which are active predominantly in Asia, where they continue to be among the most prominent providers of short-term capital to farmers. In responding to government mandates to serve farmers directly, they tend to serve all farmer segments and about 20% of their lending is for broader household needs.
- Next in terms of scale of lending, **MFIs** provide about USD 3 billion in both agricultural and non-agricultural lending, especially in Asia and Latin America, where they are furthering their core mission to alleviate poverty by increasingly engaging in rural areas.
- Meanwhile, **social lenders**—impact driven smallholder agricultural lenders such as Root Capital, Oikocredit, and Triodos—currently provide about USD 350 million in short-term trade finance to producer organizations,

backed by buyer contracts.²⁴ While small in relative volume, social lenders play an important catalytic role in the space, preparing farmer organizations for access to formal capital markets.²⁵ The bulk of their lending is in Latin America, with increasing operations in sub-Saharan Africa. Social lenders have recently begun exploring opportunities to provide customers with long-term capital for the renovation of tree crops.

Two **emerging FSP types** contribute a further USD ~1.5 billion in formal financing:

- **Commercial bank** participation in smallholder agricultural finance remains relatively limited and is, for the most part, indirect, with around USD 1 billion in capital flowing primarily to smallholders in tight value chains through arrangements with input providers or buyers who on-lend to farmers, or through warehouse receipts.²⁶ These kinds of arrangements offer promising models for commercial banks to tap into new—if modest—profit pools (and—in the case of India—comply with government requirements for community investment).

²⁴ Social lenders provided a total of USD 564 million in finance in 2014 across all client types, approximately USD 350 million of which was provided to producer organizations: "2014 Year in Review," The Council on Smallholder Agricultural Finance (CSAF), 2015.

²⁵ Note that these lenders are increasingly financing agricultural small and medium-sized enterprises (beyond just cooperatives). While this is extremely important, it is beyond the scope of this report and has been excluded from the supply sizing.

²⁶ Leveraging these relationships with value chain players is key; banks that have failed to do so effectively report disappointing results.

- Non-governmental organizations (NGOs)**, driven by their missions to alleviate poverty, serve hundreds of thousands of noncommercial farmers through a “high touch” in-field agent network that mobilizes farmers to form producer groups, provides agronomic and financial training, and bundles credit with personal and agricultural insurance. At present, these social ventures operate almost exclusively in Africa; however, One Acre Fund—the largest by far, with more than 300,000 clients—is planning to expand into Southeast Asia and there are signs that NGOs already active in that region may be moving toward including financing in their service offering.

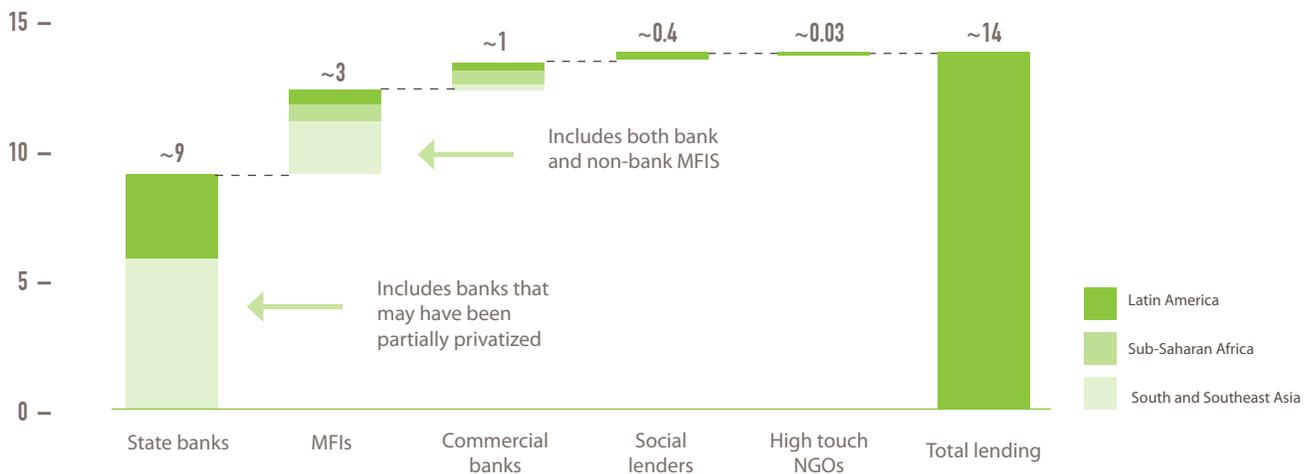
Value chain actors are large, established providers of agricultural working capital, supplying an estimated USD 17 billion in loans to commercial smallholders. They typically work with commercial smallholder farmers as a means of meeting a core business need: steady demand for their products in the case of input suppliers or reliable

and sufficient commodity supply in the case of buyers. The formality and structure of the financial offerings vary greatly, ranging from informal, no-contract arrangements with local traders to carefully designed purchasing agreements with multinational buyers. Input suppliers rely on access to credit from wholesale distributors while buyers tend to use their own balance sheet to supply credit. Value chain actors play a particularly important role in sub-Saharan Africa, where participation from formal financial institutions is limited.

More than USD 20 billion in non-agricultural financing may be available from informal and community-based FSPs. Such capital sources—which include rotating savings and loan associations and local moneylenders—have long played an important role in providing smallholders with access to credit. Unfortunately, the fragmentation and poor documentation of informal providers only permit an indicative sizing of this segment based on survey data measuring total population access to informal sources of finance.

Figure 6: LENDING BY FORMAL FINANCIAL INSTITUTIONS

Lending by formal financial institutions in South and Southeast Asia, sub-Saharan Africa, and Latin America
(Annual disbursements, USD billion)¹



¹ Excludes China, Central Asia, Middle East and North Africa, and Eastern Europe. FSP refers to formal financial service provider. Source: ISF Briefing 1, “Local bank financing for smallholder farmers,” Oct. 2013; RAF Learning Lab Smallholder Financial Solutions Database; annual reports; expert interviews; Dalberg analysis.

Ultimately, each type of provider has relative advantages (and drawbacks); no single type of FSP can successfully meet all the financing needs of smallholders. For instance, formal financial institutions are often able to provide smallholders with a comprehensive product offering, potentially at more competitive interest rates, but the terms of the product may be inflexible. An informal or community-based finance provider offers convenience and is typically viewed as a trustworthy source of finance, but it can also leave smallholders vulnerable to extremely high interest rates or unreliable access. Value chain actors may be more willing to lend to smallholders given their familiarity with agriculture; they can also guarantee market access for the borrower, but are unlikely to offer non-agricultural credit or other kinds of services. The trajectory of smallholder finance should move toward a world of choice where smallholder farmers have access to a wide variety of providers and products and can select the most appropriate ones to meet their needs.

Beyond credit

Savings products are often tied in one way or another to credit, though standalone savings solutions for smallholders are beginning to appear. Many of the formal, direct lenders – including MFIs, state banks, and commercial banks – also offer savings accounts. Some, for example many deposit-taking MFIs, require that smallholders have a savings account in order to borrow. Others, like commercial banks, may require some kind of savings as collateral for lending, but may accept these savings to be held at external institutions such as village savings and loan associations (VSLAs). Member savings is of course intrinsic to informal and community-based lending models for which it is the primary source of capital. Savings, however, can also be a standalone solution, especially for smallholders who

cannot yet generate sufficient cash flows for loan repayment. Two such newly conceived solutions, by MyAgro and EcoNet are described in Box 6.

In addition to credit and savings provision, models are emerging to bring other critical financial services to smallholder farmers. Some 27 million small farmers—nearly all living in India—are covered by large-scale agricultural insurance schemes. At present, most smallholder farmer agricultural insurance is provided through large (sometimes mandatory) national insurance programs (see Figure 7 for examples).²⁷ **Mobile money accounts**, meanwhile, are used by roughly 11.5% of rural residents in sub-Saharan Africa, but less than 2% in other developing regions.²⁸ They are typically provided by private mobile network operators, though rural penetration in some countries has been driven by government partnerships with mobile network operators to deliver payments to farmers (e.g., fertilizer subsidies in Nigeria²⁹). While mobile money accounts are still primarily used for payments – with customers using their accounts to pay utility bills and school fees, receive remittances, or repay loans³⁰ – network operators are increasingly looking for ways to offer mobile savings, insurance, and credit products.

THE ROLE OF CAPITAL

The credit-focused FSPs rely on a wide range of investment instruments with varying costs of capital (Figure 8). Many of the FSPs draw on different kinds of below market-rate capital—in some cases exclusively; in others, as a supplement to more costly capital pools. Banks and MFIs frequently rely at least partially on customer deposits, while many value chain players—particularly buyers—use their own balance sheets to lend.

27 While it may seem odd that large-scale national insurance schemes—many of which have been around for decades—are classified as “emerging,” this is because many of them have undergone repeated reforms and have only recently started to show signs of success by, for example, using partners to bundle products, leveraging technology, or making insurance mandatory with credit.

28 Demircuc-Kunt, Asli, Leora Klapper, Dorothe Singer, and Peter Van Oudheusden, “The Global Findex Database 2014: Measuring Financial Inclusion around the World,” Policy Research Working Paper 7255, World Bank, 2015.; The Financial Inclusion Insights Program, “Financial inclusion insights tracker surveys,” Intermedia, 2014/15.

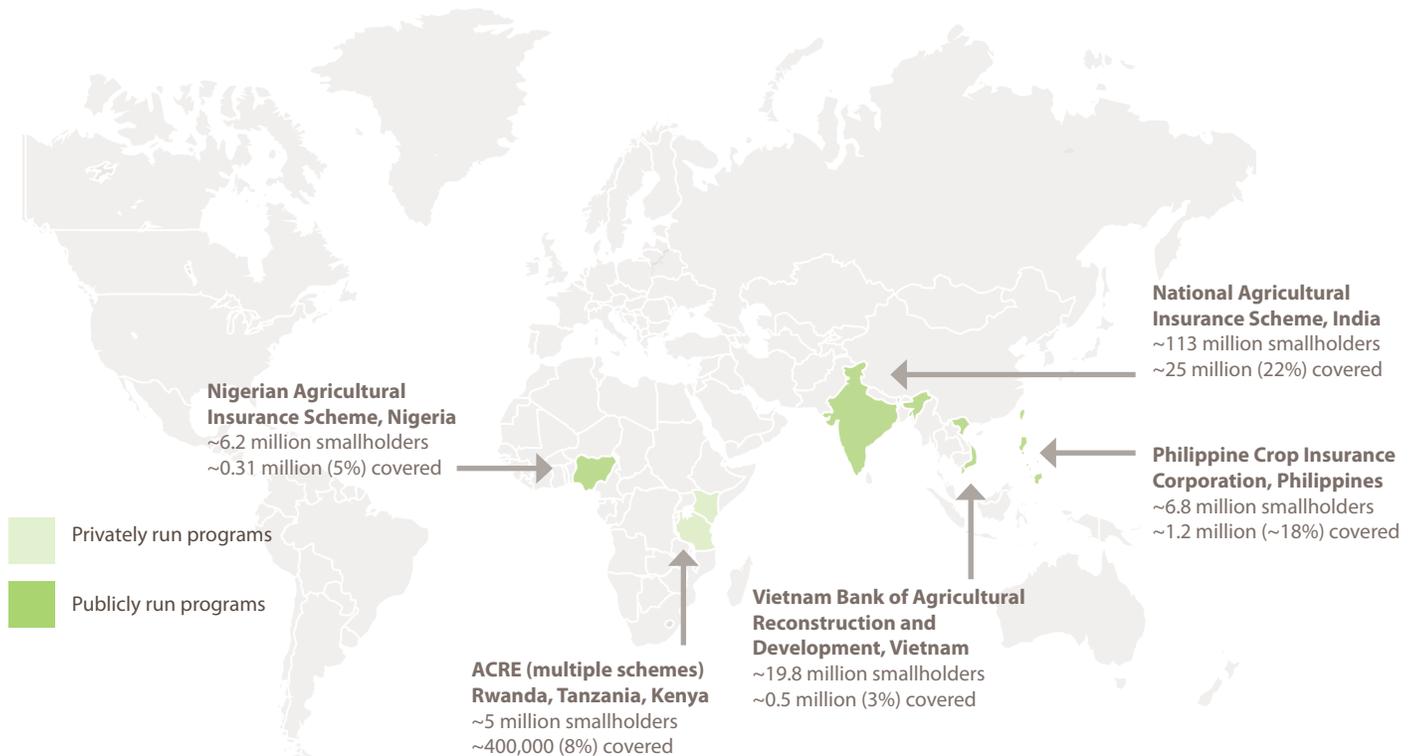
29 Akinboro, Bolaji, “Bringing Mobile Wallets to Nigerian Farmers,” Jun. 2014.

30 One Acre Fund clients use mobile money to repay loans: Hanson, Stephanie, “Can Mobile Money Extend Financial Services to Smallholder Farmers,” CGAP, Jun. 2014.; in Uganda, rural households use it for remittances: Munyegera, Ggombe Kasim and Tomoya Matsumoto, “Mobile Money, Remittances and Rural Household Welfare: Panel Evidence from Uganda,” Dec. 2014; occasionally used to pay utility bills and school fees: McGovern, Anna, “Dialing for cash: mobile transfers expand banking,” Africa Renewal Online, Dec. 2011.

Figure 7: Large agricultural insurance schemes in developing countries

Overview of largest agricultural insurance schemes in developing countries¹

Total: ~27 million (10%)² smallholder farmers covered by agriculture insurance, out of ~268 million



¹ All known programs covering more than 200,000 smallholders, excluding macro-insurance schemes in Mexico and the Caribbean; ² Estimate of global coverage based on estimates for these six largest schemes and excluding China.
 Source: FAOStat; Microinsurance Network, Briefing Paper 29; ClimateWise database; Munich Re Foundation analysis; Global Index Insurance Facility; CCAFS' Scaling up index insurance for smallholder farmers'; Daily Independent, 13 July 2014; Millman, "What's the future of insurance in China?" 2011; indexinsuranceforum.org; Dalberg Interviews; Dalberg analysis.

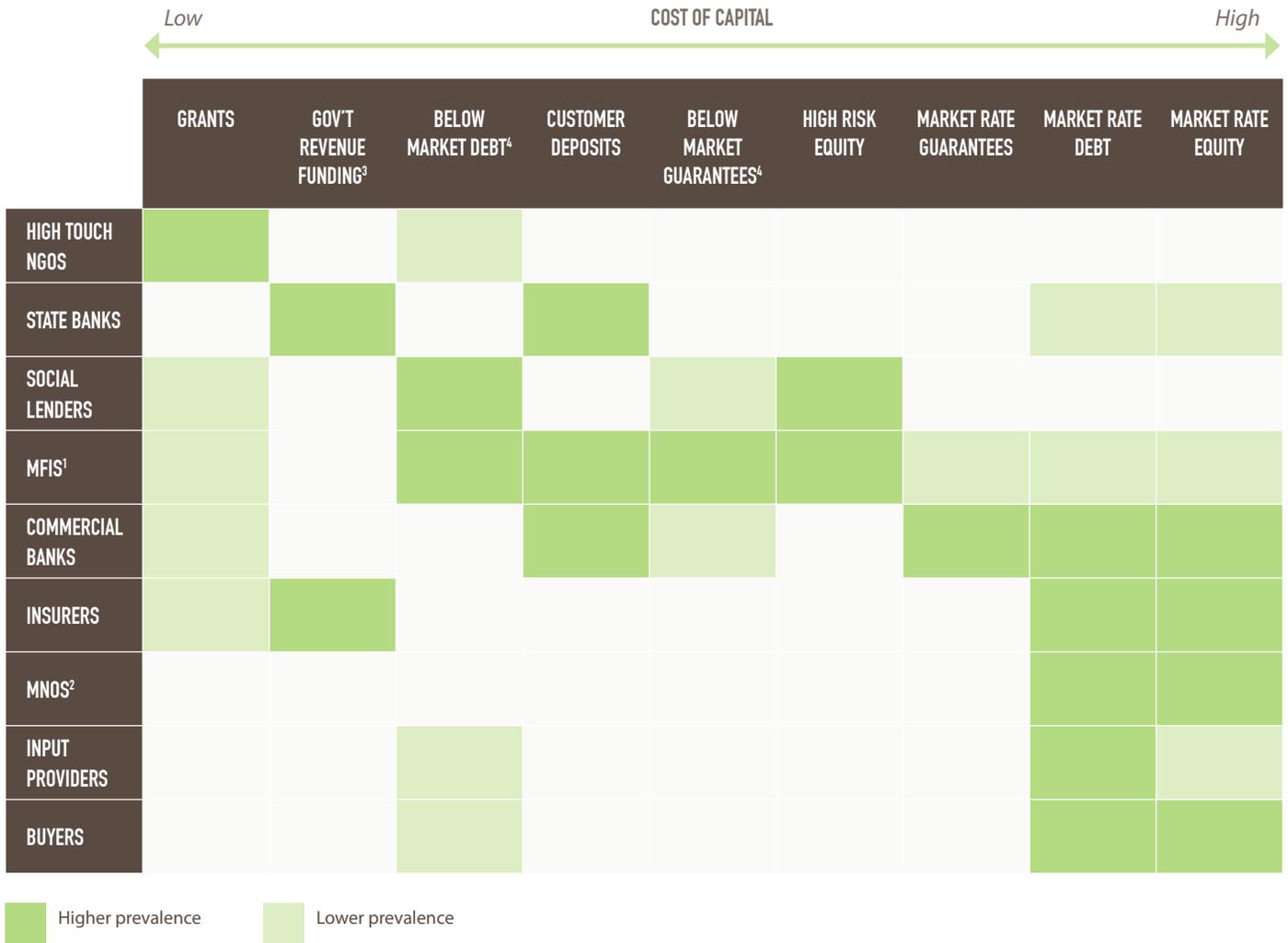
An FSP's capital requirements for its smallholder lending activities, in turn, determine the types of investors on which an FSP tends to rely. Investors in the smallholder finance sector are an equally diverse group ranging from national governments and development finance institutions to private foundations and impact-oriented family offices. Ultimately, FSPs' capital needs have implications for their ability to scale, as discussed in the Barriers section later in this report.

Today, national governments, public funders—such as development finance institutions and bilateral aid agencies—and foundations capitalize most formal smallholder finance. Data on national governments is not available, but international public funders are estimated

to contribute more than USD 1 billion annually to projects in which a portion of funds are dedicated to smallholder finance activities.³¹ This group most frequently deploys capital through concessionary lending and guarantees, although a number of public funders such as the International Finance Corporation target market-rate returns on lending. Several private foundations are increasingly interested in smallholder finance—The MasterCard Foundation has committed around USD 200 million in programming to this space, of which over one-third has been approved in the last 12 months. However, foundations are building on what is still a relatively small base of support at approximately USD 60 million per year.³² They use primarily grants and concessionary lending.

³¹ Estimate based on analysis of ~250 projects with a smallholder farmer focus funded by nine public funders between 2011 and 2013. Many donors include smallholder financial services as one of several components in larger multi-part projects (e.g., smallholder value chain projects), but are not able to break out spending dedicated to financial services. As such, this figure includes funding for smallholder focused interventions beyond finance.
³² Annual average during the period 2011 – 2013, based on scan of ~9,000 commitments focused on agriculture from the Foundation Center database (and supplemented by desk research).

Figure 8: TYPES OF CAPITAL ACCESSED BY FSPs



1 MFI refers to Microfinance Institutions;
 2 Refers to Mobile Network Operators;
 3 Refers to interest rate and insurance premium subsidies;
 4 Below market debt and guarantees are offered at an interest rate or fee that is lower than the standard cost of capital
 Source: Expert interviews; Dalberg analysis

The volume of capital flowing into smallholder finance from private and institutional investors is very limited. Well below 1% of impact-oriented family offices and high net worth individuals currently support the smallholder finance sector.³³ Risk appears to be a significant barrier; private investors are generally much less willing to expose themselves to high levels of risk than to accept low returns in exchange for development impact. Participation from institutional investors is even rarer, with just a handful of

pension funds investing in microfinance funds that offer relatively high returns—upwards of 10%—such as Incofin’s Rural Impulse Fund or the Accion Gateway Fund (which is increasingly targeting rural MFIs).³⁴ This is unsurprising, given the low risk-adjusted returns smallholder finance typically offers, as well as the fact that most institutional investors have to comply with fiduciary responsibilities. However, the potential supply of market-rate capital is large, should risk-adjusted returns improve.³⁵

33 Dalberg interviews with industry experts.
 34 Note that this excludes commercial banks, which act simultaneously as FSPs and capital providers: they may lend directly to smallholder farmers or capitalize an MFI or value chain actor that lends to smallholder farmers.
 35 As is the case in developed markets; for instance, in France, of EUR 7.5 billion in agricultural loans, just EUR 0.5 billion are subsidized, i.e., private capital is funding the rest. In the US, the share of government loan subsidy programs in outstanding debt of the US agricultural sector is now below 3%: Westercamp, Christine, Miryam Nouri and André Oertel, “Agricultural Credit: Assessing the Use of Interest Rate Subsidies,” AFD Sustainable Development Department, Jul. 2015.

MARKET ENABLERS

Supporting the smallholder finance market is a set of key enablers: technical assistance providers, policymakers, and market and research platforms.

Technical assistance is a vital complementary service that can operate at several levels: farm, FSP, and public institution. On the demand side, at the farm level, extension services can be effective in helping increase smallholder yields from a low base. In addition, by aggregating farmers for efficient training, technical assistance facilitates the formation of farmer groups that can endure and become the recipients—and sometimes on-lenders—of credit at lower rates than might be offered to individual farmers. Technical assistance effectively increases farmers' ability to repay a loan (through greater yields) and decreases the cost to serve them, thereby making it easier for a broader range of FSPs to offer this population affordable credit. Currently, around USD 8 billion, or less than USD 20 per farmer, is spent on demand-side programs every year.³⁶ On the supply side, at the FSP level, training can help providers overcome the constraints of product design and distribution to smallholder farmers; as little as USD 25 – 35 million is spent annually on supply-side technical assistance. A final form of technical assistance is aimed at strengthening public institutions, reforming programs and policies that directly affect farmers, and addressing constraints in the enabling environment by increasing the effectiveness of government.³⁷ Long running programs from the World Bank and IFAD have sought to provide these services to host country governments.

The **policy environment** relevant for smallholder finance spans land title legislation to court systems to agricultural policy. Ministries of agriculture are often the key stakeholders for policies that directly affect agricultural practices; key among these are the provision of large-scale fertilizer

subsidies and extension services, as well as regulations that guarantee seed quality.³⁸ Ministries of finance and central banks play an important regulator role with respect to institutions that have the potential to serve smallholder farmers, e.g., non-deposit taking financial institutions, such as non-bank MFIs and leasing companies; mobile network operators looking to offer mobile financial services; or commercial banks looking to use warehouse receipt financing.³⁹ They can also influence the development of stronger information ecosystems through credit bureaus and collateral registries.⁴⁰ Finally, broader institutions such as the legislature and the courts are implicated in land title laws, contract enforcement, and infrastructure, all of which affect the extent to which farmers can interact with markets.

Market and learning platforms bring a degree of coordination to the various activities happening within the sector, while also encouraging learning and knowledge-sharing. These activities help stakeholders build on each other's experiences and avoid having to reinvent the wheel. Such platforms also provide a centralized forum for stakeholders to find partners. Even though the distinction is far from clear-cut, some platforms tend to be more focused on playing a market facilitation role (e.g., The Initiative for Smallholder Finance and Grow Africa / Grow Asia), whereas others prioritize research and learning (e.g., Rural and Agricultural Finance Learning Lab, CGAP, World Bank AgriFin).

Finally, it is worth noting that certain types of FSPs, mainly value chain actors and mobile network operators, can be involved in the sector as enablers rather than financial service providers. For instance, multinational buyers who sign a purchasing agreement with a farmer organization that is used to guarantee a loan from a social lender are enabling that transaction. Similarly, a mobile network operator that offers mobile money can enable a bank to serve smallholder farmers thanks to a lower cost to serve.

³⁶ "Technical Assistance for Smallholder Farmers: An Anatomy of the Market," Initiative for Smallholder Finance, Nov. 2014.

³⁷ "Rethinking Technical Assistance to Unlock Smallholder Financing," Initiative for Smallholder Finance, Dec. 2014.

³⁸ "Enabling the Business of Agriculture 2016: Comparing Regulatory Good Practices," Conference Edition, the World Bank, 2016.

³⁹ "Synthesis Report: Agricultural Finance Policy Coordination in Africa," Making Finance Work for Africa, Feb. 2015.

⁴⁰ "Agriculture Finance," World Bank, Nov. 2015, <http://www.worldbank.org/en/topic/financialsector/brief/agriculture-finance>.

4. MARKETPLACE GAPS

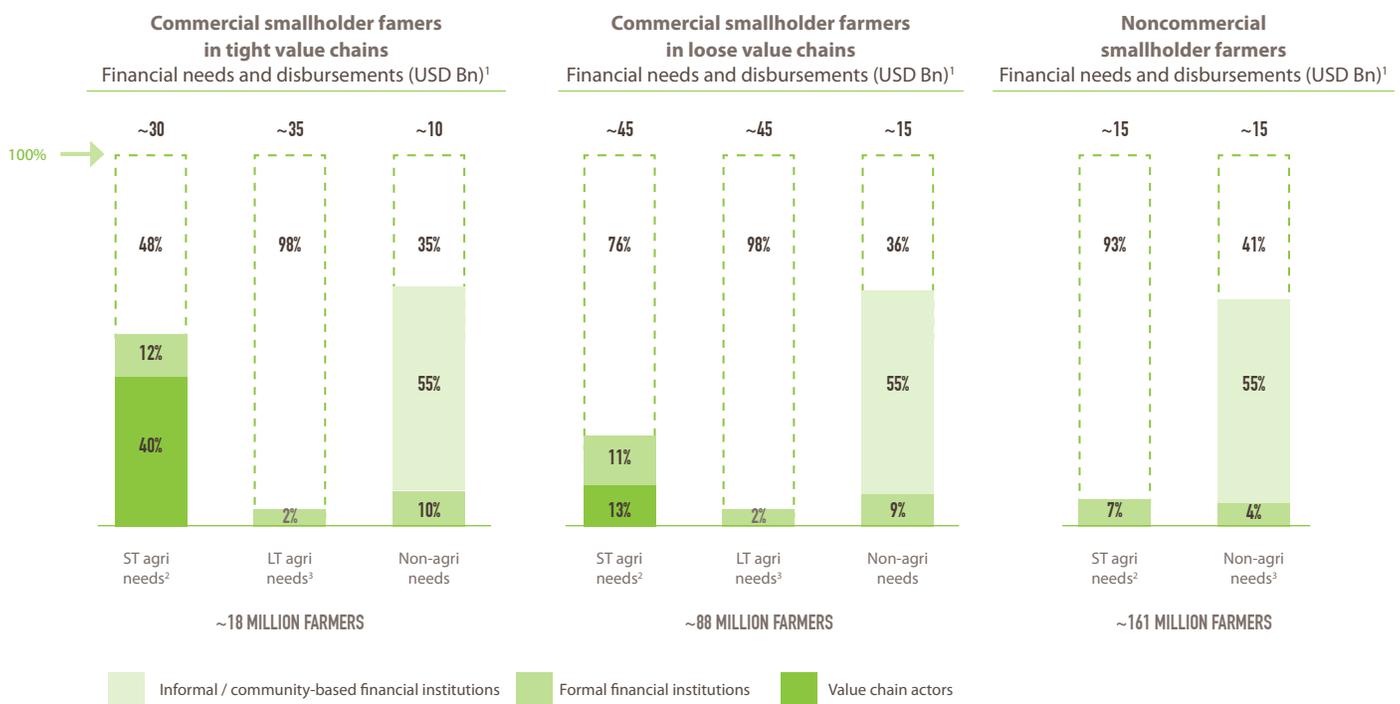
LIMITATIONS OF SUPPLY

A gap in quantity (and quality)

Unfortunately, existing FSP models are unable to meet the needs of a large percentage of smallholder farmers. At present, the total gap in terms of volume is around USD 150 billion; it spans all farmer segments and categories of financing need. Figure 9 quantifies the volume gap for credit. As indicated by the empty bars, there are glaring shortages of lending across all farmer segments and credit needs, though these are particularly pronounced for long-term finance and for noncommercial farmers.

Penetration of insurance, mobile money, and savings also remains very low. Across all farmer segments, there are few options for effective agricultural risk mitigation. Current agri-insurance schemes, including the largest, publicly-run programs, address only a small proportion of smallholders—approximately 10% across Latin America, Asia and sub-Saharan Africa. With more than 90% of those policies in India, penetration in many parts of the world is often even lower (e.g., 3% in Vietnam, 5% in Nigeria). In addition, the vast majority of rural households currently do not use mobile money or formal savings.

Figure 9: GAP BETWEEN SMALLHOLDER FINANCING NEED AND SUPPLY⁴¹



¹ Excludes China, Central Asia, Middle East, and North Africa and Eastern Europe. Includes financing to producer groups by state banks and commercial banks.

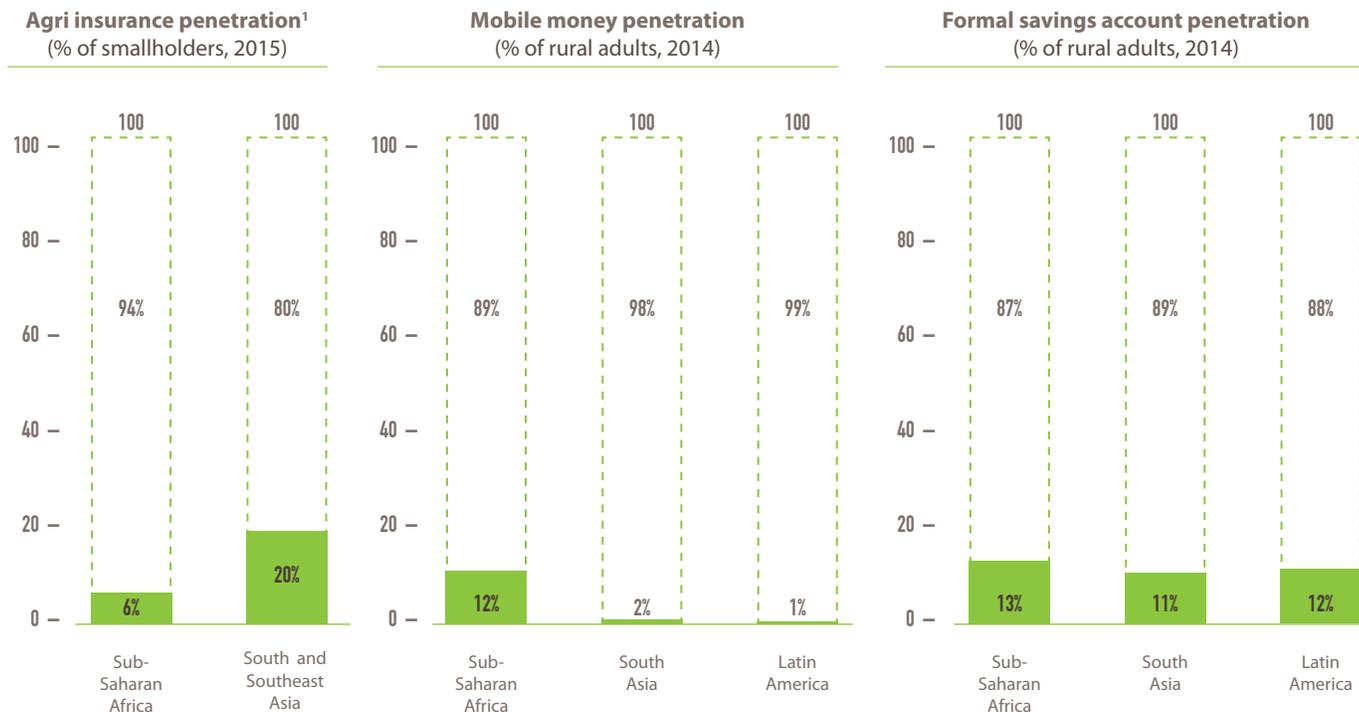
² ST agri needs refers to short term financing needs of less than a year (typically for inputs, harvest and export).

³ LT agri needs refers to long term financing needs of more than one year (typically for renovation or equipment).

Notes: Commercial banks and social lenders disbursements counted toward SHFs in tight VCs; state bank financing distribution in proportion to farmer segment needs; MFI agri lending included in loose value chains; MFI noncommercial-agri lending distributed in proportion to farmer segment need; "high touch" NGOs included under subsistence. Informal / community-based allocated in proportion to non-agri needs.

⁴¹ A regional breakdown of gaps is presented in Annex C.

Figure 10: PENETRATION OF AGRICULTURAL INSURANCE, MOBILE MONEY, AND SAVINGS ACCOUNTS



¹ Weighted averages based on countries with large scale microinsurance schemes, so numbers represent an upper bound.
 Source: Findex World Bank Database; Financial Inclusion Insights Surveys 2014/15; India data for 2013/14 surveys; Dalberg interviews.

Even when some access to financial services is available to farmers, it may not always be of an acceptable quality.

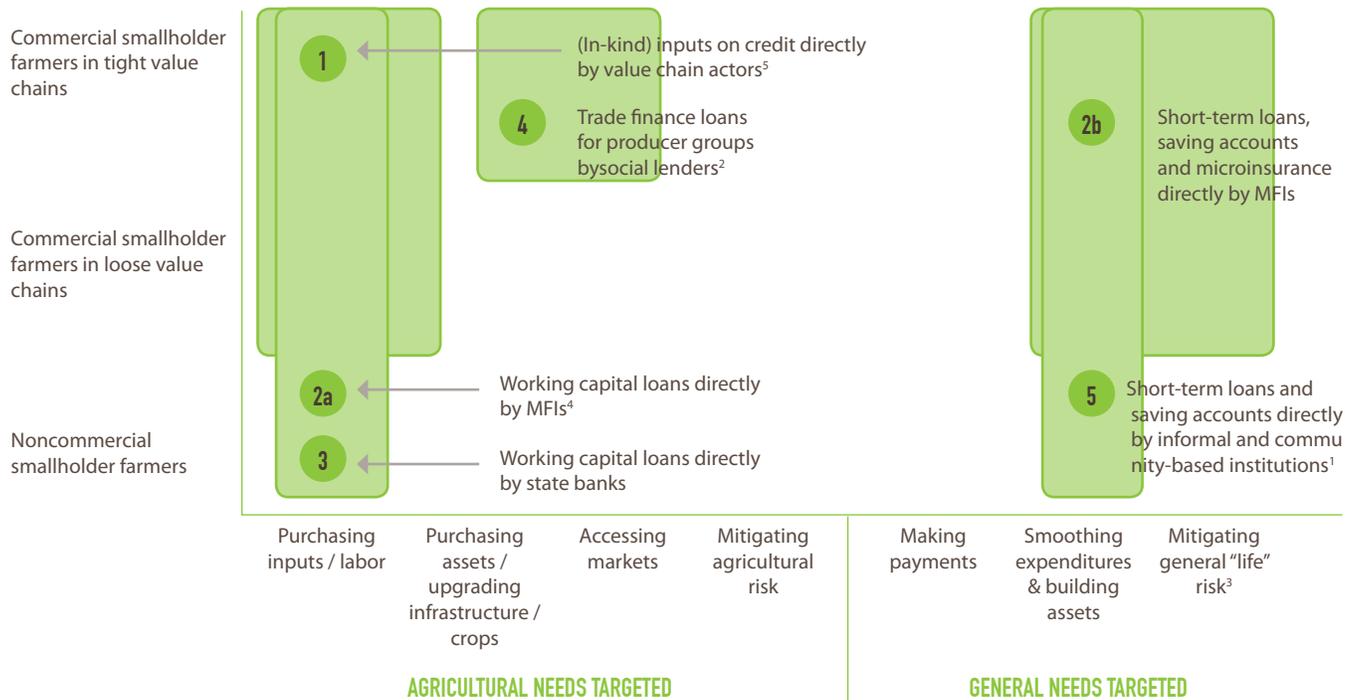
Just because a portion of a bar in Figure 9 is full does not mean that the finance being provided is as flexible or affordable as it could be. For example, while multinational buyers might offer well-designed purchasing agreements that include support services, such as agronomic training, local traders may demand exceedingly high interest rates for in-kind input loans. The disparities in the capabilities and behavior of input providers can be stark, both in terms of the type of financial services offered and the quality of customer service. Some input providers work only in cash; others offer expensive credit; still others offer layaway programs. In some contexts, the supply of financial offerings is unpredictable from season to season, while in others, value chain actors are a dependable source of working capital. In other words, ‘filling the gap’ effectively will also require improving some of the financial services that are already available.

Exploring the white space - moving from institutions to models/solutions

As described earlier, financial service providers tend to vary in their ability to reach different farmer segments or meet a broad set of household needs. Figure 11 and Figure 12 map the FSPs—and the models through which they serve farmers—against those dimensions. The more established models primarily address short-term capital needs through direct lending to farmers and enable access to markets through trade financing for farmer organizations. It is encouraging to see that the more emergent models address a wider range of needs and, in some cases, are able to cater to all farmer segments, or even explicitly target noncommercial smallholders. Each model is described in greater detail in Annex D.

Figure 11: ESTABLISHED SMALLHOLDER FINANCE MODELS BASED ON FARMER SEGMENTS AND NEEDS

SMALLHOLDER SEGMENTS



- 1 Significant portion used for agriculture purposes even if not specifically targeted or customized to meet agricultural needs;
- 2 Have more recently started offering some long-term financing;
- 3 Not shown: national safety nets, e.g., food reserves, national health insurance, etc.
- 4 Refers to bank and non-bank microfinance institutions;
- 5 Some buyers have more recently started offering some long-term finance to increase farmer mechanization.

Figure 12: EMERGING SMALLHOLDER FINANCE MODELS BASED ON FARMER SEGMENTS AND NEEDS

SMALLHOLDER SEGMENTS



- 1 Includes input suppliers, buyers and outgrower schemes, farmer orgs and warehouses.
- 2 MNOs refers to Mobile Network Operators.

As evidenced by the white space in Figure 11 and Figure 12, the gap in supply extends beyond quantity and quality: particular farmer needs cannot be met by existing financial solutions. The main needs that fit this description are:

- Long-term finance for asset purchases and other farm investments across smallholder segments
- Market access (post-harvest) finance for farmers outside tight value chains, and
- Agricultural insurance for noncommercial farmers.

Several FSPs have early-stage experimentation underway to deliver novel products that could fill some of this white space. For instance, organizations are developing and testing agriculture-specific savings accounts, dedicated education loans, microleasing, and other tools adapted specifically to meet the needs of rural households. In addition, social lenders are exploring ways to make long-term finance for crop renovation available to their customers, as well as trying to make capital available to loose value chains. Many of these efforts are currently limited to just a couple of early-stage initiatives, and thus have not been classified as standalone models, but they hold much promise for the future of the sector. A few are highlighted in Box 6.

BOX 5: FROM PATHWAYS TO FSP MODELS

The FSP models described in this report map closely to the growth pathways outlined in the 2012 *Catalyzing Smallholder Agricultural Finance* report, but disaggregate

the pathways according to which types of FSPs are active within them.

GROWTH PATHWAY	CORRESPONDING FSP MODEL
PATHWAY 1: Social lending	→ Social lenders – harvest finance
PATHWAY 2: Products beyond short-term trade finance	→ Social lenders – long-term credit
PATHWAY 3: Out-grower schemes	→ A portion of value chain finance – buyers
PATHWAY 4: Alternate aggregation points	→ A portion of value chain finance—input providers, traders—and commercial banks
PATHWAY 5: Direct-to-farmer finance	→ <ul style="list-style-type: none"> ■ State banks, MFIs, “high touch” NGOs, informal and community-based financial institutions ■ Agricultural insurance ■ Mobile wallets and mobile payments by MNOs

NEW

BOX 6: FUTURE FSP MODELS

MyAgro mobile based layaway – Mali

MyAgro sells agricultural fertilizer, seed, and training packages on layaway via a mobile phone platform and a network of local village vendors. Layaway allows the customer to make small payments on the product until the purchase price is paid in full. Registered farmers can “top up” their myAgro account over time in flexible amounts (USD 1 – 50) just as they would buy talk time for their phones.⁴²

Econet Save 4 School – Zimbabwe

Save 4 School (currently under development and testing) will use Econet’s EcoCash mobile money platform to connect smallholders to a mobile savings account that lets them make flexible monthly contributions as low as USD 2, with the option to deposit larger amounts. When school fees are due, the account transfers the savings to a chosen school. Transfer fees are paid by the schools, which see value in the product as they often receive fee payments late, in-kind, or not at all. A credit scoring algorithm will also give customers the choice to apply for a microloan to cover the remaining balance if they miss their savings target.⁴³

LOLC Group Microcredit (LOMC) microleasing – Sri Lanka

LOMC offers asset-backed loans (also referred as microleasing) to rural microentrepreneurs to purchase income-generating assets. The leasing products are designed to suit the needs of clients by building in an appropriate grace period and flexibility in repayment: farmers have the option to pay at the end of the season at a LOMC branch, a post office, or through an agent. The majority of the microleasing portfolio is dedicated to purchases of 3-wheelers, hand tractors, and 4-wheel tractors.⁴⁴

Rainforest Alliance Cocoa Renovation and Rehabilitation Finance – Cote d’Ivoire

At the beginning of this year, Rainforest Alliance launched a pilot project that provides the first long-term finance for cocoa farmers in Côte d’Ivoire to rejuvenate their cocoa plantations. The pilot has approximately USD 300,000 in funding from two social lenders, Alterfin and responsAbility, and co-financing from the union of cooperatives ECOOKIM. Alterfin provided a long-term loan for rejuvenation activities, while responsAbility’s technical assistance facility supported the project with technical assistance grant funding. The loan funding will be channeled through ECOOKIM in the form of a multiyear package of in-kind loans to 335 of its members. Three different loan packages and extended grace periods have been designed according to farmers’ long-term renovation plans.⁴⁵

THE CURRENT GROWTH TRAJECTORY

As discussed earlier, the distribution of farmers across the smallholder segments will certainly evolve in the future; in fact, financial inclusion can be an enabler of long-term growth pathways, which envision smallholders making their way up the farmer pyramid or beyond it. Such growth pathways are increasingly at the forefront of

development program design and implementation. For instance, the United Kingdom’s Department for International Development recently reimagined its agricultural support framework around solutions that help smallholder farmers to “step up” within agriculture to commercialize their operations, or “step out” of agriculture in pursuit of an alternative livelihoods (with various safety nets supporting a temporary “hanging in” period for subsistence farmers).⁴⁶

42 “Our Model”, MyAgro, <http://www.myagro.org/model/our-model/>.

43 Mattern, Max and Michael Tarazi, “Designing Digital Financial Services for Smallholder Farmers: Lessons from Zimbabwe, Senegal, Rwanda, and Cambodia,” CGAP, Oct. 2015.

44 “LOLC Microcredit (LOMC)”, Grameen Credit Agricole, <http://www.grameen-credit-agricole.org/en/content/loic-microcredit-lomc-0>.

45 “Cocoa Renovation and Rehabilitation Finance Pilot Project,” Rainforest Alliance, <http://www.rainforest-alliance.org/business/sites/default/files/site-documents/news/documents/rr-finance-pilotproject-email-web.html>; Dalberg interviews.

46 DFID’s Conceptual Framework on Agriculture, Department for International Development, Nov. 2015.

Movement along growth pathways can have a substantial impact on the volume of need for smallholder finance.

For instance, if half of all noncommercial smallholder farmers become commercial, total financing need would increase by about USD 80 billion. Or if just 20% of commercial smallholders in loose value chains move to tight value chains, the need in tight value chains would double. At the same time, as some smallholders graduate to full commercial farmer status (rather than commercial smallholder status), they will be able to navigate the broader realm of agricultural finance, no longer relying on the smallholder finance industry. Others are expected to migrate to urban areas where they will have access to different FSPs.

Since a number of broader trends are expected to drive smallholder transition across segments, as well as change the nature of needs within segments, the overall direction and scale of change in smallholder financing need is ambiguous. Key trends expected to affect smallholder financing needs include, but are not limited to:

- **Large-scale, government-led agricultural transformation efforts:** A number of developing

countries—particularly in Africa—are increasingly focusing on the commercialization of agriculture, envisioning a strong role for agribusiness (e.g., Ethiopia’s Agricultural Transformation Agency, the Southern Agricultural Corridor of Tanzania).⁴⁷

- **Climate change:** Climate change has already started to affect agriculture around the world, contributing to changing weather patterns that impact agricultural productivity and expose farmers to more frequent extreme weather events.⁴⁸
- **Rural-urban migration:** Population movement toward cities in pursuit of alternative livelihoods continues at a rapid pace across developing countries, affecting the smallholder labor force, land distribution, and household income sources.⁴⁹

The potential impact of these trends on smallholder finance need is outlined in Figure 13. Given the opposing forces at work in each case, it is difficult to predict the direction in which smallholder need will evolve over the next 5-10 years.⁵⁰

Figure 13: IMPACT OF TRENDS ON SMALLHOLDER FINANCE NEED

NOT EXHAUSTIVE	EXPECTED IMPACT ON NEED FOR SMALLHOLDER FINANCE	
	+ Positive	- Negative
AGRICULTURAL TRANSFORMATION	Inclusive development increases proportion of smallholders in value chains	Growth of agribusiness promotes large scale agriculture for ease of sourcing
RURAL-URBAN MIGRATION	Smallholders who remain in rural areas need to produce more to maintain total food supply	Departure to cities decreases the total number of smallholders
CLIMATE CHANGE	Increases need per farmer for adaptation inputs (e.g., drought resistant crop varieties) and training	Increased exposure to extreme weather events pushes farmers toward noncommercial status

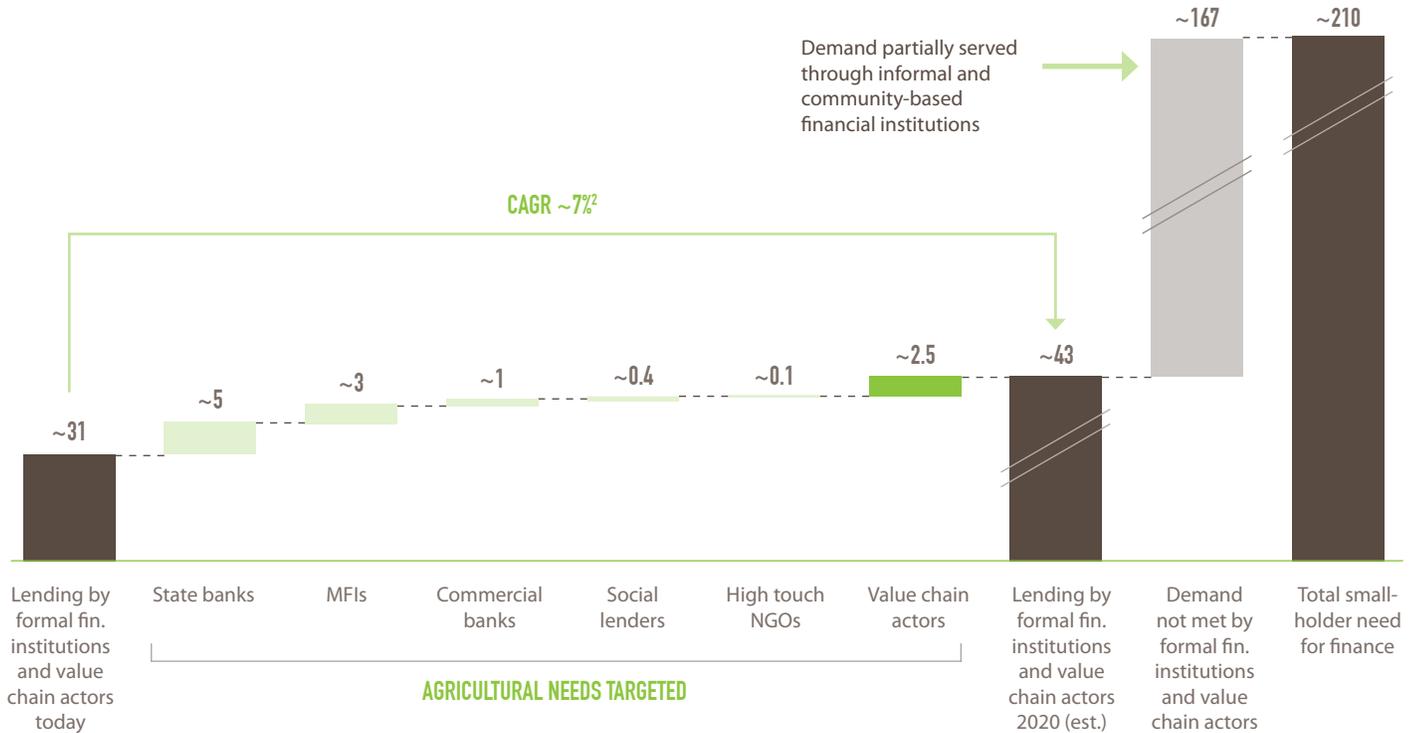
47 For more information on such initiatives, consult: 1) "Investment Blueprint," Southern Agricultural Growth Corridor of Tanzania, Jan. 2011; 2) "Annual Report: Transforming Agriculture in Ethiopia," Agricultural Transformation Agency, Nov. 2013; 3) Adesina, Akinwumi, "Agricultural Transformation Agenda: Repositioning agriculture to drive Nigeria's economy," Nov. 2012.
 48 "Africa Agriculture Status Report 2014: Climate Change and Smallholder Agriculture in Sub-Saharan Africa," Alliance for a Green Revolution in Africa (AGRA), 2014; "Smallholders, food security, and the environment," International Fund for Agricultural Development (IFAD), 2014.
 49 "Rural-Urban Dynamics and the Millennium Development Goals," World Bank and International Monetary Fund, 2013.
 50 The ambiguity is further compounded by a lack of precise data on historical or expected evolution in the number of smallholder farmers, as well as the generally slow transition of agriculture observed historically.

Assuming a constant smallholder need for finance, expected growth in the supply of finance from formal financial institutions and value chain actors will not make a noticeable dent in sector gaps in the next five years. Overall, stakeholders project existing formal financial institution and value chain actor credit models to grow by approximately

7% per year until 2020 (see Figure 14). High touch NGOs, social lenders, and commercial banks project the fastest growth, but at current rates, formal and value chain finance would meet less than 20% of total need in five years, holding need constant.

Figure 14: EXPECTED GROWTH IN SMALLHOLDER LENDING

Growth projections for smallholder lending by source 2015-2020
(Annual disbursements, USD billion)¹



¹ Excludes China, Central Asia, Middle East and North Africa, and Eastern Europe;

² CAGR assumptions: state bank market participant projections of ~9%, value chain actors in-line with crop production projections: ~3% export crops, ~2% non-export crops; MFI market participant projections of ~14%; commercial banks in-line with projected growth of retail banking: ~15% in sub-Saharan Africa, ~14% in South and Southeast Asia, ~13% in Latin America; social lenders market participant projections of ~15%; high touch NGOs in line with 2010-2015 growth of ~30-35%.

Sources: Expert interviews; "World Supply and Demand Outlook," ICO, 2014; "Current Situation and Medium Term Outlook for Tea," Intergovernmental Group on Tea, FAO, 2012; "Agricultural Outlook 2015-2024," FAO, 2015; "Sector report: banking in Africa," KPMG, 2013; "Retail banking in Asia: actionable insights for new opportunities," McKinsey & Company, 2013; "Growth opportunities despite banking sector slowdown," BMI Research Article; Annual reports; Dalberg analysis.

5. UNLOCKING GROWTH

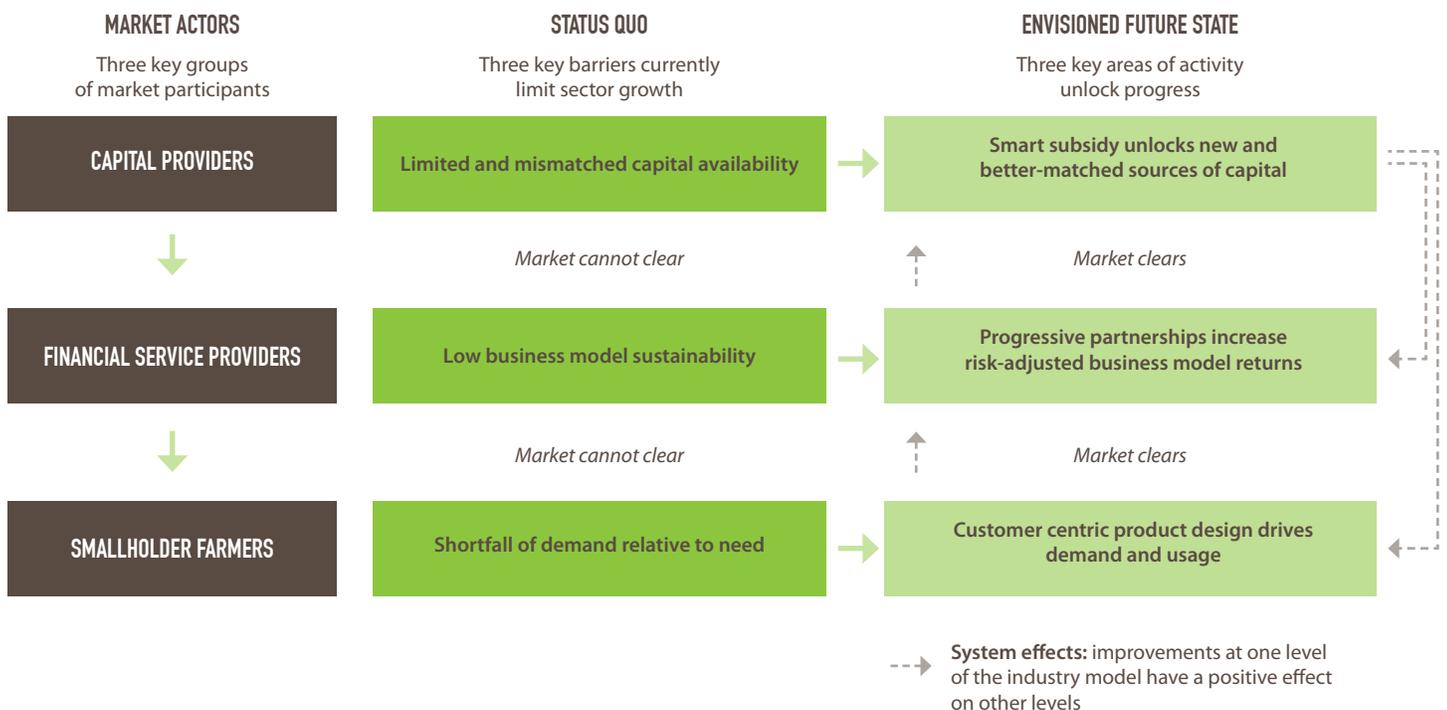
The smallholder finance industry needs a fundamental shift in its growth trajectory: a doubling of annual growth (to roughly 14% per year) would allow formal financial institutions and value chain actors to meet almost a third of the financing need by 2020 and more than half the need by 2025. This must be accompanied by rapid growth in non-credit financial services.

Overcoming critical industry barriers to unlocking this level of growth requires a concerted effort across the smallholder financing ecosystem (captured in the industry model in Figure 4). Due to the high degree of interdependence among the different levels of the industry model, progress will have to be made against multiple barriers concurrently in order to move the needle (see Figure 15). For instance, increased capital availability from funders and investors will not be impactful unless there is sufficient absorptive capacity among FSPs and, in turn, smallholder farmers. Similarly, if an FSP designs the perfect product

but does not have the capital to deploy it, the product will make little difference in the lives of farmers. The era of farmer finance—with its diverse set of models, actors and approaches—is the perfect time to start thinking holistically about what is needed across the ecosystem to change the trajectory of what is possible.

More specifically, achieving this ambitious growth will require that the smallholder finance industry move toward a future in which **FSPs engage closely with customers to design and offer appropriate, desirable products through integrated and innovative partnerships supported by more and smarter subsidy**. While not shown in Figure 14, active support from key enablers such as market and research platforms and technical assistance providers will be critical to reaching the envisioned future state by removing market barriers and augmenting the system effects. A number of specific opportunities to overcome binding constraints in the ecosystem are presented below.

Figure 15: MOVING FROM THE STATUS QUO TO AN ENVISIONED FUTURE STATE



BARRIERS

This report focuses on three overarching barriers that currently constrain the growth of the sector: (1) the mismatch between farmer need and demand, (2) the low financial returns of FSP business models, and (3) limitations in the available supply of capital.

Regulatory and ecosystem factors represent a fourth barrier holding back the growth of smallholder finance. Critical factors include poor contract enforcement, which permits side selling; underdeveloped customer information ecosystems, which increase the cost of customer screening; limited land titling, which deprives farmers of collateral, discourages investment in the land, and makes land transactions difficult, limiting farmer mobility; and underdeveloped transport infrastructure, which inhibits access to markets.⁵¹ The context-specific nature of policy means that a close examination of these factors is out of scope for this global report. However, a true system-wide approach to tackling smallholder financial inclusion requires that policymakers work in parallel with other actors in the space to address barriers in the enabling environment.

Barrier 1: Farmer demand

At present, farmers' demand or willingness-to-pay for a formal financial service does not always match what appear to be farmers' needs. For instance, recent nationally representative Finclusion surveys find that more than half of rural respondents in Bangladesh, Nigeria, and Uganda indicate that they do not need or want a bank account, even though financial inclusion proponents point to the multiple benefits a formal savings account (or, more recently, a mobile wallet) can bring to a household.⁵² To some degree, findings like these may be due to smallholders' lack of exposure to financial services—for example, in a nationally representative survey of Mozambican smallholder farmers conducted by CGAP, less than one-quarter of respondents said they have ever been inside of a bank and just over one-quarter had ever heard of mobile money.⁵³ Mistrust of financial institutions is also an influencing factor—more than 10% of adults without a bank account worldwide indicate a lack of trust in financial institutions as a key reason.⁵⁴ In the case of loan products, the challenge of creating demand is further compounded by smallholders' aversion to taking on loan obligations, which exposes themselves to even more

risk than they already face on a daily basis; this sentiment can be particularly acute for subsistence farmers and is often exacerbated by the absence of public safety nets.⁵⁵

In addition, at present, a large proportion of smallholder farmers may not have the ability to use capital productively and thus have no incentive to borrow. While researchers and practitioners have yet to agree on a number, they generally acknowledge that unless inputs like fertilizer and improved seed can generate a yield gain above a certain threshold, they are not worth the investment.⁵⁶ Realizing such returns requires a sufficient amount and quality of land, access to markets to purchase inputs and sell crops, as well as the right farming skillset, which can typically be developed through training (although in some cases may also hinge on intrinsic ability or motivation). Research has shown that farmers with higher (unobserved) marginal returns to capital borrow when given the choice, but farmers with lower marginal returns do not.⁵⁷ Thus, creating demand will require increasing farmers' marginal returns to capital.

Finally, the products currently offered by formal FSPs may not align with the requirements of smallholders or may be perceived as inferior to alternatives. For instance, MFIs entering rural areas for the first time may try to disburse the same kinds of basic, inflexible short-term loans they might offer an urban microentrepreneur, which are not suited to the seasonality of farmer cash flows. As another example, one FSP in the sector has observed the following scenario on multiple occasions: a farmer organization identifies a need but is reluctant to apply for a loan because it is concerned about the cost of financing and has, in the past, seen similar projects funded by donations; well-intentioned grants have essentially made lending unappealing. Given that at least a portion of needs are already being met by informal sources of finance, formal FSPs must be able to offer a service that, at the very least, is competitive in its cost, ease of access, and reliability.

Barrier 2: Business model sustainability

FSPs wishing to enter the smallholder finance market face persistent barriers to business model development. Chief among them are the cost of designing financial products that meet the needs and preferences of smallholder farmers—e.g., repayment schedules tied to the agricultural calendar—and of building the internal capabilities—e.g., training new field agents, developing systems for tracking

51 "A green evolution," *The Economist*, Mar. 2016.

52 Okonjo-Iweala, Ngozi and Janeen Madan, "Shine a Light on the Gaps," Center for Global Development, Jan. 2016.

53 Anderson, Jamie and Colleen Leach, "National Survey and Segmentation of Smallholder Households in Mozambique: Understanding Their Demand for Financial, Agricultural, and Digital Solutions", CGAP, Mar. 2016.

54 Demircuc-Kunt, et al., "The Global Findex Database 2014 Measuring Financial Inclusion around the World," Policy Research Working Paper 7255, World Bank, Apr. 2015.

55 Collaborative Research Group discussions.

56 Dalberg interviews with industry stakeholders.

57 Beaman, L., et al., "Self-Selection into Credit Markets: Evidence from Agriculture in Mali," No. w20387, National Bureau of Economic Research, 2014.

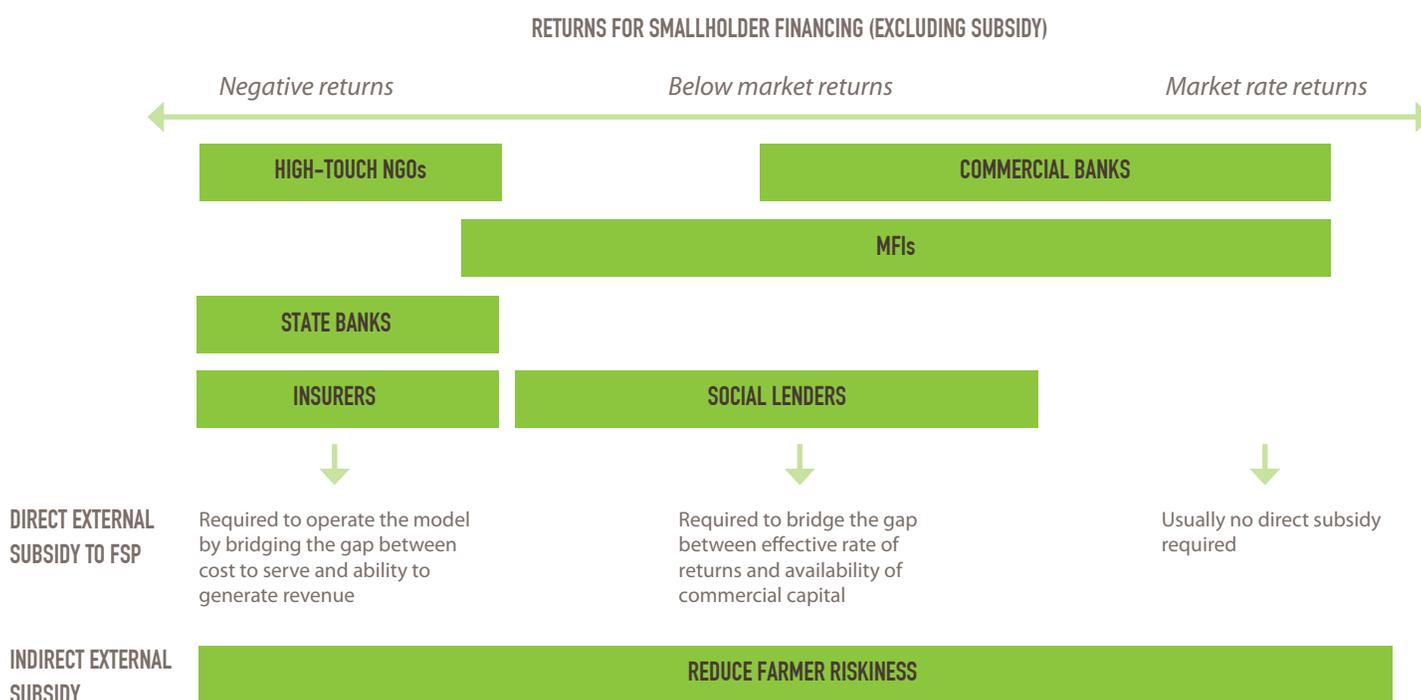
rural borrowers and new forms of collateral—for engaging effectively (and profitably) with this population. Another key challenge is building agribusiness capacity within credit and internal controls teams at financial institutions, so that they can unpack and manage risks objectively.

For FSPs that are already serving smallholders, business model sustainability is elusive: while most have demonstrated the potential to deliver some financial returns, these are almost universally below market-rates and expectations. Broadly speaking, the drivers of low returns—well documented by past research⁵⁸—are the high cost of reaching remote customers, the high risk of non-performing loans, and the low revenue generated per customer. To overcome these drivers (particularly the latter two), smallholder finance is typically accompanied by various supporting services, such as financial literacy training and agricultural extension. The degree to which an FSP internalizes the cost of these services (instead of relying on a government extension agent network, for instance) affects its bottom line. Typically, FSPs working with less sophisticated farmer segments are likely to experience even lower relative returns, since these segments tend to require the most support, generate less revenue per customer, and are harder to reach given a lack of value chain relationships.

These barriers to business model development and sustainability drive a dependence on external subsidy for many FSPs. Most FSPs that serve smallholder farmers rely on direct subsidies in the form of grants, guarantees, or concessionary loans. Some of these are offered as one-time investments or grants for upfront research and development, or else catalytic and time-bound guarantees that enable an FSP to enter a new geography or sector. Others take the form of ongoing support; for instance, social lenders rely on concessionary lending capital,⁵⁹ a number of commercial banks take advantage of long-term credit guarantees, and agricultural insurance companies are able to deliver insurance to smallholders thanks to government premium subsidies.

Other FSPs, such as value chain actors and mobile network operators, typically do not require external subsidy (hence their absence from Figure 16), but rather rely on internal (cross) subsidy, i.e., using returns from other parts of their business to support smallholder finance. For many of these companies, engaging in such cross-subsidization typically serves a core business need, such as ensuring a reliable supply of produce or attracting customers who are expected to graduate to higher value products. In other cases, corporate social responsibility may be a key driver; the Access to Seed Index—recently launched with the support

Figure 16: RELATIVE DEPENDENCE ON EXTERNAL SUBSIDY



58 For a concise overview, see: "Policy Brief on Agricultural Finance in Africa," Making Finance Work for Africa, Mar. 2012.
59 "Investor and Funder Guide to the Agricultural Social Lending Sector," Initiative for Smallholder Finance, Jun. 2014.

of the Bill and Melinda Gates Foundation and the Dutch Ministries of Economic and Foreign Affairs—which ranks seed companies by measuring and comparing their efforts to improve access to seeds for smallholder farmers, relies on such motivation to drive change.⁶⁰

Most FSPs also depend on externally subsidized enablers, such as provision of high quality inputs, delivery of extension services, or farmer aggregation.

These enablers are often supported by philanthropic and/or public funds, which serve as indirect subsidies to smallholder finance models. Enablers can affect not just ongoing operations, but also scale-up efforts—for example, a social lender that depends on government-driven farmer aggregation efforts would have to adjust growth to fall in line with government program outcomes. A full discussion of subsidy is available in Annex E.

Barrier 3: Capital supply

For many FSPs, capital availability is a critical barrier to reaching scale. Many investors perceive agriculture as an inherently risky sector, often without acknowledging that there is a wide spectrum of risk *within* the sector—for example, across smallholder segments and value chains. In addition, they typically have alternative investment options with higher expected returns. A lack of transparency in the market means that FSPs also struggle to connect with the right funder.

In addition, available capital often does not meet FSPs' needs in terms of tenure, currency, or other conditions. Much of the capital currently available for FSPs serving smallholders is relatively short-term debt, in hard currency, with a minimum investment size of around USD 1 million. This prevents many FSPs from accessing capital, since they cannot absorb the minimum investment size; it also precludes them from offering long-term lending to their customers and exposes them to significant currency risk.

BOX 7: DIGITAL FINANCIAL SERVICES—NOT A SILVER BULLET BUT CHANGING WHAT IS POSSIBLE

There has been much recent activity directed toward adopting technology for smallholder finance and excitement around its potential for both increasing smallholder demand (by overcoming barriers such as distance to bank) and lowering FSPs' cost to serve. Some banks are beginning to forego brick-and-mortar branches, instead sending agents armed with tablets into the field; MFIs have begun using GPS technology to measure customers' farm plots; and buyers are increasingly able to pay their suppliers via mobile transfers. While financial technology holds great promise, for several reasons it is unlikely to entirely alleviate business model dependence on subsidy:

1. technology can be expensive to adopt, so FSPs are likely to require support in developing the right systems and tools;
2. customer adoption at scale still requires an extensive field presence and trusted intermediaries; and

3. beyond East Africa (where mobile money has taken off), rural areas in the developing world are characterized, for the most part, by low mobile access/ownership rates, insufficient agent liquidity, and low financial and technological literacy.⁶¹

While digital financial services are unlikely to be a silver bullet, applications such as farmer profiling, value chain payments, and the digitization of information flows are likely to change what is possible in the design and delivery of direct financial, and other support services. Furthermore, as more data is captured in digital form, big data and data science holds promise for changing the way that financial institutions approach credit assessment and risk management in lending. For further reading, see ISF's 2016 "Briefing 11: The Rise of the Data Scientist: How big data and data science are changing smallholder finance."

60 "About the Index," Access to Seeds Index, www.accesstoseeds.org/the-index/.

61 "African Farmers in the Digital Age", Foreign Affairs, ed. Gideon Rose, 2016; "Digital Financial Services", CGAP, <http://www.cgap.org/topics/digital-financial-services>.

Significantly scaling up the sector will require drawing in new—and more suitable—capital sources. To do so, FSPs and capital providers are already looking for opportunities to blend capital. Blending capital refers to the strategic use of development finance and philanthropic funds to mobilize private capital flows to emerging and frontier markets.⁶² Capital can be blended at an intermediary level—typically a fund—or directly at the FSP level. At the intermediary level, a commonly observed blended vehicle is an impact investment fund that stacks different kinds of capital in a way that protects private investors from some portion of the risk. Blending at the FSP level commonly occurs through direct loan guarantees or internal management of different credit sources; for example, to meet financing needs, an MFI might borrow at different interest rates from a local bank as well as an impact investment fund (see Figure 17 for other examples).

While blended finance is a promising approach to introducing new capital to sectors with low risk-adjusted returns, the process of blending is challenging in its own right. There are high search and transaction costs to identifying the right investors, bringing them to the table, agreeing to terms, and securing commitments. In addition, a relative dearth of existing vehicles for indirect blending focused on finance for smallholders or producer groups means that investors must engage in direct blending, which places the burden of due diligence on the individual investor⁶³ and requires advanced capital management (as well as potentially more time spent fundraising) on the FSP side. Overall, a lack of transparency and industry standards means that the risks and sustainability of blending models are not well understood. This makes it difficult for investors to create appropriate intermediaries or understand how their capital will be blended at the FSP level.

Figure 17: CAPITAL BLENDING MECHANISMS FOR SMALLHOLDER FINANCE

BLENDING MECHANISM	PRIMARY BLENDING APPROACH	EXAMPLES
Indirect blending: intermediary level		
Impact investment fund	Fund combines different sources of capital and may choose to build a stack of varying seniorities of debt and equity: typically high risk equity and/or subordinated debt provided by philanthropic investors, senior debt by private investors	Africa Agriculture and Trade Investment Fund, Fairtrade Access Fund, Incofin Rural Impulse Funds
Guarantee fund	Fund pools capital from different investors, usually national governments, local banks, and international donors	<i>No evidence of guarantee funds that currently support smallholder finance, unlike finance for agricultural small and medium-sized enterprises (SMEs)</i>
Direct blending: FSP level		
Matching grant	Philanthropic investor blends grant capital with FSP's own (market-rate) capital	Fund for Rural Prosperity, Africa Enterprise Challenge Fund
Direct investment	Investor directs capital to an FSP, which blends it with a variety of other capital sources (often credit lines) with different return expectations	Social lenders, MFIs
Direct guarantee	Single guarantor—typically philanthropically oriented (although in other sectors, may be commercially-motivated)—blends capital with that of the FSP	International Finance Corporation Global Warehouse Finance Program, Agricultural Credit Guarantee Fund Scheme (Nigeria), USAID Development Credit Authority
Integrated supply-chain model	Buyer uses own capital to source from smallholders, but partners with financial institution, which provides capital for on-lending to the farmers	Commercial banks like Yes Bank and HDFC in India that work with value chain actors

62 "Blended Finance Vol. 1: A Primer for Development Finance and Philanthropic Funders,"The World Economic Forum, Sep. 2015.

63 This can be conducted in-house or outsourced to an asset manager.



OPPORTUNITIES

Overcoming these barriers will require concerted activity around three main themes: *customer centricity*, *progressive partnerships*, and *smart subsidy*.

Customer centricity

Customer centricity is about providing solutions based on a deep understanding of customer needs, preferences, and behaviors. Doing so requires that FSPs engage closely with their customers. A number of tools exist to help with this engagement, including focus groups, human centered design (HCD), and customer satisfaction surveys. FSPs' improved understanding will enable them to design financial products that smallholders will want and be able to afford—products that are accompanied by the additional support necessary to ensure that customers know how to use them and that are delivered through channels that farmers trust and can easily access. These products will also be able to meet the evolving needs of smallholder farmers as they scale the smallholder pyramid and navigate broader trends, such as climate change. The good news is that a subset of actors who have been working closely with smallholders for a number of years (e.g., One Acre Fund, Opportunity International) already know—and have shared—a lot about some of the key product changes that need to be made to meet smallholder needs, so FSPs new to the space can tap into that readily available knowledge.

By using customer engagement to tailor their approaches to the circumstances and challenges of smallholder farmers, FSPs can begin to close the gap between smallholder demand and need. Smart design can make a product more accessible and desirable, as well as increase its use. An example of the former is a

Rural Resilience Initiative (R4) insurance pilot in Ethiopia, which adopted two payment options: paying with labor or paying in cash. This made insurance accessible to even the poorest farmers, who were able—and willing—to work for coverage.⁶⁴ CARD Bank in the Philippines offers another interesting example of using design to increase usage. The bank partnered with Ideas42—experts in applied behavioral economics—to redesign its savings product, incorporating a number of behavior levers, such as goal-setting, commitment to a client-designed savings plan, and text message reminders to save. They found that clients enrolled using the revised approach made initial deposits 15% higher than the control group and were 73% more likely to initiate a transaction in the new account.⁶⁵ Practitioners such as Opportunity International and One Acre Fund have also found that bundling loans with financial literacy training and/or extension services, building up a strong reputation with other farmers in the area, and guaranteeing market access can all drive adoption by increasing farmers' awareness, as well as their marginal returns to capital, and thus offsetting some of their risk aversion.

Customer centricity can also help FSPs mitigate risk, thus improving the sustainability of their smallholder business models. By engaging more closely with customers, FSPs can develop a nuanced understanding of the source and nature of risk, improve their ability to segment risk *within* target customer groups, and build stronger relationships with customers. All of these factors can, in turn, help FSPs to mitigate risk effectively. For instance, matching loan repayment terms to agricultural cash flows is critical; a recent study by Hystra demonstrates that this model drives much higher repayment rates.⁶⁶ In addition, customer research undertaken during a Grameen Foundation partnership with Musoni Kenya led to the design of a product that allows for staggered loan disbursement, helping farmers

64 "The R4 Rural Resilience Initiative," World Food Programme, www.wfp.org/climate-change/initiatives/r4-rural-resilience-initiative.

65 "Applying Behavioral Economics to Improve Microsavings Outcomes," Ideas42, Feb. 2014.

66 Hystra (2015).

to manage their money and reducing the risk of default.⁶⁷ Another valuable application of customer centricity for risk mitigation could be the design of approaches that decrease the likelihood of side selling, e.g., building strong customer relationships and ensuring timely compensation.

Applying principles of customer centricity beyond the product design stage can go even further toward supporting product uptake and risk mitigation. For instance, rapid feedback loops can help FSPs regularly gauge customer satisfaction and alert field staff if a product is not working as expected, creating an opportunity to take action. Participatory monitoring and evaluation can help FSPs to capture impact from the point of view of the customer—impact that may not be evident when using more traditional, quantitative methods.⁶⁸ Both of these approaches have the added advantage of making customers feel heard and respected, thus contributing to the strength of their relationship with—and trust in—the provider. While basic adjustments to product design may be relatively straightforward, moving to a customer centric institutional mindset and regularly incorporating associated tools and approaches into how a FSP does business is typically more challenging; targeted training and funding, accompanied by commitment on the part of FSP management, can assist FSPs in attaining this goal.

New customer data are already becoming available in the smallholder finance space, paving the way for greater customer centricity. However more needs to be done to help FSPs incorporate these findings into their operations. Stakeholders are investing heavily in improving the sector’s understanding of smallholder farmers. For instance, CGAP recently released its farmer financial diaries research, is conducting national surveys

of smallholder households in four countries, and funds HCD exercises with selected FSPs.⁶⁹ In addition, the Rural and Agricultural Finance Learning Lab has an explicit focus area around “client voice” and, in addition to analyzing and synthesizing data on customer demand, will highlight effective customer engagement methodologies. It will be critical to find ways to help FSPs to maximize the value of emerging information by incorporating it into their operations—in order, for example, to identify addressable customer segments or bundle products effectively. This can be achieved through a combination of dissemination and training, and could be particularly beneficial for value chain actors who may not have experience in smallholder data collection or product design.

Transparency could greatly supplement these efforts by making available data that already exist but are not public. Most (formal) FSPs already collect a great deal of data, but for a variety of reasons (including funder restrictions, competitive concerns, and limited monitoring and evaluation capacity) have not made them publicly available. Much could be learned through efforts to extract and aggregate these data in ways that protect the anonymity of the provider. One such effort already underway is insight2impact. FinMark Trust and Cenfri established insight2impact in 2015, with the support of the Bill & Melinda Gates Foundation and The MasterCard Foundation, to inform and support data initiatives and drive improvement in the sophistication, accuracy, and consistency of data used in the design of effective programs, policies, and products for financial inclusion.⁷⁰

67 “Kilimo Booster: Musoni Launches an Agricultural Loan for Kenya’s Smallholder Farmers,” Grameen Foundation, Jan. 2015.

68 “Understanding the impact of rural and agricultural finance on clients,” Technical Report No. 2, Rural & Agricultural Finance Learning Lab, Dec. 2015.

69 Anderson, Jamie, “CGAP’s National Surveys of Smallholder Households,” CGAP, Oct. 2014.

70 “About insight2impact,” Insight2Impact, i2ifacility.org/about.html.

Progressive partnerships

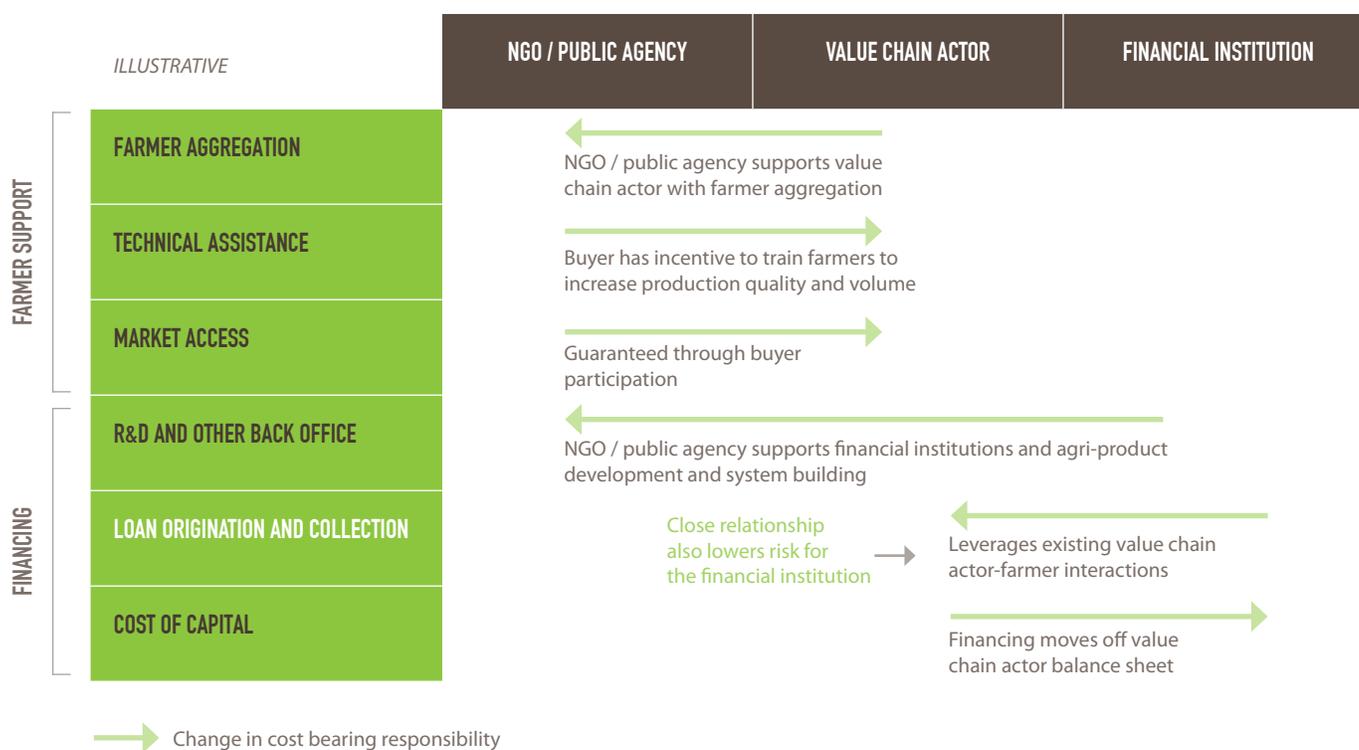
Progressive partnerships requires that the smallholder finance sector create and scale more and deeper partnerships designed to strengthen business model sustainability and increase reach. The main goals of progressive partnerships are: 1) decreasing risk and cost to serve, 2) distributing remaining cost and risk more effectively, and 3) increasing customer reach. To these ends, every partner brings its own strengths to create mutual value. Since every partner has something at stake, each holds the others accountable. At least two types of partnerships can be used effectively to overcome particular drivers of low business model sustainability:

- Partnerships between financial institutions and value chain actors operating at different points of the smallholder value chain (typically supported by other partners, such as NGOs), and
- Partnerships between different types of financial institutions.

By leveraging the unique strengths of each partner, partnerships between financial institutions and value chain actors can decrease the cost and risk to serve smallholder farmers, as well as distribute the remaining cost and risk more effectively. Within a partnership, cost sharing can be achieved in a number of ways. Figure 18 illustrates this by tracing hypothetical changes in cost-bearing responsibility in moving from a situation in which different stakeholders act independently in pursuit of their own goals (NGO/public agency – smallholder well-being; value chain actor – reliable crop sourcing; financial institution – attracting borrowers) to one in which they collaborate.

Simultaneously, the partnership creates more value for participants over time. As farmers become embedded in tighter value chain relationships, they increase their use of farm inputs and hence require more financing. This increases revenue per customer for both the input provider and the bank; it also increases the supply of goods available to the buyer.⁷¹

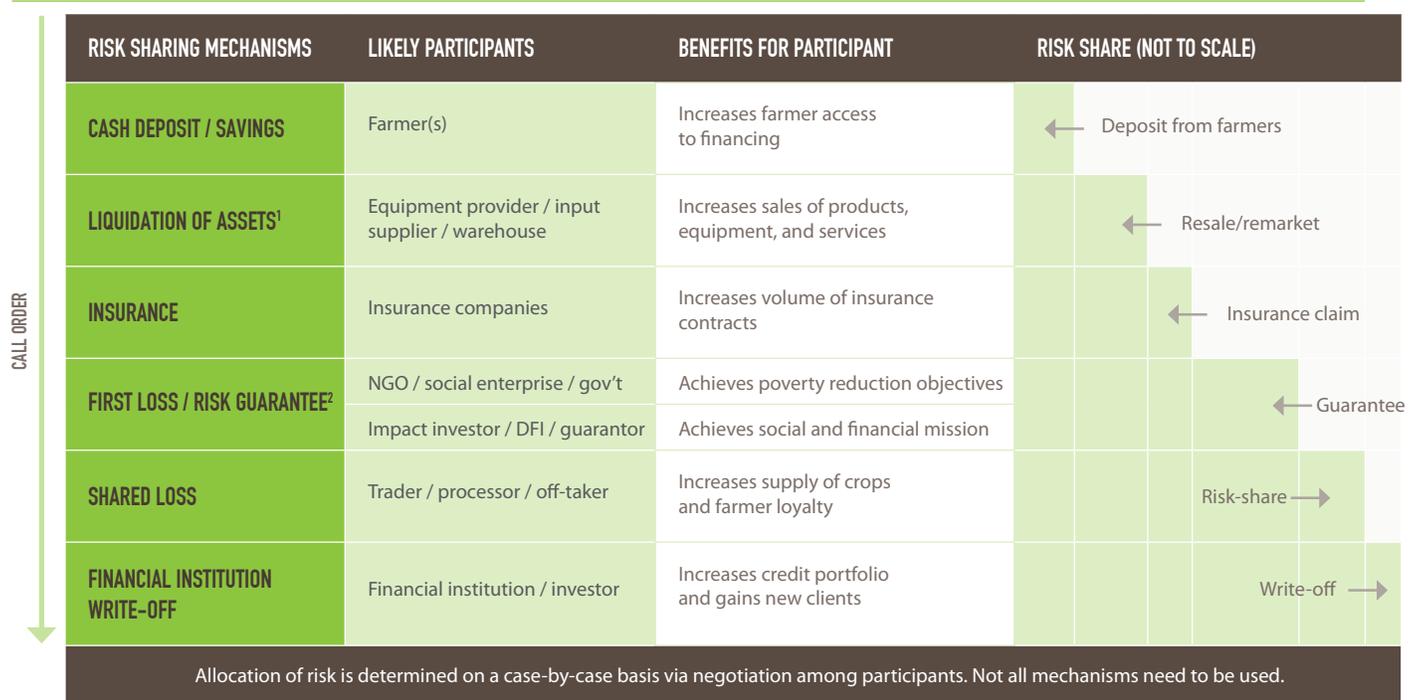
Figure 18: ILLUSTRATION OF HYPOTHETICAL COST SHARING AMONG PARTNERS



Source: Dalberg Analysis.

71 For a more in-depth discussion of value chain finance partnerships, see "Agricultural value chain finance strategy and design," International Fund for Agricultural Development (IFAD), Nov. 2012; "Briefing 10: Value Chain Financing: How agro-enterprises can serve as alternate aggregation points for delivering financial services to smallholder farmers," Initiative for Smallholder Finance, Oct. 2015; and a wealth of case studies and technical guides available from the Agriculture Finance Support Facility (AgriFin) at http://www.agrifinfacility.org/general_resources.

Figure 19: Illustrative risk sharing scenario



1 Assets may include movable and/or non-farm collateral.

2 First loss guarantees may be introduced initially to incentivize private sector investment and phased out over time as model achieves a successful track record.

Source: Based on adaptation of Technoserve's risk share model, as detailed in "Aligning multi-party incentives to deliver input credit to cocoa farmers," Cracking the Nut Conference 2015.

While the cost sharing described on the previous page on Figure 18 has inherent risk-lowering benefits, the actors within a partnership can also share any outstanding risk. Figure 19 above illustrates a risk-sharing scenario, using equipment leasing as an example. While many of the actors are the same as those in Figure 18, philanthropic investors and insurance companies can add extra layers of protection.

A salient and promising example of a progressive partnership that recently launched is the World Food Program's Patient Procurement Platform (see Figure 20 below). Envisioned as a consortium of end-to-end value chain actors that share and manage risks associated with crop loss, repayment, and price, the Platform aggregates demand from a consortium of buyers and uses this to unlock financing from banks for smallholders. Over the next three years, the platform aims to engage 1.5 million farmers across Africa, Asia, and Latin America with USD 750 million worth of buyer contracts. So far, the initiative has attracted high profile partners such as Bayer, the International Finance Corporation, Rabobank, and Yara International.⁷²

Value chain partnerships are valuable beyond provision of credit. The Agriculture and Climate Risk Enterprise (ACRE Africa, formerly Kilimo Salama by Syngenta Foundation) offers an interesting case study in insurance. ACRE Africa is a service provider in Kenya working with local insurers and other stakeholders in the agricultural insurance value chain to facilitate access to insurance products for smallholders. ACRE has developed several different insurance products that are underwritten by insurers but distributed and pre-financed by MFIs or value chain partners. For instance, dairy livestock insurance is offered in partnership with a dairy cooperative or lending institution. These partners pay the premium upfront, then either deduct it from the payments to farmers for milk deliveries, or combine it with the loan payments. These arrangements significantly lower cost to serve for the insurer; the partners carry the risk of premium repayment, but also benefit from the fact that their customers or suppliers are protected.⁷³ By the end of 2015, ACRE Africa's insurance products had already been adopted by nearly 400,000 farmers, and the company expects to scale rapidly.⁷⁴

72 "WFP Boosts Food Security By Connecting Smallholder Farmers To Global Markets," World Food Programme, Jan. 20, 2016.

73 Greatrex H, Hansen J, Garvin S, Diro R, Le Guen M, Blakeley S, Rao K, and Osgood D, "Scaling up index insurance for smallholder farmers: Recent evidence and insights," Report No. 14, CGIAR Research Program on Climate Change, Agriculture and Food Security, Jan. 2015.

74 Dalberg interview with ACRE; ACRE/Syngenta Foundation for Sustainable Agriculture - Kenya, Rwanda, Tanzania; "Global Index Insurance Facility: Index Insurance Forum," <http://www.indexinsuranceforum.org/project/acresyngenta-foundation-sustainable-agriculture-kenya-rwanda-tanzania>.

Due to their complexity and the close collaboration required, value chain partnerships may sometimes have to go beyond just memorandums of understanding to be effective. Instead, they might require the creation of dedicated platforms, joint ventures, or even dedicated NGOs, service companies, or finance companies that include shared service agreements, blended capital, and shared risk. This has been the approach of both WFP and ACRE and, in certain situations, may be the right approach for others.⁷⁸

The second type of partnership—between different types of financial institutions—can also reduce risk and cost to serve, as well as expand each partner’s reach.

Community-based groups are an important provider of financial services to smallholder farmers; increasingly, formal financial institutions are seeking out opportunities to work with them,⁷⁹ benefitting from their ability to offer access to an aggregate group of customers, strong customer relationships, and historical data on customers. The community-based financial institutions, in turn, can benefit from improved systems and capabilities, higher levels of return on savings, higher profit margins, and even loan capitalization.

New findings on the impact of such partnerships are encouraging. CARE research finds great potential in connecting village savings and loan associations (VSLAs) to banks: once linked to a bank, the average savings per VSLA member increase by 40 to 100% and the average profit per member doubles.⁸⁰ Some banks are also experiencing positive initial results when they expand on the concept by using linkages to extend credit to VSLAs. For instance, DFCU Bank in Uganda is partnering with VSLAs and on-the-ground NGOs to reach farmers outside tight value chains through group lending. Since the project started, DFCU has been able to increase lending to smallholder farmers in its partner VSLAs nearly fivefold. Several key elements are in place to address obstacles to the sustainability of the partnership’s business model.⁸¹

OBSTACLE TO SUSTAINABILITY	DFCU PROJECT FEATURE TO OVERCOME OBSTACLE
RISK	Lend to groups of 15 – 30 farmers
	Require 20% collateral in the form of savings (not necessarily with DFCU)
HIGH COST TO SERVE	Partner with VSLAs that disburse cash and collect payments
CLIENT NEED FOR SUPPORTING SERVICES	Partner with NGOs such as TechnoServe to deliver technical assistance

Ultimately, by lowering the cost and risk to serve farmers, while increasing customer reach and revenue per customer, **partnerships offer the promise of increasing risk-adjusted returns on smallholder finance;** this is critical to attracting more capital to the sector.

Smart subsidy

Even though customer centricity and progressive partnerships will decrease business model dependence on subsidy, the need is unlikely to disappear altogether.

Take, as evidence, the continued provision of government subsidies to the agricultural finance sector in developed countries. For example, the US Department of Agriculture offers a variety of specialized loans to farmers and extends loan guarantees to agricultural lenders. As of September 2014, those guarantees covered more than USD 6 billion in lending to farm businesses and cooperatives, or about 6% of total agricultural lending in the country.⁸² Agricultural insurance is much more heavily subsidized—government support accounts for as much as 73% of insurance premiums in the US and Canada and 37% in Europe.⁸³

Given the firm place of subsidy in agricultural finance, and in light of the need for significant growth in the smallholder finance sector, considerably more blending of capital is required. By supporting blended finance transactions, public and philanthropic investors can magnify the impact of their own resources; estimates suggest that public capital deployed through blended finance transactions can often attract one to five times the initial amount in private investment, depending on sector risk and the type of public capital provided (e.g., grants may deliver higher ratios).⁸⁴

78 A briefing note on value chain finance from the Initiative for Smallholder Finance describes several other interesting models for value chain partnerships and speaks to a “rich landscape of models.”

79 “The State of Linkage Report: The first global mapping of savings group linkage,” Banking on Change, 2016.

80 “Does the Business Case Hold Up? Examples and evidence from CARE’s experience,” CARE, Nov. 2015.

81 Dalberg interview with DFCU management.

82 USDA Rural Development 2014 Progress Report; Kauffman, Nathan, “Loan Volumes Continue Rising as Lower Farm Incomes Persist,” Federal Reserve Bank of Kansas City, Apr. 2015.

83 Sandmark, Thérèse, Jean-Christophe Debar, and Clémence Tatin-Jaleran, “The Emergence and Development of Agriculture Microinsurance,” Microinsurance Network, 2013.

84 “The Green Investment Report: The ways and means to unlock private finance for green growth,” The World Economic Forum, 2013.

Tangibly increasing capital availability in the sector will require a much more nuanced approach to deploying subsidy within blended finance models. Funders first need to determine the purpose of the subsidy, i.e., what will convince the target private investor to invest. Typically, this falls into one of two categories: offsetting high cost to serve or sharing (or decreasing) risk. Second—and closely related—funders should consider whether a catalytic or ongoing subsidy is more appropriate. For instance, high cost to serve can originate from upfront setup cost, potentially overcome through one-off (matching) grants, or it may be due largely to ongoing operating costs, which require long-term support. On the risk side, risk may be inherent to the sector (e.g., production risk, currency risk) or associated with operating in an unfamiliar context (e.g., entering a new geography, launching a new product, or serving a new customer segment). In the latter situation, perceived risk may prove to be unwarranted, in which case support can wind down; on the other hand, the FSP may, indeed, experience high risk exposure. These considerations and examples of associated subsidy options are shown in Figure 21 below.

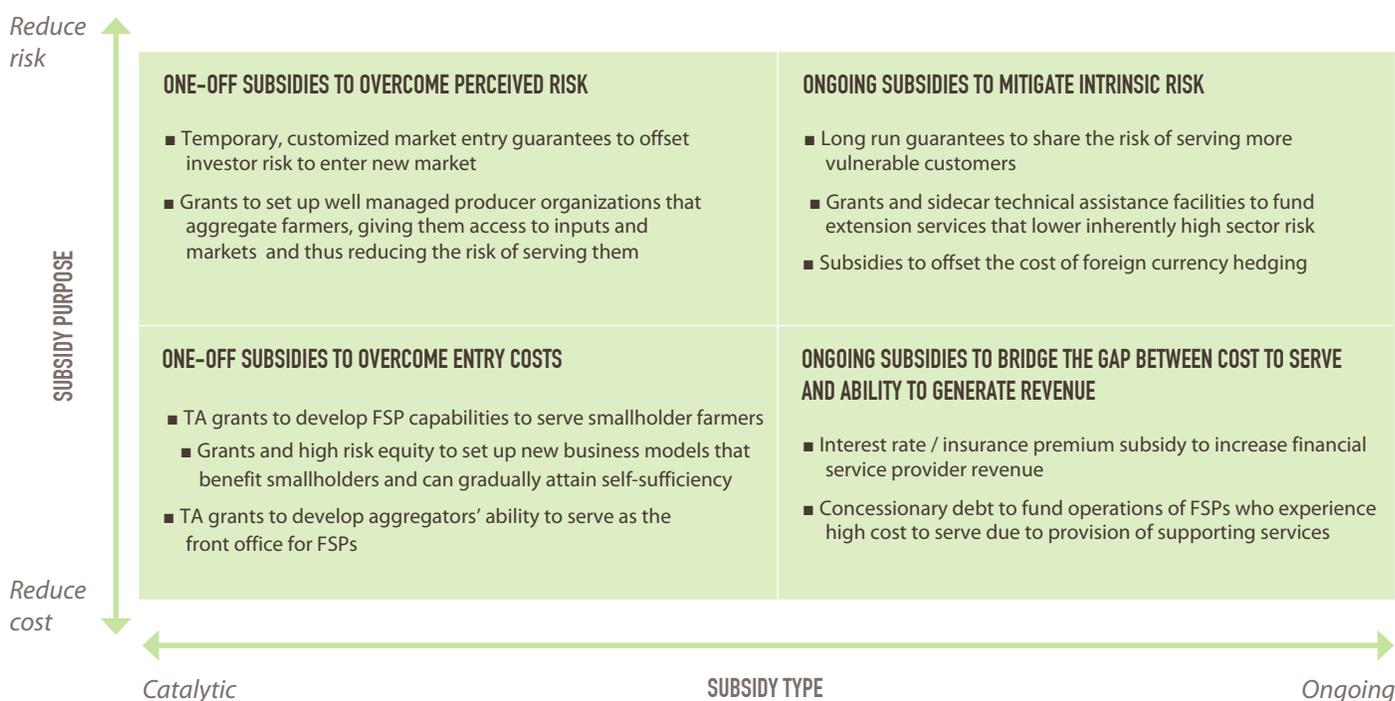
To some degree, the choice of catalytic or ongoing subsidy is also driven by the farmer segment targeted. It is conceivable that, in the right circumstances, the growth of tight value chains or strengthening of loose value chains could be supported by subsidies that taper off over time as more costs can be borne by the private sector.

Supporting noncommercial farmers until they can transition to commercial status or away from agriculture altogether is more likely to require ongoing subsidy. It is important to remember, however, that currently even proven models that work with commercial farmers in tight value chains, such as social lending, rely on external subsidy.

While smallholder finance already benefits from many ‘tried and true’ subsidies, actors have been experimenting with newer approaches recently (Figure 22, next page). This activity is expected to generate valuable lessons and replication opportunities.

Increased transparency around business model drivers and associated subsidy needs and uses will be critical to enabling smarter subsidy deployment. To date, there has been a lack of interrogation of business model economics or transparent comparisons of returns across models. Greater transparency is needed to enable the design of appropriate subsidies and attract the capital (both philanthropic / public and private) necessary for blending. More transparency will also help to create a demonstration effect, making it easier for private funders to enter into blended arrangements and for subsidies to be replicated in the future. It will therefore be critical to monitor the effectiveness—and the key enablers—of the various subsidies described here.

Figure 21: CONSIDERATIONS IN CHOOSING AN APPROPRIATE SUBSIDY TOOL



Source: Climate Policy Initiative: The Global Landscape of Climate Finance, 2015; Dalberg Analysis, 2016.

Figure 22: SUBSIDY INNOVATIONS IN SMALLHOLDER FINANCE

TYPE OF SUBSIDY	EXAMPLE
HIGH COST TO SERVE: CATALYTIC, UPFRONT GRANTS TO OVERCOME ENTRY COSTS	
Grants to develop FSP capabilities to serve smallholder farmers	<ul style="list-style-type: none"> ■ The World Bank's AgriFin recently conducted an evaluation of ten projects undertaken with ten financial institutions in Uganda, Sri Lanka, Nepal, Cambodia, Rwanda, Burkina Faso, Mali, Senegal, Madagascar, and Mozambique, in which FSPs were the recipients of technical assistance that helped them to set up agricultural lending units;⁸⁵ the results are very encouraging—by March 2015, after an average implementation time of around two years, partner banks had: <ul style="list-style-type: none"> □ Reached 137,386 new agricultural clients; and □ Deployed USD 469 million in new agriculture lending to smallholders and agricultural SMEs. ■ The MasterCard Foundation Fund for Rural Prosperity is a USD 50 million challenge fund that offers matching grants to private sector FSPs and enablers seeking to develop and scale-up solutions for financial inclusion of smallholders, and other poor rural clients. ■ At least three other programs supported by The MasterCard Foundation also target FSP capacity building: AGRA's Financial Inclusion for Smallholder Farmers in Africa Program, Mercy Corps' AgriFin Accelerate Program, and ICCO Cooperation's Strengthening African Rural Smallholders.
Grants and high risk equity to set up new, farmer-led business models that gradually attain self-sufficiency	<ul style="list-style-type: none"> ■ Carana Agribusiness Partnerships is testing a farm lease model that bundles and modernizes small farms through a long-term leasing arrangement supported by impact investors.
HIGH PERCEIVED RISK: GUARANTEES, TECHNICAL ASSISTANCE SIDECAR FACILITIES, AND FOREX SUBSIDIES TO OFFSET OR SHARE RISK	
Creative, demand-driven guarantees for offsetting investor risk during market entry or in the long run	<ul style="list-style-type: none"> ■ Supporting market entry: The Development Credit Authority's (DCA's) revised mandate has helped Root Capital serve value chains and geographies that it otherwise would not have reached. ■ Drawing on non-traditional sources of capital: MCE Social Capital is accessing a unique, high-net-worth-individual-funded guarantee to de-risk investments in MFIs and, more recently, agribusinesses. ■ Customizing for success: Rabobank Foundation takes a highly customized approach to guarantee design, tailoring each guarantee to the specific context in which the beneficiary operates.
Sidecar technical assistance facilities to investment funds to lower inherently high sector risk	<ul style="list-style-type: none"> ■ Many smallholder farmer finance funds (e.g., several Incofin funds, Africa Agriculture and Trade Investment Fund) have built such facilities into their design, with technical assistance budgets typically representing ~5% of fund size.
A variety of tools to mitigate foreign currency risk	<p>A recently released ISF briefing note offers suggestions for designing subsidies to offset currency risk,⁸⁶ including:</p> <ul style="list-style-type: none"> ■ Subsidizing the provision of foreign exchange advisory services and/or creating a shared-service back-office for currency risk management across multiple lenders; ■ Subsidizing costs associated with executing foreign exchange hedges; and ■ Establishing currency reserve funds for individual agricultural lenders.⁸⁷

85 AgriFin supported the banks in developing new credit risk assessment processes and procedures for agricultural clients, new products tailored to both agricultural smallholders and SMEs, and new delivery channel modalities to reduce transaction costs when targeting rural clients.

86 Note that these are not yet being implemented.

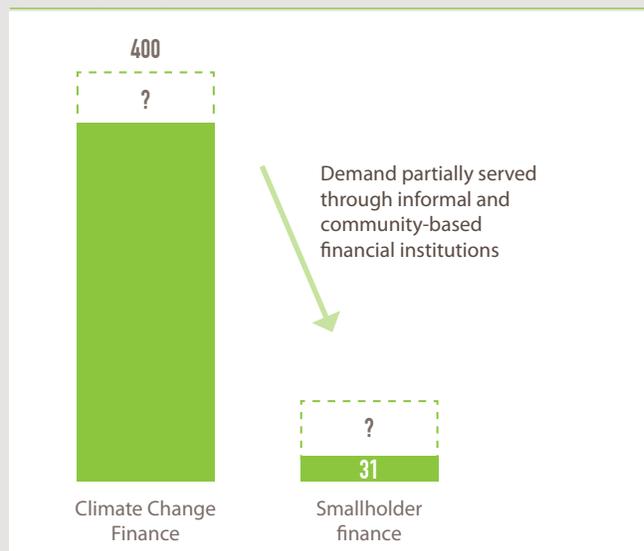
87 "Unlocking Local Currency Lending: Foreign Exchange Risk in Agricultural Finance," Initiative for Smallholder Finance, Mar. 2016.

BOX 9: POTENTIAL DIRECTION OF CLIMATE CHANGE FINANCE TO ALSO SUPPORT SMALLHOLDERS

Capital commitments to address climate change stood at USD 400 billion in 2015,⁸⁸ compared to just ~USD 31 billion of formal financial institution and value chain investment in smallholder finance. This represents an opportunity to direct a portion of climate change finance to smallholder finance that targets improvements in farmer resilience and adoption of climate-smart cultivation methods.

An interesting initiative that is already blending smallholder and climate funding is IFAD's Adaptation for Smallholder Agriculture Program, which funds climate resilience elements for agricultural finance initiatives. Another example is The Livelihoods Fund for Family Farming, a blended public and private vehicle that also blends in conservation finance revenue streams—e.g., carbon sequestration credits—in order to support smallholder yields and preserve natural assets.

Total finance for climate change and smallholder finance (USD bn, 2015)



Source: Climate Policy Initiative: The Global Landscape of Climate Finance, 2015; Dalberg Analysis, 2016.

Enablers – Transparency, technology and policy

Increased transparency will be critical to the initiation and long-term success of collaborative actions in the smallholder finance sector. Different actors will only be able to make a concerted effort if they are willing to share information about their operations, from historical supplier performance to funding sources to breakdowns of cost to serve. This high degree of transparency is crucial to achieving the level of resource sharing and cost optimization necessary for effective service provision.

Incorporating technology into service design and delivery can be an important enabler. Financial technology (fintech) can significantly lower cost to serve by replacing some forms of direct customer interaction with mobile interaction; equipping agents with time-saving tools, such as tablets; automating loan approval processes; and streamlining back office systems. Fintech can also make it possible to collect, analyze and share significantly greater volumes of data to inform their operations. Research indicates that around 15% of existing smallholder finance solutions are technology-enabled, with much higher rates for new solutions. Recent landscape studies in East Africa capture a growing trend toward service providers offering financial services that are either entirely or partially digital; globally, fintech is most commonly used by FSPs for deposit, disbursement, and payment, and to a somewhat lesser

degree for data collection and management.⁸⁹ Aware of the benefits of technology, a number of winners of the first innovation competition of the Fund for Rural Prosperity are actively incorporating into their operations such fintech elements as branchless banking that reaches remote customers, SMS updates and mobile payments to smallholder suppliers, and digitization of value chain data for purposes of credit scoring. In addition, instant farmer insurance enrollment and payouts through a partnership with M-PESA has been critical in enabling ACRE to scale. More broadly, part of the value proposition of linkages between banks and VSLAs involves digitizing the data of the latter, which essentially provides banks with customer credit history.

A third enabler is a policy environment that recognizes and facilitates increased lending to smallholder farmers. With a significant proportion of financing being facilitated through state banks, and close linkages between finance and extension services, integrated delivery within government-administered programs is important. In addition, government policies around subsidies, tariffs, bank reserve and lending requirements, compliance, foreign exchange management, and general agricultural market development all affect the ability of non-state institutions to provide services. While this is a highly localized issue, there are a number of best practices emerging from the long-running technical assistance and investment programs provided to host-country Governments by IFAD, World Bank, and others.

⁸⁸ "The Global Landscape of Climate Finance," Climate Policy Initiative, 2015.

⁸⁹ Rural and Agricultural Finance Learning Lab Smallholder Financial Solutions Database; Dalberg analysis.

6. A CALL TO ACTION

To change the growth trajectory of smallholder financing over the next 5 – 10 years, each type of sector stakeholder will need to take on a unique and ambitious role within the broader ecosystem, tackling multiple barriers simultaneously through carefully designed and coordinated efforts:

1. **Financial service providers:** *product and service design pioneers*
2. **Funders:** *smart subsidy champions*
3. **Market and research platforms:** *connected savants*
4. **Technical assistance providers:** *specialized educators*
5. **Policy makers:** *ecosystem enablers*

Financial service providers should strive to become pioneers in relevant product and service design, working in creative partnership with others. FSPs are on the front lines of bringing financial services to smallholders and need to find ways to expand their reach and make their offerings more relevant to this segment. The right partners can make this much more feasible, alleviating obstacles such as high cost to serve and information asymmetries. Armed with the right products and partners, FSPs will be in a strong position to raise capital to support their activities. By sharing relevant data from these endeavors, FSPs will support the creation of appropriate industry tools, standards, and knowledge-sharing platforms and inform smarter subsidy allocation. More specifically, FSPs can take the following actions:

RECOMMENDATIONS FOR FINANCIAL SERVICE PROVIDERS		
CUSTOMER CENTRICITY	PROGRESSIVE PARTNERSHIPS	SMART SUBSIDY
<p>1.1 Build mechanisms and processes for soliciting customer input</p> <p>1.2 Use customer knowledge to improve product/ process design (e.g., by linking repayment timelines to smallholders' actual crop cycles)</p> <p>1.3 Strengthen and contribute to nascent information-sharing platforms (e.g., Propagate, insight2impact) to make more customer information available</p>	<p>1.4 Explore partnership opportunities with different kinds of actors (e.g., value chain actors, fintech providers) for market access or expansion to change what is possible</p> <p>1.5 Become active contributors to research efforts, documenting partnership processes and outcomes</p>	<p>1.6 Increase transparency by providing data on use of subsidy</p> <p>1.7 Collaborate with funders to structure appropriate subsidies and blending instruments</p>

The role of public and private funders is to become champions of smart subsidy, finding the most effective ways of blending capital to substantially increase the total flow of funding to smallholder finance. In this role, funders will carefully assess and select financial service models to support; identify, design, and test the appropriate mechanisms to do so; and determine the appropriate role of individual funders given the wide variation in requirements and flexibility observed across actors in this segment. In parallel, funders can provide critical support for research, cover upfront setup costs associated with launching new partnerships, facilitate connections between their investees, and motivate their partners to contribute to the ecosystem-wide push for change. The table below suggests more detailed activities for funders to pursue:

RECOMMENDATIONS FOR FUNDERS		
CUSTOMER CENTRICITY	PROGRESSIVE PARTNERSHIPS	SMART SUBSIDY
2.1 Make funds available for building the evidence base related to customer centrality (see below)	2.4 Facilitate connections between grantees / investees that may be suitable partners	2.7 Participate in the design of blending instruments suited to smallholder finance investment and leverage emerging blending platforms (e.g., Convergence) to deploy them to crowd funding into the space
2.2 Support technical assistance for FSPs to develop customer centric capabilities (e.g., product design)	2.5 Support partnership set-up costs	2.8 Request that grantees / investees report on use of subsidy using new industry standards
2.3 Request that grantees / investees incorporate customer centrality in operations and capture outcomes	2.6 Identify and equip organizations to act as coordinators that can broker relationships and drive them toward execution	2.9 Fund research on subsidy effectiveness
		2.10 Participate in donor coordination activities to optimize investments around common priorities and learning questions

Market and research platforms can support sector growth by playing the role of connected savants, sparking learning around actors’ most pressing questions and promoting the findings widely to encourage action. These platforms have a critical role to play in shedding light on aspects of smallholder finance that are not well understood or documented today, such as the value of customer centrality to FSPs or the details of business model dependence on subsidy. They can also go far beyond research, rallying the industry around a common set of reporting standards, aggregating and sharing data, creating opportunities for potential partners to connect, and infusing energy into the sector by showcasing successes. More concrete actions for these platforms are recommended below:

RECOMMENDATIONS FOR MARKET AND RESEARCH PLATFORMS

CUSTOMER CENTRICITY	PROGRESSIVE PARTNERSHIPS	SMART SUBSIDY
3.1 Aggregate, anonymize, and share customer data from FSPs and technical assistance providers	3.4 Aggregate and analyze data to quantify the value of partnerships to different parties involved in order to develop compelling propositions for stakeholders to engage in more partnerships	3.8 Articulate and quantify business model dependence on subsidy to shed light on actual returns
3.2 Build up evidence base of a) value of customer centrality to FSPs and b) relative effectiveness of different tools and approaches, to encourage uptake of such methods among service providers	3.5 Investigate most appropriate partnership structures to ensure optimal future partnership design	3.9 Evaluate relative effectiveness of different kinds of subsidy to inform future subsidy placement
3.3 Showcase successful product design for smallholder finance (or—perhaps equally valuable—examples of failed product design)	3.6 Create opportunities for actors to meet, e.g., side events at existing convenings, in order to cultivate relationships that evolve into partnerships	3.10 Develop and promote standards around metrics and reporting on subsidy
	3.7 Provide support for structuring and facilitating new partnerships	3.11 Create a platform for sharing standardized information (similar to MIX) that can help investors make informed decisions

Technical assistance providers must take on the role of specialized educators across the ecosystem. This means not just training smallholder farmers, for whom technical assistance providers are already making a world of difference, but also becoming sought-after advisors to FSPs, who have much to learn in order to serve smallholders more effectively. Extending the educator role beyond direct engagement, technical assistance providers can also contribute valuable data from their experience to industry research efforts. The table below offers several specific ways in which technical assistance providers can contribute:

RECOMMENDATIONS FOR TECHNICAL ASSISTANCE PROVIDERS

CUSTOMER CENTRICITY	PROGRESSIVE PARTNERSHIPS	SMART SUBSIDY
4.1 Focus energy on building out FSPs' customer-centric capabilities, especially for value chain actors (e.g., by developing and promoting trainings and guides)	4.3 Play a pre-competitive role in setting up partnerships (e.g., by helping partners establish norms for working together, selecting an appropriate structure, etc.)	4.5 Support FSPs in implementing new reporting standards
4.2 Contribute data to platforms based on: a) own work with farmers or b) outcomes from FSP engagement	4.4 Integrate finance as a sustainability strategy from the outset in major market development programs	4.6 Contribute to the evidence base around the cost and effectiveness of subsidy related to TA

Policy makers have the opportunity to become ecosystem enablers, creating the policies and investment frameworks to enhance service provision to smallholder farmers. Policymakers should reimagine their role alongside other actors, becoming system correctors who tackle key regulatory and infrastructural challenges to the efforts envisioned above, including weak information ecosystems and limits on financial service provider activities. As the smallholder finance agenda typically sits at the intersection of different ministries of government, this role as a connector is required both within and outside of government institutions.

Never before has there been such a diversity of actors and approaches working to deliver financial services to smallholder farmers. Moreover, industry actors are pioneering new ways of working, with decisions informed by more data and information than ever before, and customized to local contexts.

Now is the time to put smallholder finance on a new trajectory that will help millions of smallholder farmers secure a more prosperous future for themselves and their families.

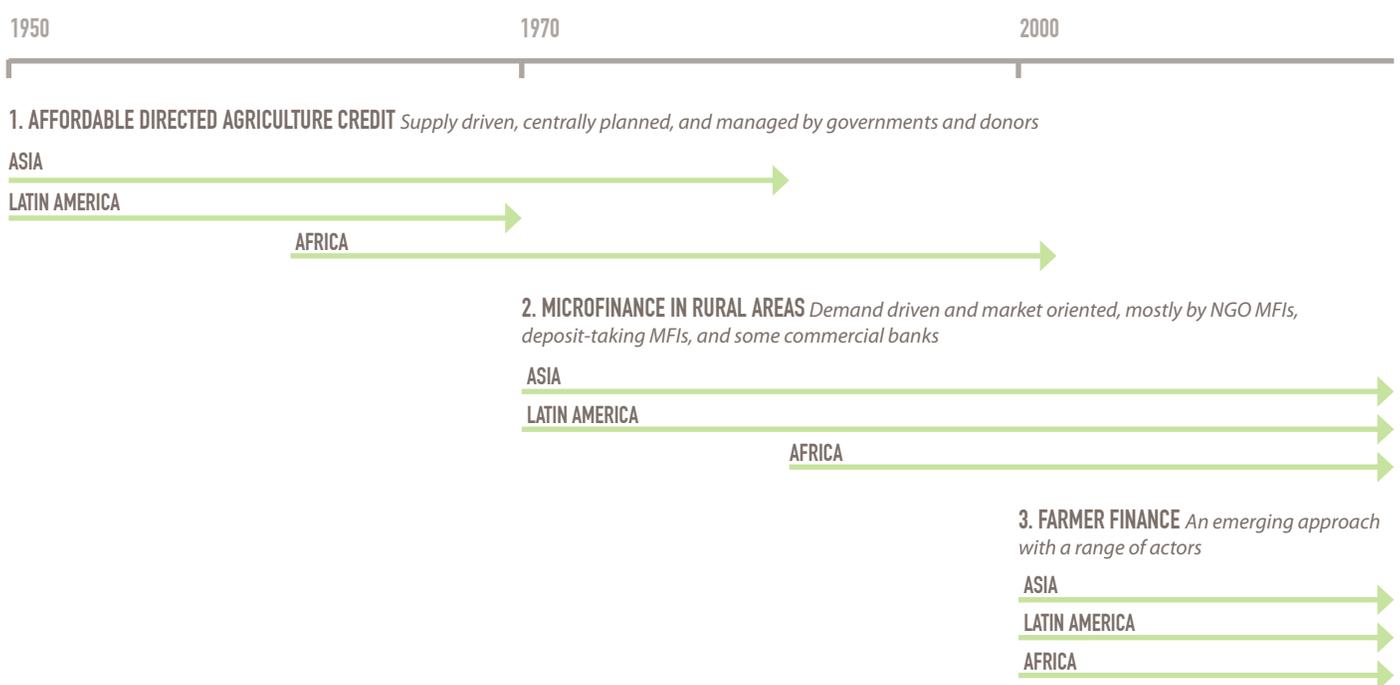
ANNEX A: EVOLUTION OF SMALLHOLDER FINANCIAL SERVICES

An estimated 2 billion of the world’s poorest people live in households in developing countries that depend on agriculture in some form for their livelihoods. Despite various efforts since the 1950’s to provide smallholder households with formal financial services, the vast majority remain financially underserved. In late 2014 and early 2015, the Bill and Melinda Gates Foundation commissioned Dalberg and the Initiative for Smallholder Finance to provide a more

thorough understanding of the historical evolution of and lessons from these efforts. The lessons were intended to help financial service providers, funders, governments and other stakeholders inform their future strategies to increase access to financial services for smallholder households.

The study identified 3 main stages from a thorough analysis of the evolution of financial services for smallholder farmers:

Figure 23: Evolution of smallholder financial services



1. **Affordable directed agriculture credit**, from the 1950’s, was driven by Government and donors, who established agriculture development banks or capitalized commercial banks, with express mandates to lend to smallholder farmers at below market interest rates. By implementing interest rate ceilings and quotas on smallholder lending, these actors intended to reach smallholder farmers with credit at scale. However with few exceptions, this approach did not produce its intended results. The majority of providers were unsustainable as a result of high default rates, and were often liquidated or transformed into diversified banks. This was largely driven by misaligned incentives – neither smallholder farmers

nor providers had strong incentives to ensure loan repayment. Additionally, this approach often didn’t reach the intended audience – the wealthy or well-connected often benefited most given their strong political ties and providers’ incentives to deploy larger loans.

2. **Microfinance in rural areas**, from the 1970’s, emerged in response to the failures of both directed credit and subsequent laissez fair policies. By serving the poor using a market-oriented and demand-drive approach, Microfinance in rural areas aimed to serve smallholders while focusing on provider sustainability. A key component of this approach was leveraging

community-based mechanisms, particularly joint-liability groups, to reduce the need for collateral, as well as reduce transaction costs and information asymmetries. With the exception of those in some countries in Asia, most microfinance providers did not ultimately reach smallholders. Many providers focused their activities in urban areas and/or lacked a strong understanding of smallholder farmers' needs. For example, the seasonality of smallholder incomes did not align to the frequent and small repayments required by most microfinance programs.

3. **Farmer finance**, from the 2000's, is the most recent attempt to provide smallholder farmers with financial services. While this approach is still developing, it aims to build on lessons from affordable directed agriculture credit and microfinance in rural areas. Approaches include: a) providing financial products & services, and non-financial support services, to smallholders that meet their needs, b) leveraging local value chain actors for smallholder finance, c) linking informal & semi-formal providers and formal providers, and d) leveraging emerging technologies. Given the earlier stage nature of this phase, lessons are still emerging.

A further summary of the research and analysis is available from the Initiative for Smallholder Finance. A research briefing is pending.

ANNEX B: METHODOLOGY AND KEY ASSUMPTIONS

Process

Dalberg Global Development Advisors, The Initiative for Smallholder Finance, and The Rural and Agricultural Finance Learning Lab developed this report over approximately four months, from November 2015 through March 2016.

Throughout the process the core team engaged with the Initiative for Smallholder Finance Steering and Advisory Committee to validate report scope, preliminary findings, and final report draft. The Steering Committee members include The Bill and Melinda Gates Foundation, Citi Foundation, The Ford Foundation, KFW, The MasterCard Foundation, Small Foundation, Skoll Foundation, and USAID. The Advisory Committee members include Aspen Network of Development Entrepreneurs, Business Action for Africa, Business Fights Poverty, CGAP, IDH, One Acre Fund, Root Capital, and TechnoServe.

Research inputs

The findings in this report were drawn from a variety of sources: existing literature and specialized databases

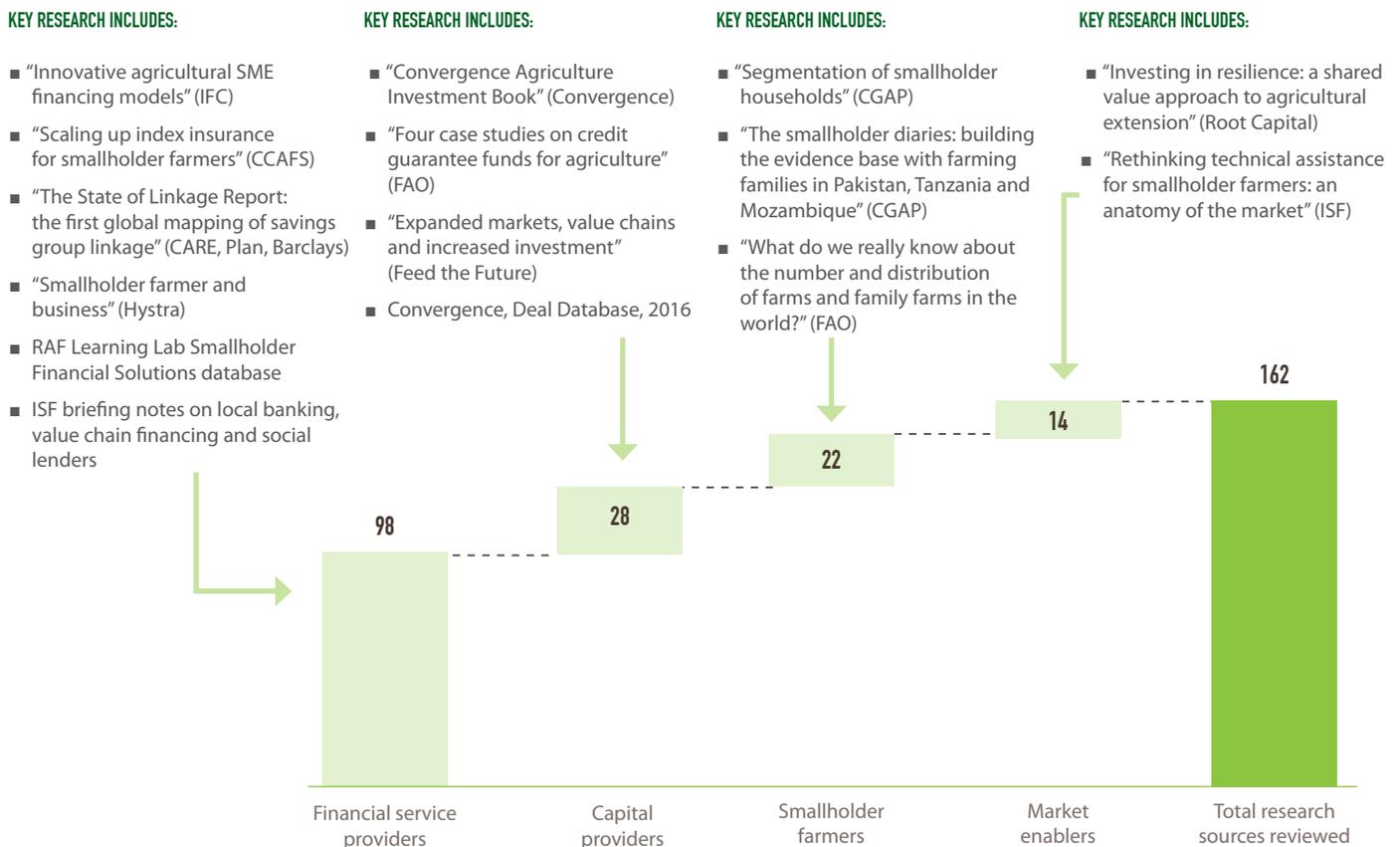
to leverage already available information; stakeholder interviews to fill in knowledge gaps; and a Collaborative Research Group, formed by key sector participants, to deep dive in specific topics and validate report insights.

1. Literature review

The Dalberg team reviewed more than 160 research documents on smallholder finance to inform this report. These reports spanned across a range of themes such as smallholder farmer needs, financial service providers and business models, capital providers and investment structures and market enablers, including research on technical assistance providers and government policy. (See figure below for a breakdown of research sources by topic).

Sources of these reports included 1) multilateral agencies, particularly the Food and Agriculture Organization of the United Nations (FAO), the World Bank and the International Finance Corporation (IFC); 2) specialized independent market and research platforms such as the Consultative Group to Assist the Poor (CGAP), the Initiative for Smallholder Finance (ISF), the Council on Smallholder Agricultural Finance (CSAF)

Figure 24: NUMBER OF REPORTS AND RESEARCH DOCUMENTS ON SMALLHOLDER FINANCE REVIEWED



and the Research Program on Climate Change, Agriculture and Food Security (CCAFS); and 3) financial service providers such as One Acre Fund and Root Capital.

The team also drew on several databases to conduct quantitative analysis and identify key market participants.

- **RAF Learning Lab Smallholder Financial Solutions Database, 2015:** database of existing financial solutions for smallholder farmers developed by the Rural Agricultural Finance Lab in partnership with Dalberg. The database includes over 600 different provider solutions offered in Africa, Asia and Latin America with each record describing the product or service offered, specifying details on the model and providing quantitative data on size and performance, if available. Developed by consolidating previous databases from the Initiative for Smallholder Finance and conducting a desk analysis of published descriptions of financial solutions targeted at smallholders, the database breaks new ground by establishing the first data set to comprehensively capture financial solutions available to smallholders today.
- **Convergence, Deal Database, 2016:** database of blended finance transactions in emerging and frontier markets developed by Convergence. Launched in January 2016, Convergence is the first platform connecting public and private investors to co-invest in blended deals.
- **CGAP Smallholder Diaries Data:** data on the demographic characteristics, income sources and financial and in-kind transactions of ~270 households in Mozambique, Tanzania and Pakistan between June 2014 and June 2015.

2. Stakeholder interviews

Interviews with market participants were fundamental in filling in knowledge gaps, gathering the most up-to-date information on market trends and the performance of different smallholder business models and capital instruments, and getting a first-hand and nuanced understanding of the challenges and opportunities perceived by different types of market actors.

Over the course of the research, the core team interviewed over eighty organizations covering capital providers, financial service providers, market enablers and sector experts. In addition, the core team incorporated insights from recent interviews conducted in the course of other Dalberg research with a complementary focus. (*Refer to*

Annex F for a full list of the organizations interviewed).

Interviews were typically conducted over 45-60min and covered a variety of topics. For example, interviews with FSPs typically covered:

- Specific to the organization:
 - Motivations for engaging in smallholder finance
 - Target smallholder customer, including geographical and value chain focus
 - Size of activity (if relevant)
 - Performance to date and drivers of that performance
 - Key challenges faced and mitigating mechanisms
 - Growth projections and key enablers of that growth
- Generally for the sector
 - Current and expected market trends impacting smallholder finance
 - Research priorities to unlock smallholder finance

3. Collaborative Research Group

A key input to the findings of this report was the Collaborative Research Group (CRG). The CRG broke new ground by establishing for the first time a precedent of collaborative research between key market participants. The CRG provided valuable input across four key topics (described below), complementing the core team's work.

Participants

The CRG included six lead contributors: Root Capital (Matt Foerster), One Acre Fund (Mark Adams), TechnoServe (Jane Abramovich), World Bank AgriFin (Azeb Fissaha), Opportunity International (Tim Strong and Genzo Yamamoto) and the Initiative for Smallholder Finance (Miriam Cherogony); participants from Dalberg and the Initiative for Smallholder Finance served as facilitators.

Topics

The CRG covered four topics:

- Trends in smallholder demand for financial services;
- Addressable market and technical assistance;
- Trends in capital supply; and
- Drivers and mitigants of risk.

Format

In anticipation of the weekly CRG calls, each contributor submitted a brief document with insights and data on the relevant topic.

During the content call, each contributor shared their perspective and highlighted key findings from their organization's prior work and experience with the topic. Dalberg and the Initiative for Smallholder Finance facilitated a discussion, focusing on common themes from the individual submissions, as well as areas where participants had different perspectives.

Upon conclusion of each content call, Dalberg synthesized findings, using these to complement insights from the literature review and stakeholder interviews.

Geographical scope

China is excluded from analysis throughout the report due to limited availability of data—particularly on the supply side—and the unique conditions of its smallholder farmers. For instance, farmers have successfully raised their agricultural income by mechanizing even small farms, diversifying production by gradually shifting from grain-based agriculture to high-value crops and livestock. Even so, the proportion of smallholder income from agriculture today is less than 30%.⁹⁰

Central Asia and the Middle East and North Africa are also excluded primarily for reasons related to data availability. The decision was further influenced by the recognition that donor interest in agricultural development in these regions has historically been relatively low (based on share of ODA to agriculture), though future research into these regions may succeed in drawing more resources in.⁹¹

⁹⁰ Huang, Jikun, Xiaobing Wang and Huanguang Qiu, "Small-scale farmers in China in the face of modernisation and globalization," Center for Chinese Agricultural Policy, 2012.

⁹¹ "Aid to Agriculture and Rural Development," OECD-DAC, Mar. 2015.

Sizing assumptions

1. Needs sizing

ASSUMPTION FIELD	ASSUMPTION VALUE	SOURCE
Total number smallholder farmers (<5ha)	<ul style="list-style-type: none"> ~268 million 	<ul style="list-style-type: none"> "What do we really know about the number and distribution of farms and family farms in the world?" FAO ESA Working Paper No. 14-02, 2014 (FAO ESA Working Paper No. 14-02) – excludes China, Central Asia, Middle East, North Africa and Eastern Europe
Number of smallholder farmers by segment	<ul style="list-style-type: none"> ~7% in tight value chains ~33% in loose value chains ~60% noncommercial 	<ul style="list-style-type: none"> "Segmentation of Smallholder Households: Meeting the Range of Financial Needs in Agricultural Families," CGAP, 2013
Number of smallholder farmers by region	<ul style="list-style-type: none"> ~12 million in Latin America ~48 million in sub-Saharan Africa ~208 million in South and Southeast Asia 	<ul style="list-style-type: none"> FAO ESA Working Paper No. 14-02
Split of smallholder segments by region	<ul style="list-style-type: none"> Tight value chains: ~18% Latin America, ~12% sub-Saharan Africa, ~71% South and Southeast Asia Loose value chains: ~5% Latin America, ~18% sub-Saharan Africa, ~78% South and Southeast Asia Noncommercial: ~3% Latin America, ~19% sub-Saharan Africa, ~79% South and Southeast Asia 	<ul style="list-style-type: none"> FAO ESA Working Paper No. 14-02
Short-term agricultural needs	<ul style="list-style-type: none"> ~USD 1,500 per farmer in tight value chain 	<ul style="list-style-type: none"> "Catalyzing Smallholder Agricultural Finance," Dalberg, 2012 (Catalyze 2012) – average short-term agri-need in coffee and cocoa value chains (includes input and trade financing needs), assumes 1.5ha per farmer
	<ul style="list-style-type: none"> ~USD 500 per farmer in loose value chain 	<ul style="list-style-type: none"> Catalyze 2012 – average ST needs for maize and rice, assumes 1ha per farmer
	<ul style="list-style-type: none"> ~USD 100 per noncommercial farmer 	<ul style="list-style-type: none"> One Acre Fund – average loan size
Long-term agricultural needs	<ul style="list-style-type: none"> ~USD 1,850 per farmer in tight value chain 	<ul style="list-style-type: none"> Catalyze 2012 – average LT need in coffee and cocoa value chains; assumes 1.5ha per farmer
	<ul style="list-style-type: none"> ~USD 500 per farmer in loose value chain 	<ul style="list-style-type: none"> ISF LT finance analysis (unpublished) – average cost of tools / equipment D-Lab – average cost of drip irrigation
Non-agricultural needs	<ul style="list-style-type: none"> ~\$600 per farmer in tight value chain ~\$200 per farmer in loose value chain ~\$100 per noncommercial farmer 	<ul style="list-style-type: none"> CGAP Smallholder Diaries data – average value of "large" purchases (furniture, emergencies, school fees, life events) in Pakistan (proxy for tight value chains), Tanzania (proxy for loose value chains) and Mozambique (proxy for noncommercial) Expert interviews – State Banks consumption loans (25% of ST agri-needs)

2. Financial service provider sizing

ASSUMPTION FIELD	ASSUMPTION VALUE	SOURCE
VALUE CHAIN ACTORS		
% of smallholder farmers in export crops	<ul style="list-style-type: none"> ■ ~15% South and Southeast Asia ■ ~15% Sub-Saharan Africa ■ ~25% in Latin America, including Central America 	<ul style="list-style-type: none"> ■ FAO data - average ratio of agriculture export value to production value in smallholder farmer crops
% of commercial smallholder farmers in export crops receiving inputs on credit	<ul style="list-style-type: none"> ■ ~50% 	<ul style="list-style-type: none"> ■ Expert interviews
% of commercial smallholder farmers in export crops receiving inputs on credit	<ul style="list-style-type: none"> ■ ~70% 	<ul style="list-style-type: none"> ■ Expert interviews
Average loan size	<ul style="list-style-type: none"> ■ ~\$500/farmer export crop ■ ~250/farmer non-export crop 	<ul style="list-style-type: none"> ■ Expert interviews
STATE BANKS		
Agri lending disbursements	<ul style="list-style-type: none"> ■ ~USD 7.3 billion 	<ul style="list-style-type: none"> ■ "Briefing 01: Local Bank Financing for Smallholder Farmers – A \$9 Billion Drop in the Ocean," ISF, 2013 (ISF Briefing 1) – includes regional split
Ratio of agri to non-agri lending	<ul style="list-style-type: none"> ■ ~80-20% 	<ul style="list-style-type: none"> ■ Expert interviews
Ratio of short-term to long-term lending	<ul style="list-style-type: none"> ■ ~85-15% 	<ul style="list-style-type: none"> ■ ISF Briefing 1
BANK MFIs		
Agri lending disbursements	<ul style="list-style-type: none"> ■ ~USD 0.9 billion 	<ul style="list-style-type: none"> ■ ISF Briefing 1 – includes regional split
Ratio of agri to non-agri lending	<ul style="list-style-type: none"> ■ ~55-45% 	<ul style="list-style-type: none"> ■ Expert interviews
Ratio of short-term to long-term lending	<ul style="list-style-type: none"> ■ ~85-15% 	<ul style="list-style-type: none"> ■ ISF Briefing 1
NON-BANK MFIs		
Average portfolio non-bank MFIs	<ul style="list-style-type: none"> ■ ~USD 50 million 	<ul style="list-style-type: none"> ■ Rural and Agricultural Finance (RAF) Learning Lab Smallholder Financial Solution Database (RAF Learning Lab Database)
% of smallholder portfolio	<ul style="list-style-type: none"> ■ ~30% 	<ul style="list-style-type: none"> ■ RAF Learning Lab Database – ratio of smallholder portfolio to total portfolio bank MFIs
Number of non bank MFIs	<ul style="list-style-type: none"> ■ ~110 	<ul style="list-style-type: none"> ■ RAF Learning Lab Database – includes regional split
Ratio of agri to non-agri lending	<ul style="list-style-type: none"> ■ ~55-45% 	<ul style="list-style-type: none"> ■ Expert interviews
Ratio of short term to long term lending	<ul style="list-style-type: none"> ■ ~85-15% 	<ul style="list-style-type: none"> ■ ISF Briefing 1

Table continues onto page 48

COMMERCIAL BANKS		
Agri lending disbursements	<ul style="list-style-type: none"> ■ ~USD 1.1 billion 	<ul style="list-style-type: none"> ■ ISF Briefing 1 – includes regional split
Ratio of agri to non agri lending	<ul style="list-style-type: none"> ■ ~90-10% 	<ul style="list-style-type: none"> ■ Expert interviews
Ratio of short-term to long-term lending	<ul style="list-style-type: none"> ■ ~85-15% 	<ul style="list-style-type: none"> ■ ISF Briefing 1
SOCIAL LENDERS		
Total annual disbursements	<ul style="list-style-type: none"> ■ ~USD 565 million 	<ul style="list-style-type: none"> ■ CSAF 2014 Annual Report
Regional split	<ul style="list-style-type: none"> ■ ~75% Latin America ■ ~21% sub-Saharan Africa ■ ~4% South and Southeast Asia 	<ul style="list-style-type: none"> ■ “Briefing 05: Investor and Funder Guide to the Agricultural Social Lending Sector,” ISF, 2014 (ISF Briefing 5)
Annual disbursements to producer groups	<ul style="list-style-type: none"> ■ ~68% 	<ul style="list-style-type: none"> ■ ISF Briefing 5
HIGH TOUCH NGOS		
One Acre Fund disbursements	<ul style="list-style-type: none"> ■ ~USD 25 million 	<ul style="list-style-type: none"> ■ One Acre Fund
Nuru International disbursements	<ul style="list-style-type: none"> ■ ~USD 0.5 million 	<ul style="list-style-type: none"> ■ Nuru International 2014 Annual Report
INFORMAL AND COMMUNITY-BASED INSTITUTIONS		
% of smallholder borrowing from informal and community-based institutions	<ul style="list-style-type: none"> ■ ~42% South and Southeast Asia ■ ~20% sub-Saharan Africa ■ ~20% Latin America 	<ul style="list-style-type: none"> ■ FinScope Survey ■ Expert interviews ■ “Financial Inclusion: Zooming in on Latin America,” IMF Working Paper 15/206, 2015
Average loan size	<ul style="list-style-type: none"> ■ ~USD 250 	<ul style="list-style-type: none"> ■ Average non-agri smallholder needs (see above) ■ Alliance For Financial Inclusion

ANNEX C: REGIONAL BREAKDOWN OF GAPS IN SMALLHOLDER FINANCE

SOUTH AND SOUTHEAST ASIA

Commercial smallholder farmers in tight value chains

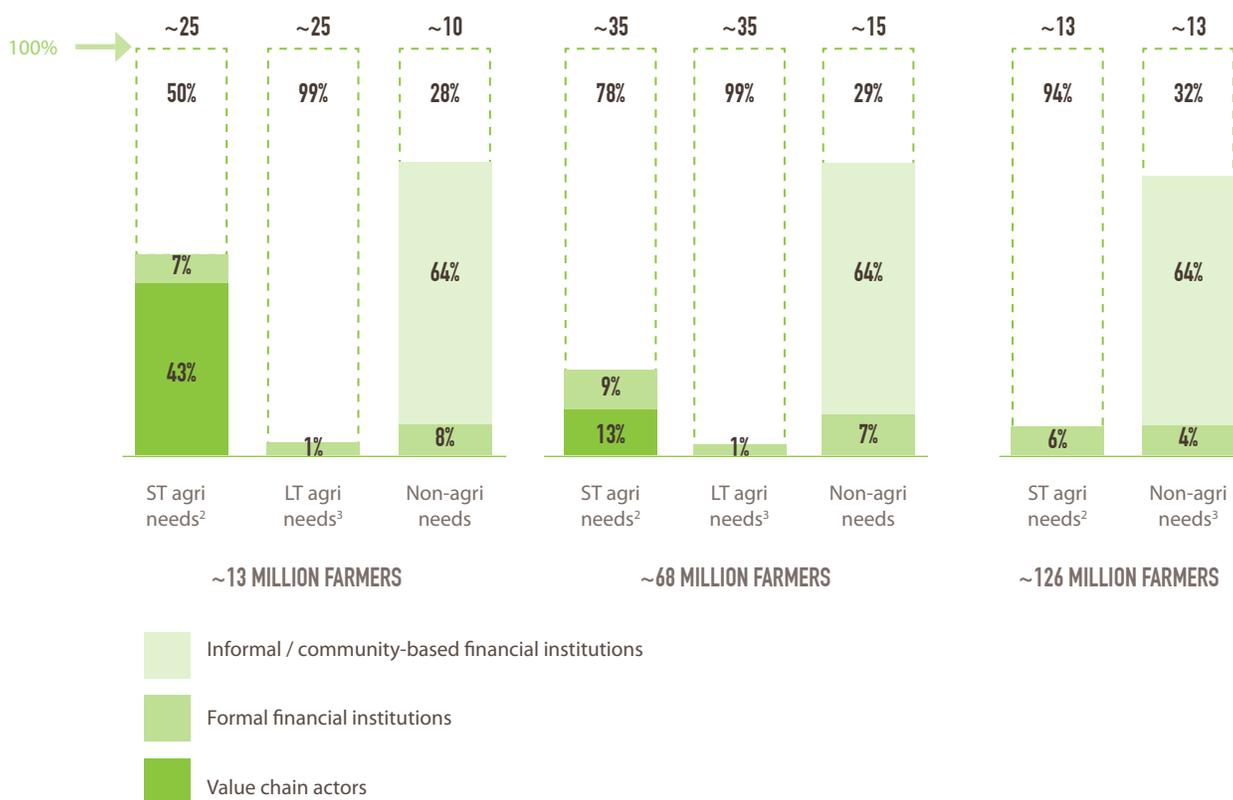
Financial needs and disbursements (USD Bn)¹

Commercial smallholder farmers in loose value chains

Financial needs and disbursements (USD Bn)¹

Noncommercial smallholder farmers

Financial needs and disbursements (USD Bn)¹



¹ Excludes China and Central Asia. Includes financing to producer groups by state banks and commercial banks.

² ST agri needs refers to short term financing needs of less than a year (typically for inputs, harvest and export).

³ LT agri needs refers to long term financing needs of more than one year (typically for renovation or equipment).

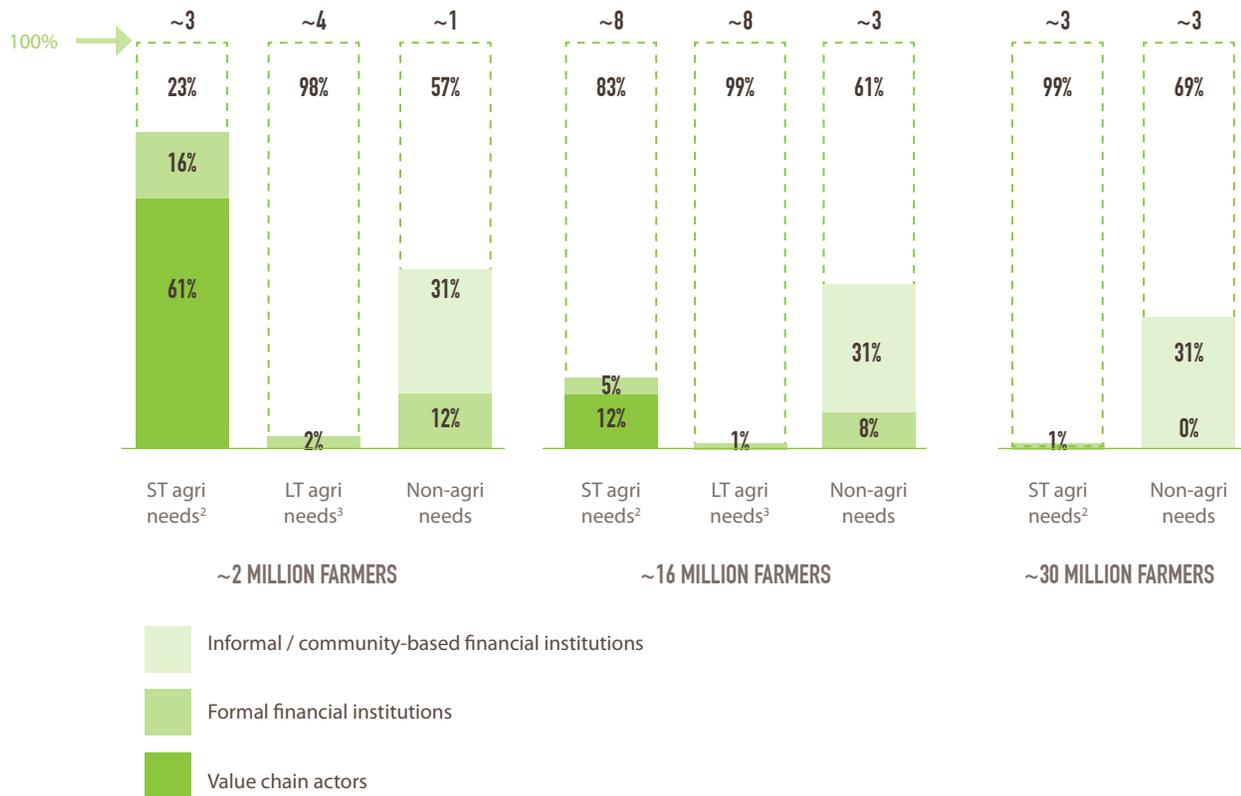
Notes: Commercial banks and social lenders disbursements counted toward smallholders in tight value chains; state bank financing distribution in proportion to farmer segment needs; MFI agri lending included in loose value chains; MFI non-agri lending distributed in proportion to farmer segment need; High touch social ventures included under subsistence. Informal / community-based allocated in proportion to non-agri needs.

SUB-SAHARAN AFRICA

Commercial smallholder farmers in tight value chains
Financial needs and disbursements (USD Bn)¹

Commercial smallholder farmers in loose value chains
Financial needs and disbursements (USD Bn)¹

Noncommercial smallholder farmers
Financial needs and disbursements (USD Bn)¹



1 Excludes Middle East and North Africa. Includes financing to producer groups by state banks and commercial banks.

2 ST agri needs refers to short term financing needs of less than a year (typically for inputs, harvest and export).

3 LT agri needs refers to long term financing needs of more than one year (typically for renovation or equipment).

Notes: Commercial banks and social lenders disbursements counted toward smallholders in tight value chains; state bank financing distribution in proportion to farmer segment needs; MFI agri lending included in loose value chains; MFI non-agri lending distributed in proportion to farmer segment need; High touch social ventures included under subsistence. Informal / community-based allocated in proportion to non-agri needs.

LATIN AMERICA

Commercial smallholder farmers in tight value chains

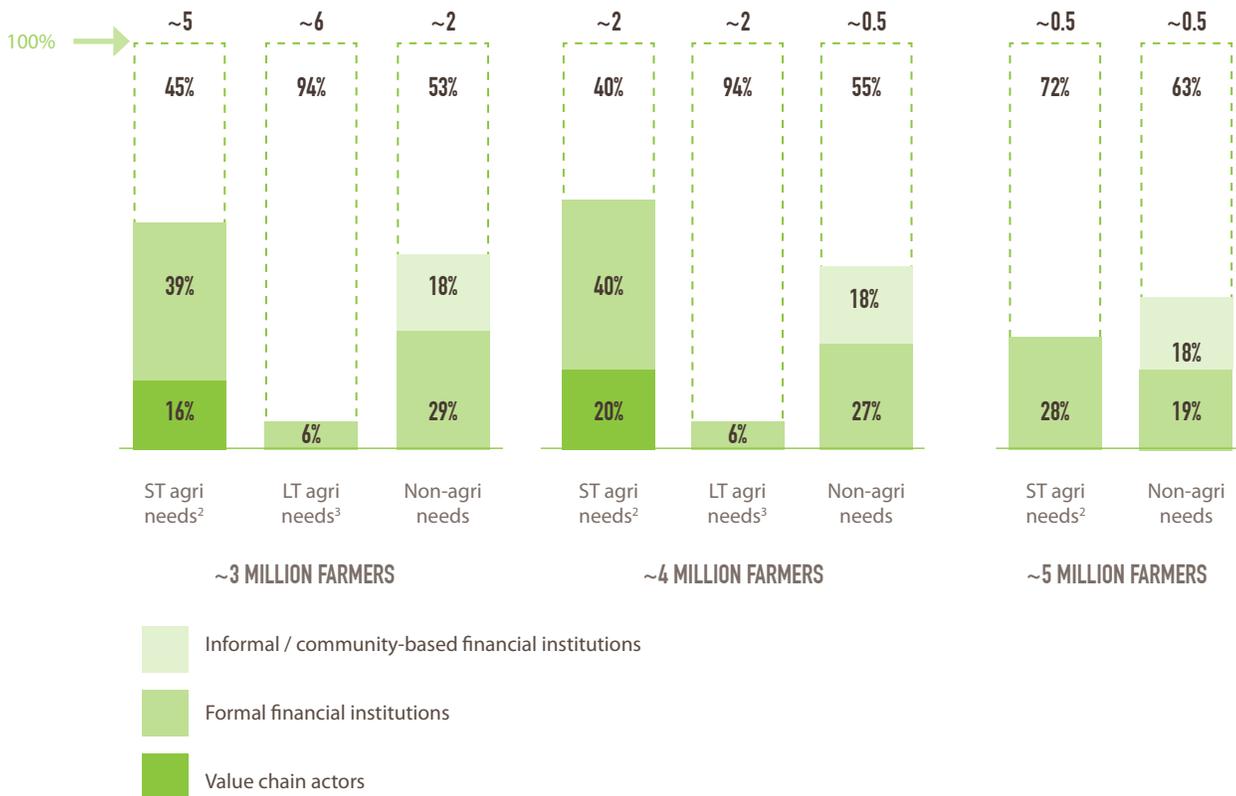
Financial needs and disbursements (USD Bn)¹

Commercial smallholder farmers in loose value chains

Financial needs and disbursements (USD Bn)¹

Noncommercial smallholder farmers

Financial needs and disbursements (USD Bn)¹



1. Includes financing to producer groups by state banks and commercial banks.

2. ST agri needs refers to short term financing needs of less than a year (typically for inputs, harvest and export).

3. LT agri needs refers to long term financing needs of more than one year (typically for renovation or equipment).

Notes: Commercial banks and social lenders disbursements counted toward smallholders in tight value chains; state bank financing distribution in proportion to farmer segment needs; MFI agri lending included in loose value chains; MFI non-agri lending distributed in proportion to farmer segment need; High touch social ventures included under subsistence. Informal / community-based allocated in proportion to non-agri needs.

ANNEX D: FSP MODELS

Relative advantages of different groups of credit providers

	FORMAL FINANCIAL INSTITUTIONS	VALUE CHAIN ACTORS	INFORMAL AND COMMUNITY-BASED FINANCIAL INSTITUTIONS
EXAMPLES	COMMERCIAL BANKS, STATE BANKS, MFIs	BUYERS, INPUT PROVIDERS	MONEYLENDERS, VSLAs, ROSCAs
KEY RELATIVE ADVANTAGES (NOT EXHAUSTIVE)	<ul style="list-style-type: none"> ■ Often able to provide smallholders with a more comprehensive offering given wider set of financial products and services (e.g., savings, insurance, financial literacy training) ■ More sophisticated financial products and/or credit assessment techniques given financial expertise ■ Potentially able to offer more competitive rates given more diversified financial services activities and easier access to capital ■ Smallholders benefit from greater customer protection given formal financial sector regulations⁹² 	<ul style="list-style-type: none"> ■ Convenient for smallholders given geographical proximity to and frequent interactions with borrowers ■ Often offer more flexible borrowing requirements (e.g., does not require collateral) due to relationship-based nature of lending activities ■ Often demonstrate greater willingness to lend to smallholders given understanding of agricultural sector (and associated risks) and individual smallholders' activities ■ Repayment and other terms may be better suited for agriculture (e.g., aligned to crop cycle) given agricultural expertise 	<ul style="list-style-type: none"> ■ Frequently viewed by smallholders as more trustworthy source of credit given familiarity and community presence ■ Often offer more flexible borrowing requirements (e.g., does not require collateral) and/or repayment terms due to relationship-based nature of lending activities ■ Convenient for smallholders given geographical proximity to borrowers

⁹² These can vary widely between country and type of institution.

FSP model profiles⁹³

1		VALUE CHAIN ACTORS: INPUT PROVIDERS	
PROFILE		PREVALENCE AND PENETRATION	
<ul style="list-style-type: none"> ■ Who? Agricultural input suppliers as well as agro-dealers providing smallholders with the inputs necessary to cultivate their crops ■ What? In-kind inputs or short term cash advances after harvest and generally at above market interest rates ■ Why? Increase sales of agricultural inputs by enabling farmers to acquire inputs they would otherwise be unable to access 		<ul style="list-style-type: none"> ■ ~USD 17 billion annual disbursements from both input suppliers / agro-dealers/ traders and buyers ■ More prevalent in export crops: ~70% of export crop farmer get inputs on credit vs. ~40% of staple crop farmers 	
MODEL(S) OF INTERACTION WITH MARKET ACTORS TO DELIVER FINANCIAL SERVICES			
MODEL DESCRIPTION <ul style="list-style-type: none"> ■ Input provider establishes business relationship with famer ■ Based on the performance of this relationship, input provider provides in-kind inputs on credit or short term cash advance ■ Input provider may deliver agronomic technical assistance to train farmers on use of inputs ■ After harvest, farmer sells produce and repays loan ■ <i>In some cases:</i> input provider may ask for buyer contract as collateral or buyer guarantee 		ENABLING FACTORS <ul style="list-style-type: none"> ■ Strong customer knowledge through geographical proximity, tight personal contacts and an existing trading relationship with historical track record of cash-based transactions, makes up for the lack of collateral and reduces information asymmetries ■ Capital availability through trade credit along the input value chain e.g. credit to agro dealers / traders from wholesalers ■ Farmer access to markets to sell crop surplus and repay loan ■ Agronomic TA to drive adoption and increase SHF productivity 	
PERFORMANCE AND FUNDING IMPLICATIONS		KEY CHALLENGES TO SCALE GOING FORWARD	
<ul style="list-style-type: none"> ■ Financing activity usually operates at a profit as input providers typically charge market or above market interest rates ■ Bulk of lending is funded by trade credit from wholesalers who finance the agro-dealers / traders interacting with farmers ■ Some input providers may use internal cross-subsidies to increase product sales by providing financing at below market rates 		<ul style="list-style-type: none"> ■ High dependence on access to trade credit from wholesalers to finance working capital needs and on-lend to farmers ■ High dependence on geographical proximity, personal trust and existing trading relationships to conduct due diligence ■ Lack of farmer aggregation, that can help lower transaction costs and individual farmer risk 	

93 Note that "model descriptions" attempt to capture characteristics shared across many models within a category, but some specific models may deviate from the descriptions.

PROFILE	PREVALENCE AND PENETRATION
<ul style="list-style-type: none"> ■ Who? Traders, processors and local, regional and multinational buyers sourcing produce from smallholder farmers under a contract farming scheme ■ What? Inputs on credit or short term cash advances, generally at below market or zero interest rates ■ Why? Secure crop volume in sufficient quantity and quality by enabling farmers to acquire high-quality inputs they would otherwise be unable to access 	<ul style="list-style-type: none"> ■ ~USD 17 billion annual disbursements from both input suppliers / agro-dealers/ traders and buyers ■ More prevalent in export crops: ~70% of export crop farmer get inputs on credit vs. ~40% of staple crop farmers
MODEL(S) OF INTERACTION WITH MARKET ACTORS TO DELIVER FINANCIAL SERVICES	
<p>MODEL DESCRIPTION</p> <ul style="list-style-type: none"> ■ Buyer contracts with farmers (often through producer groups) to buy crops at a future date, often at an agreed price ■ Buyer provides inputs on credit or short term cash advances based on the expected crop value at the time of sale ■ Buyer provides agronomic training to increase productivity and ensure quality standards as well as additional services ■ After harvest, buyer buys crop from farmer, subtracting farmer's loan repayment from purchase price 	<p>ENABLING FACTORS</p> <ul style="list-style-type: none"> ■ Contract agreement enables buyers to deduct repayments directly from crop value and incentivizes repayment by linking future contracts to current loan compliance ■ Strong agronomic training guarantees quality standards are met and enables buyer to sell at a premium ■ Additional household and community services increase farmer loyalty and lowers the risk of side selling ■ Capital availability from buyers' internal cross-subsidies
PERFORMANCE AND FUNDING IMPLICATIONS	KEY CHALLENGES TO SCALE GOING FORWARD
<ul style="list-style-type: none"> ■ Financing activity tends to operate at below market returns or even at a loss given the low or zero interest rates charged and the high cost to serve ■ Internal cross-business unit subsidies used to bridge the gap: from a company wide perspective, buyers can offset the cost of providing farmers with input financing at a loss by the higher revenues achieved through the secure sourcing of high-quality produce and ability to market this at a premium 	<ul style="list-style-type: none"> ■ Processing capacity limits ability to scale financing scheme beyond current demand and current crop focus ■ Increased risk of side selling as competition rises for certain crops, particularly in recent liberalized markets ■ Fragile legal systems with weak contract enforcement ■ Sustainability of agronomic services that guarantee quality standards and higher price premium ■ Lack of farmer aggregation, particularly for larger buyers with limited local outreach

PROFILE	PREVALENCE AND PENETRATION
<ul style="list-style-type: none"> ■ Who? Non-specialized bank and non-bank MFIs that have expanded from urban customers into lateral segments, i.e. rural population, to address smallholder needs ■ What? Traditionally focused on non-agri group lending and savings; increasingly moving into individual agricultural short term loans for inputs and working capital ■ Why? Further their mission of supporting the poor by providing services that complement existing product offering and by proving that smallholders are bankable 	<ul style="list-style-type: none"> ■ ~USD 3 billion in annual disb., 2013 ■ Highly concentrated in South an Southeast Asia (~85% of MFI lending) ■ Less prevalent in Sub-Saharan Africa (~9% of total MFI disbursements) and Latin America (~7%)
MODEL(S) OF INTERACTION WITH MARKET ACTORS TO DELIVER FINANCIAL SERVICES	
<p>MODEL DESCRIPTION</p> <ul style="list-style-type: none"> ■ MFI disburses individual or group loan based on the farmer riskiness, and uses soft collateral (group guarantee, buyer agreement or – if deposit taking – savings) to limit exposure ■ MFI delivers financial literacy training through in-field agents and agronomic training and market access services through specialized partners if the loan is intended for agri-purposes ■ Farmer(s) repays the loan to agent after harvest 	<p>ENABLERS</p> <ul style="list-style-type: none"> ■ Innovative risk management through alternative collateral (guarantees (~50% of MFIs), savings (~27%) or buyer agreements), credit bundling with savings and insurance, and credit due diligence at the household level (vs. individual) ■ Extensive agent network to enable proximity and frequent touch points to monitor portfolio ■ Partnerships with agronomic assistance providers ■ Product customization to adapt to agricultural cash flows
PERFORMANCE AND FUNDING IMPLICATIONS	KEY CHALLENGES TO SCALE GOING FORWARD
<ul style="list-style-type: none"> ■ High disparity in returns depending on the interest rate being charged, average loan size, revenue from additional financial services, and the extent of in-house support services ■ MFIs generating market returns source funding primarily from commercial investors, retained earnings, and deposits ■ MFs generating below market returns tend to have a mixed funding model, often using retained earnings and commercial capital for operations and philanthropic capital for higher risk activities 	<ul style="list-style-type: none"> ■ Limited or expensive capital for growth: dependent on philanthropic capital or on high cost commercial capital, particularly if unable to mobilize savings ■ Limited ability of for-profit MFIs to reach higher risk segments given investors' return expectations ■ High operating costs and limited ability to leverage economies of scale in rural areas, leading to high interest rates ■ Highly dependent on agronomic partners' capacity and reach

PROFILE	PREVALENCE AND PENETRATION
<ul style="list-style-type: none"> ■ Who? Specialized state agricultural development banks originally established by national governments; some banks have been partially privatized ■ What? Savings accounts and short term loans for inputs or working capital, generally at below market interest rates ■ Why? Mandated by policy makers to lend to smallholder farmers, both commercial and noncommercial, under the assumption that subsidized credit for agricultural activities will enable investment in farms and raise smallholder incomes 	<ul style="list-style-type: none"> ■ ~USD 9.2 billion in annual disbursements, equivalent to ~65% of smallholder lending by formal financial institutions ■ Highly concentrated in South and Southeast Asia (~65%) and to a lesser extent in Latin America (~35%)
MODEL(S) OF INTERACTION WITH MARKET ACTORS TO DELIVER FINANCIAL SERVICES	
<p>MODEL DESCRIPTION</p> <ul style="list-style-type: none"> ■ State Bank mobilizes savings from smallholder farmers ■ State Bank issues loan directly¹ to farmer and bundles it with personal and agri insurance, frequently provided by specialized government programs ■ At the end of the season farmer visits branch to pay back loan 	<p>ENABLING FACTORS</p> <ul style="list-style-type: none"> ■ Availability of public capital in large quantities and at low cost, primarily in the form interest rate subsidies ■ Mobilization of deposits for additional funding at low cost ■ Large branch foot print with extensive outreach in rural areas ■ Strong agri expertise drives strong understanding of smallholder agricultural risks ■ Bundling with personal and agri insurance
PERFORMANCE AND FUNDING IMPLICATIONS	KEY CHALLENGES TO SCALE GOING FORWARD
<ul style="list-style-type: none"> ■ Negative or below market returns given below market interest rates, high cost to serve and higher default rates ■ Significant funding sourced from national governments in the form of interest rate subsidies ■ Additional funding in the form of market rate debt and equity from private and institutional investors may also be available, particularly for state banks that have been partially privatized 	<ul style="list-style-type: none"> ■ Highly dependent on public subsidies to bridge the gap between the full cost to serve (including non-performing loans) and the ability to generate revenue ■ Subject to political interference and changing public agendas, particularly when government leadership changes ■ Limited ability to attract commercial capital due to below market returns ■ Lack of product innovation due to limited competition

¹ Some state banks have experimented with indirect financing with value chain actors but the majority of lending continues to be through its branches.

PROFILE	PREVALENCE AND PENETRATION
<ul style="list-style-type: none"> ■ Who? Specialized impact-first lenders focused on agricultural smallholder finance ■ What? Primarily focused on trade finance (90% on average) for producer groups at market interest rates ■ Why? (1) Fill the financing gap for producer organizations, which are often too small for commercial loans and too big for microfinance and (2) demonstrate producer organizations' financial viability to crowd-in resources from state and commercial banks as producer groups become bigger and establish a track record 	<ul style="list-style-type: none"> ■ ~USD 350 million annual disbursements to producer groups ■ Concentrated in Latin America (~70%) and in cash crops, particularly coffee ■ Small portion of global smallholder financing (~1%) but more prominent in Latin America (~5%)
MODEL(S) OF INTERACTION WITH MARKET ACTORS TO DELIVER FINANCIAL SERVICES	
<p>MODEL DESCRIPTION</p> <ul style="list-style-type: none"> ■ Technical assistance aggregates farmers into producer groups ■ Buyer issues contract to producer groups to buy crops ■ Based on the buyer contract, social lenders disburse lending ■ Social lenders work with TA providers to deliver financial, management and agro-economic training ■ Producer groups sell crops to buyers and repays social lenders 	<p>ENABLING FACTORS</p> <ul style="list-style-type: none"> ■ Strong TA ecosystem enables smallholder aggregation in producer groups and further lending as groups strengthen ■ Alternative collateral in the form of buyer contracts makes up for the lack of credit history and physical collateral ■ Availability of below market-return capital enables funding for higher risk / low return lending
PERFORMANCE AND FUNDING IMPLICATIONS	KEY CHALLENGES FOR SOCIAL LENDERS GOING FORWARD
<ul style="list-style-type: none"> ■ Typically below market returns ranging from 0.5%-5% depending on the segment targeted ■ Social lenders targeting 0.5-2.5% net returns typically focus on early stage producer associations and attract philanthropic and private investors with low or no returns expectation ■ Those targeting 2.5-5% net returns typically focus on more mature producer groups, processors and traders and attract impact-first private investors with some return expectations 	<ul style="list-style-type: none"> ■ Sustainability of TA due to the high cost of aggregating farmers into producer groups and of providing financial management and agro-economic training to strengthen producer groups ■ Lack of long term capital and low ability to manage commodity/currency risk to expand to new financial products, e.g. long term lending, and new crops, e.g. local crops ■ Reliance on philanthropic and below market rate capital to fund future growth

PROFILE	PREVALENCE AND PENETRATION
<ul style="list-style-type: none"> ■ Who? Independent for profit, non-specialized banks that are coming “down market” to address smallholder needs ■ What? Primarily focused on short term working capital loans (~85% of total agri lending disbursements), at market interest rates and in small sizes (less than USD 500) ■ Why? Benefit from smallholder profit pool as competition in urban areas increases and downstream clients (processors, buyers, farmer organizations) seek funding for their smallholder customers and require bank support 	<ul style="list-style-type: none"> ■ ~USD 1.2 billion annual disbursements, 2013 ■ Higher prevalence Sub-Saharan Africa (~50%)
MODEL(S) OF INTERACTION WITH MARKET ACTORS TO DELIVER FINANCIAL SERVICES	
<p>MODEL DESCRIPTION</p> <ul style="list-style-type: none"> ■ Sub-model – indirect lending via input providers (pre harvest): bank advances funds to inputs provider who distributes in-kind inputs on credit and collects loan repayments ■ Sub-model – indirect lending via buyers (pre harvest): based on buyer agreements, bank advances funds to buyers who lend to farmers and collect in-kind payments with crops ■ Sub-model – direct lending using warehouse receipts (post harvest): bank issues loan with warehouse receipts as collateral 	<p>ENABLING FACTORS</p> <ul style="list-style-type: none"> ■ Strong partnerships with value chain actors that have existing farmer relationships and can provide data on borrower ■ Comprehensive de-risking structures including alternative collateral, credit guarantees, agri-insurance and farmer agro-economic and financial management training ■ Management commitment to serving smallholder farmers ■ Technical assistance to build bank agri-lending capabilities
PERFORMANCE AND FUNDING IMPLICATIONS	KEY CHALLENGES TO SCALE GOING FORWARD
<ul style="list-style-type: none"> ■ Performance varies across players but below market returns are common when accounting for full cost of de-risking tools <ul style="list-style-type: none"> □ Banks are capable of absorbing agri-lending risk through diverse cross-sector portfolios and from retained earnings generated through interest rate revenue ■ Bulk of funding for lending is sourced internally from customer deposits, though banks may also draw on commercial-grade capital ■ Additional capital from governments / multilateral institutions in the form of guarantees, dedicated lines of credit and matching grants to build capabilities and pilot programs cross-sector portfolios and from retained earnings generated through interest rate revenue 	<ul style="list-style-type: none"> • Business model sustainability given banks’ return needs, high cost to serve and dependence on partnerships for ag TA • High upfront investment to build capacity for smallholder lending that will not be recouped without scale • Competing lending opportunities with lower risk and more attractive returns • Lack of farmer aggregation, land titles and credit bureaus to expand beyond tight value chains

PROFILE	PREVALENCE AND PENETRATION
<ul style="list-style-type: none"> ■ Who? NGOs and social ventures specialized in smallholder finance and agri-training ■ What? Full service package including in-kind provision of inputs on credit, technical assistance and access to markets ■ Why? Accomplish their mission to fill market gap by serving the most marginalized farmers that other financial institutions tend to consider too risky 	<ul style="list-style-type: none"> ■ ~USD 25 million disbursements (One Acre, Nuru) ■ Currently concentrated in specific countries in Sub-Saharan Africa (Kenya, Tanzania, Rwanda, Burundi, Ethiopia)
MODEL(S) OF INTERACTION WITH MARKET ACTORS TO DELIVER FINANCIAL SERVICES	
<p>MODEL DESCRIPTION</p> <ul style="list-style-type: none"> ■ NGO mobilizes farmers to form groups of 10+ farmers ■ NGO delivers in-kind inputs on credit for a variety of crops, bundling credit with personal and agri insurance ■ NGO provides agronomic and financial training through in-house field-based staff and supports group in marketing and selling crop surplus ■ Smallholders pay back loan at the end of the season 	<p>ENABLING FACTORS</p> <ul style="list-style-type: none"> ■ High-touch support system in the form of input distribution, training and market facilitation guarantees reliable marketable crop surplus to repay loan ■ In-field agent network builds farmer relationships and strong understanding of farmer needs to provide customized products ■ Group loans reduce servicing costs and replace collateral ■ Crop diversification, personal and agricultural insurance further limit farmer and crop risk
PERFORMANCE AND FUNDING IMPLICATIONS	KEY CHALLENGES TO SCALE GOING FORWARD
<ul style="list-style-type: none"> ■ Negative returns due to small loan sizes (\$50-\$300) and high transaction costs from staff and operating activities (field officer ratio ~100-200:1) ■ Loan repayment covers ~75% of operating expenses ■ Unrestricted grants, individual donations and concessionary debt from philanthropists used to bridge gap between the cost to serve and revenue 	<ul style="list-style-type: none"> ■ Highly reliant on philanthropic capital given the high costs to serve and the limited ability of farmers to pay the full cost ■ Difficult to hire and train staff given the high-touch delivery model based on in-field agents providing integrated financial and supporting services ■ High exposure to commodity price fluctuations and high logistical complexity and costs due to in-house input procurement and distribution

PROFILE	PREVALENCE AND PENETRATION
<ul style="list-style-type: none"> ■ Who? Publicly or privately owned insurers providing agricultural insurance products ■ What? Area-yield index insurance and / or weather index insurance ■ Why? (1) Reduce farmer vulnerability by mitigating the risk of natural hazards on farm production, particularly as climate change becomes more evident; and (2) facilitate financial services to smallholder farmers by reducing agricultural risk for credit providers 	<ul style="list-style-type: none"> ■ Penetration of agri-insurance in South and Southeast Asia, sub-Saharan Africa and Latin America ~10% ■ Higher penetration in South and Southeast Asia (~20%) ■ Lower penetration in Africa (<5%)
MODEL(S) OF INTERACTION WITH MARKET ACTORS TO DELIVER FINANCIAL SERVICES	
<p>MODEL DESCRIPTION</p> <ul style="list-style-type: none"> ■ Insurer partners with aggregator (input provider, buyer, fin. institution) to distribute insurance and share servicing costs ■ Insurer receives up-front premium subsidies from government ■ Aggregator sells insurance to farmer (frequently bundled with other services), pre-finances the non-subsidized premium, provides agronomic training and disburses compensation ■ Farmer pays aggregator the non-subsidized premium along with loan repayments or payment of non-financial services 	<p>ENABLING FACTORS</p> <ul style="list-style-type: none"> ■ Government subsidy of insurance premiums increases insurance affordability and enables private sector to operate ■ Collaboration with aggregators to reach smallholders and reduce marketing and servicing costs ■ Bundling with services offered by aggregators drives adoption by unlocking access to tangible benefits (e.g. credit, inputs) ■ New technologies for both evaluating and managing agri-risk and for marketing, distribution and payment
PERFORMANCE AND FUNDING IMPLICATIONS	KEY CHALLENGES TO SCALE GOING FORWARD
<ul style="list-style-type: none"> ■ Negative returns pre-government subsidies given the high cost to serve and the limited willingness to pay by farmers ■ Government funding in the form of (1) subsidized premiums to bridge the gap between operational expenses and the ability to generate revenue, e.g., NAIS in India subsidizes 75% of premiums and is expected to increase to ~97%) and (2) infrastructure investments, e.g., setting up weather stations ■ Commercial capital from private investors for privately owned insurer 	<ul style="list-style-type: none"> ■ Highly dependent on government subsidies to operate sustainably ■ High customer education cost given the price of unsubsidized premiums (>10% of insured amount) and difficulty of explaining index insurance “basis risk” (disconnect between on-farm real losses and actual formula-based payouts) ■ High upfront cost to build aggregator’s capabilities ■ High infrastructure and loss assessment costs (data analytics)

PROFILE	PREVALENCE AND PENETRATION
<ul style="list-style-type: none"> ■ Who? Established Mobile Network Operators who have successfully rolled out mobile money schemes in urban areas and are looking to reach rural communities ■ What? Primarily mobile payments, increasingly moving into savings and credit ■ Why? Increase revenues by leveraging their existing mobile platform to reach smallholder farmers with higher value added financial services, particularly as average revenue per user (ARPU) for traditional voice services falls 	<ul style="list-style-type: none"> ■ Higher prevalence in Sub-Saharan Africa where average penetration of mobile money accounts in rural areas is ~12%, with cross-country differences ■ Lower uptake in East Asia (~2%), South Asia (~1.5%) and Latin America (~1%)
MODEL(S) OF INTERACTION WITH MARKET ACTORS TO DELIVER FINANCIAL SERVICES	
<p>MODEL DESCRIPTIONS (P2P / P2B / B2P)¹</p> <ul style="list-style-type: none"> ■ Farmer, in possession of a mobile phone, visits agent to register for mobile account to send and receive payments ■ To get mobile money, farmer exchanges cash for e-float which is credited to the mobile account and which can be transferred to other users by phone (e.g., to pay bills) in return for a fee ■ Payment recipient visits agent to exchange e-float for cash ■ MNO collaborates with banks to manage agent liquidity and pays agent a commission for every transaction (registration, cash-in, cash-out) 	<p>ENABLING FACTORS</p> <ul style="list-style-type: none"> ■ Agent network with extensive reach in rural areas and strong existing farmers relationships that facilitate trust building ■ Effective management of agent liquidity, growth and quality through aligned incentives, training and collaboration with banks ■ Strong marketing and customer education through agents and local partners to increase awareness, activate regular usage and transition farmers to higher value add services (e.g. credit) ■ Favorable regulation enables agents (who normally sell airtime) to provide payment services
PERFORMANCE AND FUNDING IMPLICATIONS	KEY CHALLENGES TO SCALE GOING FORWARD
<ul style="list-style-type: none"> ■ Smallholder business units tends to operate at a loss given the high cost to serve and the low customer ARPU from low payment fees ■ Viability of smallholder customers is expected in the long term as mobile money penetration increases, enabling large active customer bases, and as users migrate to higher value add products with higher transaction fees (e.g., credit) ■ In the meantime, smallholder-focused activities are often supported through cross-business unit subsidies 	<ul style="list-style-type: none"> ■ High marketing costs to build a base of frequent users that can offset infrastructure and agent network costs ■ Dependent on complex multi-stakeholder partnerships, e.g., with banks for higher value financial services (e.g., credit), with value chain actors to create demand for MNO services (e.g., B2P), with local NGOs to increase awareness and literacy ■ Limited mobile ecosystem development in rural areas, including access to mobile phones and network coverage

¹ P2P – person to person; P2B – person to business; B2P – business to person.

ANNEX E: FSP MODEL DEPENDENCE ON SUBSIDY

EXTERNAL DIRECT SUBSIDIES

The majority of financial service providers rely on external direct subsidies to build capabilities /test new markets or fund ongoing operations

	TARGET SEGMENT	SUPPORT SERVICES	REVENUE IMPLICATIONS	COST IMPLICATIONS	DEPENDENCE ON EXTERNAL DIRECT SUBSIDIES
COMMERCIAL BANKS	Commercial SHF in tight value chains	Occasionally financial literacy	<ul style="list-style-type: none"> ■ Larger loan sizes ■ Market interest rates ■ Additional financial products (e.g. savings, insurance) 	<ul style="list-style-type: none"> ■ Lower cost to serve (value chain partnerships and limited support services) ■ Lower costs in NPL 	<p>Forms: guarantees to lower NPL costs, one-off grants to build capabilities, below market debt to test new markets/products</p>
SOCIAL LENDERS	Commercial SHF in tight value chains	Financial literacy	<ul style="list-style-type: none"> ■ Larger loan sizes ■ Market interest rates ■ Additional financial products (e.g. insurance) 	<ul style="list-style-type: none"> ■ Mid-range cost to serve (aggregation in groups and some support services) ■ Lower costs in NPL 	<p>Forms: one-off grants to build capacity, on-going grants to provide support services, concessionary debt to scale business</p>
MICROFINANCE INSTITUTIONS	Commercial in loose value chains	Financial literacy and agronomic training	<ul style="list-style-type: none"> ■ Smaller loan sizes ■ Above market interest rates ■ Additional financial products (e.g. savings, insurance) 	<ul style="list-style-type: none"> ■ Higher cost to serve (in-field agents and some support services) ■ Higher costs in NPL 	<p>Forms: one-off grants to build capacity, on-going grants to provide support services, concessionary debt to scale business</p>
STATE BANKS	Segment agnostic	Occasionally financial literacy	<ul style="list-style-type: none"> ■ Smaller loan sizes ■ Below market interest rates ■ Additional financial products (e.g. savings, insurance) 	<ul style="list-style-type: none"> ■ Mid-range cost to serve (branch network but limited support services) ■ Higher costs in NPL 	<p>Forms: on-going government interest rate subsidy</p>
HIGH TOUCH NGOS	Subsistence	Financial literacy and agronomic training	<ul style="list-style-type: none"> ■ Lower loan sizes ■ Below market interest rates ■ Limited additional financial products 	<ul style="list-style-type: none"> ■ Higher cost to serve (in-field agents and more support services) ■ Lower costs in NPL 	<p>Forms: on-going grants and donations to provide additional support services</p>
INSURANCE COMPANIES	Segment agnostic	Insurance literacy and agronomic	<ul style="list-style-type: none"> ■ Below market premiums ■ Limited additional financial products 	<ul style="list-style-type: none"> ■ High cost to serve (in-field agents and some support services) ■ Higher infrastructure costs 	<p>Forms: on-going grants and donations to provide additional support services</p>

Higher
 Medium
 Lower

Higher
 Lower

INTERNAL CROSS-SUBSIDIES

Certain financial service providers (e.g. buyers and MNOs¹) cross-subsidize smallholder activities given the potential to enhance overall profitability

	BUYERS	MNOs
SUBSIDY NEED	<ul style="list-style-type: none"> ■ Input and working capital financing activity of smallholders usually operates at a loss <ul style="list-style-type: none"> □ Free or below market rate interest rate loans □ High costs of support services in the form of financial literacy, agro economic training and community support to build loyalty 	<ul style="list-style-type: none"> ■ Delivery of payment services to smallholder segment usually operates at a loss <ul style="list-style-type: none"> □ Bulk of transactions focus on low fee P2P □ High outreach costs through in-field agent networks and high training costs to drive adoption
SUBSIDY RATIONALE	<ul style="list-style-type: none"> ■ Secure high quality produce in the right quantity by enabling farmers to acquire inputs they would otherwise be unable to access 	<ul style="list-style-type: none"> ■ Enter new customer segment that will migrate to higher ARPU services, e.g., P2B
SUSTAINABILITY	<ul style="list-style-type: none"> ● Subsidy accounted as sourcing cost that pays off through higher price premiums 	<ul style="list-style-type: none"> ● Subsidy sustainable in the short term as long as smallholders migrate to higher value add products that pay off the subsidy

¹ MNOs refers to Mobile Network Operators

INDIRECT SUBSIDIES

Facilitate operations by reducing the risk of smallholders; dependence higher for providers with limited support services

Indirect subsidies: subsidies provided directly to farmers and benefiting financial service providers indirectly by lowering the farmer's risk profile and / or lowering the cost to serve

	BENEFICIARY	RATIONALE	HIGHLY DEPENDENT PROVIDERS	EXAMPLE
PROVISION OF HIGH QUALITY INPUTS	<ul style="list-style-type: none"> ■ Individual smallholder farmers 	<ul style="list-style-type: none"> ■ Increase crop yields to reduce food insecurity and lower farmer risk 	<ul style="list-style-type: none"> ■ Commercial banks ■ MFIs¹ ■ Insurance 	<ul style="list-style-type: none"> ■ Government sponsored Crop Intensification Program in Rwanda, which subsidizes fertilizer for staple crops (maize, potatoes, wheat, rice) has increased fertilizer penetration from 14 to 29% and improved yields significantly
ENABLING ACCESS TO MARKETS	<ul style="list-style-type: none"> ■ Individual smallholder farmers 	<ul style="list-style-type: none"> ■ Develop market linkages for smallholder farmers to sell crops 	<ul style="list-style-type: none"> ■ Commercial banks ■ MFIs¹ ■ Social lenders ■ State banks 	<ul style="list-style-type: none"> ■ The government sponsored Food Reserve Agency in Zambia buys maize from smallholder farmers and sells it to processors ■ Government owned Rwanda Grain Cereal Corporation procures produce from farmers and sells it to end markets
DELIVERY OF AGRONOMIC / FINANCIAL LITERACY TRAINING	<ul style="list-style-type: none"> ■ Individual smallholder farmers ■ Smallholder producer groups 	<ul style="list-style-type: none"> ■ Increase crop yields and lower farmer risk by providing credit management training 	<ul style="list-style-type: none"> ■ Commercial banks ■ MFIs¹ ■ Insurance ■ Social lenders 	<ul style="list-style-type: none"> ■ TechnoServe Haiti Hope Project delivered direct training on mango tree production, harvesting techniques and credit and financial management; enabling +9,300 famers to receive +\$3.25M in loan disbursements from commercial bank Sogesol
ORGANIZATION OF FARMERS INTO PRODUCER GROUPS	<ul style="list-style-type: none"> ■ Smallholder producer groups 	<ul style="list-style-type: none"> ■ Enable a value chain aggregation point through which providers can reach out to farmers ■ Reduce individual farmer vulnerability 	<ul style="list-style-type: none"> ■ Commercial banks ■ Social lenders ■ Buyers 	<ul style="list-style-type: none"> ■ E.g., Progreso supports small producer groups with capacity building and management training to build strong and independent organizations that aggregate hundreds of farmers

¹ MFIs refers to Microfinance Institutions

ANNEX F: LIST OF INTERVIEWEES

Direct Interviews

CATEGORY	ORGANIZATION	NAME
Capital providers		
Foundation	Grameen Credit Agricole	Pierre Casal Ribeiro
Foundation	Rabobank Foundation	Albert Boogaard and Martine Jansen
Foundation	Clinton Giustra Enterprise Partnership	Mark Gunton
Foundation	Skoll Foundation	Eric Cooperstrom
Foundation	The MasterCard Foundation	Rewa Misra
Public funder	Netherlands Development Finance Company (FMO)	Anton Timpers
Public funder	USAID Development Credit Authority	Harsha Kodali and Sean Keogh
Public funder	The World Bank AgriFin	Roy Parizat and Azeb Fissaha
Public funder	The World Bank Financial Inclusion Support Framework	Ajai Nair
Public funder	International Finance Corporation Global Warehouse Finance Program	Makiko Toyoda
Public funder	International Fund for Agricultural Development (IFAD)	Francesco Rispoli and Michael Hemp
Public funder	International Fund for Agricultural Development (IFAD) Adaptation for Smallholder Agriculture Program	Gernot Laganda
Private investor	Goldman Sachs (formerly Imprint Capital)	Amie Patel
Private investor	D. Capital	Retief Swart
Private investor	Ceniarth	Harry Davies
Institutional investor	Goldman Sachs	Megan Starr
Impact investment vehicle	Incofin	Dana Roelofs and Milena Leoni
Impact investment vehicle	Livelihoods Fund	Cyril Hetzel
Impact investment vehicle	PASS Trust	Nicomed Bohay
Impact investment vehicle	MCE Social Capital	Pierre Berard and Gary Carrier
Impact investment vehicle	Voxtra	Anders Aabo
Impact investment vehicle	Innovare	Roger Frank and Mary Jane Potter
Impact investment vehicle	ACCION	Jorge de Angulo
Impact investment vehicle	Acumen Fund	Amon Anderson
Impact investment vehicle	AgDevCo	Sandi Roberts and Chris Isaac
Impact investment vehicle	Rabo Development	Hans Bogaard
Impact investment vehicle	IDH	Lucian Peppenlenbos
Financial service providers		
Value chain actor	NWK Agri-Services	Stuart Hall
Value chain actor	Joseph Initiative	Benjamin Prinz
Value chain actor	Yara Intl ASA (Ghana Grains Partnership)	Oystein Botillen
Value chain actor	Kenya Tea Development Authority	Muriuki Karuiru
Value chain actor	BIDCO Africa	John Kariuki
Value chain actor	Kenya Seed Company	Erick Kiplagat
Value chain actor	African Fertilizer and Agribusiness Partnership	Jason Scapone
Value chain actor	East Africa Commodities Exchange	Olivier Ngoga

Value chain actor	Starbucks	Pablo Ramirez
Value chain actor	Cooperandes	Juan David Rendon
Value chain actor	Olam	Chris Brett
Value chain actor	Louis Dreyfus	Guy Hogge
Value chain actor	Tembo Coffee	Stephen Miller
Value chain actor	World Cocoa Foundation	Paul Macek
Commercial bank	Chase Bank	Samuel Ndonga
Commercial bank	Cooperative Bank	Patrick Muchiri
Commercial bank	HDFC Bank	Vimal Tripathi
Commercial bank	Akiba Commercial Bank	Israel Chasosa
Commercial bank	Banque Populaire du Rwanda	Aaron Turamy and Laurien Rugira
Commercial bank	DFCU	Steven Kizito
Insurers	CIC Insurance	Fredrick Kinoti
Insurers	ACRE Africa	Rahab Karanja and Warimu Muthike
Insurers	Impact Insurance Facility	Pranav Prashad
Insurers	Coin Re	Joost Zuidberg
Non-bank financial institution	Sumannati	Anil Kumar SG
MFI Bank	NMB	John Machunda
MFI Bank	Opportunity International	Genzo Yamamoto, Tim Strong and Doug Pond
MFI Bank	Opportunity Bank Malawi	Sakina Mandanda
NGO	One Acre Fund	Mark Adams and Stephanie Hanson
Social Lender	Root Capital	Brian Milder and Matt Foerster
Enablers and sector experts		
Enablers and sector experts	Nathan Associates	Howard Miller
Enablers and sector experts	Technoserve	Jane Abramovich
Enablers and sector experts	African Rural and Agricultural Credit Association	John Amino
Enablers and sector experts	Asia and Pacific Rural and Agricultural Credit Association	Prasun Das
Enablers and sector experts	Food and Agriculture Organization of the United Nations (FAO)	Toshiaki Ono
Enablers and sector experts	TCX	Per van Swaay
Enablers and sector experts	Cardano Development	Ingwell Kuil
Enablers and sector experts	FAST	Francesca Nugnes
Enablers and sector experts	Grameen Foundation	Samantha Akins, Caitlin Burton, Geraldine Diaz Ko, Whitney Gantt, and Lisa Kienzle
Enablers and sector experts	Hystra	Jessica Graf
Enablers and sector experts	CARE	Christian Pennotti
Enablers and sector experts	Farm Drive	Rita Kimani
Enablers and sector experts	Christian Aid	Joanna Heywood
Enablers and sector experts	Rainforest Alliance	Michelle Buckles and Helene Roy
Enablers and sector experts	Mercy Corps	Leesa Schrader

Indirect interviews (conducted by other Dalberg teams or research partners)

CATEGORY	ORGANIZATION
Commercial banks	First Bank
Commercial bank	Union Bank
Commercial bank	FCMB
Commercial bank	Stanbic Bank
Commercial bank	Fidelity Bank
Commercial bank	Ecobank
Commercial bank	Banco Terra
Commercial bank	Opportunity Bank Mozambique
Commercial bank	Prudential Bank Limited
Commercial bank	Ghana Agriculture Development Bank
Non-bank financial institution	Rent-to-Own
Non-bank financial institution	Equity for Africa

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