

2018

EXECUTIVE SUMMARY

CGAP National Surveys of Smallholder Households

Bangladesh • Côte d'Ivoire • Mozambique • Nigeria • Tanzania • Uganda

Jamie Anderson and Danielle Sobol



CONTENTS

1818 H Street NW, MSN IS7-700
Washington DC 20433
Internet: www.cgap.org
Email: cgap@worldbank.org
Telephone: +1 202 473 9594

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INTRODUCTION

The CGAP national surveys of smallholder households in Mozambique, Uganda, Tanzania, Côte d'Ivoire, Nigeria, and Bangladesh explore the agricultural and financial lives of smallholder families and offer data and insights to financial services providers (FSPs), policy makers, and other stakeholders working to better meet their varied needs for financial services. The six surveys are nationally representative, and thus the results can be used with other datasets and estimates to size the market and inform business models. The data can also be used to pursue a range of research questions and conduct market segmentations to better understand the heterogeneity of smallholder households.

For FSPs, the data may answer some questions about smallholder livelihoods, while illuminating other opportunities for further investigation. Further analysis rooted in specific market geographies and contexts will also offer important substantive, actionable guidance. Used in conjunction with qualitative insights and other local market knowledge, the national survey data can guide FSPs as they seek to deepen their engagement with smallholder households.

Key data from all six surveys are compiled in a series of easy-to-reference charts and tables. A short narrative after each point offers concise answers to two questions: **What do the data tell us? What does this mean for financial service providers and financial inclusion?**

Details on survey methodology, slide decks summarizing the findings, and the complete datasets for each country are published on the CGAP [Smallholder Families Data Hub](#), the [CGAP website](#), and the World Bank Group [Microdata Library](#).

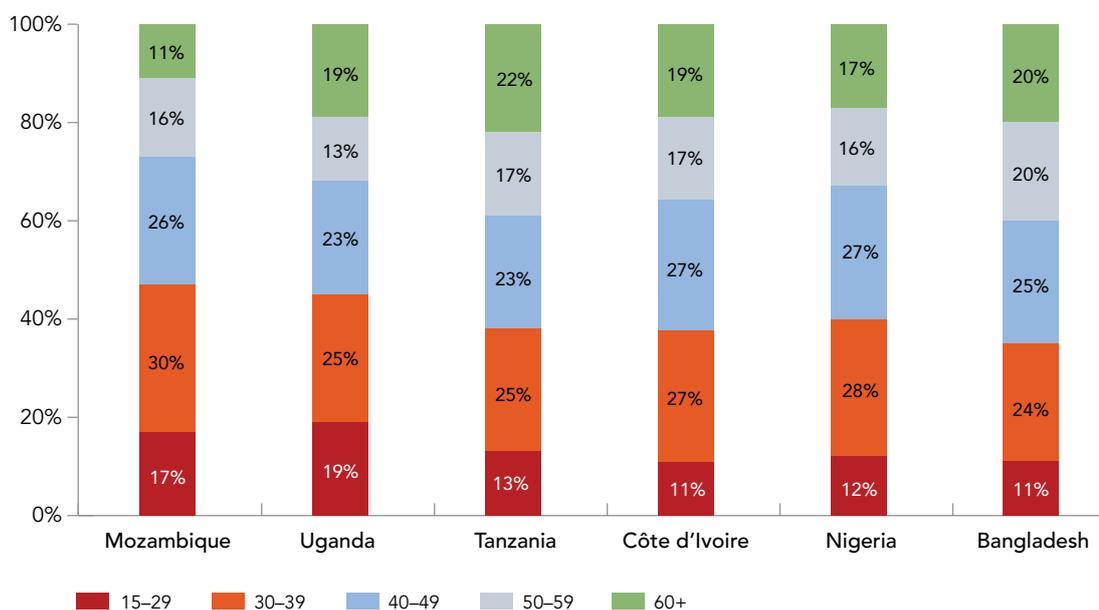
1. DEMOGRAPHICS

AGE OF HEAD OF HOUSEHOLD

Sample: Smallholder Households

| YEAR | AGE (HOUSEHOLD HEAD) | | | | | |
|-------|----------------------|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 2,574 | 2,870 | 2,993 | 3,019 | 3,026 | 3,154 |
| 15–29 | 17% | 19% | 13% | 11% | 12% | 11% |
| 30–39 | 30% | 26% | 25% | 27% | 28% | 24% |
| 40–49 | 26% | 23% | 23% | 27% | 27% | 25% |
| 50–59 | 16% | 13% | 17% | 17% | 16% | 20% |
| 60+ | 11% | 19% | 22% | 19% | 17% | 20% |

HOUSEHOLD HEAD AGE



In smallholder families, the head of the household tends to be between 30 and 49 years old. They are well into their working lives and chosen livelihoods, and FSPs tend to see them as clear targets for a range of financial products and services. This may include financial tools related specifically to their crop and livestock activities, but also to household needs like managing regular expenses, coping with emergency needs, and managing longer-term investments such as housing and their children's education.

Another sizeable proportion of household heads in smallholder families are over 50 years old. Older heads

of household may work less and receive payments from government programs, which could be transferred to their bank or mobile money accounts. Their children and grandchildren may be more adept with technology and have stronger eyesight, and thus play an important role in helping them manage these accounts. As FSPs design and deliver cash transfer services and communication channels for older customers, they should consider that, while the named user and end-beneficiary may be the older head of household, they may also be interacting with younger household members in the process.

Relatively few smallholder families are led by younger people under 29 years old. These young people may be recognized as the head of the household because they have lost their parents, or they may have already transitioned out of their family home. They may be starting their own family and making choices about their education and livelihood that will resonate for years. Young people in smallholder households

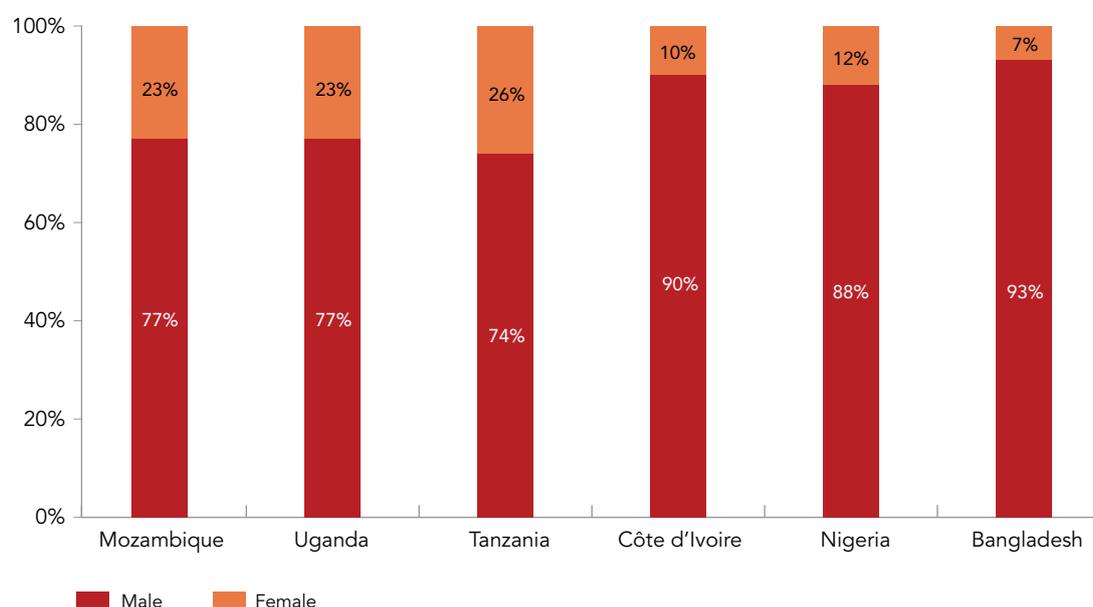
tend to save more than their elders and, as the next generation of clients for FSPs, they may need financial services that reduce vulnerability, smooth income, and build their future.¹ Over time, as the needs and responsibilities of young people change and as their habits and preferences become better known, FSPs can be there to offer an updated suite of financial services.

GENDER OF HEAD OF HOUSEHOLD

Sample: Smallholder Households

| YEAR | HOUSEHOLD HEAD GENDER | | | | | |
|--------|-----------------------|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 2,574 | 2,870 | 2,993 | 3,019 | 3,026 | 3,154 |
| Male | 77% | 77% | 74% | 90% | 88% | 93% |
| Female | 23% | 23% | 26% | 10% | 12% | 7% |

HOUSEHOLD HEAD GENDER



In most smallholder households, the head of the household is a man. Roughly nine in 10 smallholder families in Côte d'Ivoire, Nigeria, and Bangladesh and approximately three-quarters of smallholder families in Mozambique, Uganda, and Tanzania are led by men. Female heads of smallholder households tend to be divorced, separated, or widowed: Among female heads of households in both Côte d'Ivoire and Nigeria, for example, 56 percent are divorced, separated, or widowed.

While smallholder households tend to recognize a man as the head of the household, generally not all family decisions are his alone. In some cases, he may play but a small part in the household's financial management, while his spouse handles their various income streams and expenses and often maintains income-generating activities of her own. It varies according to the social context and prevailing norms, but FSPs should recognize that not only the head of household, but also their spouse, children, elders, and other extended family are likely to make financial decisions and transactions, too.

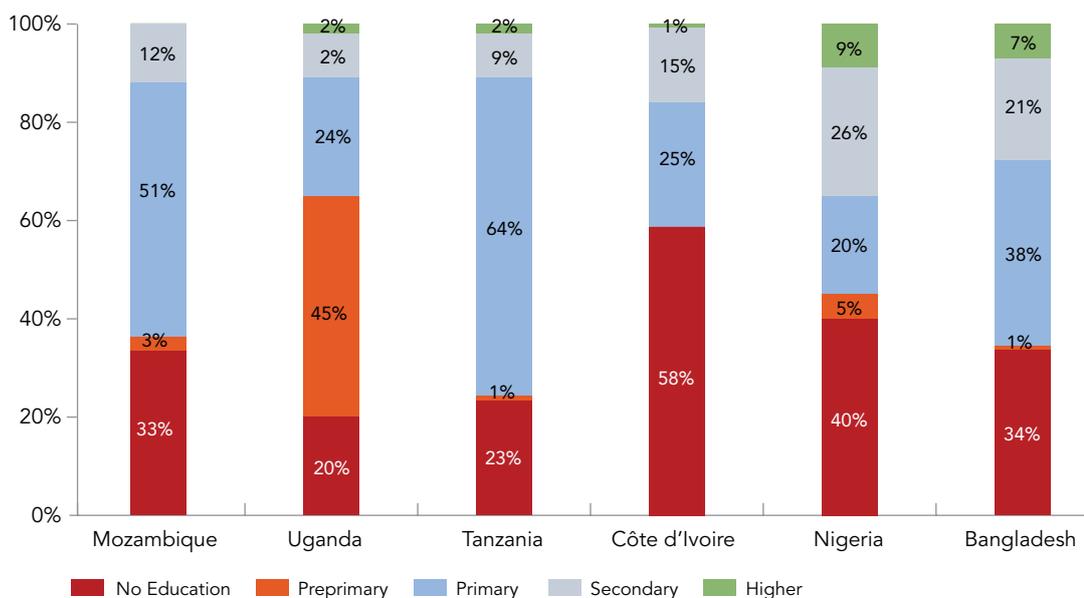
HIGHEST LEVEL OF EDUCATION ATTAINED BY HOUSEHOLD HEAD

Sample: Smallholder households

Question: What is the highest grade (the household head) has attended?

| YEAR | HIGHEST EDUCATION ATTENDED (HH HEAD) | | | | | |
|--------------|--------------------------------------|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 2,574 | 2,870 | 2,993 | 3,019 | 3,026 | 3,154 |
| No Education | 33% | 20% | 23% | 58% | 40% | 34% |
| Preprimary | 3% | 45% | 1% | 0% | 5% | 1% |
| Primary | 51% | 24% | 64% | 25% | 20% | 38% |
| Secondary | 12% | 9% | 9% | 15% | 26% | 21% |
| Higher | 0% | 2% | 2% | 1% | 9% | 7% |

HIGHEST EDUCATION ATTENDED, HOUSEHOLD HEAD



In smallholder households, the highest level of education attained by the head of the household varies substantially. A sizeable portion in each market—ranging from 20 percent of household heads in Uganda to 58 percent in Côte d'Ivoire—have not participated in any form of formal education. At the same time, heads of smallholder households in Nigeria and Bangladesh show notable educational achievement: 35 percent and 28 percent, respectively, have attended secondary school or another form of higher education.

The varying levels of education among smallholder households have implications for how FSPs engage with this client group. The most effective ways to communicate the benefits, terms, and limitations of their financial services must be calibrated to the target client.

The educational background of target clients relates to their level of literacy, numeracy, and preferred languages, which may differ between written and oral communications. Clients may also have different preferences for communication channels (e.g., radio, mobile phone, billboard) and methods (e.g., in-person, SMS, interactive voice response [IVR], smart phone application).

To use mobile phones as an effective channel to deliver financial services, for example, customers must be able to read the transaction menus in the given language and have basic numeracy skills. When customers know only how to receive calls on their mobile phone or need their friends and family to guide them through a mobile-based financial transaction, their access to a mobile phone is not enough, and additional support like IVR is needed.

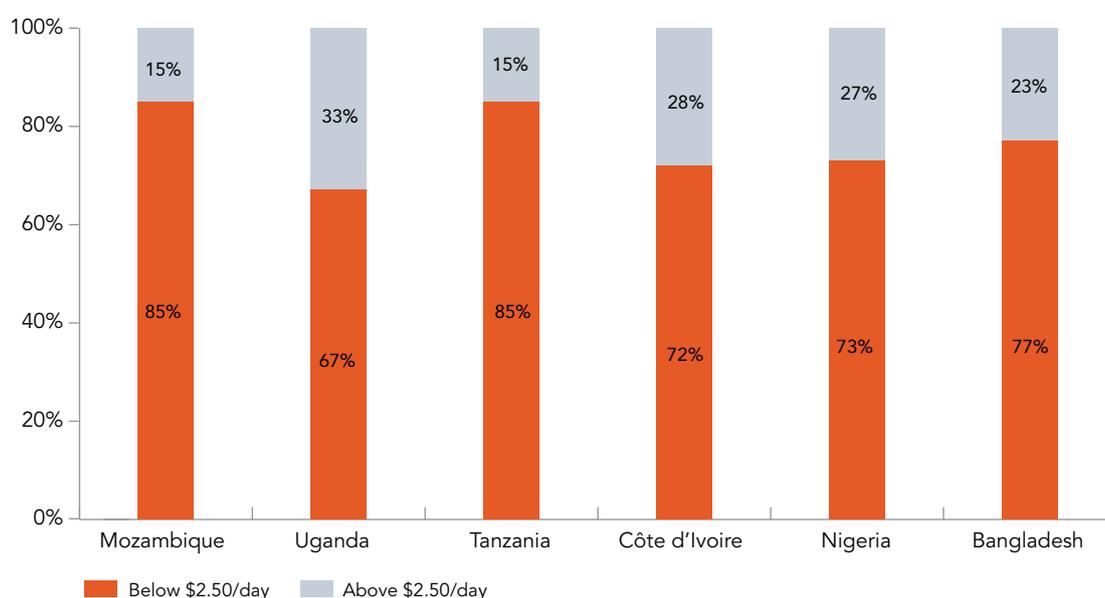
POVERTY STATUS OF HOUSEHOLD

Sample: Smallholder households

Question: Uses progress-out-of-poverty (PPI) methodology to score households and assign them a percent likelihood of living above or below \$2.50/day.

| YEAR | PPI | | | | | |
|------------------|-------|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 2,574 | 2,870 | 2,993 | 3,019 | 3,026 | 3,154 |
| Above \$2.50/day | 15% | 33% | 15% | 28% | 27% | 23% |
| Below \$2.50/day | 85% | 67% | 85% | 72% | 73% | 77% |

POVERTY STATUS



Most smallholder households live below the poverty line, according to PPI methodology and the \$2.50 per day threshold. The proportion of smallholder families living below the \$2.50 per day poverty line ranges from a low of 67 percent in Uganda to a high of 85 percent in Tanzania.

The incidence of poverty among smallholder households is high, as is the complexity of their financial lives. Smallholder families manage a range of income sources and cash flows, each ebbing and flowing at different points of the year. For many smallholder households, a relatively modest portfolio of financial services could meet their needs. Various solutions could manage a range of income flows, put money aside here and there, accumulate amounts for larger purchases, and receive and send payments—all sim-

ple, but vital financial tools. FSPs can explore business models to meet some customer needs that operate on volume and leverage technology, and government partners also play an important role, especially on cash transfers of social safety nets and pensions.

There is also an important proportion of smallholder households who live above the poverty line—the sheer number of smallholder families makes this portion a meaningful market. These households may also be more commercially engaged with markets, selling their crops and livestock, and have a range of other income sources, such as a job with steady wages or casual employment from time to time, reducing the risk of income concentration and introducing additional financial needs.

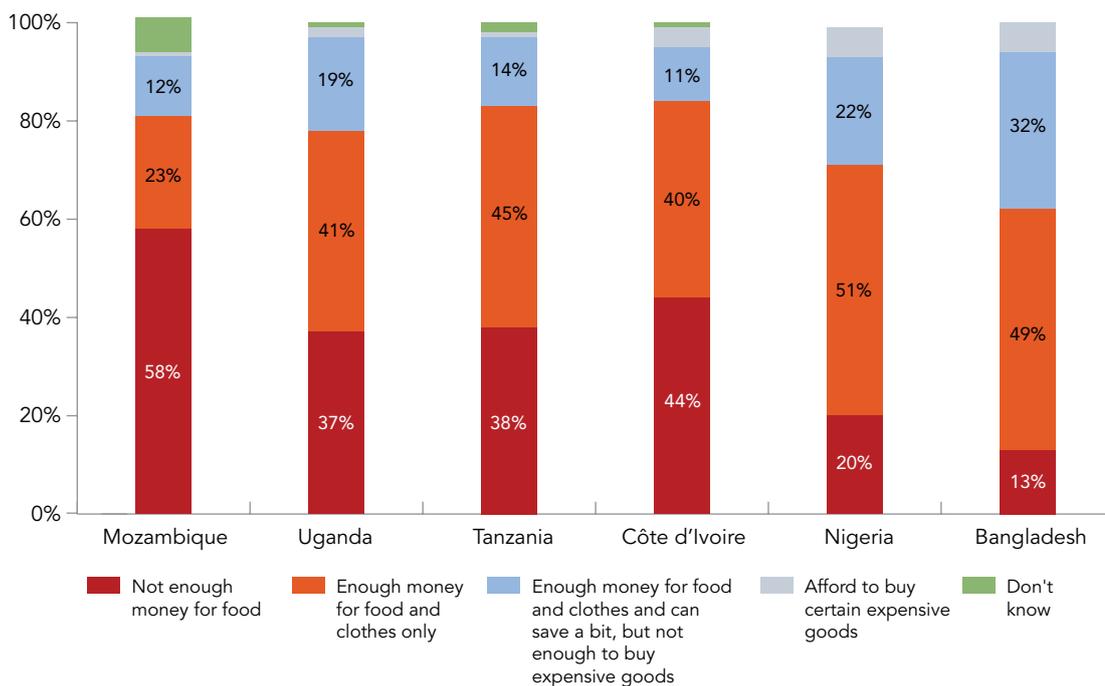
HOUSEHOLD'S CURRENT FINANCIAL SITUATION (SELF-ASSESSED)

Sample: Smallholder households

Question: Respondents were shown a card with the following options and asked to select which best reflects their household's current financial situation.

| YEAR | FINANCIAL SITUATION (SELF-ASSESSED) | | | | | |
|---|-------------------------------------|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 2,574 | 2,870 | 2,993 | 3,019 | 3,026 | 3,154 |
| Not enough money for food | 58% | 37% | 38% | 44% | 20% | 13% |
| Enough money for food and clothes only | 23% | 41% | 45% | 40% | 51% | 49% |
| Enough money for food and clothes and can save a bit, but not enough to buy expensive goods | 12% | 19% | 14% | 11% | 22% | 32% |
| Afford to buy certain expensive goods | 1% | 2% | 1% | 4% | 6% | 6% |
| Don't know | 7% | 1% | 2% | 1% | 0% | 0% |

FINANCIAL SITUATION (SELF-ASSESSED)



Survey respondents were asked to characterize their family's financial situation by selecting from a range of options. Most indicated that their family did not have "enough money for food" or had "enough money for food and clothes only." This echoes data on the poverty status of smallholder households (page 5) and confirms that most farming families are living in poverty. That said, a notable proportion in each market indicates that they were in a relatively better financial position, with "enough money for food and clothes and [the ability to] save a bit, but not enough to buy expensive goods" or even able to "afford to buy certain expensive goods."

Living in precarious financial situations, many smallholder households may demand relatively modest financial services that solve near-term problems. Their individual transaction sizes may be relatively small, but significant in number and volume in aggregate. And in each market, some proportion of smallholder households feel that they are on stronger financial footing and can buy expensive goods or save money. They may demand an expanded suite of financial products and could offer FSPs a fruitful entry point into the market.

2. INCOME AND EXPENSES

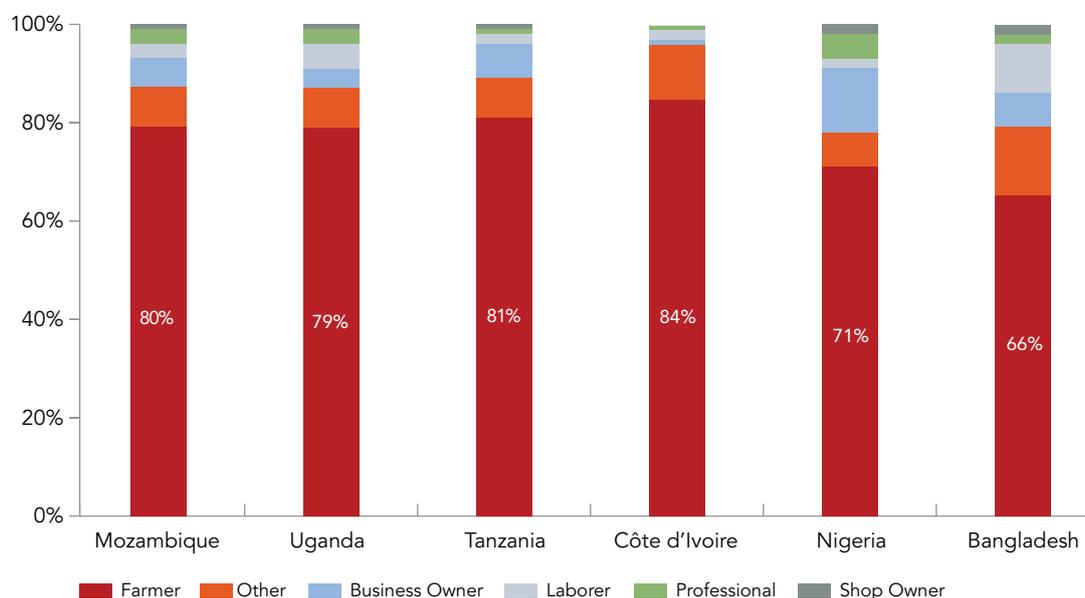
PRIMARY JOB

Sample: Smallholder farmers

Question: What is your primary job (i.e., the job where you spend most of your time)?

| YEAR | PRIMARY JOB | | | | | |
|----------------|-------------|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 4,456 | 5,517 | 5,034 | 5,706 | 5,128 | 5,124 |
| Farmer | 80% | 79% | 81% | 84% | 71% | 66% |
| Other | 8% | 8% | 8% | 11% | 7% | 14% |
| Business owner | 6% | 4% | 7% | 1% | 13% | 7% |
| Laborer | 3% | 5% | 2% | 2% | 2% | 10% |
| Professional | 3% | 3% | 1% | 1% | 5% | 2% |
| Shop owner | 1% | 1% | 1% | 0% | 2% | 2% |

PRIMARY JOB



Many sources of income may flow through smallholder families over the course of a year, including cash or in-kind contributions from raising crops and livestock, wages from a steady job or casual employment, income from their own business, or transfers from government programs or family and friends.² Though there may be many income sources, most smallholders see farming as their primary job. From 66 percent of smallholders in Bangladesh to 84 percent

of smallholders in Côte d'Ivoire, smallholders indicate that farming is their primary job (i.e., where they spend most of their time).

Agriculture may not generate the most income for their household, measured in cash or in-kind contributions, but it seems to be at the center of their identity and perception of their livelihood. This is reflected in CGAP's smallholder financial diaries, which collected detailed financial data from approximately 270 small-

scale farming households in three communities in Mozambique, Tanzania, and Pakistan over the course of a year.³ At the beginning of the research, the smallholder diaries sample of households indicated that they earned most of their income from agriculture, but the final data showed a more nuanced picture. Across the sample, agriculture contributed only about half of their total household income, in cash and in-kind, for the year. Thus, while the sample strongly identified as farming households, agriculture played a relatively limited role in their income.

FSPs should recognize the importance of agriculture to smallholder households and reflect that pride in their communications with this market. Even for financial products unrelated to agriculture, FSPs could appreciate smallholder households for their stewardship of the land, for feeding families with their crops and livestock, and for contributing to the national economy. Marketing and communications from FSPs could feature smallholders and the agricultural sector in a positive light, signaling that they are welcome in their branches and banking halls. While smallholders need financial services for a range of needs and activities, their identity is rooted in agriculture.

CONTINUING TO WORK IN AGRICULTURE

Sample: *Smallholder farmers who participate in household agricultural activities*

Question: *Do you intend to keep working in agriculture?*

| YEAR | INTENTION TO CONTINUE WORKING IN AGRICULTURE | | | | | |
|------------|--|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 1,753 | 2,296 | 2,638 | 2,751 | 2,502 | 2,448 |
| Yes | 86% | 88% | 97% | 90% | 90% | 87% |
| No | 6% | 10% | 3% | 6% | 8% | 11% |
| Don't know | 8% | 2% | 0% | 4% | 2% | 2% |

Smallholders express a strong intention to continue working in agriculture. Across the sample, approximately 90 percent plan to continue working in agriculture. Even when disaggregated by their level of education, poverty level, or interest in expanding their agricultural activities, the results are consistent: Most smallholders are committed to agriculture. This is reflected in data that indicate that smallholders consider farming their primary job, irrespective of how they earn most of their cash income (page 7).

The strong connection that smallholders have with agriculture is an important unifying thread running through this very diverse client group. FSPs could reach

out to smallholders using images and messages that communicate an appreciation of and respect for agriculture, even for general financial solutions unrelated to agriculture. Smallholders who have limited commercial activity in agriculture, and who may not need highly specialized financial products tailored to their agricultural activities, may still appreciate marketing messages that recognize and value agriculture, both as part of their livelihood and in the larger economy and culture. This could be particularly appealing to potential clients who trust FSPs but have felt out of place or uncomfortable in the formal atmosphere of their branches.

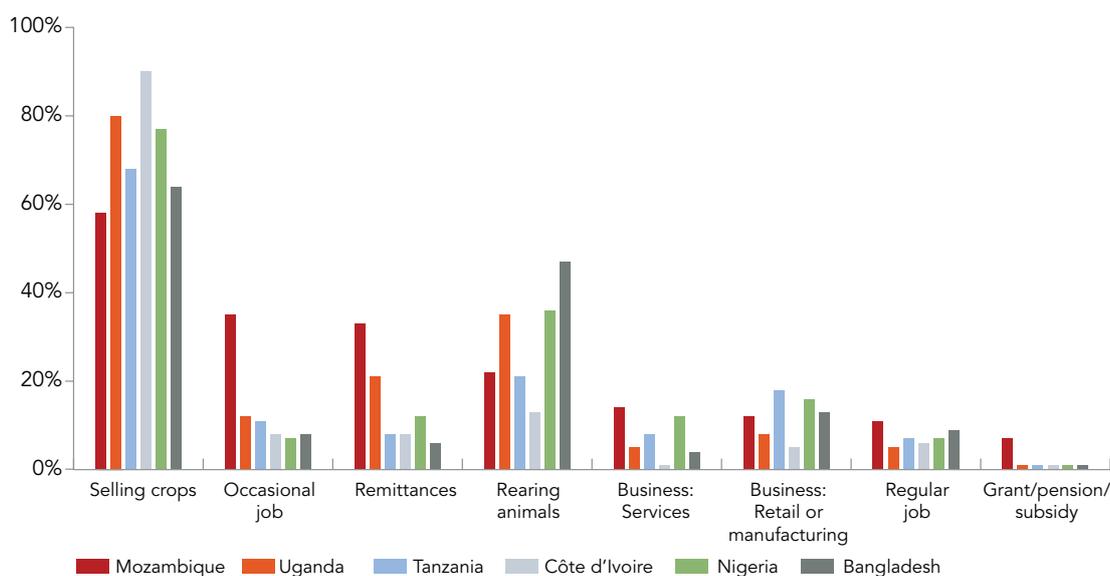
INCOME SOURCES

Sample: Smallholder farmers

Question: Do you generate income from the following sources? (Multiple responses allowed.)

| YEAR | PERCENT OF SMALLHOLDERS WHO GENERATE INCOME FROM THE FOLLOWING SOURCES | | | | | |
|-----------------------------------|--|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 4,456 | 5,517 | 5,034 | 5,706 | 5,128 | 5,124 |
| Selling crops | 58% | 80% | 68% | 90% | 77% | 64% |
| Occasional job | 35% | 12% | 11% | 8% | 7% | 8% |
| Remittances | 33% | 21% | 8% | 8% | 12% | 6% |
| Rearing animals | 22% | 35% | 21% | 13% | 36% | 47% |
| Business: Services | 14% | 5% | 8% | 1% | 12% | 4% |
| Business: Retail or manufacturing | 12% | 8% | 18% | 5% | 16% | 13% |
| Regular job | 11% | 5% | 7% | 6% | 7% | 9% |
| Grant/pension/subsidy | 7% | 1% | 1% | 1% | 1% | 1% |

INCOME SOURCES



Smallholder households have more diverse income streams than has been typically assumed, and that has implications for how FSPs design products and services. Generally, most smallholder families generate some level of income from selling the crops and livestock they raise. Large proportions of smallholders in Uganda (80 percent) and Côte d'Ivoire (90 percent) earn income from selling crops, though this is relatively lower in Mozambique (58 percent), Bangladesh (64 percent), and Tanzania (68 percent). Livestock also plays a prominent role in the farming system and market engagement of smallholder households; notable percentages of smallholder households generate

income from their livestock in Uganda (35 percent), Nigeria (36 percent), and Bangladesh (47 percent).

Generating cash and in-kind income from crops and livestock distinguishes the smallholder livelihood but does not preclude other income sources. Income from occasional jobs and remittances plays meaningful roles in Mozambique and Uganda, while their own retail or manufacturing businesses are important income sources for smallholders in Tanzania and Nigeria. Côte d'Ivoire and Bangladesh show highly diversified streams of income outside of their agricultural activities.

FSPs should take a holistic view of all income sources in smallholder households, particularly when

assessing risk and making credit decisions. Agriculture plays an important role in smallholder livelihood strategies and identities, but FSPs need to know that there is more to the story of smallholder families than crops and livestock. When smallholder households need short-term credit for consumption purposes, for example, their diverse income streams make it more

likely that they can repay these loans. Some smallholders may be more engaged in commercial agriculture and demand financial tools tailored to these activities, while others need a relatively standard portfolio of financial services like that of other existing FSP clients.

WEEKLY EXPENSES

Sample: Smallholder households

Question: How often do you pay each of the following expenses? (Figures represent the percent who answered, "At least once a week.")

| YEAR | EXPENSES INCURRED ONCE OR MORE PER WEEK | | | | | |
|--|---|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 4,456 | 5,517 | 5,034 | 5,706 | 5,128 | 5,214 |
| Grocery purchases | 10% | 50% | 78% | 66% | 54% | 84% |
| Transportation | 17% | 20% | 8% | 29% | 57% | 57% |
| Medicine, medical payments, hospital charges | 5% | 8% | 5% | 1% | 6% | 21% |
| Educational expenses, school fees | 4% | 1% | 2% | 1% | 2% | 3% |
| Bills: Utility, mobile phone and airtime, rent, taxes, etc. | 6% | 21% | 36% | 13% | 15% | 6% |
| Emergency expenses | 2% | 1% | 7% | 2% | 1% | 2% |
| Investment in business, farm or future | 2% | 2% | 2% | 1% | 1% | 2% |
| Make a large purchase, such as TV, car or bicycle, house, etc. | 1% | 0% | 0% | 0% | 0% | 1% |
| Home repairs | 8% | 1% | 0% | 1% | 0% | 0% |

Groceries and transportation are significant expenses for smallholder families. In Bangladesh and Tanzania, for example, 84 percent and 78 percent, respectively, of smallholder households purchase groceries at least once a week. In Nigeria and Bangladesh, 57 percent of smallholder families also had expenses related to transportation at least once a week. For FSPs targeting smallholder households and working to build financial solutions around their most common expenses, grocery purchases, transportation expenses, and other merchant payments appear to be good starting points.

Other weekly expenses are less prevalent. Paying bills related to utilities, mobile phone airtime, and rent are notable only in Uganda (21 percent) and Tanzania (36 percent). In some cases, bill payment could offer FSPs an opportunity. For example, business models built around the PAYGo approach could offer some smallholder families a way to acquire productive assets like solar panels and water pumps that meet both agricultural and general household needs.

Other possible expenses—related to health care, school fees, business investments, or home repairs—may be perceived as important and an aspiration, but they do not appear to be regularly taking place. Paying school fees, for example, is a common concern among smallholder households, and households in general, though these payments are made less frequently and in relatively larger amounts. FSPs have been experimenting with ways that allow smallholder households to set aside money for school fees over time. There has also been some indication from customers that if the amount needed for school fees has been accumulated, then they feel comfortable making other purchases, including of agricultural supplies like improved seeds and fertilizer. This is an example of a financial solution targeting smallholder households that meets a household need (school fees) that then opens the door to agricultural improvements (increased yield).

FINANCIAL SHOCKS

Sample: Smallholder farmers

Question: In the past 12 months, have you experienced any of these events? (Multiple responses allowed.)

| YEAR | FINANCIAL SHOCKS EXPERIENCED IN THE 12 MONTHS BEFORE THE SURVEY | | | | | |
|--------------------------------|---|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 2,209 | 2,271 | 2,795 | 2,949 | 2,773 | 3,095 |
| Medical emergencies | 23% | 69% | 76% | 47% | 35% | 57% |
| Death of a family member | 28% | 26% | 30% | 29% | 18% | 4% |
| Birth of a family member | 39% | — | 23% | 30% | 23% | 5% |
| Housing repair or construction | 10% | 14% | 22% | 13% | 11% | 30% |
| Income lost due to theft | 14% | 16% | 12% | 5% | 6% | 3% |
| Wedding or marriage | 10% | 7% | 11% | 9% | 16% | 8% |
| Loss of wage labor | 5% | 5% | 9% | 1% | 2% | 2% |
| None | — | 20% | 8% | 24% | 30% | 24% |
| Loss of job | 5% | 3% | 7% | 1% | 2% | 2% |
| Relocation | 7% | 2% | 6% | 2% | 3% | 1% |

Smallholder families, like all households, cope with a range of financial shocks. Medical emergencies were the biggest challenges faced by smallholders in the study; in the 12 months before the survey, most households in Uganda (69 percent), Tanzania (76 percent), and Bangladesh (57 percent) had coped with a medical emergency. Births and deaths exerted a financial shock on families, too, particularly in Mozambique and Côte d'Ivoire. A sizeable number of smallholder families in Tanzania (22 percent) and Bangladesh (30 percent) also experienced financial shocks related to housing repair or construction.

The prevalence of financial shocks related to medical emergencies and health-related life events (i.e., births and deaths) signals the need for financial solutions to manage these common but pivotal household events. Targeted health savings accounts and health microinsurance products could anticipate expenses related to prenatal care and birth, and funeral coverage could manage end-of-life expenses. Close collaboration with national health insurance programs and health care providers and short-term credit to meet emergency health care costs could also address these needs.

3. FINANCIAL INCLUSION

FINANCIALLY INCLUDED

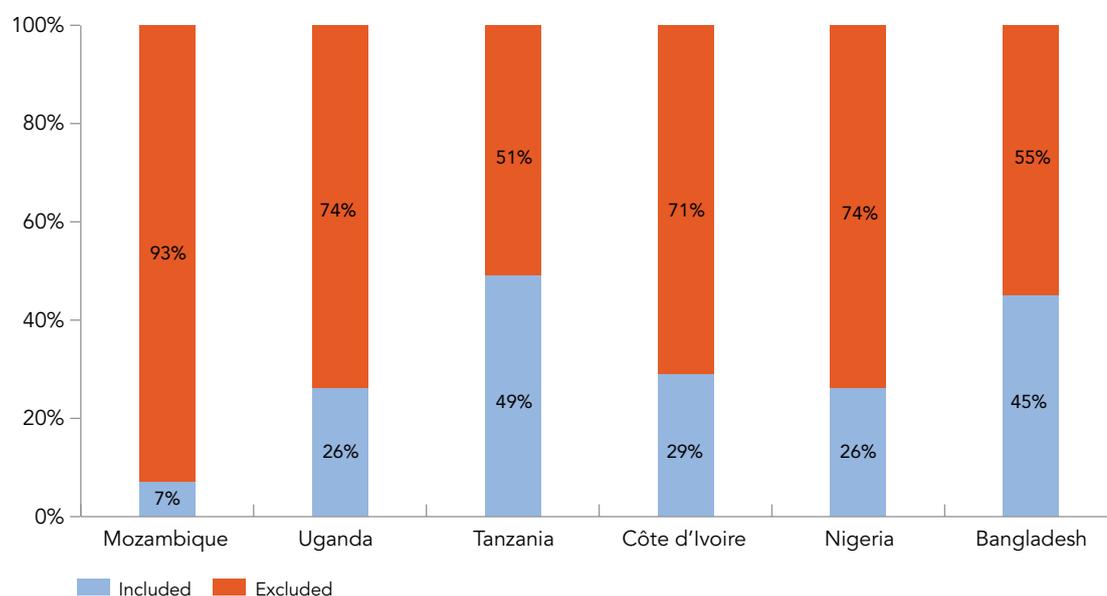
Sample: Smallholder farmers

Question: A smallholder is considered financially included if they have:

- An account registered in their name at a bank, microfinance institution (MFI), savings and credit cooperative (SACCO), credit union, village savings and loan association (VSLA), or post office bank that offers savings, money transfers, insurance, or investments, and/or
- A mobile money account registered in their name.

| YEAR | FINANCIALLY INCLUDED | | | | | |
|----------|----------------------|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 2,209 | 2,271 | 2,795 | 2,949 | 2,773 | 3,095 |
| Excluded | 93% | 74% | 51% | 71% | 74% | 55% |
| Included | 7% | 26% | 49% | 29% | 26% | 45% |

FINANCIALLY INCLUDED



Financial inclusion varies substantially for smallholders across this sample, ranging from a low in Mozambique (7 percent) to peaks in Tanzania (49 percent) and Bangladesh (45 percent). In this calculation, smallholders are considered to be financially included if they have, in their name, a mobile money account and/or an account with a bank, MFI, SACCO, cooperative, credit union, VSLA, or post office bank that offers saving, money transfer, insurance, or investment services.⁴

Given the widespread financial exclusion of smallholder households and their market size, making major advances in financial inclusion does mean reaching small-

holder households. FSPs that offer relatively simple financial solutions in a high-volume, small transaction size business model could make major breakthroughs in financial inclusion. There is also a meaningful market of smallholder households who are already financially included, driven largely by mobile money (page 13). They already have some experience with financial services, and they have an expanding data footprint of transactions. FSPs that want to begin building experience with and exposure to agricultural livelihoods and designing tailored financial solutions could start by targeting these financially included smallholders.

ACCOUNTS WITH FORMAL FINANCIAL INSTITUTIONS

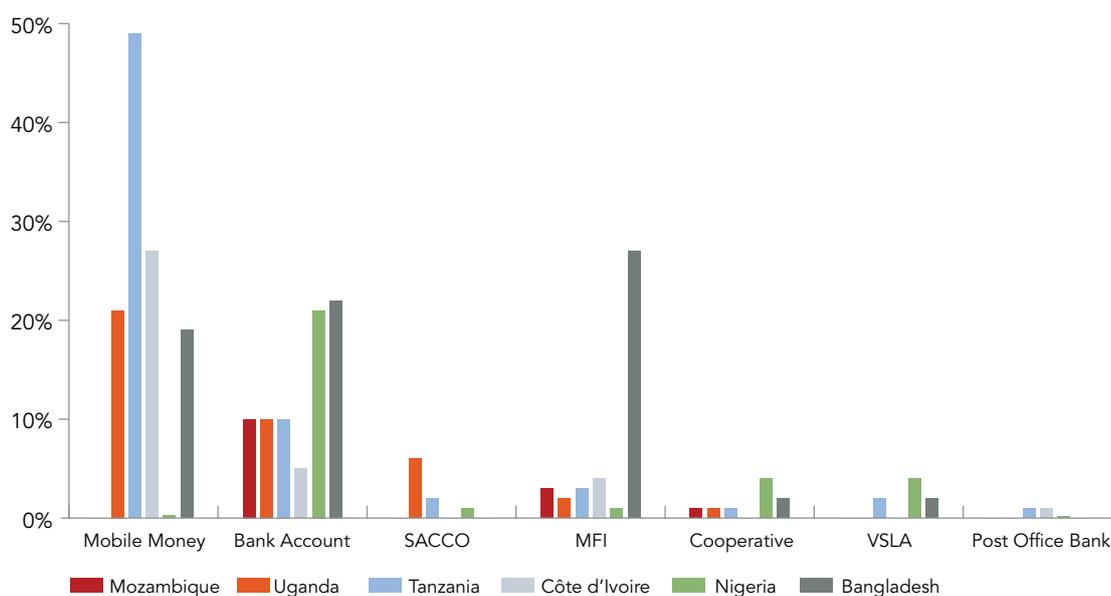
Sample: Smallholder farmers

Question(s): Do you have an account/membership in your name at/with the following? (Multiple responses allowed.)

| YEAR | ACCOUNTS WITH FORMAL FINANCIAL INSTITUTIONS | | | | | |
|-------------------|---|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 2,209 | 2,271 | 2,795 | 2,949 | 2,773 | 3,095 |
| Mobile money | 0% | 21% | 49% | 27% | 0.3% | 19% |
| Bank account | 10% | 10% | 10% | 5% | 21% | 22% |
| SACCO | — | 6% | 2% | — | 1% | — |
| MFI | 3% | 2% | 3% | 4% | 1% | 27% |
| Cooperative | 1% | 1% | 1% | — | 4% | 2% |
| VSLA ^a | — | — | 2% | — | 4% | 2% |
| Post office bank | — | — | 1% | 1% | 0.2% | 0% |

a. In these tables, VSLAs are categorized as formal or informal based on how they are categorized in each country-level survey.

FORMAL FINANCIAL ACCOUNTS



Mobile money drives the use of formal financial services among smallholder families. Given the percentage of smallholders with an account in their own name, mobile money is the leading formal financial tool in Uganda (21 percent), Tanzania (49 percent), and Côte d'Ivoire (27 percent). In contrast, its use is negligible in Mozambique and Nigeria. Banks play a meaningful role in the financial inclusion of smallholders in Nigeria and Bangladesh, where 21 percent and 22 percent, respectively, of smallholders have an account in their name. Only in Bangladesh do MFIs serve a sizeable proportion (27 percent) of smallholders.

Low levels of formal financial account ownership offer big opportunities to FSPs, and the higher mobile money account ownership signals the potential of digitally enabled financial services. While VSLAs and co-operatives have a limited range of simple but still useful products, their lighter structure also has potential for significant outreach in rural areas. They currently serve a small portion of smallholders, but they may be able to leverage technology in their operations (i.e., information sharing, transparency of accounts, facilitation of payments, increased safety of the group's holdings) without jeopardizing the social dynamics that define them.

USE OF INFORMAL FINANCIAL MECHANISMS

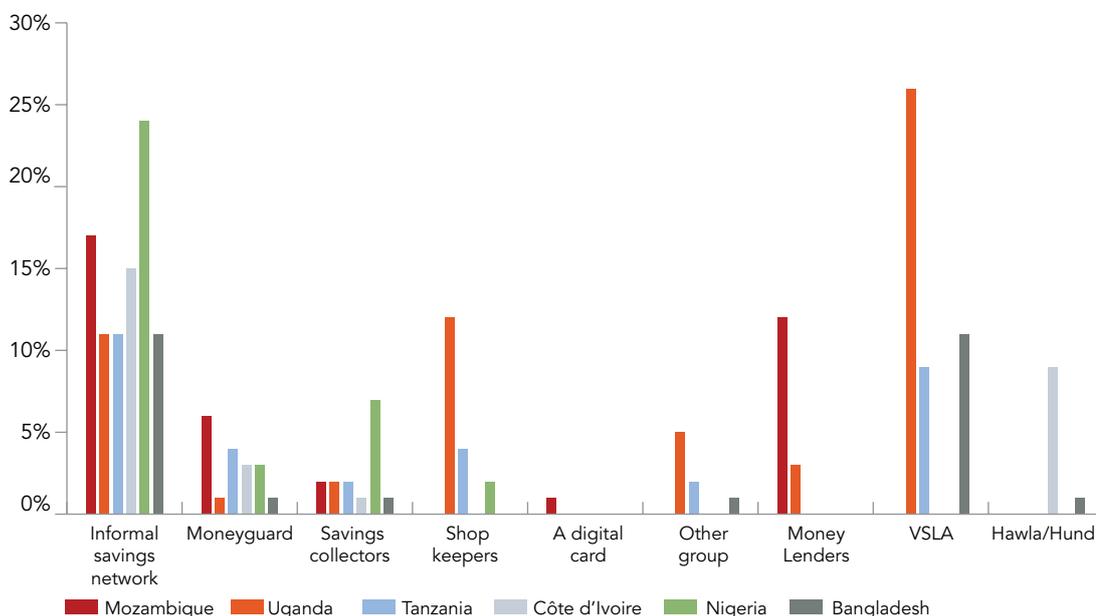
Sample: Smallholder farmers

Question: Have you ever used any of the following? (Multiple responses allowed.)

| YEAR | USE OF INFORMAL FINANCIAL MECHANISMS (EVER USED) | | | | | |
|---|--|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 2,209 | 2,271 | 2,795 | 2,949 | 2,773 | 3,095 |
| Merry-go-round/informal savings network | 17% | 11% | 11% | 15% | 24% | 11% |
| A money guard/someone in workplace or neighborhood that collects and keeps savings deposits regularly | 6% | 1% | 4% | 3% | 3% | 1% |
| Savings collectors | 2% | 2% | 2% | 1% | 7% | 1% |
| Shop keepers | — | 12% | 4% | — | 2% | — |
| A digital card, a recharge card that is not attached to a bank or MFI account | 1% | 0% | 0% | 0% | 0% | 0% |
| Other | — | 5% | 2% | 0% | 0% | 1% |
| Money lenders | 12% | 3% | — | — | — | — |
| VSLA ^a | — | 26% | — | 9% | — | — |

a. VSLAs are categorized in these tables as formal or informal based on how they are categorized in each country-level survey.

INFORMAL FINANCIAL INSTITUTION USE



In all six countries of the sample, the use of informal financial tools among smallholders was low. Informal savings networks or merry-go-rounds are used by one-tenth (Uganda, Tanzania, Bangladesh) and one-quarter (Nigeria) of smallholders. In Uganda, one-quarter (26 percent) of smallholders also use a VSLA and one-tenth (12 percent) also use store credit from shopkeepers. Other informal financial tools such as money guards, savings collectors, and money lenders were rarely used, despite a perception of the prevalence of informal financial tools.

There is much more room to grow for informal financial services among smallholder households. VSLAs, treated as a formal or informal financial service in different countries, seem to be the dominant model. But even in Uganda, the most active market in this sample, VSLAs have been used by only one in four smallholders. Providers could also consider contemporary adaptations of these informal services that leverage technology and link to more formal FSPs, while preserving their critical social cohesion.

Apart from these structured financial tools, it is common for smallholder households to engage in financial activities on their own and with friends and family. The financial relationships that flow through social networks—giving money to friends and family to hold and save; lending money to and borrowing money from friends and family; and saving money at home in dedicated envelopes or jars, under the mattress, or buried in their compound—were the most common financial devices among the three communities sampled in the financial diaries with smallholder families.⁵

These notable flows of funds signal opportunities for FSPs to offer compelling financial product alternatives that are more accessible, affordable, or socially preferable. Financial relationships will always be woven into social networks, but it may not always be desirable, for example, to let friends and family know when the household has had a lucky financial windfall that it wants to save for school fees or seed purchase, or when it faces potential embarrassment that can be addressed with a quick digital loan. Enterprising FSPs will see opportunity in these financial flows.

FINANCIAL SOLUTIONS CURRENTLY USED FOR AGRICULTURAL ACTIVITIES

Sample: Smallholder farmers

Question: Do you currently have any of the following products for your agricultural activities?

(Multiple responses allowed.)

| YEAR | FINANCIAL SOLUTIONS CURRENTLY USED FOR AGRICULTURAL ACTIVITIES | | | | | |
|---|--|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 2,209 | 2,271 | 2,795 | 2,949 | 2,773 | 3,095 |
| A savings plan for inputs, such as seeds, fertilizers, or pesticides | 11% | 7% | 9% | 3% | 11% | 7% |
| A payment plan for inputs, such as seeds, fertilizers, or pesticides | 11% | 5% | 8% | 3% | 9% | 9% |
| A goal savings plan or contractual savings plan for school fees | 8% | 4% | 5% | 3% | 4% | 1% |
| A credit plan for school fees | 7% | 5% | 4% | 2% | 4% | 0% |
| A loan that came with a bank account | 6% | 3% | 3% | 2% | 3% | 6% |
| A loan that came with a mobile money account | 4% | 3% | 3% | 2% | 1% | 1% |
| A loan that came with an insurance plan (i.e., home, business, life, medical) | 4% | 2% | 3% | 3% | 2% | 2% |
| A prepaid card for receiving income | 4% | 2% | 2% | 1% | 1% | 0% |
| A prepaid card to make payments | 3% | 2% | 2% | 1% | 1% | 0% |
| A mobile money account that comes with a smartphone | 2% | 2% | 3% | 4% | 1% | 0% |
| A loan that is accessed directly through a bank account | — | 3% | 2% | 2% | 2% | 1% |
| A loan that is accessed through a mobile money account and linked to a bank account | — | 2% | 2% | 2% | 1% | 1% |
| A loan that is accessed through a mobile money account | — | 2% | 3% | 2% | 1% | 0% |

The use of financial solutions tailored to agricultural activities is low among smallholders. Savings or payment plans for agricultural inputs such as seeds, fertilizers, and pesticides are used by approximately 10 percent of smallholders in Mozambique, Tanzania, Nigeria, and Bangladesh. While smallholders expressed significant interest in this range of financial tools, their current use is quite limited.

This represents an opportunity for FSPs striving to reach smallholders who are growing a commercial business in agriculture. Given the variability in how these tailored products and packages of services could be structured, the range of households and household needs that they could meet, and the ways that technology could be leveraged to deliver them, there is room for forward-leaning, risk-taking FSPs to explore targeted financial solutions for agricultural activities.

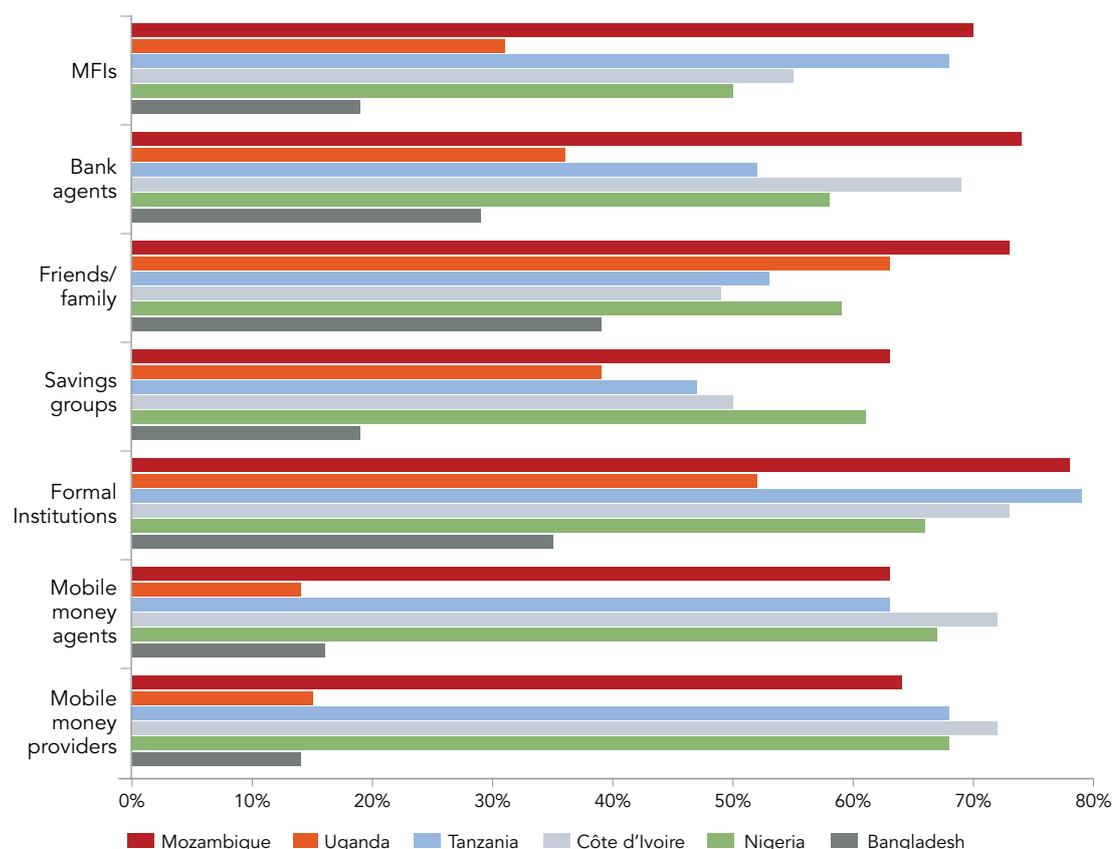
TRUST IN FINANCIAL INSTITUTIONS

Sample: Smallholder farmers

Question: How much do you trust each of the following as financial sources? Participants were asked to rate their level of trust in institutions on a scale of 1 to 5, where 1 means "Fully distrust" and 5 means "Fully trust." The table below shows the percentage of people that chose 5 ("Fully trust") or 4 ("Somewhat trust").

| YEAR | TRUST IN INSTITUTIONS (% FULLY OR SOMEWHAT TRUST) | | | | | |
|---|---|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 2,209 | 2,271 | 2,795 | 2,949 | 2,773 | 3,095 |
| Mobile money providers | 14% | 68% | 72% | 68% | 15% | 64% |
| Mobile money agents | 16% | 67% | 72% | 63% | 14% | 63% |
| Banks and other formal financial institutions | 35% | 66% | 73% | 79% | 52% | 78% |
| Savings groups | 19% | 61% | 50% | 47% | 39% | 63% |
| Friends, neighbors or relatives who borrow from/save money for me | 39% | 59% | 49% | 53% | 63% | 73% |
| Bank agents | 29% | 58% | 69% | 52% | 36% | 74% |
| MFIs | 19% | 50% | 55% | 68% | 31% | 70% |

PERCENT THAT TRUST FINANCIAL INSTITUTIONS



Smallholders demonstrate notable differences in their trust of FSPs. Levels of trust in banks and in other formal financial providers vary widely (ranging from 35 percent in Mozambique to 79 percent in Côte d'Ivoire), as it does with savings groups (ranging from 19 percent in Mozambique to 63 percent in Bangladesh). Relatives,

friends, and neighbors also have limited amounts of trust because they may have their own financial struggles and may not be able to offer financial support in times of need. No one type of provider is universally trusted, and FSPs need tailored communication and client engagement strategies for each market context.

In Mozambique, where financial inclusion among smallholder households is low, FSPs are afforded less trust than in the other five countries sampled. Smallholders in Mozambique and Nigeria have low trust in mobile money providers and their agents. In both countries, the proportion of smallholders who have mobile money accounts is negligible. For mobile money providers, having a great solution in a market where you are not trusted may not be good enough. Customers may need reassurance about the provider and its values and the product's value proposition. For smallholders new to mobile money and uncertain about its providers, thorough onboarding and effective customer service support are important.

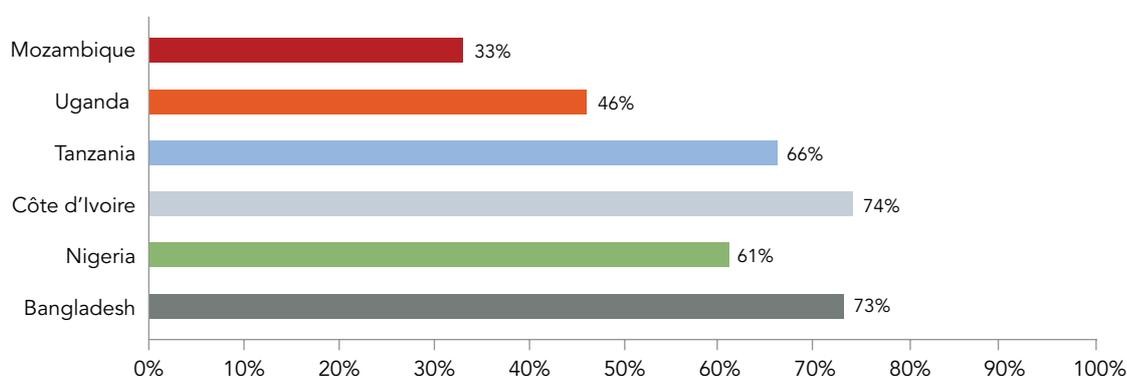
Where mobile money is more prevalent, there is more trust in its providers among smallholders. Mobile money providers are fully or somewhat trusted among a significant number of smallholders in Uganda (68 percent), Tanzania (72 percent), Côte d'Ivoire (68 percent), and Bangladesh (64 percent). However, it is unclear whether smallholders trust mobile money more because it is also more common or because they truly have confidence in it as a reliable financial tool. Mobile money providers may have more latitude to experiment with and test new digitally enabled financial solutions with smallholders where there is this reservoir of trust.

INDIVIDUAL MOBILE PHONE OWNERSHIP

Sample: Smallholder farmers

| YEAR | PERCENTAGE OF SMALLHOLDERS WHO OWN A PERSONAL MOBILE PHONE | | | | | |
|------|--|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 2,209 | 2,271 | 2,795 | 2,949 | 2,773 | 3,095 |
| Yes | 33% | 46% | 66% | 74% | 61% | 73% |

SMALLHOLDERS WHO OWN A MOBILE PHONE



Mobile phones have an important place in smallholder households. Approximately three-quarters of smallholder farmers in Côte d'Ivoire and Bangladesh, two-thirds in Tanzania and Nigeria, half in Uganda, and one-third in Mozambique own their own mobile phone.

Increasingly, FSPs can use mobile phones to deliver information and financial services. Customers can also use mobile phones to make payments, ask questions, and submit complaints to FSPs. In addition, FSPs should not discount those who do not have mobile phones because they may be able to use a mobile phone that belongs to a family member.

FSPs should be aware that those who own or can access mobile phones do not always know how to use them. Depending on the target customers, FSPs that want to use mobile phones to deliver financial services

may need to educate their customers on both how to use their phones and how to use the financial service. Some customers may know how to answer a call on their mobile phone, for example, but may not be able to read or navigate through a USSD menu.

In the financial diaries with smallholder households, of the smallholders with access to a mobile phone, 68 percent in Tanzania knew how to use SMS on their mobile phone, compared with only 24 percent in Pakistan and 25 percent in Mozambique.⁶ The range of ability to use mobile phone functions underscores the importance of simple interfaces and short processes in delivering digitally enabled financial services, as well as the key roles agents and other human touch points play in customer support and education.

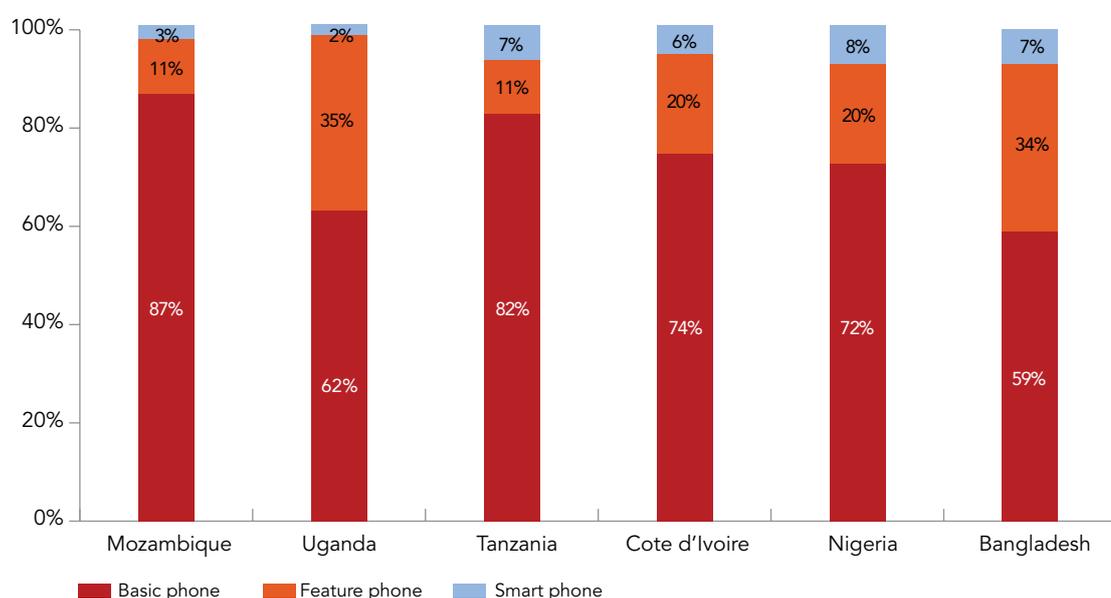
TYPE OF MOBILE PHONE OWNED

Sample: Smallholder farmers

Question: What type of mobile phone(s) do you own? (For simplicity, owners of multiple types of phones are reported as an owner of the most advanced phone type.)

| YEAR | TYPE OF MOBILE PHONE OWNED (AMONG MOBILE PHONE OWNERS) | | | | | |
|---------------|--|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 731 | 1,258 | 1,834 | 2,161 | 1,672 | 2,257 |
| Basic phone | 87% | 62% | 82% | 74% | 72% | 59% |
| Feature phone | 11% | 35% | 11% | 20% | 20% | 34% |
| Smart phone | 3% | 2% | 7% | 6% | 8% | 7% |

TYPE OF MOBILE PHONE OWNED



Most smallholder farmers who own a mobile phone own a basic phone. Because of this, FSPs who want to serve smallholder farmers should design mass market financial solutions that work on basic or feature phones. IVR and near field communication (NFC) technology can address the limited literacy and/or numeracy of some segments of smallholders as well as the difficulty some users may have in reading messages on the small screens of basic phones.

Only a few smallholders own smart phones, with those in Nigeria having the highest rate of ownership among the countries studied (8 percent). Though this market is small, FSPs may find it worthwhile to design specific applications or adjust existing products for smallholders with smartphones.

HOUSEHOLD'S GREATEST SAVINGS NEED

Sample: Smallholder farmers

Question: Which of the following do you feel your household needs to save for the most? (Single answer.)

| YEAR | GREATEST HOUSEHOLD SAVINGS NEED | | | | | |
|--|---------------------------------|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 2,209 | 2,271 | 2,793 | 2,949 | 2,737 | 3,095 |
| Save money for a future purchase | 28% | 29% | 20% | 37% | 40% | 33% |
| Save money for an unexpected event | 27% | 18% | 20% | 23% | 18% | 30% |
| Save money for regular purchases | 16% | 10% | 11% | 13% | 13% | 11% |
| Save money for school fees | 20% | 43% | 6% | 24% | 10% | 16% |
| Save money for marriage ceremony/dowry | — | — | 0% | 1% | 1% | 8% |
| Save money for health care | — | — | 32% | — | 12% | — |
| Save money for death in the family | — | — | 1% | 1% | 0% | — |
| Save money for future loss of income | — | — | 8% | — | 3% | — |

When asked about their savings priorities, one-third of smallholders felt that it is most important for their household to save for a future purchase, and roughly one-fifth prioritize putting money aside in anticipation of unexpected events. Saving for school fees was the priority in Uganda (43 percent), while saving for health care expenses was the imperative in Tanzania (32 percent). FSPs could collaborate closely with health care providers, government bodies, and insurers to develop financial solutions related to health care and ensure they are in place as health care needs arise.

Smallholders in this sample put a high priority on savings for future purchases and to handle unexpected events. Some financial solutions (e.g., layaway products, commitment savings products) could help small-

holders anticipate future purchases and collect small sums at irregular intervals, locking them away and keeping them safely out of reach until they are needed. Product features could encourage and reward savings discipline with recognition, rewards, or financial incentives. Savings tools designed to handle unexpected events, however, would need to remain relatively liquid and easy to access in an emergency.

In both cases, savings solutions could be particularly relevant for smallholders who are debt-averse and do not want to use credit or those who would not qualify for a loan. Digitally enabled solutions that run on basic or feature phones could be particularly relevant to increase outreach, drive scale, and, most importantly, solve problems for smallholders.

4. AGRICULTURE

MOST IMPORTANT CROP GROWN

Sample: Smallholder farmers participating in agriculture who grow at least one crop

Question: Which of the following crops that you grow is most important to you and your family? (Single answer.)

| YEAR | MOST IMPORTANT CROP GROWN | | | | | |
|---------------------|---------------------------|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 4,456 | 5,088 | 4,726 | 5,202 | 4,446 | 3,866 |
| Maize | 66% | 24% | 62% | 5% | 19% | 2% |
| Cassava | 10% | 25% | 9% | 9% | 25% | 0% |
| Paddy | 9% | 0% | 10% | 14% | 7% | 86% |
| Beans | 4% | 16% | 4% | 0% | 3% | 0% |
| Sweet potatoes/yams | 1% | 5% | 1% | 0% | 12% | 0% |
| Cashew | 0% | 0% | 1% | 9% | 0% | 0% |
| Cocoa | 0% | 0% | 0% | 36% | 0% | 0% |
| Millet | 0% | 2% | 0% | 0% | 9% | 0% |

The most important crop to smallholder families in this sample varies by country. Maize is considered the most important crop in Mozambique (66 percent), Tanzania (62 percent), Uganda (24 percent), and Nigeria (19 percent), while cassava ranks first among one-quarter of smallholders in Uganda and Nigeria. As expected, cocoa is the most important crop for one-third of smallholders in Côte d'Ivoire, and rice dominated in Bangladesh (86 percent).

FSPs should be aware of the diversity of crops that smallholder households grow and find important, which can limit covariant risk across the sector. In addition, some crops are consumed at home, and some are sold through various markets, further amplifying this diversity. FSPs should carefully consider all household cash flows, related and unrelated to agriculture, when designing and delivering financial products.

TYPES OF LIVESTOCK REARED

Sample: Smallholder farmers who have any livestock, herds, other farm animals, fish, or poultry

Question: Which of the following do you rear? (Multiple responses allowed.)

| YEAR | LIVESTOCK REARED | | | | | |
|------------------------|------------------|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 1,817 | 3,184 | 2,585 | 1,673 | 2,555 | 2,585 |
| Indigenous cattle | 6% | 19% | 32% | — | 15% | — |
| Cattle – dairy | 2% | 10% | 8% | 3% | 3% | 41% |
| Cattle – beef | 11% | 15% | 1% | 16% | 7% | 60% |
| Indigenous goat | — | 29% | 39% | — | 52% | — |
| Goat – dairy | 6% | 2% | 1% | 4% | 6% | 22% |
| Goat – meat | 26% | 25% | 5% | 33% | 26% | 31% |
| Sheep | 3% | 5% | 11% | 33% | 35% | 2% |
| Pigs | 25% | 18% | 13% | — | 9% | — |
| Chicken – layers | 76% | 32% | 24% | 20% | 54% | 82% |
| Chicken – broilers | 15% | 20% | 48% | 63% | 28% | 2% |
| Fish (number of ponds) | 1% | 0% | 0% | 1% | 3% | 26% |
| Bees (number of hives) | 0% | 3% | 1% | 0% | 0% | 0% |
| Camel | — | — | — | — | 1% | — |
| Donkey | — | — | — | — | 1% | — |
| Horse | — | — | — | — | 0% | — |
| Dog | — | — | — | — | 11% | — |
| Ducks | 32% | 7% | — | 3% | — | 47% |
| Turkeys | — | 2% | — | — | — | — |
| Pigeon | — | — | — | 2% | — | 12% |
| Buffalo | — | — | — | — | — | 2% |

Livestock have an important role in smallholder households. In Tanzania, one-third of smallholders raise indigenous cattle, and in Bangladesh, both dairy cattle (41 percent) and beef cattle (60 percent) are common among smallholders. Livestock insurance may be relevant to these households, as well as savings and lay-away products for veterinary care and medicine.

As with crops, smallholders raise a wide variety of livestock that contribute to household cash flows and consumption. Roughly one-quarter to one-half of smallholders raise goats; one-third of smallholders in Côte d'Ivoire and Nigeria raise sheep. Results across the six countries confirm that smallholders often raise chickens, both for eggs and for meat; in Bangladesh, fish (26 percent) and ducks (47 percent) are more common.

PAYING SUPPLIERS

Sample: Smallholder farmers who purchase main agricultural and livestock inputs.

Question: How do you usually pay your suppliers of inputs? (Multiple responses allowed.)

| YEAR | PAYING SUPPLIERS | | | | | |
|--------------------------------------|------------------|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 2,644 | 3,892 | 3,731 | 3,795 | 3,978 | 3,835 |
| Cash | 93% | 97% | 97% | 93% | 96% | 99% |
| Payment in-kind (crops, labor, etc.) | 9% | 1% | 0% | 0% | 2% | 1% |
| Pay cash into bank | 2% | 0% | 0% | 0% | 0% | 0% |
| Electronic funds transfer | 1% | 0% | 0% | 0% | 0% | 0% |
| Mobile banking | 0% | 0% | 0% | 0% | 0% | 0% |
| Check | 0% | 0% | 0% | 0% | 0% | 1% |
| Prepaid debit card | 0% | 0% | 0% | 0% | 0% | 0% |

Among smallholders who purchase agricultural supplies (i.e., inputs such as seeds, pesticides, and fertilizer), almost all pay their suppliers (i.e., agricultural input dealers) in cash. In Uganda and Tanzania, for example, 97 percent of smallholder payments to their suppliers are in cash.

These massive cash flows to smallholders offer a large market to FSPs that collaborate with agricultural suppliers. Together, they could design and provide financial solutions that open greater access to agricul-

tural products and services and facilitate payments among smallholders. These financial transactions would also contribute to the financial footprint of smallholders, which could open access to other financial tools over time. Successful approaches could include layaway or commitment savings products to accumulate the money to buy inputs over time, especially via a mobile phone. Some productive assets in agriculture could also be acquired through leasing or PAYGo business models.

GETTING PAID BY BUYERS

Sample: Smallholder farmers who grow and sell crops

Question: How do you usually get paid for what you sell? (Multiple responses allowed.)

| YEAR | GETTING PAID BY BUYERS | | | | | |
|--------------------------------------|------------------------|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 2,718 | 4,375 | 3,803 | 4,948 | 4,236 | 3,430 |
| Cash | 98% | 100% | 99% | 98% | 100% | 99% |
| Prepaid debit card | 10% | 1% | 0% | 0% | 0% | 0% |
| Mobile banking | 2% | 0% | 0% | 0% | 0% | 0% |
| Check | 0% | 0% | 0% | 1% | 0% | 1% |
| Payment in-kind (crops, labor, etc.) | 0% | 0% | 1% | 0% | 2% | 0% |
| In a bank or MFI account | — | — | — | 1% | — | — |
| Electronic funds transfer | 0% | 0% | 0% | 0% | 0% | 0% |

Cash remains king in smallholder agriculture. With few exceptions, smallholders are paid in cash for the crops they sell. Every buying season, large amounts of cash flow from agricultural buyers to smallholders, often in remote rural areas.

Though some FSPs, social enterprises, and agricultural buyers are working to digitize payments to smallholders and to share information about their agricultural practices and financial transactions, widespread digitally enabled solutions remain elusive outside major mobile money markets like Kenya. Cash still presents compelling advantages, despite its limitations and

risks. Smallholders may have few options to make purchases with mobile money in rural areas, and they may be concerned that a phone full of digital money that they can neither access nor spend will mean that they will be unable to respond to an emergency, such as a sick child in need of urgent medical care. Smallholders are discouraged by transaction fees and the time and expense of traveling to an agent. These challenges underscore the importance of collaboration among FSPs, agricultural buyers, health care providers, government partners, and insurers to serve smallholders.

SALES ON CONTRACT

Sample: Smallholder farmers who grow and sell crops

Question: Do you have any contract to sell any of your crops or livestock?

| YEAR | SALES ON CONTRACT | | | | | |
|------------|-------------------|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 2,718 | 4,375 | 3,803 | 4,948 | 4,236 | 3,430 |
| Yes | 5% | 8% | 3% | 10% | 13% | 4% |
| No | 91% | 89% | 96% | 87% | 85% | 95% |
| Don't know | 4% | 3% | 1% | 3% | 2% | 1% |

Few smallholders who sell their crops have contracts with the buyers. The use of contracts in this sample is highest in Nigeria (13 percent) and Côte d'Ivoire (10 percent); it is below 10 percent in the other four countries.

FSPs often look for aggregation points to more easily serve smallholders, who are a varied, highly dispersed, and often remote client group. A lot of attention has been dedicated to large agricultural buy-

ers and value chains to reach smallholders with a range of goods and services, including finance, but it is important to recognize that these relationships and contracts are not realistic for most smallholders. FSPs funders, NGOs, and other stakeholders in agricultural development and rural finance cannot rely on agricultural buyers alone to reach smallholder households.

MEMBERSHIP IN GROUPS OR ASSOCIATIONS

Sample: Smallholder farmers who participate in household agricultural activities

Question: Are you a member of any of the following groups or associations? (Multiple responses allowed.)

| YEAR | MEMBERSHIP IN GROUPS OR ASSOCIATIONS | | | | | |
|---|--------------------------------------|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 1,753 | 2,296 | 2,638 | 2,751 | 2,502 | 2,448 |
| Merry-go-round/informal savings network | 1% | 20% | 2% | 5% | 15% | 5% |
| Planting, weeding, and harvesting group | 5% | 7% | 10% | 26% | 13% | 5% |
| Women's group or association | 2% | 7% | 5% | 12% | 7% | 2% |
| SACCO | 0% | 4% | 1% | — | 1% | 0% |
| Co-operative/producers group | 0% | 2% | 1% | 12% | 3% | 0% |
| Farm implement group | 0% | 2% | 0% | 0% | 2% | 4% |
| Exporting group or association | 1% | 0% | 0% | 2% | 1% | 1% |
| Trade union | 0% | 0% | 1% | 1% | 4% | 1% |
| Processors group | 1% | 0% | 0% | 0% | 2% | 0% |

Among smallholders who participate in their household's agricultural activities, few are members of groups or associations. The highest incidences of group participation among smallholders are in Côte d'Ivoire, where 26 percent of smallholders participate in a planting, weeding, or harvesting group, and in Uganda, where 20 percent of smallholders are in a merry-go-round or informal savings network. Other groups—including women's groups, SACCOs, producer co-operatives, and processors groups—also have very limited participation from smallholders, though there is some variation across the six countries.

Smallholders show limited engagement in groups and associations, offering few ready aggregation points for FSPs. A smallholder association collaboration with an FSP may be able to strengthen the association and increase its membership. This would, in turn, increase the consumer base for the FSP, but the collaboration would require sustained commitment of the FSP and the association. In another approach, agricultural groups, such as planting, weeding, and harvesting groups, and producers' groups may want to help their members acquire productive agricultural assets like water pumps, biodigesters, solar panels, and post-harvest storage through PAYGo business models with social enterprises.

SMALLHOLDER HOUSEHOLD SEGMENTS

Sample: Smallholder households

Segment formation: Household segments were created by assessing factors that correlate with formal financial account ownership and the degree to which these factors explain variations within the population. The resulting segments are tools in understanding the characteristics and financial inclusion needs of various subpopulations.

| YEAR | SEGMENTS | | | | | |
|---|----------|-------|-------|-------|-------|-------|
| | 2015 | 2015 | 2016 | 2016 | 2016 | 2016 |
| | MOZ | UGA | TAN | CDI | NGA | BGD |
| n | 2,574 | 2,870 | 2,993 | 3,019 | 2,773 | 3,095 |
| Farming for Sustenance | 77% | 54% | 18% | 38% | 23% | 27% |
| Battling the Elements | 15% | 21% | 15% | 16% | 44% | 31% |
| Diversified Pragmatists | 4% | 4% | 29% | 26% | — | — |
| Options for Growth | 2% | 16% | 22% | 5% | 19% | 31% |
| Strategic Agricultural Entrepreneurship | 1% | 4% | 15% | 15% | 14% | 11% |

Segmentation is the subdivision of a market into discrete customer groups that share (or are perceived to share) similar characteristics. Market segmentation is an important way for FSPs to better understand and serve the various types of customers within a client group that is as large and diverse as smallholder households.

In 2013, CGAP began exploring the diversity of smallholder households through a literature review. The farming families were differentiated by what they produce and where they sell their products. They were put in three segments of smallholder families: Noncommercial households, commercial households in loose value chains, and commercial households in tight value chains.⁷

In 2016 and 2017, CGAP used national survey data to explore the drivers of financial inclusion among smallholder households. The resulting segments were distinct and showed stark differences in their level of financial inclusion. Interestingly, none of the key variables influencing their financial inclusion was related to agriculture. Thus, while the agricultural activities of a smallholder household did not influence their financial inclusion, each segment of smallholder households demonstrated distinct needs and preferences for financial services, which remain largely unmet.

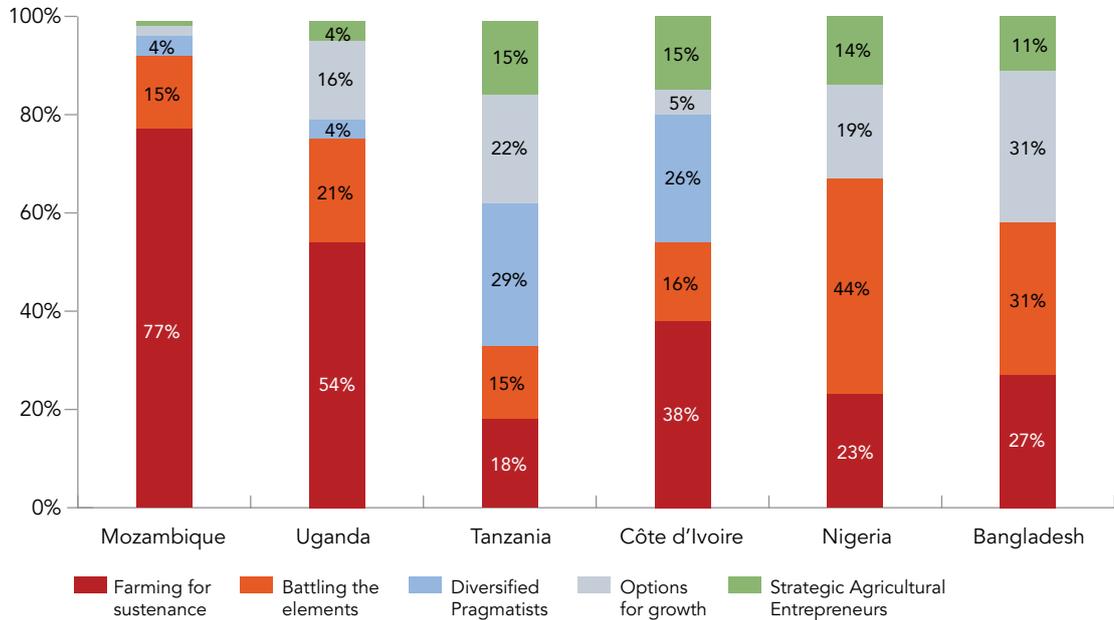
In each of the six survey countries, the 2016–2017 segmentations identified six variables as the key drivers of financial inclusion and outlined four to five distinct segments in each market (the individual country reports provide details):

- **Farming for Sustenance** smallholder households have the lowest household income, generate very little agricultural income, have very limited access to financial tools, and are highly vulnerable to shocks. Farming for Sustenance households are

most relevant to graduation approaches that build livelihoods and resilience, provide savings products to manage shocks and smooth consumption, connect to government-led social protection programs, and offer skills and livelihood training.

- **Battling the Elements** smallholder households have low household income and earn somewhat more from agricultural and other sources. Although they use more financial tools, they are still vulnerable to shocks. They have persevered through harsh agricultural challenges and remain optimistic about agriculture. Battling the Elements households need risk mitigation strategies (e.g., better seeds, agricultural training on better methods), financial solutions for family needs (e.g., health, education, energy), and better access to informal financial tools.
- **Diversified and Pragmatic** smallholder households are growing more, selling more, and earning more; they are engaged in more income streams and are using more financial tools than those in the other segments. They take pride in their agricultural activities, but they would be more likely to leave the sector if the opportunity arose. These households would benefit from financial tools that would help them save, purchase over time, and possibly borrow. They may also benefit from financial products that are bundled with nonfinancial services (e.g., information, extension) and aggregation services.
- **Options for Growth** smallholder households rely heavily on agricultural income. This segment is most likely to have other stable income sources. Young, optimistic, and highly engaged in agriculture, these smallholders also have other livelihood options, and could pivot into or out of farm-

SMALLHOLDER HOUSEHOLD SEGMENTS



ing, depending on the opportunities that arise. Options for Growth households include formalized value chains that would help them to increase access to financial services and post-harvest storage and financing solutions.

- Strategic Agricultural Entrepreneurship** smallholder households have the relatively highest income and most access to financial mechanisms than the other segments. They have been successful in agriculture and have resources and tools to get through tough times. The Strategic Agricultural Entrepreneurship segment would be well-served with digitized links to value chains, relationships that build credit and facilitate access to formal FSPs, and credit for investments in assets to increase productivity.

The lowest income, most vulnerable segment—Farming for Sustenance—is the largest segment in Mozambique, Uganda, and Côte d'Ivoire. Combined with the next, slightly less vulnerable, more stable segment, Battling the Elements, these two segments comprise most of the market in all six sample countries except Tanzania.

The Strategic Agricultural Entrepreneurship segment has the highest relative income and the most success in agriculture. It also has the widest current access to financial tools. It is generally the segment with the smallest proportion of smallholders, but it is a key target group for FSPs.

ENDNOTES

1. See Jamie Anderson, Ramesh Karuppusamy, Paul Enrico Neumann, and Vijendran Thangavel, “High-Saving Youth in Smallholder Households: An Untapped Market” (Washington, D.C.: CGAP, 2018).
2. In this context, “in-kind income” refers to the value of the agricultural outputs that smallholder families produce and then consume within their own household.
3. The diaries methodology combines in-depth quantitative and qualitative research. Research teams met participating families every two weeks to collect granular data on cash flows in and out of the household, financial tools, assets, major life events, and attitudes toward agriculture and financial services. For more information, see [“Smallholder Diaries: Building the Evidence Base with Farming Families in Mozambique, Tanzania, and Pakistan”](#) and the research methodology that accompanies the datasets.
4. The definition of financial inclusion varies slightly by country. For details, see the working paper and methodology for each country.
5. For more information, see Section 5 on “Household Financial Portfolios” in [“Smallholder Diaries: Building the Evidence Base with Farming Families in Mozambique, Tanzania, and Pakistan.”](#)
6. For more information, see Section 6, “Access to Mobile Phones and Use of Digital Financial Tools,” in [“Smallholder Diaries: Building the Evidence Base with Farming Families in Mozambique, Tanzania, and Pakistan.”](#)
7. Robert Christen and Jamie Anderson, [“Segmentation of Smallholder Households: Meeting the Range of Financial Needs in Agricultural Families”](#) (Washington, D.C.: CGAP, 2013).

