

# Lessons learned

## Digital financial services for smallholder households

Inclusive rural financial services



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These notes are “living” documents and will be updated periodically based on new experiences and feedback. If you have any comments or suggestions, please contact the originators.

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## List of acronyms

AML/CFT	anti-money laundering/combating the financing of terrorism
B2P	business-to-person
BTCA	Better Than Cash Alliance
DFS	digital financial service
FSP	financial service provider
G2P	government-to-person
KYC	know your customer
MFI	microfinance institution
MFS	mobile financial service
MNO	mobile network operator
OTC	over-the-counter
P2B	person-to-business
P2G	person-to-government
P2P	person-to-person
PIN	personal identification number
POS	point-of-sale
SIM	subscriber identification module
SMS	short messaging service
VAS	value added service
WAEMU	West African Economic Monetary Union

## Introduction

Recent advances in technology and increasing penetration of telecommunication systems into rural areas have the potential to make financial services more accessible to smallholder households. Mobile telephony and data networks, coupled with agent networks, can enable the use of digital payments and savings and provide a platform for credit and insurance, without smallholders having to visit a bank branch. Mobile phones can also bridge information asymmetries by offering weather forecasts and real-time market prices, which can improve the ability of farmers to prepare and respond to inclement weather and price fluctuations.

There remain, however, significant barriers to offering digital financial services (DFSs) to smallholder farmers in rural areas.<sup>1</sup> DFSs depend considerably on the quantity of agents, which can be limited in rural areas, as well on their quality, including good customer service skills. Digital interfaces can be very confusing, especially for smallholder farmers, who might have limited experience with technology tools. And while most urban areas have adequate network coverage, there are still many rural communities in developing countries that have little or no connectivity.

With the rapid growth of innovations, regulators are faced with the challenge of responding promptly with adequate regulations to protect consumers and mitigate the risk of money laundering and the financing of terrorism, while also stimulating innovation to increase financial inclusion (Grossman and Nelson 2014). Lack of enabling legislation can affect all consumers, but smallholders could experience even greater impact. For example, regulations that impose major requirements for becoming an agent could affect rural areas more, as the potential supply of agents there might already be quite constrained.

The purpose of this note is to synthesize lessons learned in the innovations and development of DFSs, focusing on how the services are meeting the financial needs of smallholder households. The authors offer examples of smallholder-specific DFSs as well as mainstream ones, highlighting the implications in each case for smallholder farmers and their households. Agricultural value added services (VASs) are included in this synthesis because they can serve as an entry point to financial inclusion and have the potential to improve the financial capability and farming productivity of smallholder farmers.

The lessons learned discussed in this note complement the guidance on design and implementation presented in the How To Do Note that is part of the IFAD toolkit for *Digital Financial Services for Smallholder Households*.

## Context and challenges

Nearly 1.2 billion people remain extremely poor, and the vast majority (78 per cent) live in rural areas of developing countries, where agriculture is their main livelihood. Yet it is these 500 million small farms and 3 billion people populating rural areas who are producing most of the food in developing countries (IFAD 2015).

Smallholder families represent one of the most economically vulnerable population sectors. Despite their critical role in the global economy as food producers, they are often marginalized from markets, resources, information, technology, capital and assets (IFAD 2013). By definition, smallholder farmers have small plots of land. These plots can be intensively farmed to boost agricultural output, but smallholder farmers with limited access to high-quality farming inputs (e.g. high-performing seed, fertilizer, irrigation and machinery) might not be as productive (Dalberg 2012a). With lower yields, smallholder households have fewer resources to rely on when facing financial difficulties.

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<sup>1</sup> Although not all smallholders live in rural areas, and not all rural residents are smallholders, in this toolkit the focus is entirely on smallholders living in rural areas. Thus, references to rural areas imply a focus on rural smallholders.

Like most households, smallholder farmers have a variety of financial needs that range from regular, programmable expenses (food, education or major life events) to irregular, unexpected ones (illness or other emergencies). In addition, smallholder farmers face specific agricultural production needs (planting inputs or major farming assets). The financial needs related to agriculture vary largely by the type of agricultural production, from subsistence farming to commercial production. The more involved farmers are in commercial farming and value chains, the greater the need for an array of financial services specifically tailored to agricultural production (Christen and Anderson 2013).

Subsistence farmers might rely on their crops primarily for their own consumption, have limited or no surplus to sell and accumulate savings through cash kept at home or through stored crops. They need, primarily, savings instruments and financial mechanisms to improve their storage methods. Subsistence farmers could benefit from information on improving their farming practices, and some could also profit from mechanisms to access markets (Anderson and Ahmed forthcoming).

Commercial smallholders producing crops for sale might need a variety of financial mechanisms such as credit and savings to buy needed agricultural inputs. Producers would especially need credit terms that are flexible enough to accommodate fluctuations in agricultural production (Anderson and Ahmed forthcoming).

Smallholder households struggle to meet their various financial needs. Agricultural income can be infrequent and volatile, and also subject to pests, extreme weather conditions and market fluctuations. Formal financial services, such as savings, credit and insurance products, could help smallholder farmers meet their needs, plan for expected future expenses and build resilience to agricultural risks. However, smallholders are largely unable to access traditional financial products because of a dearth of financial service providers (FSPs) in agricultural communities and a lack of appropriate, affordable financial offerings. FSPs tend to be absent in rural areas because of the high cost of establishing branches and the lower profits to be generated.

While traditional, commercial banking is generally absent in rural areas, socially oriented FSPs, such as microfinance institutions, community-based financial organizations<sup>2</sup> and impact-driven smallholder agricultural lenders, are helping fill the gap in smallholder financing, primarily with credit products for farmers involved in value chains and producer organizations (Dalberg 2012a).<sup>3</sup> However, demand far exceeds supply, with less than 10 per cent of smallholders having access to formal finance (IFC 2014).

Another promising area of innovation in agricultural finance is weather index-based insurance. This approach reduces moral hazard and adverse selection because insurance payments are tied to recorded weather conditions, which are externally verifiable. It eliminates the need for field assessments, bringing down the cost of insurance products (IFAD 2010).

Nonetheless, innovations in finance are constrained by the cost of delivering financial products to rural areas and by the limited profits to be generated from smallholder farming. Moreover, even when innovative financial products are available, there might not be sufficient demand if smallholder farmers do not understand the value of the products and opt not to use the services.

DFSs, with their branchless, real-time platforms and innovative features allowing bundling of services, show great promise in overcoming distance and costs while also meeting many of the financial needs of smallholder farmers.

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<sup>2</sup> See the IFAD toolkit Community-based Financial Organizations (IFAD 2014).

<sup>3</sup> Examples of impact-driven smallholder agricultural lenders, also known as social lenders, include Root Capital, Oikocredit and Triodos.

## Overview of digital financial services

DFSs encompass a wide range of products – including payments, savings, credit and insurance products – delivered through a variety of digital platforms (e.g. point-of-sale (POS) terminals, mobile phones and the Internet). In more advanced economies, electronic payments by credit and debit card are very common and have been replacing cash for some time. Online commerce has also rapidly become the premier marketplace in developed economies, recently topping US\$1 trillion in sales (eMarketer 2013).

In developing countries, however, bank accounts and Internet connections are still only reaching about half the population (ITU 2015a). Instead, digital systems relying on mobile technology have garnered the attention of financial inclusion advocates for their potential to extend financial services to “unbanked” people. Mobile network coverage reaches about 90 per cent of the world (GSMA 2015a), and requirements for using mobile-based services are commonly less onerous than those of a bank account, thus making mobile services much more accessible to poor people, especially in rural areas.

DFSs in developing countries are facilitated primarily by mobile money services, which provide a platform for electronic payments, savings, credit and insurance. There are non-mobile forms of DFS available in developing countries, such as e-vouchers, but documented examples of those are fewer.

People can send and receive money and make payments with participating merchants through their mobile money accounts. Users can also accumulate positive balances in these accounts, as a form of savings, or they can access a bank savings account via their mobile phone. With credit, borrowers can receive a loan disbursement and/or make a loan payment via a mobile money account. Similarly, insurance premiums can be paid and claim payments disbursed via these accounts.

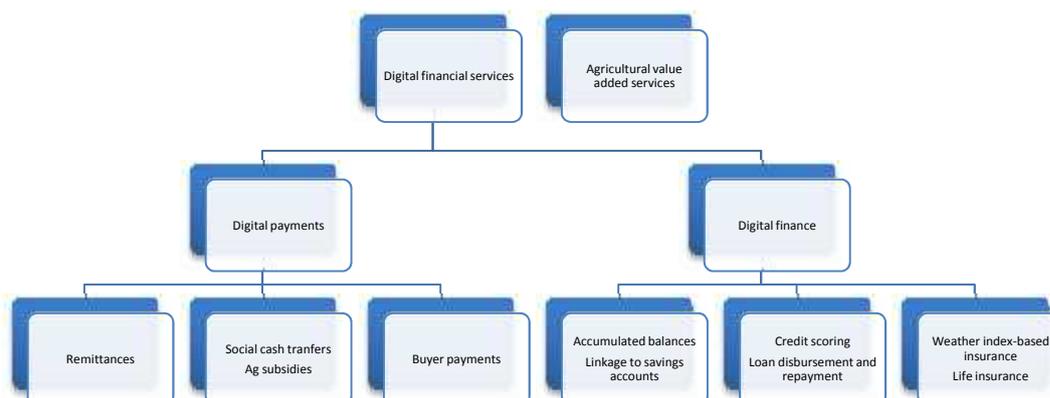
DFSs rely largely on agents, which are significantly less expensive to establish than a bank branch. Agents offer cash-in/cash-out services, which are critical to any DFS deployment. They play a major role in the uptake and use of services because they can help a new client open a mobile money account and conduct mobile money transactions.

Digital platforms are also being used to deliver VASs, primarily through the messaging features of mobile phones. Although VASs consist mostly of informational functions and do not constitute financial services per se, information can serve as an entry point to financial inclusion and as a mechanism to build the financial capability of users.

The landscape of DFSs available to smallholder farmers includes digital financial products specifically tailored to small-scale farm production, as well as a number of mainstream DFSs (Figure 1). Given the wide range of financial needs of smallholders and families – from household to agricultural production expenses – smallholders can benefit from an array of DFSs, even services that are not specifically designed for smallholders.<sup>4</sup>

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<sup>4</sup> Nonetheless, the difficulties smallholders face in meeting their specific financial needs would likely be best addressed by a greater number of tailored products.



Source: Adapted from Gencer 2011.

**Figure 1: The DFS landscape for smallholders**

A major quandary in developing DFSs for smallholder farmers is that the successful uptake of services depends largely on multiple, interconnected elements – technical infrastructure, regulations, distribution networks – that enable digital financial products to be widely used (ITU 2015b). With an enabling environment in place, a digital ecosystem for smallholders can be created in which a variety of participants in the agriculture sector connect with smallholder farmers through digital tools (Figure 2). The foundation for such a digital ecosystem is only in its nascent stages in a few countries (e.g. Kenya, where a growing number of innovations are leveraging its extensive mobile money sector).

Much of the available documentation on smallholder-specific DFSs focuses on the early stages of implementation, so there is limited evidence available on impact and sustainability. However, many products have gone through extensive trial and error. As a result, many valuable lessons have been learned from the operational successes and challenges of designing and delivering DFS for smallholders.

The following is a synthesis of those lessons, mainly specifically designed for smallholders but also drawing on a variety of other DFSs that can be used by smallholders, focusing on the strengths and limitations of each type of service.<sup>5</sup>

<sup>5</sup> As smallholder farmers share many of the same challenges in using financial services as poor and unbanked people, many of the lessons learned are often applicable to those sectors as well.



Source: Grossman and Tarazi 2014.

**Figure 2: DFSs ecosystem for smallholder farmers**

## Lessons learned

### Digital payments

#### Description

Digital payments consist of financial transactions conducted through a digital medium, such as a mobile phone or a bankcard.<sup>6</sup> Transactions might be initiated by consumers, typically using their own mobile phones, or by agents as an over-the-counter (OTC) transaction in which they facilitate the entire process for the receivers and senders without the consumers interacting directly with a digital tool (Box 1).

<sup>6</sup> The Better Than Cash Alliance (BTCA 2015) excludes over-the-counter transactions (OTC) from its definition of electronic payments. For the purposes of this paper, examples of DFS that can be carried out as OTC have been included.

**Box 1: Two contrasting mobile money services: M-PESA and bKash**

M-PESA in Kenya and bKash in Bangladesh are two of the largest mobile money services in the world, with over 26 million registered M-PESA accounts (half are active) and 11 million registered bKash accounts (a third are active). Yet the services differ greatly in their structure and in how clients use them.

In Kenya, regulators have passed legislation enabling mobile network operators (MNOs) to offer mobile money services. M-PESA is provided by Safaricom, an MNO, and is used primarily by clients with registered accounts.

In Bangladesh, regulations limit the offer of mobile financial services (MFSs) to a bank or a bank subsidiary. As a result, bKash is a specialized, private limited company, with BRAC, the largest NGO in Bangladesh, as the majority shareholder, in partnership with the four largest MNOs in the country. bKash transactions are primarily OTC, with the help of an agent.

While bKash transactions offer many of the same benefits as M-PESA, such as security and speed of access, OTC transactions do not build the financial capability of users. In addition, they are limited mostly to digital payments, whereas M-PESA offers a platform facilitating a myriad of other DFSs.

Sources: Chen and Rasmussen 2014; GSMA 2015b; Chen and Islam 2014; BTCA 2015

Payments made through mobile money services are a common example of DFS and have become widespread, as they can take many forms (Box 2). Mobile money platforms can be used to expedite payments to commercial smallholder farmers. There are numerous programmes currently in place or being developed to facilitate crop payments to farmers. For instance, smallholder farmers in Ghana selling rice to the Ghana Agricultural Development Company can now receive payment in their Tigo Cash mobile wallets; coffee and cotton farmers in Uganda and the United Republic of Tanzania can receive payments from intermediaries through a SmartMoney mobile money application (Babcock 2015); cashew farmers in Madagascar can be paid through an Airtel mobile money account (Riquet 2013); and cocoa farmers in Indonesia are participating in a pilot programme in which buyers pay them through an interest-bearing mobile money account (ACDI/VOCA n.d.)

**Box 2: Digital payments**

Type	Acronym	Example
Person-to-person	P2P	<ul style="list-style-type: none"> <li>Remittances</li> </ul>
Person-to-government	P2G	<ul style="list-style-type: none"> <li>Tax payments</li> </ul>
Government-to-person	G2P	<ul style="list-style-type: none"> <li>Social cash transfers</li> <li>Agricultural subsidies</li> </ul>
Business-to-person	B2P	<ul style="list-style-type: none"> <li>Buyer payments for cash crops</li> <li>Loan disbursements</li> </ul>
Person-to-business	P2B	<ul style="list-style-type: none"> <li>Merchant payments</li> <li>Airtime top-up</li> <li>Loan repayments</li> </ul>

A few non-mobile-based payment systems have also emerged, especially systems facilitating access to agricultural value chains. For example, NWK Agri Services, the largest cotton buyer in Zambia, first experimented with paying farmers for their harvests with e-vouchers – which look like airtime scratch cards – to minimize payment costs and the risks of carrying and distributing small cash payments throughout the country. The e-vouchers, offered by Zoono, could be redeemed at specific retailers, which would offer discounts (Babcock 2015).

Digital platforms are also facilitating sending and receiving remittances to rural areas. Remittances can play a major role in the financial lives of smallholder farmers, as approximately one third of the over US\$500 billion in remittances are sent to rural areas (IFAD and World Bank Group 2015). Remittances can be domestic or international, but domestic remittances are increasingly facilitated by mobile money services, whereas international remittances consist mostly of OTC transactions using specialized intermediaries such as Western Union or MoneyGram.

## Strengths

- *Safety.* The digitization of money eliminates the risks of carrying cash. This feature is particularly attractive for smallholders living in remote rural areas who receive remittances (Box 3). Digital services make the transfer of funds safe by either requiring an identification document (for OTC transactions) or a personal identification number (PIN) (for mobile money transactions). Security is also a major benefit for smallholder farmers receiving lump sums from the sale of their crops. Moreover, keeping friends and family from finding out when money has been received can help smallholders protect their funds from unwanted uses.
- *Efficiency.* Digital payments can expedite the delivery of payments from private and public actors to smallholder farmers. For instance, smallholder farmers in Nigeria can purchase subsidized fertilizer directly from suppliers by confirming their identity through any mobile phone. By registering farmers with a unique ID, governments can ensure that farmers receive their subsidies directly. With this system, governments can cut delivery costs and increase the number of farmers receiving subsidies (Grossman and Tarazi 2014).
- *Convenience.* For smallholder families that receive social cash transfers, being able to receive their funds digitally saves them time and money – avoiding a trip to collect their funds (agents tend to have a greater rural presence than bank branches). Similarly, smallholder farmers receiving agricultural subsidies can choose a convenient time and place to collect their funds, improving their ability to manage their cash flow and liquidity. For example, commercial coffee growers in Colombia receive state subsidies through their *cédula*, a personal identification smart card, which is now being linked to a full savings account, so they can decide when to withdraw funds (BFA 2015).
- *Consumption smoothing and income growth.* The ease and speed of receiving transfers digitally – whether they are P2P or G2P – could ease liquidity constraints faced in agriculture and result in greater farm gains and improved household consumption for commercial smallholder farmers. A survey in Kenya showed that banana growers using mobile money received higher levels of remittances and purchased more agricultural inputs, resulting in greater sales and profits (Kikulwe, Fischer and Qaim 2014). Moreover, P2P transfers, in the form of remittances, can play a major role in sustaining farmers during unexpected financial emergencies. Another study in Kenya showed that M-PESA users did not experience a significant fall in consumption during financial shocks, which demonstrates increased resilience, whereas non-M-PESA users did have a significant consumption drop under similar circumstances (Jack and Suri 2014).<sup>7</sup>

<sup>7</sup> Jack and Suri report a 7-10 per cent reduction in consumption among non-users when facing a negative shock, whereas the reduction for users is much smaller (indistinguishable from zero).

- *Financial inclusion.* Digital payments offer smallholders a ramp to greater financial inclusion. In Mexico, the government provides a subsidy to farmers, including subsistence farmers, through its Procampo programme. Under the agreement with the government, banks open accounts for programme participants (to receive their subsidies) and issue debit cards. This has benefited unbanked people, as 90 per cent of the farmers who had an account opened as part of the Procampo programme did not have a prior bank account (Babatz 2013).
- *Access to value chains.* Digital payments can facilitate transactions along agricultural value chains. For example, SmartMoney, a mobile savings and payments platform in Uganda and the United Republic of Tanzania, can be used by large agribusinesses to pay intermediaries, who transfer funds digitally to the SmartMoney accounts of farmers. Recipients then use their digital funds to make purchases at SmartMoney retail shops or simply to cash out (Babcock 2015).

### Box 3: Regional cross-border remittances

Although international remittances are mostly taking place through OTC transactions, there are some examples of emerging models of cross-border remittances using the same currency, the Communauté Financière Africaine (CFA) franc, facilitated by the West African Economic Monetary Union (WAEMU).

*Orange Money International Transfer.* This service, the first of its kind, allows transfer of funds across three West African countries (Côte d'Ivoire, Mali and Senegal) using the Orange Money operator. After only a year and a half in operation, cross-border remittances accounted for one quarter of all remittances.

*MTN Mobile Money in Côte d'Ivoire to Airtel Money in Burkina Faso.* This service, also the first of its kind, is facilitated by an interoperability agreement between the two distinct service operators (MTN and Airtel) and an intermediary hub (HomeSend). Similar to Orange Money International Transfer, this interoperator service has scaled up rapidly, with 9 per cent of annual estimated flows.

In both cases, some reasons for the rapid uptake include: tight socio-economic integration of WAEMU members; strong awareness of mobile money services by customers; low prices due to aggressive competition; common regulatory frameworks by the central banks of all participating countries; and cross-border interoperability.

Source: IFAD and World Bank Group 2015

## Limitations

- *Insufficient supply of mobile money services.* Although mobile payment services are growing very rapidly, many smallholder farmers – by virtue of living in rural areas – do not have access to mobile money options. Roughly half the countries in the world still do not have any mobile money services (GSMA 2014b), and in countries where such services are available, most providers have not yet expanded beyond urban centres (GSMA 2014a).
- *Mistrust of services and lack of awareness.* Even in places where mobile money is available, the uptake is still limited – the number of mobile money accounts represents only 8 per cent of all mobile connections in markets where mobile money is functioning (GSMA 2014b). There is no detailed breakdown of the penetration of mobile money among smallholder farmers, but there is some indication that early adopters of mobile money tend to be urban (GSMA 2014a; McKay and Kaffenberger 2013). There are many factors likely to explain the limited uptake of DFSS, including lack of awareness or mistrust of the services (Mattern and Tarazi 2015; Seltzer and McKay 2014).

A study of smallholders in Mozambique found that 21 per cent of farmers participating in the survey had heard of mobile money, but almost nobody had used it (Anderson and Ahmed forthcoming). In addition, in many developing countries people share mobile phones or even subscriber identification module (SIM) cards, which can limit access to DFS because of the sensitivity regarding embedded personal financial information. Potential users of mobile money (who might not be aware of safety mechanisms in digital transactions, such as use of a PIN) might also be wary of losing their funds if they lose their phones or SIM cards.

- *Pricing variations and lack of transparent fees.* Although some evidence indicates that mobile money can be a less expensive mechanism for sending money than alternatives such as couriers (Morawczynski and Pickens 2009), costs vary greatly among DFS providers. In Kenya, transaction fees for P2P transactions are significantly higher on a percentage basis for smaller amounts than for larger sums (Mazer and Rowan 2014). Moreover, there is emerging evidence that pricing terms are not clearly explained and not charged consistently by agents (McKee, Kaffenberger and Zimmerman 2015). These inconsistencies can further exacerbate the mistrust smallholders might have of DFS.
- *Preference for cashing out.* There is some tendency for recipients of digital payments to cash out all their money, even when they are able to leave some or all of the funds in a digital account. When smallholder farmers cash out, they lose out on the security of the digital medium, one of the most valuable features of this technology. This trend is partly the result of a lack of retail establishments that accept digital payments for goods and services. Even among registered mobile money merchants, only 25 per cent accepted mobile payments in 2014 (GSMA 2014a). While smallholder farmers might be able to buy agricultural inputs with a mobile money account, households have a variety of other expenses that are often paid only in cash, such as school fees. The amount of money received in a mobile money account might also determine whether recipients decide to cash out. Small amounts might not be worth keeping tied up in a digital format. For example, in a Ghana pilot project involving commodity buyer payments to rice farmers through a Tigo Cash mobile money account, rainfed-system farmers cashed out more than irrigated-system farmers, possibly because payouts for rainfed rice were small (Grossman and Tarazi 2014).
- *Limited reach of technology.* Given the significant role mobile phone technology plays as a platform for DFS, mobile network coverage is essential in the expansion of digital payments among smallholder farmers. While the majority of the world has network coverage, there is still 10 per cent of the world, primarily in remote, rural communities – where smallholder farmers typically live – that have no network coverage (GSMA 2015a). In addition, sending money across diverse mobile money providers is often not possible owing to a lack of interoperability among providers. This can limit options and the spread of DFS in rural areas.
- *Agent challenges and risks.* The use of agents in digital money networks poses a number of challenges and risks, some specific to rural areas. Networks with an insufficient number of agents in these areas could force smallholders to travel a significant distance to find an agent, thereby eliminating the benefit of easy access that digital platforms are supposed to provide. Another significant risk for rural residents is an agent lacking sufficient liquidity for cash-out transactions. For smallholder farmers who receive lump sums of money (either in the form of agricultural subsidies, social cash transfers or crop sales), uncertain liquidity can be a major deterrent to use. There are also other risks specific to the quality of agents, such as engaging in fraud or theft, or mismanaging user data. Moreover, as agents rely on technology to confirm transmission of funds, they are also subject to technology disruptions (Lauer, Dias and Tarazi 2011; McKee, Kaffenberger and Zimmerman 2015). These risks affect the trust smallholders might have in the system, which in turn could result in users cashing out, further exacerbating the liquidity problem in rural communities.

- *Illiteracy.* Rural areas tend to have higher levels of illiteracy, which can complicate the ability of people to understand and use digital tools. In multilingual countries, people who do not speak the predominant language might struggle using tools that are not available in local languages and dialects. Illiteracy in financial and digital realms – meaning lack of experience and knowledge of financial instruments and/or digital technologies – can also create major barriers to access and use of DFS, even among literate populations. Those with limited exposure to digital technology might not know how to keep their PIN secure or how to log into a mobile money account. For example, in Indonesia, women smallholder farmers participating in a programme offering agricultural information forgot how to register for the system as they changed SIM cards often (Mercy Corps n.d.).
- *Limited flexibility.* The infrequent and irregular nature of farming income necessitates flexible financial mechanisms. Without flexibility, smallholders might not be able to make the most of digital financial products. For instance, cotton farmers in Zambia were reluctant to sign up for Zoon e-vouchers, partly because the vouchers did not have the flexibility that cash provides, for example to pay for expenses such as school fees (MEDA 2013).
- *Inadequate frameworks for international remittances.* Remittances play a major role in the livelihoods of poor rural people. For smallholder farmers, they can help fill financial gaps between harvests. Yet digital platforms are still not fully developed in most countries to facilitate cheap, fast access to international remittances. While domestic remittances are facilitated in countries where there are mature, countrywide P2P mobile platforms, such as M-PESA or bKash, international remittances are mostly taking place through OTC transactions, which can be very expensive, with specialized money transfer operators such as Western Union or MoneyGram. Few mobile money operations offering international remittances have been deployed because of the complexity of the international transfer process, which involves exchange control regulations, settlement accounts for sending and receiving remittances, banks to run the debiting and crediting of the settlement accounts, and technical interoperability (Dalberg 2012b).

## Credit

### Description

Among the various financial products that can be incorporated into a digital platform, credit is seeing very creative innovations. There are three credit dimensions currently being digitized: evaluation of a person's repayment capacity, loan disbursement and loan repayment.

*Evaluation of repayment capacity.* Loan providers can evaluate a person's credit worthiness based on data obtained from mobile or electronic transactions. Credit bureaux have been digitizing consumers' credit histories for years in developed financial markets, but mobile money transactions represent a new platform for understanding the financial behaviours of unbanked smallholder farmers. For example, both M-Shwari in Kenya and M-Pawa in the United Republic of Tanzania offer 30-day loans, with eligibility based on the mobile transactional history of users (Box 4). In both cases, funds are made available through an M-PESA account.

**Box 4: Mobile credit and savings**

M-Shwari is a mobile credit and savings product available through a partnership between Safaricom and the Commercial Bank of Africa. Not surprisingly, the far-reaching M-PESA platform has helped accelerate M-Shwari's growth. In just two years, M-Shwari has opened almost 10 million savings accounts (7.2 million unique account holders), with almost half of them active, and over 20 million cumulative loans (2.8 million unique borrowers).

M-Shwari savings accounts earn interest and require only a minimum savings balance of 1 Kenyan shilling (KSh), with a maximum of KSh 500,000. M-Shwari loans are 30-day loans, renewable one time.

M-Pawa in the United Republic of Tanzania, modelled after M-Shwari, offers a savings account with a minimum amount of 1 Tanzanian shilling (TSh) and a microloan based on account use. The service is a partnership between Vodafone and the Commercial Bank of Africa. It opened in May 2014 and already boasts over 1 million users.

Sources: Cook and McKay 2015; Butt 2014

*Loan disbursement and repayment.* Digital platforms are helping smallholder farmers access and repay loans. There are a number of examples of loans being disbursed through digital means. One example is in Colombia, where the federation of coffee growers can issue credit (as well as subsidies) to smallholder farmers through their *cédula*, a personal identification card (BFA 2015). Digital platforms can also be used for loan repayments, which are essentially P2B payments facilitated primarily through mobile money platforms. In Kenya, smallholder farmers who obtain an agricultural loan from One Acre Fund can make loan payments through their M-PESA accounts (Hanson 2014).

**Strengths**

- *Greater financial access for unbanked people.* The digitization of a person's mobile money use into a credit scoring instrument has the potential to make credit available to smallholder farmers who were previously unbanked. The offer of credit has usually been based on physical documentation of income sources and collateral provided to a bank by the borrower. For smallholder farmers – who tend to have few assets and have to supplement their agricultural income with a variety of non-agricultural jobs – a credit assessment based on their regular financial behaviours might be a better predictor of their ability to manage their various money flows.
- *Resilience.* The real-time availability of a loan through a mobile money account can help farmers cope with financial difficulties. For instance, users of M-Shwari loans (who tend to be shop owners) seem to use the funds primarily to meet short-term cash flow, rather than for a business investment (Cook and McKay 2015).
- *Easier loan repayment.* Digital credit benefits smallholder farmers most when the services provide flexible terms that account for fluctuations in the financial flows of agricultural production.<sup>8</sup> This is the case in Zimbabwe, where the MNO Econet Wireless offers farmers credit to buy agricultural inputs, with flexible repayment options through an EcoCash wallet (Mattern and Tarazi 2015). Moreover, mobile loans have great potential to help farmers manage their expenses better if the credit providers can send text notices of upcoming repayment due dates, as is the case with Econet loans.

<sup>8</sup> Although repaying loans through a mobile money account is very convenient (saving farmers time and money by avoiding the trip to a bank branch to make a loan payment), FSPs derive most of the benefit – lowering their collection costs by avoiding sending officers to the field to collect payments.

## Limitations

- *Nascent technology.* The technology of digital credit scoring requires complex algorithms, which are still being developed and tested, and are not yet widespread among smallholder farmers. There are no data available to determine to what extent these alternative credit mechanisms are advancing financial inclusion of unbanked smallholders.
- *Inadequate credit products.* The loans often available to smallholder farmers via digital tools are not designed for irregular financial flows. Some of the more widely available loans, such as the ones provided by M-Shwari and M-Pawa, are very small and short-term, with very high interest rates, so they are only useful as stopgap measures. For instance, M-Shwari charges a 7.5 per cent fee for 30-day loans, which is the equivalent of an annual percentage rate (APR) of 90 per cent, significantly higher than the typical rate of a Kenyan microfinance institution (MFI) (Cook and McKay 2015).
- *Limited availability.* Although examples of credit available through digital means are increasing, the supply is still limited, especially for smallholder farmers. As non-FSPs are not permitted to loan funds to consumers, mobile credit can only be available through partnerships between MNOs and FSPs. Currently, there are only 20 countries in which mobile credit is available (GSMA 2014b).

## Savings

### Description

Diverse savings mechanisms are available to smallholder farmers through digital platforms, some designed to address the particularities of agricultural income:

*Mobile money accounts as savings instruments.* Smallholder farmers with mobile money accounts can accumulate savings by maintaining a positive balance. In fact, this practice is quite common among mobile money users. Providers report that over half the mobile money accounts have a positive balance (GSMA 2014b). In most mobile money markets, these balances do not earn interest. The exception is the United Republic of Tanzania, where regulators have indicated that the interest accrued on the trust accounts where mobile money balances are held must benefit customers directly (GSMA 2014c). Under this directive, Tigo is the first MNO in the country offering payouts to mobile money users.

*Bank-dedicated savings accounts linked to mobile money.* Deposit-taking institutions can design interest-bearing savings accounts that are specifically accessed through mobile phones. This type of account is offered through a partnership between an MNO and an FSP, such as EcoCashSave in Zimbabwe (a partnership between the MNO Econet Wireless and its related company Steward Bank). In addition, there are dedicated mobile saving services offered by banks, such as Nationwide Microbank's MiCash in Papua New Guinea, Housing Finance Bank's Mcash in Uganda and Bank Sinar's Sinar Sip in Indonesia (GSMA 2014b).

*Hybrid accounts.* Although not common, MNOs can offer a mobile money account specifically geared as a savings instrument. That is the case of Airtel in Uganda, which designed a special mobile money account, Airtel Weza, for members of savings groups. With this specialized account, group leaders must have their own Airtel SIM, through which they can receive short messaging service (SMS) notifications and approve account transactions (GSMA 2015c).

*Agricultural savings instruments.* In recognition of the specific needs of smallholder farmers, a number of savings-like innovations have emerged. For example, myAgro in Mali and Senegal helps farmers accumulate money in small increments to pay for their agricultural inputs at times that are convenient. Through this layaway model, farmers decide the amount they want to save; they buy scratch cards from rural vendors throughout the year; and they send the code in the cards to myAgro via SMS. Once the savings goal is reached, myAgro delivers the agricultural inputs (Ratnayake 2015).

## Strengths

- *Convenience.* Digital savings, especially those enabled through a mobile phone, facilitate savings for smallholder farmer families whose income can be infrequent. Smallholder farmers can save as much or as little as they want, whenever they are able to set aside money. The digital mechanism also helps smallholders avoid transportation costs and travel time to the nearest bank branch for a financial transaction. Instead, they can make deposits or withdrawals through locally available agents.
- *Advance planning.* Given the seasonal financial fluctuations in farming, access to a savings instrument can help farmers plan in advance for a wide range of household and agriculture-specific expenses, such as school fees and farming inputs. Dedicated accounts, like the ones offered by myAgro, can ensure that, when planting season arrives, farmers are not caught off-guard without enough funds to pay for seed, fertilizer and tools (Ratnayake 2015).
- *Goal-based savings.* Goal-based savings have been shown to help low-income people (Karlan et al. 2010; Dupas and Robinson 2011). Digital platforms can incorporate these concepts through product features that motivate smallholder farmers to save regularly and achieve specific financial goals. For instance, Econet Wireless in Zimbabwe offers Save 4 School, a mobile, goal-based savings product that helps farmers save small monthly amounts automatically from Econet's EcoCash mobile money platform. The savings are locked and paid directly to schools through EcoCash (Mattern and Tarazi 2015). A similar product is available through Amret, an MFI in Cambodia, which offers Goal+, a long-term savings product for farmers that includes a tailored plan to meet their goals. Amret helps customers meet savings goals through mobile tellers, who collect savings regularly from clients via smartphone or tablet (Mattern and Tarazi 2015).
- *Security.* As with digital payments, digital savings protect funds that would otherwise be saved in unsafe places or spent by household members. For instance, women smallholder farmers in Zimbabwe with a Save 4 School product indicated that their locked savings would prevent their husbands from using their savings for other purposes (Mattern and Tarazi 2015).

## Limitations

- *Limits on savings amounts for mobile money accounts.* Mobile money services have limits on the amounts that can be stored as savings. For instance, M-PESA has a maximum account balance of KSh 100,000 (approximately US\$950). Such accounts might be enough for subsistence farmers with lower-saving capacity, but might not be sufficient for smallholders engaged in commercial production, who need to save larger amounts for the purchase of farm assets and tools.
- *Know-your-customer (KYC) requirements.* A major drawback to dedicated savings instruments is the KYC requirements that already exclude many smallholder farmers from the formal financial services sector. For example, the Airtel Weza product available to savings groups in Uganda had limited uptake, in large part due to KYC requirements (such as a voter's card and a passport photo) that could not be easily met by group members, as they would need to travel significant distances to obtain an official passport photo (GSMA 2015e).
- *Need for liquidity.* Smallholder farmers might prefer to keep their savings easily accessible, especially in the case of an emergency or an unexpected expense. This might be a concern in areas where there are fewer available agents or where agents are known to run out of cash.
- *Infrequent use.* Although digital technology makes saving significantly easier and more convenient than saving in person at a bank branch, mechanisms are still needed to help smallholder farmers save as frequently as they can to meet their financial goals. Formal savings accounts have been known to go dormant, and in some cases account fees can deplete savings balances. A mechanism to instil regular savings is especially needed for smallholder farmers, whose income fluctuates throughout the year. For instance, myAgro initially found that one third of registered

users were not able to accumulate enough savings in their myAgro account to pay for their selected agricultural inputs. Those farmers reported a “lack of discipline” as one of the contributing factors (Ratnayake 2015).

- *Regulatory constraints.* Savings products are constrained by regulations that limit the offering of interest-bearing accounts to formal deposit-taking financial institutions. Such restrictions could be a detriment to uptake by commercial smallholder farmers, who might expect a return on their savings (just as they would on the value of their crops if they stored them to wait for higher post-harvest prices).

## Insurance

### Description

Although multiple types of agricultural insurance products have been developed, only a few are becoming available through digital platforms. Acre Africa is probably the most well known because it was the first agricultural index product worldwide to be available to smallholder farmers via mobile phones, and became the largest agricultural insurance product in Africa (Box 5). Econet Wireless in Zimbabwe also offers a weather index product that is available when farmers purchase a specially branded seed bag. Farmers submit the crop cover voucher found inside the seed bag and pay the premium separately, which can be done through an EcoCash account, a related mobile money service (Econet n.d.).

#### Box 5: Digital weather index insurance

Acre Africa (formerly known as *Kilimo Salama*, meaning “safe agriculture” in Swahili) is a weather index insurance product in Kenya, originally funded by Syngenta Foundation and the Global Index Insurance Facility. With Acre Africa, farmers are protected against financial losses on damaged crops due to excessive rain or drought.

Farmers can buy insurance when they purchase branded seed by paying a small premium, generally 5 per cent of the recommended retail price, which is included in the price of the seed. The supplier of the seed registers the insurance and the farmers receive an SMS containing insurance details and the policy number.

At the end of the farming season, farmers receive another SMS with information on whether there is a payout. If there is a payout, the amount is transferred to the client’s M-PESA account.

By the end of 2013, Acre Africa had insured 187,000 farmers in three countries: Kenya, Rwanda and the United Republic of Tanzania.

Sources: IFC n.d.a; IFC n.d.b; Kilimo Salama n.d.

In both cases, at the end of each growing season, rainfall data is collected from automated weather stations and compiled as an index to estimate the impact on farming. In cases where the index indicates a potential loss, farmers are automatically paid through their mobile money accounts, without having to submit a claim and without the insurance company conducting a field visit, greatly reducing costs for the insurer (IFC n.d.a).

Smallholder families can now also access general insurance products, such as health, life and accident insurance (Box 6). Insurance products are increasingly being offered and bundled via mobile money products, with life insurance making up three quarters of the mobile insurance products currently available (GSMA 2014b). Insurance products are sometimes offered as free services by MNOs. They are intended to build customer loyalty or as “freemium” products, a hybrid model in which basic offerings are free and more advanced features available for a small premium (Tellez and Zetterli 2014).

#### **Box 6: Life, health and accident insurance**

BIMA, a specialized provider of mobile-delivered life, health and accident insurance in emerging markets, is an example of a successful insurance programme. BIMA now operates in 14 countries across Latin America, Africa and Asia. It acts as an intermediary between MNOs and insurance companies by providing the mobile insurance platform and distribution network.

BIMA's success hinges partly on its ability to hire, train and manage a network of sales agents, spread throughout each country.

Launched in 2013, BIMA now has 18 million registered customers.

Source: BIMA n.d.

### Strengths

- *Consumption smoothing.* Smallholder households are especially vulnerable when facing a serious illness or death in the family, as they might be unable to work on their farms and could face major expenses if they need to travel to a nearby town for medical care. Life, accident and health insurance can alleviate the financial strain caused in these circumstances. Similarly, access to affordable agricultural insurance products can help smallholder households smooth out their consumption when bad weather or market fluctuations affect their farm yields and agricultural income.
- *Insurance as a catalyst.* Access to agriculture insurance not only benefits farmers directly, but it could have other positive ramifications. For instance, smallholder farmers might be more likely to invest in their farms, as they know some of their agricultural income will be secure. In addition, FSPs might be more inclined to offer credit to insured smallholder farmers.

### Limitations

- *Lack of understanding and trust.* Agricultural insurance products can be difficult to sell because farmers might not understand or trust how insurance products work (Bauchet et al. 2011). Smallholder farmers might be reluctant to tie up their funds in a financial product when there is no certainty of payouts (Anderson and Ahmed forthcoming). Farmers might also expect government assistance if crops are ruined due to natural events (Grossman and Tarazi 2014). As a result, digital insurance must be bundled with other services, such as agricultural inputs, as farmers are not likely to buy the insurance separately.
- *Limited product awareness.* Another major factor resulting in limited uptake of agricultural insurance is lack of awareness of such products. Even with an easily accessible insurance product such as Acre Africa, total uptake by farmers is only a fraction of the total market (approximately 7 million farmers are eligible in Kenya alone). A bottleneck is created because Acre Africa partners with only one seed company, which has a 5 per cent share of the market, so many farmers are not

aware of the availability of insurance, nor are they able to take advantage of it if they buy seed from a different company (GSMA 2015d).

- *Lack of agriculture-specific insurance products.* Among the 17 million mobile insurance policies available, only 10 per cent of products are intended for agriculture (GSMA 2015d).

## Value added services

### Description

In addition to offering financial products, digital platforms can provide complementary services to improve the financial capability and farming productivity of smallholder farmers. VASs consist primarily of informational functions that can be offered as part of a package with DFS or as a separate service. VASs that are closely integrated into digital financial products have the potential to positively impact the livelihoods of smallholder farmers. In Zimbabwe, for example, Econet has recently offered a new product, My Yearly Package, which consists of a mix of credit for agricultural inputs, SMS loan payment reminders and helpful tips on using agricultural inputs (Mattern and Tarazi 2015).

The different types of VAS offered to smallholder farmers include:

*Weather information and farming tips.* Mobile technology offers an ideal platform for delivering information needed by farmers, such as current and future weather conditions and farming advice. Airtel Green SIM in India offers subscribers regular network services plus free voice and SMS messages with agricultural content. The Green SIM card costs about the same as a regular SIM card, about US\$1 (GSMA 2015c).

*Market prices and linkages.* Beyond basic farming tips, smallholders can receive specific information on current market prices to better determine when to sell their crops. In addition, there are some platforms being developed to connect farmers with buyers. Vodafone in Turkey offers participants in its Farmers' Club a virtual marketplace where farmers can advertise their products to buyers. There are currently 900,000 active users in the Farmers Club (GSMA 2015e).

*Reminders and/or prompts.* Leveraging the SMS feature of mobile phones, smallholder farmers can be reminded to repay a loan or make a savings deposit. myAgro in Mali and Senegal sends smallholder clients motivational text messages, encouraging them to reach their savings goal for agricultural inputs (Mattern and Tarazi 2015).

### Strengths

- *Ease of use.* Messaging technology works in all mobile phones, and the information can even benefit people sharing a mobile phone or SIM card.
- *Improved financial capability.* Messages prompting farmers to save and repay loans on time could be particularly effective. Regular reminders have been shown to be successful in helping people reach their savings goals (Karlan et al. 2010).
- *Advance planning.* Weather information can be very valuable for any farmer, regardless of the size of his or her land or type of crop, as he or she can anticipate and potentially prepare for adverse weather conditions.
- *Potentially improved yields and income.* With farming tips, market prices and linkage to buyers, smallholder farmers are better positioned to sell their crops for a better price in value chains.

## Limitations

- *Illiteracy.* Agricultural VASs are mostly offered as text messages, thus benefiting mainly literate farmers. Illiterate farmers could still potentially access the information through a child or friend who can read the information to them, though the benefits would be less direct and not as timely. There are voice-only software applications, such as an interactive voice response (IVR) system, but they are much more expensive and more difficult to set up than SMS messages. People who speak a different dialect than that of the message would also lose out on the information.
- *Lack of relevant information.* Farming tips or market prices might not be useful to smallholders unless the information is tailored to a farmer's context. Many agricultural VASs offer standard information and do not provide a mechanism for farmers to ask specific questions. Moreover, some agricultural VASs, especially for market prices and linkages, benefit primarily commercial smallholders who have surplus crops to sell.
- *Digital illiteracy.* Although agricultural VASs delivered as text messages are fairly simple, for people with limited or no experience with digital technology even navigating through a mobile menu could be daunting. Older smallholder farmers might require help from their children in using digital platforms.

## Follow-up and strategic recommendations

Significant challenges remain to a more extensive, scalable supply of digital financial offerings for smallholder farmers. It is possible that some of these will be addressed organically by continued growth and innovation in the technology. For instance, network coverage will likely increase over time in rural areas. But without an intentional and coordinated approach, innovations might not reach or benefit smallholder farmers directly, especially subsistence farmers. Developing an entire digital ecosystem focused on smallholder farmers is beyond the scope of IFAD-funded projects, but IFAD's technical and financial investment can support key foundation elements for advancing such an ecosystem.

The following strategic recommendations for IFAD's country programme managers can foster the development of DFSs that meet the diverse financial needs of smallholder farmers and their families.

*Explore the financial needs of smallholder households more extensively.* While detailed data are emerging in a few countries on the financial lives of smallholder households (Anderson and Ahmed forthcoming), extensive knowledge of the financial needs of smallholders is still limited. In order for DFS to be effective, it is important to better understand the financial inflows and outflows of smallholder families and how digital platforms can make financial products more accessible and usable for different sectors of this group. IFAD should support further studies engaging smallholders directly in identifying innovative solutions for their financial needs.

*Build the business case for serving smallholder farmers.* The design and offer of a DFS might involve stakeholders unfamiliar with the characteristics of smallholder farmers, including their market size and potential brand loyalty. IFAD can play a major role by convening exchanges between private actors (such as MNOs, FSPs and agricultural buyers) and public entities (such as regulators and ministries of agriculture) to explore business and financial opportunities for serving rural areas. In Nigeria, for instance, with government bowing out of the supply chain and providing subsidies digitally to recipients, smallholder farmers could then shop for fertilizer in an open market, benefiting farmers and suppliers alike and eliminating programme inefficiencies (Grossman and Tarazi 2014).

*Promote innovations that target the more vulnerable sectors of smallholder farmers.* Many of the DFSs tailored for agriculture benefit primarily commercial smallholder farmers, largely because the innovations are being driven by commercial interests, such as large agricultural buyers. IFAD should engage social support programmes and potential DFS providers to find products that can directly target subsistence farmers and help them become more resilient to financially difficult times with products such as savings and VAS.

*Promote consumer education.* A major obstacle in increasing uptake of the available DFSs is building trust among smallholder farmers, who have very limited exposure to and experience with new technologies. This can be accomplished by providing information to potential users on product features. In Mexico, the social cash transfer programme Oportunidades, which mainly reaches families in rural areas, provides transfers electronically with a prepaid card linked to a basic bank account, but recipients are not saving in the account, largely because they are unaware of its availability (CGAP 2011). IFAD can collaborate with DFS providers to ensure that an educational component is included in their operational plans.

*Engage regulators in adopting appropriate KYC requirements.* IFAD can collaborate with a country's regulatory agencies to review the new risk-based approach to standards for anti-money laundering/combating the financing of terrorism (AML/CFT) – making sure the requirements are sensible and achievable for smallholder farmers and their families. For example, regulators could approve tiered KYC requirements for different balances in a digital wallet, with lower requirements for low-balance accounts (see Box 7 for an example).

**Box 7: Ecobank Mobile Money KYC requirements in Nigeria**

Banking status	KYC requirement	Mobile payment transaction limit
Unbanked /Tier 1	Name and phone number	Maximum transaction limit of 3,000 Nigerian naira (₦) and daily withdrawal or deposit limit of ₦30,000
Semi-banked /Tier 2	Partial KYC – name, phone number, passport photograph and valid ID card	Maximum transaction limit of ₦10,000 and withdrawal or deposit limit of ₦100,000
Banked/Tier 3	Full KYC – name, phone number, passport photograph, valid ID card and address verification	Maximum transaction limit of ₦100,000 and daily withdrawal or deposit limit of ₦1,000,000

Source: Ecobank Mobile Money n.d.

*Support training and supervision of agents in rural communities.* Developing a high-quality, reliable cadre of agents can build trust among reluctant smallholder farmers and result in greater uptake of DFS. Agents can also play a major role in building the capacity of rural residents to use DFS, especially when an account is first opened. While DFS providers have primary responsibility for training their agents, IFAD can provide technical and financial support to bank agents to help them understand the provision of good customer service to rural residents, who possibly have little or no experience in DFS and might also be illiterate.

*Promote consumer protection regulations.* Regulations are needed that protect smallholder farmers from abuses, theft and mismanagement of their personal information. But such regulations need to remain flexible enough to stimulate innovation. Some regulations can be internally driven by DFS providers, such as ensuring that smallholder farmers have easy access to customer recourse procedures in the event of problems with an agent: for instance, offering rural residents a toll-free number that is clearly displayed at all agent locations.

*Promote competition and interoperability.* Smallholder farmers would benefit from greater competition among service providers, which could offer more options and drive prices down. They would also benefit significantly from interoperability among service providers – especially for sending and receiving international remittances – and among agents. Some of these changes could take place as competition increases. Just recently, the Communications Authority of Kenya ordered Safaricom to open its agent networks to competitors after Airtel filed a complaint (Gicheru 2014). M-PESA also recently lowered its fees as a result of a new, competitively priced mobile money service available in Kenya (Mazer and Rowan 2014). Facilitating a competitive environment in nascent digital spaces would thus likely benefit smallholders.

*Promote financial inclusion for unbanked smallholder farmers.* A major goal in promoting digital financial products for smallholder farmers should be greater financial inclusion. Not all DFSs provide a direct ramp to formal financial service providers, nor do OTC transactions. While OTC might be the sole service available in certain areas, smallholders need access to a wide array of financial products such as savings and insurance to reap the full benefits of financial inclusion. While this evolution towards full financial inclusion is already happening in countries such as Kenya and the United Republic of Tanzania, with products such as M-Shwari and M-Pawa, a more intentional and coordinated effort among stakeholders is needed to expand access to digital finance for smallholder households.

## Glossary

**Agent.** Any third party acting on behalf of a bank or other financial services provider (including an e-money issuer or distributor) to deal directly with customers. The term “agent” is commonly used even if a principal agent relationship does not exist under the law of the country in question.<sup>1</sup>

**Airtime top-up.** Purchase of airtime via mobile money, usually funded from a mobile money account.<sup>2</sup>

**Anti-money laundering and combating the financing of terrorism (AML/CFT).** A set of rules, typically issued by central banks, that attempt to prevent and detect the use of financial services for money laundering or to finance terrorism. The global standard-setter for AML/CFT rules.<sup>2</sup>

**Digital financial services (DFSs).** A broad category that encompasses MFS and all branchless banking services that are enabled via electronic channels. Services can be accessed using a variety of electronic instruments, including mobile phones, POS devices, electronic cards (credit, debit, smart card, key fobs) and computers.<sup>3</sup>

**Interoperability.** The ability of users of different digital money services to transact directly with each other. There are three levels of interoperability: at the platform level (users of one digital service being able to send funds to users of a different service), at the agent level (the same agent facilitates financial transactions of different service providers), and at the customer level (customers can access their accounts with any SIM or access multiple accounts with one SIM).<sup>4</sup>

**Know your customer (KYC).** A set of due diligence measures undertaken by a financial institution, including policies and procedures, to identify a customer and the motivations behind his or her financial activities. KYC is a key component of Anti-Money Laundering and Combating the Financing of Terrorism regimes.<sup>1</sup>

**Mobile financial services (MFSs).** The use of a mobile phone to access financial services and execute financial transactions. This includes both transactional and non-transactional services, such as viewing financial information on a user’s mobile phone.<sup>1</sup>

**Mobile money.** A mobile-based transactional service that can be transferred electronically using mobile networks. A mobile money issuer may, depending on local law and the business model, be an MNO or a third party such as a bank.<sup>1</sup>

**Mobile money account.** An account that is primarily accessed using a mobile phone that is held with the issuer. In some jurisdictions, mobile money accounts may resemble conventional bank accounts, but are treated differently under the regulatory framework because they are used for different purposes (for example, as a surrogate for cash or a stored value that is used to facilitate transactional services).<sup>5</sup>

**Mobile network operator (MNO).** A company that has a government-issued license to provide telecommunications services through mobile devices.<sup>1</sup>

**Over-the-counter (OTC).** Some mobile money services are being offered primarily over-the-counter. In such cases, a mobile money agent performs the transactions on behalf of the customer, who does not need to have a mobile money account to use the service.<sup>2</sup>

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