



FINANCIAL INNOVATION FOR SMALLHOLDER FAMILIES



LESSONS FROM CGAP'S PARTNERSHIPS
WITH PROVIDERS



Table of Contents

Project Overview 03

Understanding
Smallholder Families

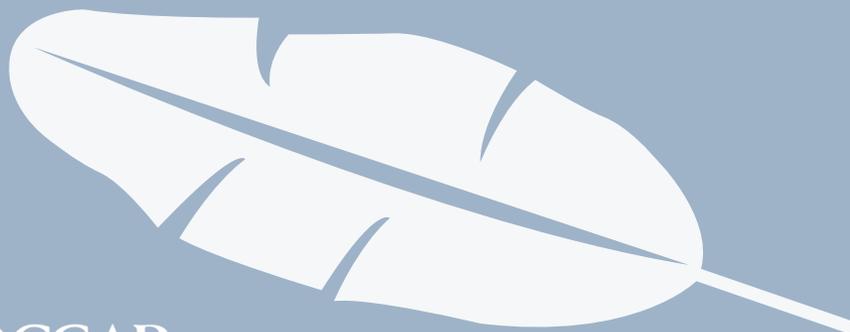
Driving Financial
Innovation

Insights & Implications
for Financial Service
Providers 28

Resources 36



Project Overview





Why Focus on Smallholder Families?

**500
million**

smallholder
families with
diverse financial
needs

Largest

client segment
by livelihood
living on less
than \$2/day



Photo Credit: Md Zakirul Mazed, CGAP



Two-Pronged Approach:

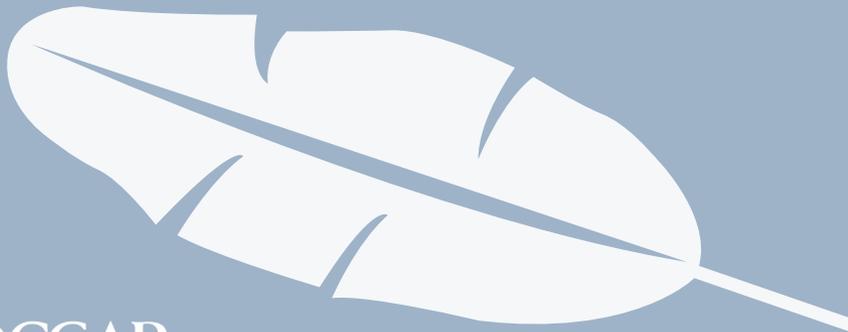
To identify how financial service providers can more effectively serve smallholder families, CGAP took a two-pronged approach:

- 1 Understand Smallholder Demand for Financial Services**
- 2 Drive Innovation in Financial Products, Services and Practices**

Photo Credit: Allison Shelley, CGAP

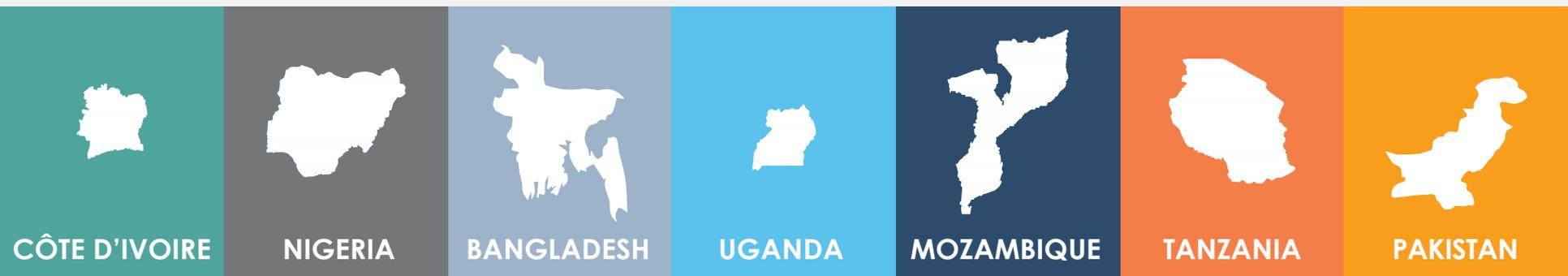
Understanding Smallholder Families

Building the Evidence Base
on Demand for Financial
Services



Understanding Smallholder Families

Six countries have data from National Surveys of Smallholder Households



[Click Here to Explore the CGAP Smallholders Data Hub](#)

Mozambique, Tanzania, and Pakistan utilize an additional data source: Financial Diaries

National Surveys of Smallholder Households

Sample design

The nationally-representative surveys of smallholder households had a target sample size of about 3,000 smallholder households in each country. CGAP and implementing partners worked closely with the bureau of statistics in each country. The listing criteria for the sample include a combination of land and livestock ceilings and self-perception questions about the role of agriculture in the household, casting a wide net in this very diverse livelihood.

Questionnaire implementation

The survey questionnaire covered a range of topics, including the agricultural activities of various household members, household demographics, attitudes and perceptions, mobile phones, and financial services. The questionnaires were translated into local languages and then pretested and validated to ensure the integrity of the questions and that they were in line with social and cultural customs.

Data Collection

Data collection took place between July 2015 and December 2016, using computer-assisted data collection tools that regularly yielded data for analysis and quality control to provide timely feedback to field staff. For more details on the methodology, refer to the user guide and questionnaires listed under resources or contact CGAP.

Photo Credit: Dalberg for CGAP



Financial Diaries with Smallholder Families

Methodology

The Diaries methodology combines in-depth quantitative and qualitative research. Research teams met participating families about every two weeks to collect granular data on their cash flows in and out of the household, financial tools, assets, major life events, and attitudes toward agriculture and financial services.

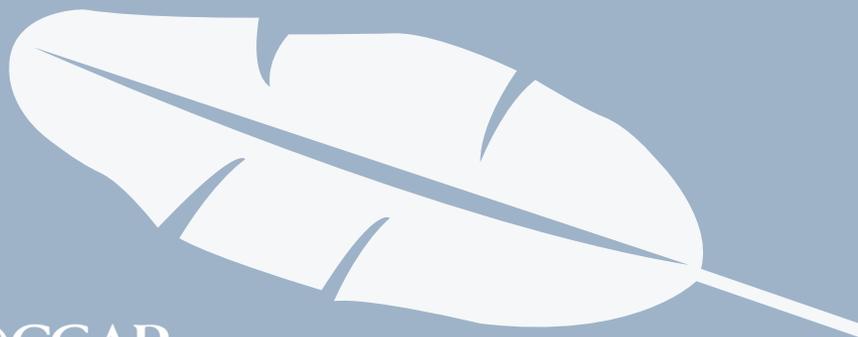
Sample Design

The Financial Diaries, conducted between June 2014 and June 2015, captured the financial and in-kind transactions of about 270 total households in impoverished northern Mozambique, the fertile farmlands of western Tanzania, and the Punjab Province, the breadbasket of Pakistan.

Photo Credit: Muhammad Abdul Motin, CGAP

Driving Financial Innovation

Collaborations with
Financial Service Providers





Key Learning Questions for CGAP Collaborations with Financial Service Providers

How can non-agricultural financial services support more sustainable smallholder livelihoods?

Collaborations in Zimbabwe, Cambodia

What is the role of savings products in facilitating household farm and non-farm investments?

Collaborations in Zimbabwe, Tanzania, Senegal

How can providers digitize value chain payments in a way that adds value for smallholders?

Collaborations in Mozambique, Uganda

What is the role of rural agents and merchants in making digital financial services more accessible to smallholders?

Collaborations in Senegal, Cote d'Ivoire, Ghana

How can providers leverage data to enable new financial products and services for smallholders?

Collaborations in Nigeria, Uganda



Photo Credit: KM Asad, CGAP



How can non-agricultural financial services support more sustainable smallholder livelihoods?

Photo Credit: Masfiqur Akhtar Sohan, CGAP

Helping Smallholders Save for School in Zimbabwe

The Opportunity

Education is a priority for smallholders in Zimbabwe. But raising the money to pay fees 3x per year is a struggle, and can lead families to forgo important investments in their farms.

CGAP Response

CGAP partnered with Econet Wireless Zimbabwe Ltd to design and pilot a goal-based savings product that allows smallholders to make small, flexible advance payments towards their school fees using mobile money.

Learnings

Customer research showed a clear demand for a school-fee savings product. A small pilot is currently underway to test the viability of the Save for School product, with plans to roll out the product to Econet's smallholder customers across Zimbabwe. Early results indicate a need for greater customer support when using the service and sticking to savings plans.



Photo Credit: Brandon Smith,
2016 CGAP Photo Contest

Connecting Smallholder Families in Cambodia

The Opportunity

New work opportunities in Cambodian cities are increasingly attracting rural youth, drawing them away from agriculture. The money they send back to their smallholder families can help to drive on-farm investments, smooth irregular cash flows and cope with shocks. But most remittances are sent over-the-counter and are cashed out immediately, limiting their impact on financial inclusion.

CGAP Response

CGAP partnered with Amret Microfinance Institution to design a new digital remittance product that allows migrant workers in the city and their parents on the farm to open linked savings accounts. They can use the linked accounts to transfer money at a lower cost than competing remittance services.

Learnings

Remittances are an important source of household income for rural smallholders, and represent an opportunity to increase formal financial inclusion by linking money transfers to account ownership. However, limited agent infrastructure and deviation from design principles led to limited product uptake during the pilot.



Photo Credit: John Won, CGAP

What is the role of savings products in facilitating household farm and non-farm investments?



Photo Credit: Allison Shelley, CGAP

Making High-Quality Inputs More Accessible in Tanzania

The Opportunity

Input distributor Positive International Ltd (PIL) faces enormous logistical challenges to anticipate demand for its products and ensure adequate stock at its network of rural agridealers. At the same time, their customers often struggle to afford the inputs they need at planting time, and what they need may not be available at the nearest shop.

CGAP Response

CGAP partnered with PIL and the Grameen Foundation to design the Digital Input Financing Toolkit. The Toolkit allows farmers to sign up for a package of inputs adapted to their unique needs at participating agridealers and pay little by little in advance using mobile money. Customers receive a discount on their inputs, they are guaranteed to be in stock when they need them and PIL can more accurately predict demand and supply their dealers accordingly.

Learnings

The pilot is still ongoing, with results expected in summer 2018. Initial results suggest demand for the product, with additional work required on messaging and capacity building for customers and agridealers.



Photo Credit: Peter Boniface, CGAP



How can providers digitize value chain payments in a way that adds value for smallholders?

Photo Credit: Philippe Lissac, CGAP

Banking on Bulk Payments in Mozambique

The Opportunity

Mozambican company JFS contracts tens of thousands of smallholder farmers in Niassa province to grow cotton, and pays them in cash. Paying in cash is not only costly for JFS and time consuming for farmers, but also limits opportunities for farmers to access a range of formal financial services.

CGAP Response

CGAP conducted customer research with cotton farmers in Niassa to identify opportunities for using payments from JFS as a gateway to financial inclusion. The findings from the research were used to identify a financial institution that will provide services to JFS farmers.

Learnings

Research identified key customer value propositions for electronic payments: Security (from theft and impulsive spending) and proximity/convenience. Low rates of mobile phone ownership and literacy also suggested that a mobile-based solution would not be appropriate. Based on the research, Letshego was selected to handle payments to farmers. Letshego uses village-level agents to deliver a full suite of financial services. An account can be opened in less than 4 minutes and the costs are low for customers. A pilot will begin in June.



Photo Credit: Allison Shelley, CGAP

Understanding the Value of Digital Payments in Uganda

The Opportunity

Despite ongoing efforts to digitize payments in agricultural value chains, cash remains the preferred medium of exchange for most smallholders. Understanding the value proposition of digitization for actors along the value chain could help providers design more attractive digital payments services.

CGAP Response

CGAP partnered with UNCDF in Uganda to conduct a value proposition mapping exercise that examined the cash payment and receipt processes for farmers, traders and off-takers. The exercise also estimated the costs associated with these cash payments compared to similar transactions conducted using mobile money.

Learnings

Research found that high cash out fees and a lack of use cases for e-money mean that digital payments are more expensive than cash for smallholders. These findings have been used to develop a business model for one of Uganda's leading MNOs seeking to digitize value chain payments. The model includes revised fees for payments and cash out for smallholders and others participating in specific value chains.



Photo Credit: Allison Shelley, CGAP

Making Banking More Relevant to Mozambican Farmers

The Opportunity

One of Mozambique's largest commercial banks sees rural farming communities as a key part of their growth strategy, but was unsure of how to get farmers to use their services.

CGAP Response

CGAP used HCD to better understand the value proposition of banking services for rural smallholders. The team also looked into the potential of agribusinesses to serve as the catalyst for opening accounts by converting their payments to smallholders from cash to direct deposit. Finally, CGAP prototyped the bank's product offerings to understand the benefits and drawbacks of each, while also suggesting content for a financial literacy program aimed at driving greater use of the bank's products and services.

Learnings

While many farmers struggled to interact with banking products, even illiterate farmers had techniques for navigating ATMs and USSD menus – for example memorizing the steps for performing important transactions or asking friends and family for assistance. This suggests that financial education may allow these farmers to benefit from the formal banking services. Moreover, a surprising number of farmers reported using Vodacom's M-PESA service and were familiar with accessing financial services on a feature phone. These developments suggest that the bank could target M-PESA users as early adopters of bank accounts. The bank is working to design a financial literacy course for farmers to learn how to use its products and services. It is also making slight changes to the products based on CGAP recommendations. The bank will also seek to partner with agribusinesses to encourage greater account ownership and use.

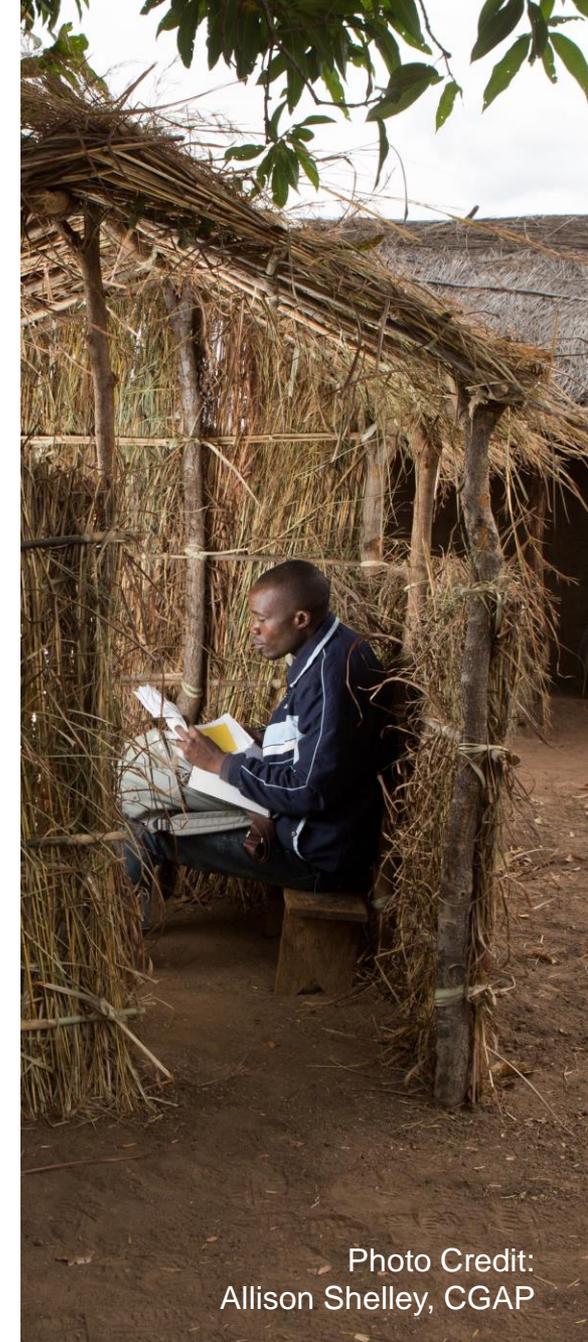


Photo Credit:
Allison Shelley, CGAP

Driving Smallholder Mobile Money Use in Uganda

The Opportunity

Driving adoption and use of mobile money among Ugandan smallholders is a persistent challenge, with only 21% owning a mobile money account. But 69% of households own a mobile phone, providing an opportunity to use mobile channels like SMS to drive behavior change.

CGAP Response

CGAP partnered with off-taker Mukwano and aggregator YO! Uganda, using principles of behavioral economics to design and test an SMS service that would encourage greater use of mobile money among smallholders in the sunflower value chain. Smallholders receive and interact with SMS messages aimed at encouraging them to use mobile money and perform new transaction types beyond P2P or cash-out.

Learnings

The initial process of operationalizing the platform has been complex. Getting the short-code from the MNO zero rated and introducing an interactive SMS solution to digitally low literate smallholders-have all been challenging. A pilot targeting 3,000+ farmers has been launched with experiments and analysis of data expected in August 2018.



Photo Credit: Allison Shelley, CGAP



What is the role of rural agents and merchants in making digital financial services more accessible to smallholders?

Photo Credit: Dalberg for CGAP

Empowering Agents to Serve Smallholders in Senegal

The Opportunity

myAgro sells packages of seeds and fertilizers using a mobile layaway system that allows customers to pay little by little in advance. But despite having village-level agents, myAgro relied heavily on full-time staff to register customers and mobilize layaway payments.

CGAP Response

CGAP partnered with myAgro to design a package of tools to empower agents to take more responsibility for the customer experience. Equipped with smartphones, agents were able to begin selling packages, registering customers and mobilizing payments.

Learnings

Devolving responsibility to agents who lived in the communities they served had a dramatic effect on both sustainability and customer payment behavior. The pilot achieved 20% cost savings, while also increasing customer package completions compared with non-pilot villages.



Photo Credit: Dalberg for CGAP

Business Models for Scaling DFS in Agricultural Value Chains

The Opportunity

The high cost of serving smallholder farmers in rural areas, and a general lack of information on their financial and agricultural lives, prevents FSPs from sustainably serving this segment. However, agribusiness actors have been developing service distribution channels and data on rural actors that can be leveraged by FSPs.

CGAP Response

CGAP partnered with Olam in Cote d'Ivoire and Ghana to study the feasibility of creating inclusive digital financial ecosystems centered around specific value chains. The goal was to develop new business models that allow FSPs to better serve smallholder families by leveraging agribusiness to dramatically reduce the delivery cost of digital payments, credit, savings and insurance services.

Learnings

Value of DFS for smallholders depends on their ability to cash-out their e-money. This is a problem for mobile money agents with low liquidity. Efforts to digitize smallholders' merchant payments reduce the need to cash out, thus favoring the formation of a digital ecosystem.



Photo Credit: Corinne Riquet-Bamba, CGAP



How can providers leverage data to enable new financial products and services for smallholders?

Photo Credit: John Won, CGAP

Satellites and Sustainable Area Yield Index Insurance in Nigeria

The Opportunity

Despite improvements in the tailoring of agricultural insurance to protect smallholder's inputs and loans against natural shocks affecting their harvest, these insurance products remain quite costly and logistically complex, which contributes to low adoption rates and scale.

CGAP Response

CGAP merged new satellite imagery and local yield datasets from Nigeria to develop a new algorithm that accurately predicts average yields and reduce the cost of delivering area yield index insurance to smallholders in remote rural areas.

Learnings

Initial findings suggest that this model could reduce costly in-person yield sampling by as much as 60-70%. The new algorithm is being tested on the ground with local financial institutions, agribusinesses, producer organizations and insurance companies. To replicate, partnerships with agribusiness and rural actors are critical to a) distribute insurance and b) access accurate farm yield data, which is required to develop an effective algorithm.



Photo Credit: Hailey Tucker, CGAP

Using Data to Expand Access to Credit for Ugandan Smallholders

The Opportunity

Lacking formal credit histories or access to collateral, many smallholders find themselves unable to secure loans for agricultural investments and other needs. But data on smallholders' agricultural and financial lives is enabling new underwriting methods that could overcome traditional barriers to credit access.

CGAP Response

CGAP partnered with PRIDE Microfinance and Harvesting to explore the use of alternative data in credit scoring for agricultural lending. By analyzing PRIDE's historical portfolio performance, CGAP was able to build a credit scorecard designed to predict borrower repayment behavior.

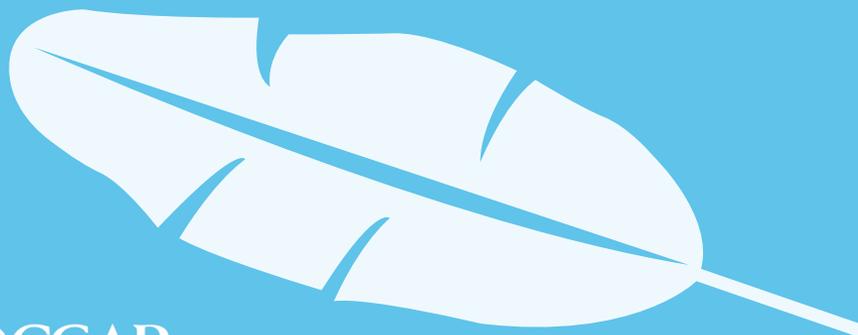
Learnings

The initial scorecard exposed several issues related to reliance on PRIDE's past portfolio performance, with scores biased against youth and female smallholders. In response, the team is working to improve the model by incorporating additional datasets that it hopes will reduce bias and increase the scorecard's predictive power.



Photo Credit: Allison Shelley, CGAP

Insights & Implications for Financial Service Providers



Smallholder families are diverse. So are their financial needs.

Product design collaborations with FSPs underscored the diversity of smallholder families. While most smallholders identify strongly with agriculture, their cash flows point to the importance of a range of income sources and expenses beyond the farm.

For example, income from casual labor and remittances is vital to smoothing consumption between harvests, while expenses like school fees for children can sometimes take precedence over making investments in agriculture.



Picture: Migrant workers in Phnom Penh, Cambodia, catch a ride home after a day at a garment factory. Many migrant workers come from rural farming households, and the money they send back to their families provides a much needed source of capital for farm investments and consumption smoothing.

Smallholders value savings products. But the right support is key to achieving savings goals.

One of the more surprising findings across CGAP's portfolio of projects was how much smallholders value financial products that allow them to keep their money safely set aside. Savings can help plan for the future, cope with risk and invest in livelihoods. This is especially important for smallholders who may not have access to or qualify for a loan, or who may be reluctant to take on debt.

But scarcity and unpredictable expenses make it difficult to plan ahead. So while savings products are important, smallholders also need highly convenient and accessible saving products to pursue and achieve their goals.



Picture: Savings group members in Zimbabwe at their weekly meeting. In Zimbabwe, a school fee savings product designed by CGAP was lauded by smallholders who struggled to pay for their children's educations. But while many customers opened accounts when the product was first introduced in the months leading up to the maize harvest, few smallholders made deposits – preferring instead to spend their scarce cash on more urgent expenses.

When digitizing payments, start with the customer value proposition.

Many efforts to digitize bulk payments in agricultural value chains focus on the potential cost savings for off-takers. But often overlooked are the significant costs digitization can impose on smallholders, such as cash-out fees. This underscores the need to invest in allowing smallholders to use e-money for their everyday purchases. Providers can reduce fees for digitizing these daily payments in a profitable manner given their total volume and frequency. Being able to pay digitally for the things smallholders need raises the value proposition of receiving e-money from the sale of their crops.

Photo Credit: Allison Shelley, CGAP



Picture: A smallholder family in Uganda shows the lockbox where they keep their cash savings. Research with coffee farmers in Uganda found significant potential cost savings associated with digitization of bulk payments. But in the absence of use cases for e-money, high cash out fees made digital payments more expensive for farmers than their cash equivalents.

In a risky world, smallholders value products that are flexible, familiar and tangible.

Flexible new products allow customers try them with little risk and quick feedback, for example by offering small, short-term savings goals and/or eschewing penalties and fees. Familiar products leverage existing customer behaviors to minimize the learning curve, which could include features like in-person customer support/education and agent-facilitated transactions. Tangible products connect finance with concrete outcomes and provide ways for customers to feel in control of their money, for example by providing paper-based tracking tools.



Picture: A myAgro customer in Senegal shows off his progress towards paying for a package of seeds and fertilizer. myAgro's layaway service combines the flexibility to choose your package size & when to pay, and the familiarity and tangibility of interacting with agents who are also members of the community, paying using scratch cards that imitate airtime top-ups and providing physical proof of payment and account balance.

Photo Credit: Ashish Kumar, CGAP

Technology should match farmer capacity...

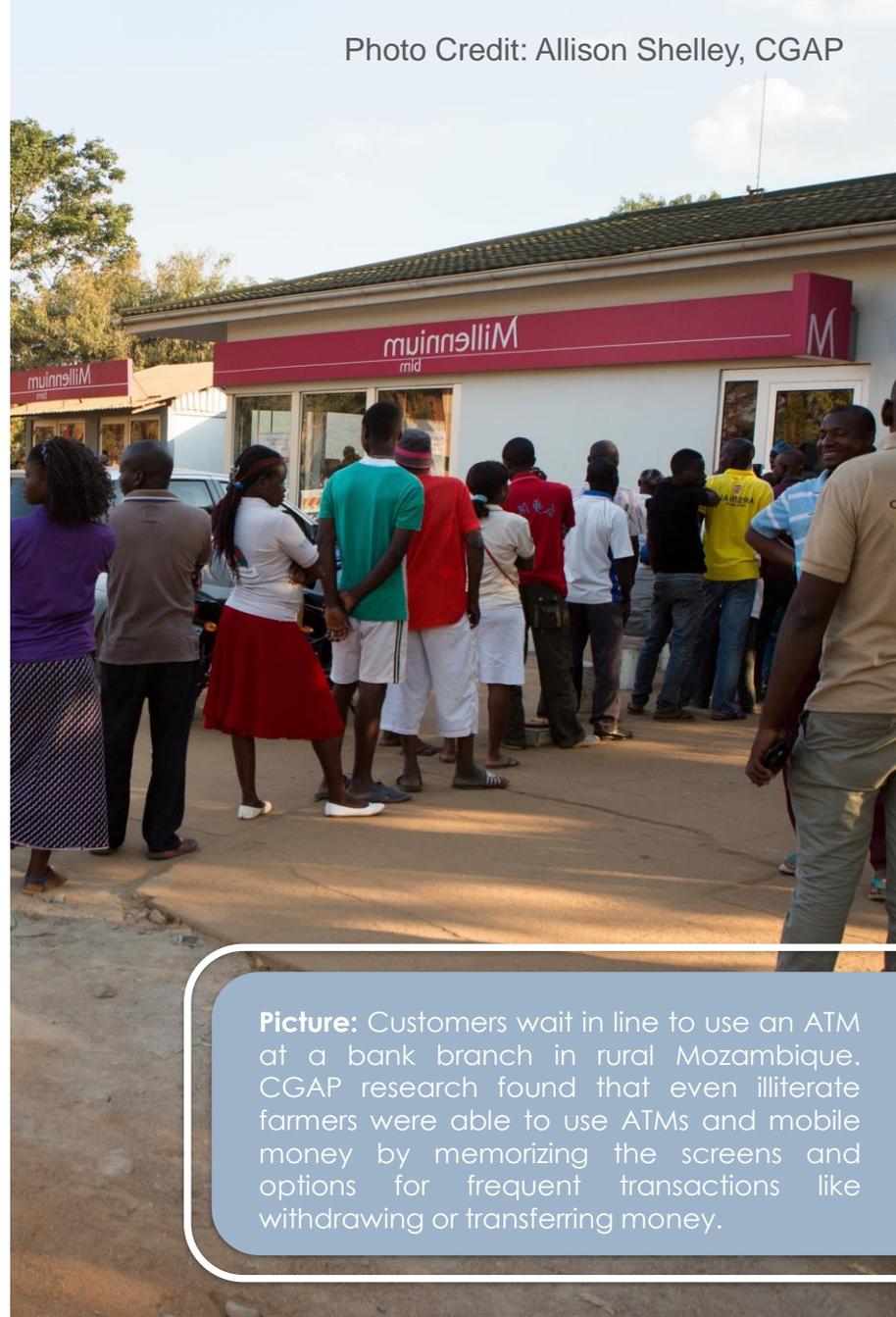
Digitization is a means to an end, not an end in itself. While mobile phones are widely seen as a breakthrough technology for smallholder financial inclusion, not all contexts call for a mobile-based financial solution. Some farmers may not own phones, while those who do may lack network coverage or a place to charge their device. Rather than focus only on mobile products and services, some situations may call for lower-tech options such as OTC transactions or card-based solutions. This also underscores the need for a range of provider types, from banks to fintechs and mobile network operators, which can offer a portfolio of products and services that more effectively meet smallholder needs.



Picture: Cotton farmers in Mozambique wait to be paid for their crop deliveries to off-taker SAN-JFS. Being paid in cash is time consuming for farmers, who must wait hours or even days for payments to arrive. But when CGAP explored the option of paying using mobile money, it quickly became apparent that farmers either did not own a phone or kept their phone off to conserve battery. As a result, CGAP opted for a card and agent-based payment solution provided by digital bank Letshego.

...but low literacy does not mean low capacity.

Even the least literate farmers have strategies for using formal financial services. Whether it means asking friends or family for help, or simply memorizing the screens and options they need to navigate to perform important transactions, literacy does not have to be a barrier to using financial services.



Picture: Customers wait in line to use an ATM at a bank branch in rural Mozambique. CGAP research found that even illiterate farmers were able to use ATMs and mobile money by memorizing the screens and options for frequent transactions like withdrawing or transferring money.

Data can break down barriers to financial inclusion. But good data is key.

New types of data available on smallholders' financial and agricultural lives can reduce the cost of financial service provision and help FSPs to better understand risk. But such services are only as good as the data on which they rely. Some datasets are of questionable quality, while others can be affected by human prejudice and could reinforce social biases that promote exclusion. Therefore, FSPs should be careful in selecting appropriate data when designing products and to determine access to financial services.

Picture: A maize farmer in Rwanda. CGAP found that satellite data could be used to accurately predict maize crop yields, thereby reducing the cost of providing area yield index insurance products.

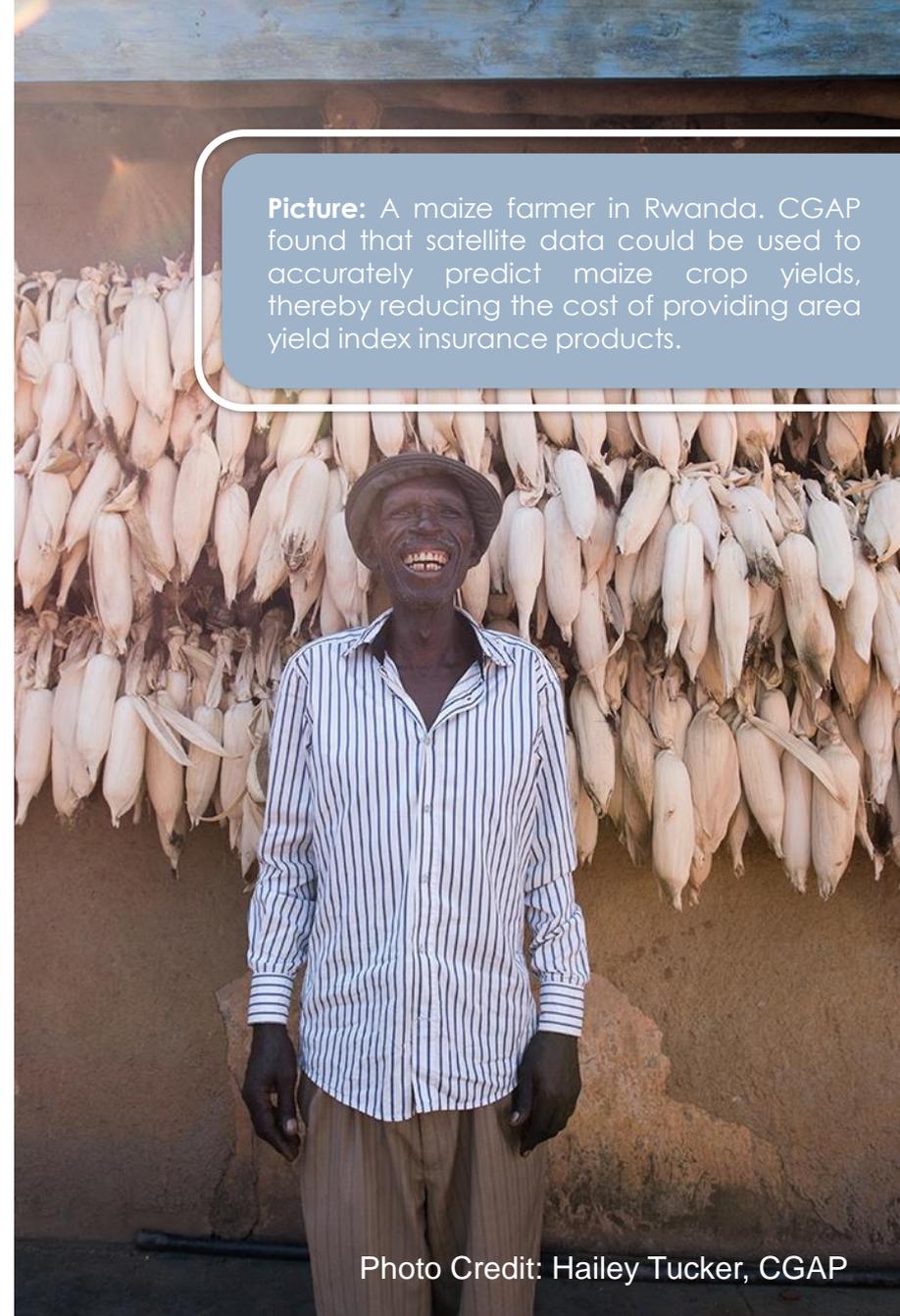
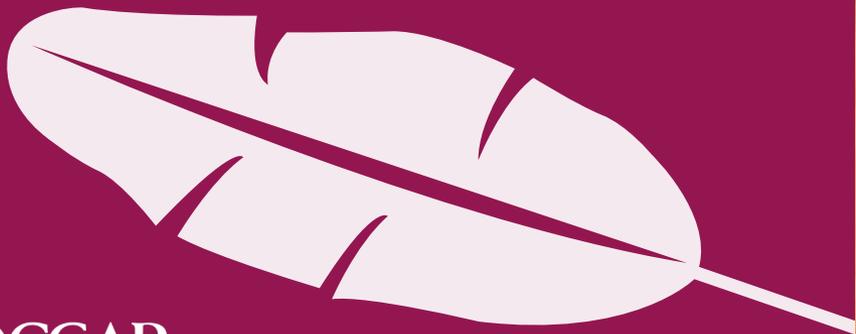


Photo Credit: Hailey Tucker, CGAP

Resources





Resources



[Smallholder Families Data Hub](#)

National Surveys of Smallholder Households

- Mozambique: [Paper](#) [ENG, POR] | [Data and user guide](#) [ENG, POR]
Summary slide deck [ENG](#) [POR](#)
- Uganda: [Paper](#) | [Data and user guide](#) | [Summary slide deck](#)
- Tanzania: [Paper](#) | [Data and user guide](#) | [Summary slide deck](#)
- Cote d'Ivoire: [Paper](#) [ENG, FRE] | [Data](#) | [Data and user guide](#) [ENG, FRE]
Summary slide deck [ENG](#) [FRE](#)
- Bangladesh: [Paper](#) | [Data and user guide](#) | [Summary slide deck](#)
- Nigeria: [Paper](#) | [Data and user guide](#) | [Summary slide deck](#)



Smallholder Diaries with Farming Families in Mozambique, Tanzania and Pakistan

[Full paper](#) and [Exec summary](#)

[Interactive data visualization](#)

Data: [MOZ](#) | [TAN](#) | [PAK](#)

[Video](#)



Resources



Exposure photo gallery: [Smallholder Families](#)



Advancing Financial Inclusion for Smallholder Households in Mozambique: [ENG POR](#)



[Smallholder Households: Understanding Demand, Driving Innovation](#)



[Digitizing Value Chain Finance for Smallholder Farmers](#)



[Designing Digital Financial Services for Smallholder Families: Lessons from Zimbabwe, Senegal, Rwanda, and Cambodia](#)



[Segmentation of Smallholder Households: Meeting the Range of Financial Needs in Agricultural Families](#)



[Female Smallholders in the Financial Inclusion Agenda](#)