Updated February 2016

Guide to the Use of Digital Financial Services in Agriculture

USAID FROM THE AMERICAN PEOPLE

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ADVANCING DIGITAL FINANCIAL INCLUSION FOR SMALLHOLDER FARMERS

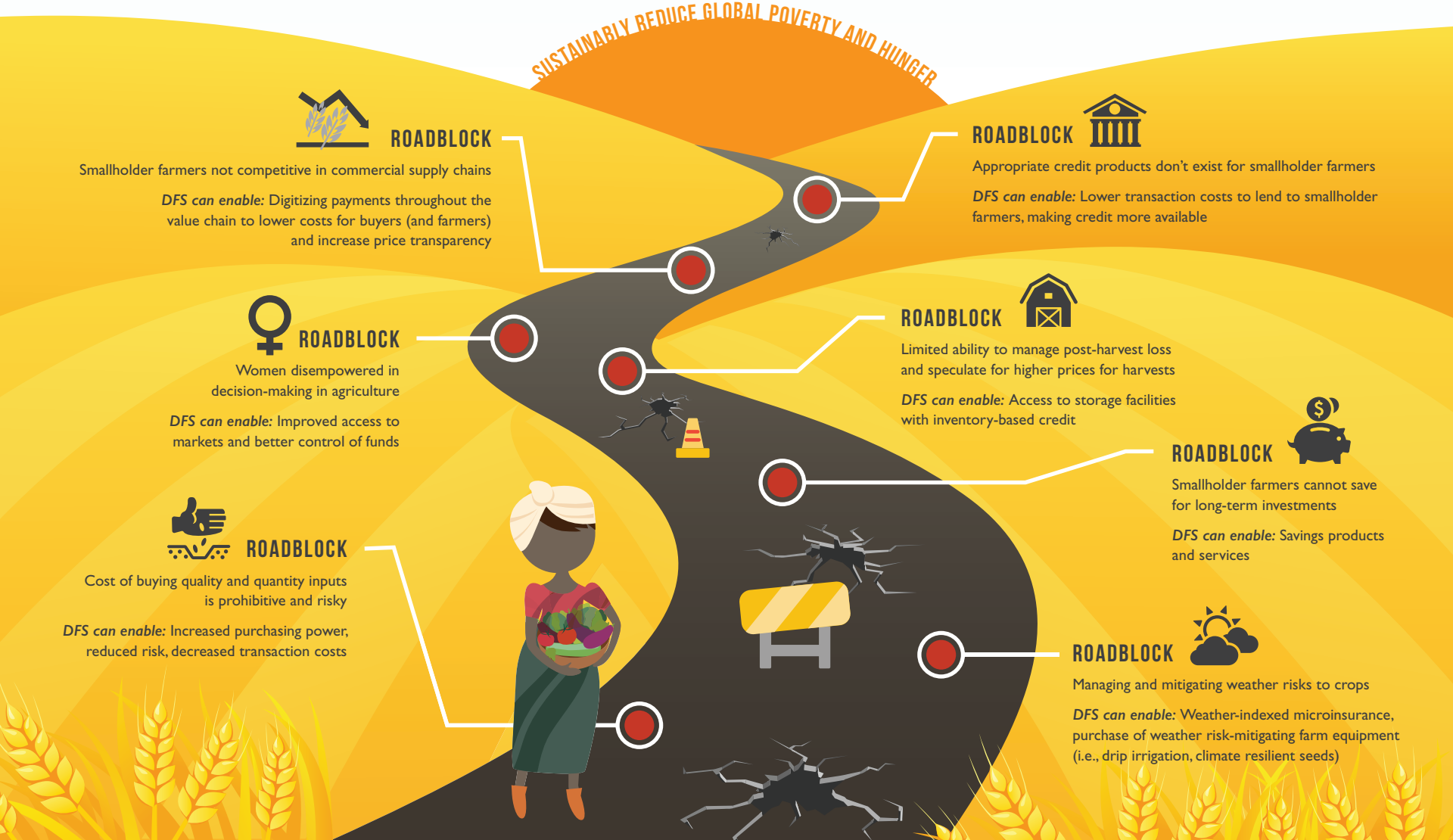
Smallholder farmers are the frontlines of every developing country's food supply. They serve as the linchpin in poverty-reduction strategies, such as Feed the Future.

However, most farmers lack access to financial services and products to enable them to invest in their farms.

Evidence suggests that there is a **$430 billion shortfall** in serving this population's demand for finance.

Farmers face a range of roadblocks in managing their farms as a business, from purchasing inputs, to accessing financial services, to storing and selling produce.

Digital financial services (DFS) present a promising opportunity to address some of these pressing needs and complement USAID's past and current portfolio of work to achieve greater impact.



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Acknowledgements

This Guide is supported by USAID's Mobile Solutions Technical Assistance and Research (mSTAR) project under the Financial Integration, Economic Leveraging, Broad-Based Dissemination and Support Leaders with Associates award (FIELD-Support LWA). Many contributors offered input, guidance, and feedback. Special thanks is extended to staff of the USAID Bureau for Food Security; Nicole Brand and the Digital Financial Services team at the U.S. Global Development Lab; staff of USAID/Uganda, USAID/Haiti, USAID/Tanzania, and USAID/Ghana; Erica Bustinza, Joyce Lehman, Nussi Abdullah, Carrie Hasselback, Josh Woodard, Troy Etulain, Sara Seavey, and the Design Team at FHI 360; and many experts who provided feedback on an initial draft including Hillary Miller-Wise of Esoko; Janine Firpo, John Ndunguru, and Wendy Chamberlain of the Bill and Melinda Gates Foundation; Doris Amponsaa Owusu of the ADVANCE II activity in Ghana; Robert Anyang of the Commodity Production and Marketing (CPM) activity in Uganda; Mike Field of DAI Bangladesh; Stephanie Hanson of the One Acre Fund; Mike Elliott and Simon Winter of Technoserve; Larry Tweed, James Obarowski from TNS Haiti, and Maya Horii and Lutz Goedde of McKinsey.

We would also like to acknowledge the CGAP and McKinsey Digital Finance + Readiness Framework, which informed the structure and approach of this document.

I

Introduction

The estimated shortfall in serving the global demand for smallholder finance.

1.5 BILLION

of people living on smallholder farms globally

80%

OF THE WORLD'S POPULATION IS FED BY SMALLHOLDER FARMERS

Smallholder farmers (SHFs) have the potential to play an ever increasing role in feeding the world through sustainable supply of key agricultural commodities. However, most smallholders lack their own funds to invest in their farms to improve productivity and connect to markets. Without inclusive market systems, smallholders must rely on their own limited savings to invest in their farm, education, and other household needs, which contributes to lower productivity, persistent income inequality, and slower economic growth.

The nature and scale of these challenges are familiar to those of you who are driving the progress of the U.S. Government's Feed the Future initiative, which, over the past few years, has been addressing many of these challenges in order to unlock the potential of agriculture to reduce hunger, extreme poverty, and malnutrition. This *Guide to the Use of Digital Finance in Agriculture* aims to provide a quick and easy-to-use tool to understand how one new technology platform, digital finance, can help address some of the challenges that smallholder farmers are experiencing today—mainly, lack of access to financial services and convenient payment systems.

Digital financial services (DFS) can help to address specific chronic challenges in the value chain—especially those challenges that need financial services solutions, and where the traditional finance sector is not fully addressing the demands in rural markets. This is often due to high infrastructure costs and a lack of incentives to adapt products to the unique needs of farmers. Digital finance offers a way to expand access to the formal financial system (through a basic transaction account supervised by the banking regulator), taking advantage of the rapid growth of digital and mobile telephone infrastructure and the advent of branchless banking (which offers the ability to transact outside of a traditional bank branch). These factors have a direct link to increasing farmer income and decreasing malnutrition.

1. Digital Finance for Development Handbook

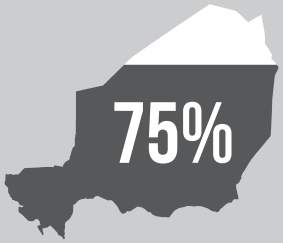
Digital financial services (DFS) are fundamentally about saving money, accessing credit and insurance, and performing transactions via digital channels—mobile phones, cards, computers, tablets, and so on. We often talk about "mobile money" because in developing countries mobile phones are the most widely distributed and most functionally adaptable means for accessing digital financial services.[1]

The goal of this Guide is to identify specific challenges in value chains that can be addressed by improved payments or financial services, and then to identify corresponding DFS solutions to these specific challenges, with the aim of improving the ability of value chains to increase farmer incomes. In doing so, it is possible to increase farmer household access to a transaction account that builds household resiliency and offers access to payments and financial services long after an aid project or intervention is complete. Ultimately, this will move us closer to Feed the Future's joint high-level objectives of inclusive agricultural sector growth and improved nutritional status.

It is important to note that while DFS is not a panacea for agriculture development, the integration of DFS to address the specific challenges identified does have significant impacts beyond the immediate goal. First, due the rapid growth of digital finance providers (including Mobile Network Operators (MNOs), banks, and technology start-ups) in many Feed the Future priority markets, integrating DFS helps to engage the private sector in the rural economy, spurring lasting market growth (the goal of Feed the Future's market systems approach.)[2]

Second, each time a farmer opens a digital account to address a specific value chain challenge, they are also gaining access to a wide range of formal financial services—often for the first time. **Lack of access to finance is not a banking challenge—it is a livelihoods challenge,** one that directly impacts Feed the Future goals of improving household economic resilience and links farmers to new market opportunities.

Though it won't be the focus of this Guide, it's worth mentioning the particular benefits of DFS for women, especially those working in the agricultural sector. Women comprise up to 50% of agricultural workers, an estimated 556 million potential users globally, and because they play different roles in agricultural production and the household (generally more "informal" roles), have different price sensitivities and purchasing priorities than men (reinvesting an estimated 90% of their income in their families), and access information through different, often informal channels. They are less likely to have access to technology due to cultural barriers, lower literacy levels, and less disposable income, addressing the needs of women in agriculture often requires a more tailored approach. For more information on this, see GSMA's Women in Agriculture, a Toolkit for Mobile Services Practitioners.



A randomized evaluation in Niger found that using mobile payments for unconditional cash transfers saved recipients 75% on payments. They used those savings to purchase a greater variety of food stuffs and to grow a greater variety of crops.

In 2011, evidence gathered from households in Kenya over a two-year period found that households with access to the mobile money product M-Pesa were able to withstand financial shocks with no impact on consumption, while those households without access to mobile money suffered a 7% decrease in consumption.[3]

Don't banks and other financial institutions already provide these services? Why is there so much hype around digital financial services?

The value of the market infrastructure of DFS is apparent in at least three broad ways:

1. Reducing loss (tied to theft, time, corruption, and business processes);
2. Increasing social protection (by enabling fast, secure transfers and
3. Extending saving, insurance, and credit services); and creating new market opportunities (for new business models, products, and services in every sector).

In most developing countries, the majority of the population is either unbanked (no bank account) or underbanked (has a bank account but, relies heavily on informal services). As of 2011, less than a quarter of low-income adults had an account in a bank or other formal financial institution. In addition, many of these accounts are used only for salary disbursements or are completely dormant. These challenges are often more acute in agriculture and rural communities, since cost and distance from urban centers are two of the biggest reasons why poor people do not use banks. In addition, financial exclusion tends to impact women more than men, which means the female farmers and smallholder households led by females can benefit from have a private mobile money account that provides a convenient and private way manage finance (while banks tend not to be private nor convenient due to the travel necessary to access a branch.)

2. http://agrilinks.org/events/facilitating-market-led-agricultural-growth-comparison-models-nigeria-and-uganda

3. "Risk Sharing and Transaction Costs: Evidence from Kenya's Mobile Money Revolution," Jack, William and Tavneet Suri, 2011. http://www.mit.edu/~tavneet/Jack_Suri.pdf

BACKGROUND AND WAY FORWARD

This Guide is based on four in-country assessments conducted jointly by the USAID Bureau for Food Security's (BFS) Office of Market and Partnership Innovations (MPI), the U.S. Global Development Lab DFS team and USAID's FHI 360-led Mobile Solutions Technical Assistance and Research (mSTAR) project. The assessments covered four different Feed the Future countries: Tanzania and Uganda, relatively mature DFS markets; Ghana, a rapidly expanding DFS market; and Haiti, a relatively nascent DFS market. These four markets are informative, but of course not conclusive, and, therefore, we have used the analysis from the in-country assessments to create an analytical framework, rather than provide an exhaustive list of answers. The framework draws insights from all four markets with the aim of allowing USAID Mission staff and implementing partner staff to do similar assessments and *plan interventions for specific contexts, and the specific results they are trying to achieve*.

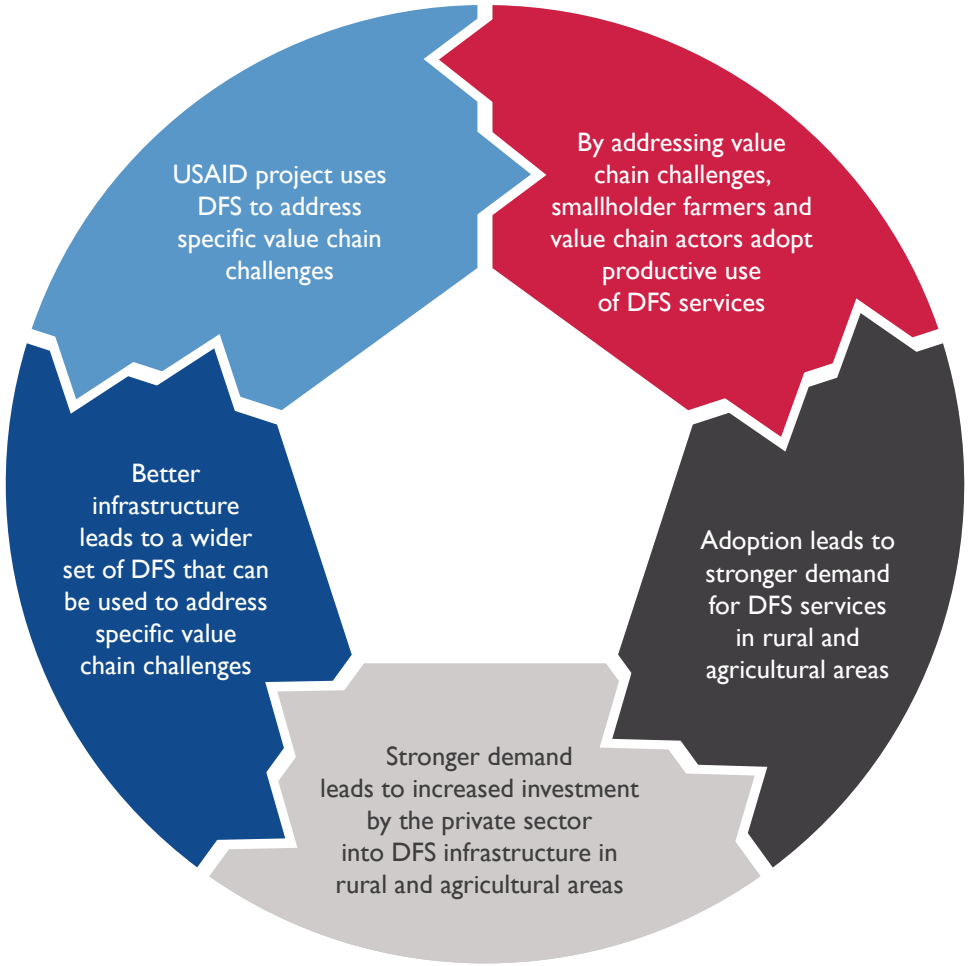
Please note that the Guide is intended to be a diagnostic tool that will help you diagnose and assess your own agriculture value chains to determine where and how DFS can help you to address the challenges that you are facing. It is not an exhaustive resource, nor will completing the Guide leave you with a fully developed action plan. The methodology relies on your knowledge of agriculture in your specific context to develop the most appropriate approach. However, we have included a host of resources and case studies to provide additional context and information, and hope that after reading this Guide, you will be excited to learn more and and will have a clear idea of where else you can go for support. The Guide is intended to be a live document: both DFS and the agriculture sector are complex market systems that are rapidly evolving.[4] We encourage you to join the conversation by engaging with USAID's Digital Finance Community of Practice, BFS/MPI's Inclusive Markets Division, USAID Mission staff, and other donors and implementing partners working to advance agriculture sector growth in your country or region.

LIMITATIONS

This Guide takes a value chain approach to identifying challenges and relevant DFS solutions. This approach is very useful in many ways; however, it does not take into account the full complexity of the financial lives of many smallholder farmers (for more on this, please refer to the outstanding Financial Diaries of Smallholder Farmers conducted by CGAP). Therefore, we hope that you will benefit from the simplicity of the framework, while understanding the complexity of the specific context in which your program operates.

A second limitation is that this Guide focuses on DFS specifically, and does not fully account for its integration into all Feed the Future goals, such as gender and climate-resistant agriculture. It also takes into full consideration other digital technologies, such as the importance of reliable connectivity, affordable handsets and services, and necessary digital literary and digital skills required to use digital financial products. This is by design, in an attempt to simplify the Guide, but should not suggest that DFS can or should be isolated from these other issues.

4. For more information on the partnership between the Bureau for Food Security and the U.S. Global Development Lab/DFS team which informed the development of this Guide, check out "How Digital Financial Services Can Meet The Financing Demands Of Smallholder Farmers" on Microlinks, a blog post co-written by Elizabeth Diebold, Nandini Harihareswara,and Harsha Kodali.



This Guide presents an analytical framework that provides one way to approach the integration of digital financial services into rural areas: through a USAID project that takes a value-chain approach to designing potential interventions.

It is important to see that this approach should not imply that there is only one, linear way to approach the integration of DFS into agriculture.

Ultimately, any intervention should help smallholder farmers access sustainable financial services that support their livelihood goals. To be sustainable, these services must be offered by the local private sector and continue to serve the needs of rural communities long after the donor-funded project has ended.

The image to the left is meant to illustrate how USAID can intervene in different ways to ultimately reach the same result. Keep this larger picture in mind as you work through the analytical framework provided in the following pages.

Key Terms Related to Digital Financial Services

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 formal principal–agent relationship does not exist under the laws of the country in question. Depending upon the regulatory framework and their agreement with the provider, agents may provide a variety of services on the provider's behalf, ranging from account opening to acceptance (cash-in) and disbursement (cash-out) of cash.
Agricultural credit/microcredit	Any of several credit vehicles used to finance agricultural transactions, including loans, notes, bills of exchange and banker's acceptances. These types of financing are adapted to the specific financial needs of farmers, which are determined by planting, harvesting and marketing cycles.
Agricultural leasing	A lease is a contractual arrangement between two parties, where the provider (the lessor) owns the asset and lets the client (the lessee) use the equipment asset in exchange for periodic payments
Branchless Banking or Banking beyond Branches	The delivery of financial services (whether by banks or by other providers) outside of conventional bank branches. Banking beyond branches uses agents or other third-party intermediaries as the primary points of contact with customers and relies on technologies, such as card-reading point-of-sale (PoS) terminals and mobile phones, to transmit transaction details.
Digital Financial Services (DFS)	"Digital financial services" is 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. Similarly, "digital payments" covers mobile payments and electronic payments, while digital money covers mobile money and electronic money.
Electronic Money (e-money)	A type of monetary value electronically recorded and generally understood to have the following attributes: (1) issued upon receipt of funds; (2) stored electronically; (3) accepted as a means of payment by parties other than the issuer; and (4) redeemable for cash.

Electronic Payments	Payments made via electronic channels, including mobile and Internet channels, using infrastructure such as mobile phones, computers, electronic cards, and PoS devices.
Embedded financial services	Embedded services occur when a buyer of an enterprise's products or a seller of inputs to an enterprise also provides "free" services or products as part of the transactional relationship. In these scenarios, the enterprise does not pay direct fees for the services or products; service providers (e.g., the input suppliers or buyers) cover the costs—although, of course, the enterprise may pay for the product or service indirectly through higher input costs or lower prices received from buyers.
Financial education	The process of building knowledge, skills and attitudes to become financially literate. It introduces people to good money management practices with respect to earning, spending, saving, borrowing, and investing.
Financial Inclusion or Access to Finance	Access to and the ability to effectively use appropriate financial services that are provided responsibly and sustainably in a well-regulated environment. Although access to informal financial services (services offered by unregulated entities) is a form of access to finance, financial inclusion efforts typically focus on extending access to formal financial services (services offered by regulated entities) to poor and underserved communities.
Financial literacy	The ability to make informed judgments and to take effective actions regarding the current and future use and management of money. It includes the ability to understand financial choices, plan for the future, spend wisely, and manage the challenges associated with life events such as a job loss, saving for retirement, or paying for a child's education.
Government-to-person payments	Financial transfers made to citizens by a public institution, typically for benefits and salary payments.
Interoperability	With respect to mobile money and other digital financial services, "interoperability" generally refers to platforms that permit the transfer of funds from mobile accounts of one service provider to mobile accounts of another service provider.
Mobile Banking (m-banking)	The use of a mobile phone to access banking services and execute financial transactions. Like MFS, this covers both transactional and non-transactional services. The term "mobile banking" is often used to refer only to customers with bank accounts.

Mobile Financial Services (MFS)	The use of a mobile phone to access financial services and execute financial transactions. This includes both transactional services (such as payments) and non-transactional services (such as viewing financial information on a user's mobile phone). Mobile financial services include both mobile banking (m-banking) and mobile payments (m-payments). In some cases, MFS is defined broadly to include other means of accessing financial services remotely, such as Internet-enabled devices (tablets, laptops, desktops, smartphones) and PoS terminals.
Mobile Money (m-money)	A mobile-based service facilitating electronic transfers and other transactional and non-transactional financial services 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. Often used synonymously with "mobile financial services."
Mobile Network Operator (MNO) / Telco	A company that has a government-issued license to provide telecommunications services through mobile devices.
Mobile Payments (m-payments)	The facilitation of domestic and/or cross-border payments via a mobile phone. M-payments are a subset of MFS. As noted above, m-payments sometimes are defined broadly to include Internet-enabled devices and PoS terminals.
Moveable collateral	Non-affixed assets, such as inventory, accounts receivable, livestock, crops, equipment and machinery, which are used as collateral on loans, typically in secured transactions.
Purchase order financing	POF is not a general loan or line of credit; it is a transaction-specific form of short-term working-capital finance. It allows an SME to obtain the capital necessary to fill a particularly large customer order—larger than it could fill without assistance—that may present a growth opportunity. The capital finances the purchase of the raw material, packaging, production, and shipment of the goods ordered by the client. POF is provided by specialized commercial financiers, usually managed by trade finance and merchant banking professionals, and professionals from manufacturing and trading. Banks and non-bank financial institutions do not provide POFs.
Value chain finance	Value chain finance refers to financial products and services that flow to or through any point in a value chain that enable investments that increase actors' returns and the growth and competitiveness of the chain.
Warehouse receipts	Also known as inventory credits, a WHR finance system is based on receipts or—warrants—that prove ownership of a specific non-perishable commodity of a stated quality and condition stored in a specified location. When the commodity is pledged or sold by mere delivery of the receipt, the buyer or pledgee bank has the assurance, without physical inspection, that the specific commodity will be available when it is required.

II

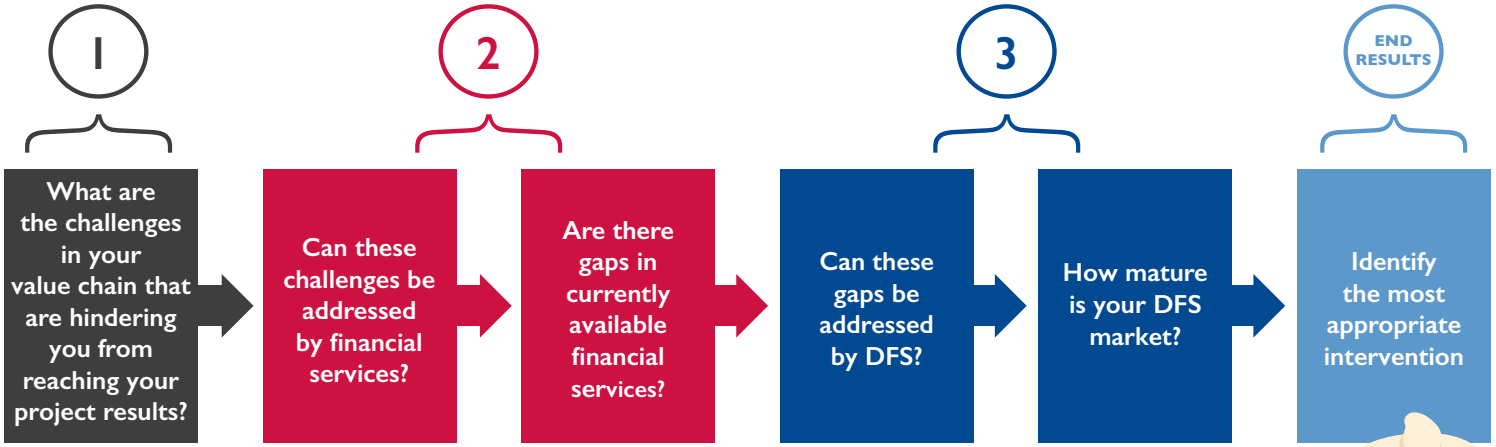
Analytical Framework

A 3-D Methodology:
Can DFS Help You Achieve Feed the Future Goals?

This exercise is meant to illustrate and provide a general sense of how digital finance can be leveraged most appropriately. The exercise is split into three high-level steps:

A 3-D Methodology:
Can DFS Help You Achieve Feed the Future Goals?

These three high-level steps can be further broken down as follows:



This "3-D" methodology is designed to rapidly assess how DFS can help address value chain challenges and accelerate progress toward your agriculture development goals. By the final step, you should have an idea of which specific challenges you are addressing, which actors need to be engaged, and what type of intervention is most appropriate for implementing a DFS solution to your challenge.

Remember! This tool is not meant to be a complete list of all challenges or all solutions. It is an analytical framework only: use your expertise to identify new challenges and new solutions not listed here. There are lots of helpful resources listed for further information, and many USAID staff members, consultants, and implementing partners that can be engaged to help map out more specific next steps once you have completed your rapid assessment.

Ultimate Destination: How can DFS Help You?

EXAMPLE Once you have completed this exercise, you will have a chart such as this, specific to your program, which will help you determine appropriate interventions in the next section.

FEED THE FUTURE RESULTS BEING ADDRESSED	FINANCE NEED	APPLICABLE DFS-ENABLED PRODUCT	DESCRIPTION	PRODUCT AVAILABLE IN YOUR MARKET?	DFS MARKET TYPE
Increase use of improved seeds by farmers	• Savings products • Product financing	• Digital savings products • Input credit for smallholders in closed-loop ecosystem of integrated value chain actors	• Zero-minimum mobile savings accounts for smallholders • Seasonal, working capital loans for smallholders • Inputs credit for smallholders in closed-loop ecosystem of integrated value chain actors	Yes, I'm in a consolidated market with a mature DFS ecosystem	
Increase delivery and utilization of input subsidies	• Payments • Short-term savings • Product financing	• E-vouchers for government input subsidy disbursement	• Electronic platform (mobile phone or card-based) for digital issuance, verification, and redemption of input vouchers	Yes, I'm in a nascent market and e-Vouchers will work without a full DFS ecosystem	
Increase resilience of farmers through adoption of insurance products	• Product financing • Payment mechanism for premiums and for payouts	• Weather-indexed crop insurance enabled by digital platform	• Insurance product to mitigate the risk of extreme weather events with digital purchase, claims filing, resolution, and payout	Maybe, I'm in a expansion market where some microinsurance is available but has not yet been adapted for farmers.	
Increase price transparency of markets for farmers	• Payments connected to timely/accurate information • Supply-chain financing	• Mobile system for agriculture information dissemination and collection of smallholder data with integrated payments	• Digital portal for collection and dissemination of agronomic, weather and market data, with extension of financial products based on detailed consumer profile	No, in my market no one has been able to create a sustainable agriculture information service that is ready for integration of payments and financing.	
Increase ability to withstand shocks (related to climate or other threats to household resiliency)	• Convenient storage of funds • Ability to receive payments • Access to short-term financing	• Basic transaction account	• A mobile wallet allowing for funds storage and for farmers to easily receive payments in times of need	Yes, I'm in a nascent market, and this is the first product launched by most DFS producers.	

Assessing the Value Chain Worksheet

This worksheet will help you to fill out each step of the process outlined in the following pages. The previous "Ultimate Destination" example shows how this will be summarized at the end of the exercise to highlight key points.

FEED THE FUTURE RESULT	VALUE CHAIN CHALLENGES	DRIVERS	VALUE CHAIN ACTOR(S)	VALUE CHAIN SEGMENTATION	FINANCE NEED?	FINANCE NEED MET?	POTENTIAL FSP PARTNERS TO ENGAGE	REASONS HINDERING USE OF FINANCIAL SERVICES

1 Assessing Your Value Chain Challenges

Assessing Value Chains

	STEP	TASK
Value Chain Assessment	1	Identify the key Feed the Future or relevant program results that you want to address through this exercise.
	2	For each value chain, identify the challenges/gaps experienced by value chain actors, along with the drivers and sub-drivers behind those challenges.
	3	Identify the actors who would need to be involved in addressing the drivers and sub-drivers for each challenge.
	4	Determine if the value chain operates as tight, loose, or subsistence. This will have implications on financial solutions that would be most relevant.
	5	For each driver and sub-driver, determine if there is a potential finance solution. If so, complete the analysis in the next section.
Financial Services Assessment	6	For drivers and sub-drivers with potential finance solutions, complete a finance gap analysis to assess which finance needs are not being met, and can be supported by DFS.
	7	Identify potential financial services providers (FSPs) to engage.
	8	DFS could serve as a great complement to traditional financial services and/or fill gaps in financial service provision. In all cases where there is a potential finance solution to the value chain challenges/drivers, determine if there is a potential DFS solution. If so, complete the analysis in the next section.
DFS Assessment	9	Determine which type of DFS market you are in.
	10	Identify specific DFS solutions to your problem.
	11	Identify whether or not the DFS solutions exist in your market yet.

Assessing Value Chains

For this section, use the worksheet template on page 19 to fill out your answers as you work through the five tasks.

Task 1. What are the challenges in your value chain that are hindering you from reaching your project results?

Task 2. Identify the challenges in your focus value chains by component. For example:

EXAMPLE: Value Chain Component Challenges

INPUT PROVISION	PRODUCTION	STORAGE & DISTRIBUTION	SALE	PROCESSING
Agrodealers have insufficient stock on hand to meet demands	SHFs subject to weather risks	Poor use of storage	Lack of price discovery/ transparency	Insufficient supply (quality/quantity) for optimal processing
DRIVER: Lack of access to working capital loans to maintain optimal supply of stock		DRIVER: Poor access to off-site, fee-based storage		
DRIVER: Farmers unable to pay for inputs until harvest		SUB-DRIVER: Minimum storage quantities too large for individual SHFs to meet		

Assessing Value Chains

How do your selected value chains operate?

Knowing how your value chains operate will help inform the most appropriate financial solution that can be successful in your environment. The following **segmentation framework** (pioneered by CGAP) is designed to highlight differences in smallholder farmers demand for financial services related to agriculture—different SHFs have different needs, and this variety in demand cannot be met by the same suite of financial products, terms of service, or even pool of financial service providers.

As defined by CGAP, these three segments are differentiated by **what they grow**, **how they engage with markets as buyers and/or sellers**, *and* **how those markets are organized**. *These segments are not meant to be fixed, iron-clad divisions, but rather categories based on common traits that can begin to illuminate the financial mechanisms that might best fit the given financial goals and cash flows.*

Using the framework on the next slide, categorize each of your focus value chains according to the most relevant segmentation. Note some value chains can operate in multiple segments depending on the geographic characteristics—tight in one area but loose in another, for example.

EXAMPLE: Value Chain Segmentation

	VALUE CHAIN	GEOGRAPHY	CATEGORIZATION
	Coffee	Zone A	Tight
	Maize	Zone B	Loose
	Maize	Zone C	Tight
	Cassava	Zone B	Subsistence

source: CGAP

Assessing Value Chains

TABLE 1: Segmentation Framework

COMMERCIAL	MOSTLY COMMERCIAL	NONCOMMERCIAL
Tight value chains: • SHFs' awards main source of income tends to be higher value crops but also likely staple crops as well (staple crops may be sold more informally through local and regional markets) • SHFs take a more business-like approach to farming • SHFs have access to buyer-provided bundles of improved seeds, inputs, agricultural and weather information, finance, and secure markets and prices • SHFs generate reliable, high-quality outputs, generally sold on a contract basis • SHFs have highly organized and structured value chains with strong relationships between value chain actors **FINANCE IMPLICATION:** SHFs likely to demand and use wider range of both formal and informal financial services than other segments.	**Loose value chains:** • SHFs' crop mix generally focuses on staple crops but could also include high-value crops • SHFs are poor but tend to be less so than subsistence segment • SHFs have limited access to inputs, financial services, and information about weather, markets, and prices • SHFs tend to rely on unimproved seeds and traditional production methods • SHFs tend to sell their surplus production in informal local or regional markets • SHFs may be looking for opportunities to diversify assets and sources of income **FINANCE IMPLICATION:** SHFs have access to some financial services but constraints in accessing a wider range	**Subsistence value chains:** • SHFs are concentrated in staple crops and may include small livestock • SHFs farm not as a strategic business choice or vocation, but to contribute to their own sustenance and survival; may endure periods of food deficits throughout the year • SHFs are generally buyers of food and sellers of labor (limiting their ability to produce) • SHFs have very limited access to land, technology, education, markets, and information about weather or production methods • SHFs use very few purchased inputs and little (if any) mechanization • SHFs' outputs are relatively low and consumed largely by the household; irregular, small amounts of surplus are sold in informal local market • SHFs not connected to a structured value chain of any kind **FINANCE IMPLICATION:** SHFs largely limited to informal financial mechanisms and simple tools (such as local savings and loan groups) to meet relatively basic financial service needs

After reading the descriptions, determine which one best fits your value chain and make a note of it in the worksheet below. Keep the finance implication in mind in the later sections when you are determining potential solutions and interventions.

source: CGAP

Assessing Value Chains

TABLE 2: Assessing the Value Chain Worksheet Template

FEED THE FUTURE RESULT	TASK 1: VALUE CHAIN GAP(S)	TASK 2: FINANCE NEED	TASK 3: VALUE CHAIN ACTOR(S)	TASK 4: VALUE CHAIN SEGMENTATION	TASK 5: FINANCE NEED?
Increased access to market	Poor use of storage	SHF unable to pay for on-site storage equipment	Xxx, xxx, xxx	Loose	Yes
		No storage facility exists within catchment area	Xxx, xxx, xxx	Loose	Maybe
		Lack of coordinated access to storage points to meet minimum quantities required	Xxx, xxx, xxx	Loose	No

TASK 5: *If "Yes" or "Maybe" is indicated for any drivers and sub-drivers of a given value chain gap, then carry those elements forward for the financial services assessment in the next section. If there is no finance need (for example, if the driver needs a regulatory change), then there is no need to carry this issue forward into the rest of the Guide. However, there could be other ICT solutions that are not finance related—for more on this, refer to Section III on different types of interventions.*

2

Assessing Existing Financial Services

Assessing Existing Financial Services

	STEP	TASK
COMPLETED — Value Chain Assessment	1	Identify the key Feed the Future or relevant program results that you want to address through this exercise.
	2	For each value chain, identify the challenges/gaps experienced by value chain actors, along with the drivers and sub-drivers behind those challenges.
	3	Identify the actors who would need to be involved in addressing the drivers and sub-drivers for each challenge.
	4	Determine if the value chain operates as tight, loose, or subsistence. This will have implications on financial solutions that would be most relevant.
	5	For each driver and sub-driver, determine if there is a potential finance solution. If so, complete the analysis in the next section.
Financial Services Assessment	6	For drivers and sub-drivers with potential finance solutions, complete a finance gap analysis to assess which finance needs are not being met, and can be supported by DFS.
	7	Identify potential financial services providers (FSPs) to engage.
	8	DFS could serve as a great complement to traditional financial services and/or fill gaps in financial service provision. In all cases where there is a potential finance solution to the value chain challenges/drivers, determine if there is a potential DFS solution. If so, complete the analysis in the next section.
DFS Assessment	9	Determine which type of DFS market you are in.
	10	Identify specific DFS solutions to your problem.
	11	Identify whether or not the DFS solutions exist in your market yet.

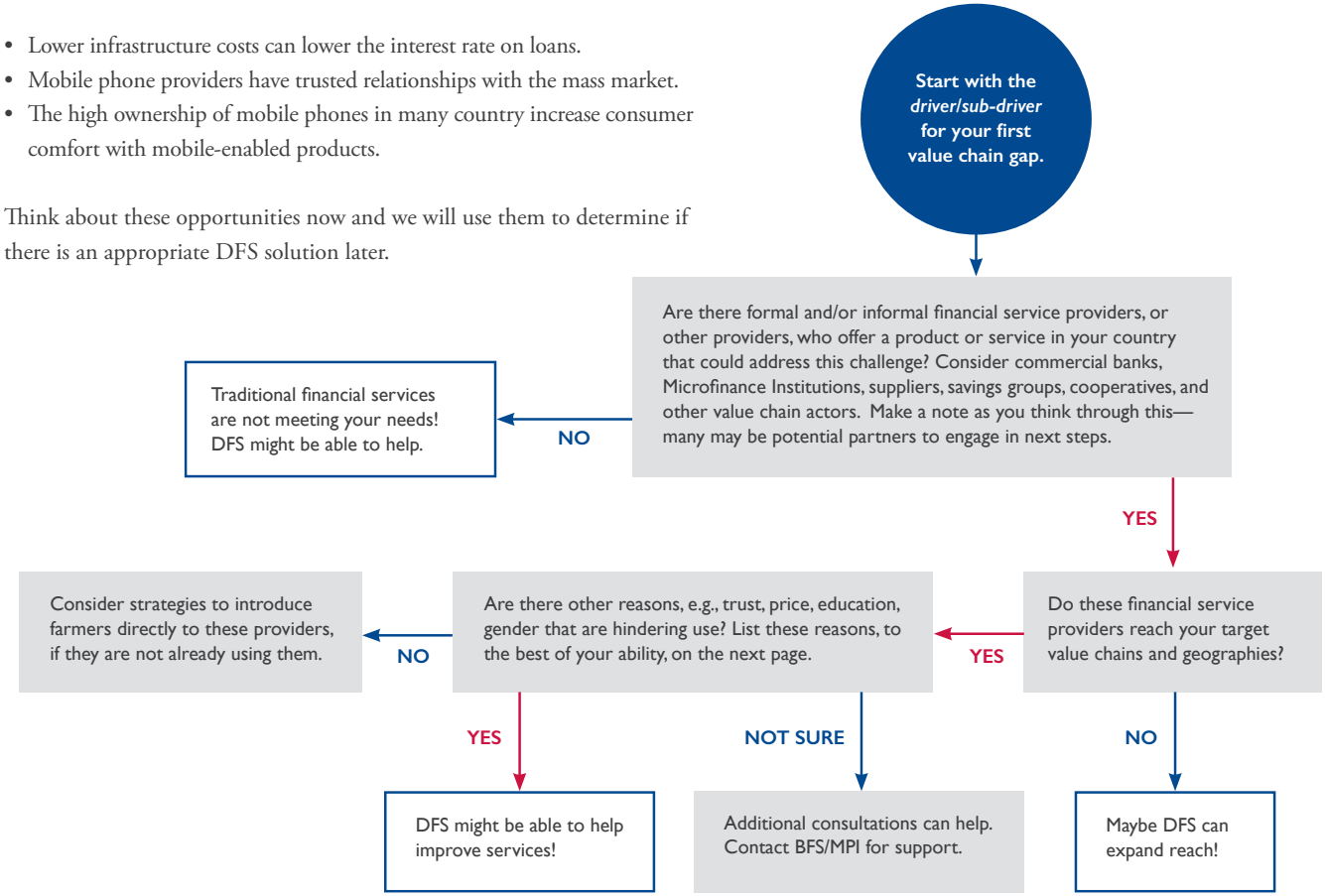
Assessing Financial Services

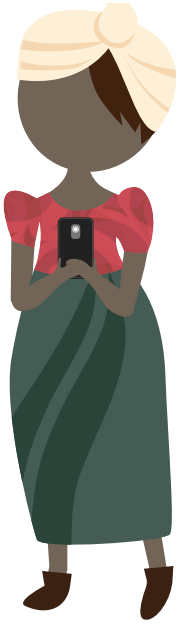
Task 6: For each of the relevant drivers and sub-drivers identified, complete the following value chain finance gap analysis

DFS have been successful in many markets because they overcome many of the challenges that have historically hindered use of traditional banking products. For example:

- Lower infrastructure costs can lower the interest rate on loans.
- Mobile phone providers have trusted relationships with the mass market.
- The high ownership of mobile phones in many country increase consumer comfort with mobile-enabled products.

Think about these opportunities now and we will use them to determine if there is an appropriate DFS solution later.





When considering barriers to both traditional and digital financial services, it is important to consider how women are impacted differently and may encounter additional barriers to those facing men. Some gender-related factors to consider include the following, all of which can inform your intervention design.

BARRIER	CONSIDERATION	INTERVENTION IDEAS (FOR SECTION IV)
Identification	Are women in your target population less likely to have the identification necessary to open a formal account?	If so, one approach may be the use of digital financial services that offer tiered know-your-customer (KYC) regulations in order to allow customers without an ID to transact at lower limits.
Literacy	Do women have lower access to education/financial literacy training?	Consider using and/or designing DFS products and training materials that rely on images; engage women during intervention planning to understand how they interact with various products.
Travel	Are there social and cultural barriers that prevent women from traveling to bank branches or mobile money agents?	Consider using and/or designing DFS products that utilize female agents who can conduct transactions at consumers' homes.
Privacy	Do women have control over their own money within a household?	If not, consider products (such as mobile money accounts) that allow women to transact via phone and agents (often stores where many types of business is occurring) without needing to travel to a building exclusively conducting financial transactions.
Marketing	Are existing marketing materials designed without considering how women may react differently from men?	Ensure that all marketing materials are prototyped with women first so that their reactions can be incorporated into the final design.

Adapted from "Digital Financial Solutions to Advance Women's Economic Participation," World Bank Development Research Group, the Better Than Cash Alliance, the Bill & Melinda Gates Foundation, and Women's World Banking, report to the G20 Global Partnership for Financial Inclusion,

According to the value chain segmentation previously conducted, think about what types of financial services are most appropriate for your target population. This will determine the types of financial services providers that you'll want to engage.

TYPE OF VALUE CHAIN	IMPLICATIONS FOR FINANCIAL SERVICES/POTENTIAL FSP PARTNERS
Commercial	• Linking, via mobile banking, to commercial banks engaged in value chain financing • SHFs will likely need a wide variety of financial tools including access to investment opportunities, working capital financing, and more specific agricultural finance as they produce higher-value crops. • SHFs may benefit from DFS products such as bulk payments to pay salaries directly to part-time or seasonal workers.
Mostly Commercial	• SHFs may need credit and/or savings to help access quality inputs. • SHFs need access to products that are designed for seasonal income and lower transaction sizes than commercial banks may provide. Therefore, they will benefit from use of digital tools to increase convenient access to get small loans and deposit regular savings at banks, credit unions, and microfinance institutions that have built capacity in agriculture. • SHFs will benefit from use of digital payments to transact directly with agribusiness and input supplies, especially as the convenience allows them to access markets at a farther distance. • Financial services can be designed in such a way to increase access to inputs that move these farmers to higher-value crops.
Noncommercial	• Due to small transaction size, SHFs will benefit from a basic transaction account offered via mobile, since providing access to these clients without the use of digital is often too expensive for banks and even MFIs. • These farmers often use informal savings groups, who can use DFS tools to save money securely in a digital wallet and eventually use digital payments to connect to MFIs or banks (mobile banking). • Electronic vouchers may be an option for offering smart subsidies to these farmers to help purchase quality inputs. • Commitment savings accounts, using mobile money agents to facilitate frequent, small deposits, have been proven to help smooth seasonal income. • Women in these group will likely have unique needs but also likely benefit from most from the security and privacy of a mobile money account.

Assessing Financial Services: Final Ouput

TABLE 2: Assessing the Value Chain Worksheet Template

FEED THE FUTURE RESULT	VALUE CHAIN CHALLENGES	DRIVERS	VALUE CHAIN ACTOR(S)	VALUE CHAIN SEGMENTATION	FINANCE NEED?	FINANCE NEED MET?	POTENTIAL FSP PARTNERS TO ENGAGE	REASONS HINDERING USE OF FINANCIAL SERVICES	DFS MARKET TYPE
Increased access to market	Poor use of storage	SHF unable to pay for on-site storage equipment	Xxx, xxx, xxx	Loose	Yes				
		No storage facility exists within catchment area	Xxx, xxx, xxx	Loose	Maybe				
		Lack of coordinated access to storage points to meet minimum quantities required	Xxx, xxx, xxx	Loose	No				

If you got to any of the blue boxes in the decision tree, the financing need is not currently met. Enter no and proceed to assess if there is a DFS solution!

If known, make note of some of the FSP partners you could engage who are involved in this space—MFIs, commercial banks, cooperatives, agriculture buyers, savings groups, etc. If you are not sure, leave blank and revisit later.

List other reasons, i.e., trust, price, education, that are hindering use.

3 Assessing Digital Finance Feasibility

Assessing Digital Financial Feasibility

	STEP	TASK
Value Chain Assessment	1	Identify the key Feed the Future or relevant program results that you want to address through this exercise.
	2	For each value chain, identify the challenges/gaps experienced by value chain actors, along with the drivers and sub-drivers behind those challenges.
	3	Identify the actors who would need to be involved in addressing the drivers and sub-drivers for each challenge.
	4	Determine if the value chain operates as tight, loose, or subsistence. This will have implications on financial solutions that would be most relevant.
	5	For each driver and sub-driver, determine if there is a potential finance solution. If so, complete the analysis in the next section.
Financial Services Assessment	6	For drivers and sub-drivers with potential finance solutions, complete a finance gap analysis to assess which finance needs are not being met, and can be supported by DFS.
	7	Identify potential financial services providers (FSPs) to engage.
	8	DFS could serve as a great complement to traditional financial services and/or fill gaps in financial service provision. In all cases where there is a potential finance solution to the value chain challenges/drivers, determine if there is a potential DFS solution. If so, complete the analysis in the next section.
DFS Assessment	9	Determine which type of DFS market you are in.
	10	Identify specific DFS solutions to your problem.
	11	Identify whether or not the DFS solutions exist in your market yet.

COMPLETED

Assessing Digital Financial Feasibility

Take this quiz to the best of your ability. We've added resources in case you don't know the answers; however, don't feel that you need to do a full or exact assessment right now. The idea is just to get a feel for the type of market you are operating in by asking around and reviewing available resources.

TOTAL POINTS

Access and reach of current mobile infrastructure

1. *What is the overall quality and reliability of mobile phone services in the geographical areas relevant to your work?*
   a. Very good (no complaints) – 4 points
   b. Good (a few, infrequent complaints) – 3 points
   c. Fair (frequent complaints, but not enough to halt usage) – 2 points
   d. Poor (frequent complaints, customers need to travel elsewhere to use mobile services) – 1 point

2. *How competitive is the mobile network operator market? In other words, are multiple providers competing? This can be indicated by high levels of marketing, prices decreasing overtime, and/or continued investment in infrastructure.*
   a. Highly competitive – 4 points
   b. Somewhat competitive – 3 points
   c. One dominant player, highly active – 2 points
   d. Not competitive, dominant player not active – 1 point

Digital Finance Services Assessment

Current levels of mobile adoption

3. *How many people have access to mobile devices in geographical areas relevant to your work? Note that people can often use phones in their family or community, even if they do not own one.*
   a. 85-100% – 4 points
   b. 60-84% – 3 points
   c. 40-59% – 2 points
   d. 0-39% – 1 point

4. *How many people individually own a mobile phone in your area? This becomes increasingly important for financial services, since privacy becomes relatively more critical than with other mobile services.*
   a. 85-100% – 4 points
   b. 60-84% – 3 points
   c. 40-59% – 2 points
   d. 0-39% – 1 point

5. *What types of phones are most prevalent?*
   a. Smartphones – access to the Internet and to a diverse range of mobile applications – 4 points
   b. Feature phones – limited access to the Internet – 2 points
   c. Basic phones, talk/SMS only – 1 point

Role of Government and Regulation in Digital Finance

6. *Does government regulation permit digital finance and e-money issuance?*
   YES (1 point) or NO (0 points)

7. *Does the government support multiple actors and partnerships? In other words, are MNOs, banks, and independent companies all allowed to participate in the expansion of digital finance?*
   Yes (2 points) or NO (0 points)

8. *Does the government use digital payments for any of its needs (e.g., pensions, salaries, per-diems, welfare payments, conditional cash transfers, disbursements)*
   YES (3 points) or NO (0 points)

9. *Is the government a member of the Better than Cash Alliance (BTCA)? *Government usage of digital payments and/or membership in the Better than Cash Alliance are strong signs of support for sound, secure digital finance expansion.* YES (2 points) or NO (0 points)

TOTAL POINTS

WHERE TO LOOK

CGAP – You can easily search by country to see what has been written about your country of interest. The BTCA website has a list of all members.

FHI 360 and OpenRevolution, with funding and support from USAID's Regional Development Mission for Asia through the mSTAR project, launched "Integrating Mobiles into Development (M4D) Projects" handbook to address the over-excited, under-planned side of M4D deployment for USAID staff.

Digital Finance Feasibility

DFS Availability

10. What types of providers offer digital finance products? (Circle all that apply)

a. Mobile network operators (1 point)
b. Banks (1 point)
c. Microfinance institutions (1 point)
d. Third parties or other (1 point)

11. What types of digital finance products exist? (Circle all that apply)

a. Mobile money (1 point)
b. Card-based products (1 point)
c. Internet based (1 point)
d. e-vouchers (1 point)

DFS Adoption

12. How active users of DFS services, either mobile or card-based?

a. <1% of adult population (1 point)
b. 1-5% of adult population (2 points)
c. 5-35% of adult population (3 points)
d. >35% of adult population (4 points)

13. What are these products used for? (1 point each)

a. Air-time top up
b. Person-to-person payments/domestic remittances
c. Utility payments
d. Bulk payments (NGOs, companies, and/or government agencies are using DFS to send salaries or other cash transfers)
e. International remittances
f. Merchant payments (people can readily use DFS at stores to purchase goods)

14. Can a randomly selected target beneficiary demonstrates how to transfer money via their mobile wallet? YES (4 points) or NO (0 points)

TOTAL POINTS

WHERE TO LOOK

GSMA Blog & State of the Industry Reports
CGAP Blog
Ask around! What are your local colleagues, implementing partners, and beneficiaries saying? What are the local advertisements showing in terms of different ways that DFS products can be used?

WHERE TO LOOK

Currently, the best resource for MNO presence is GSMA Intelligence. US Gov email addresses can get an account for free.

Assessing DFS: Categorization

Add up the points next to each of your answers. The total will fall in the range of one of the four categories below. This will help determine the most appropriate intervention types in the next section.

TOTAL POINTS

What type of DFS ecosystem are you in?

Inception – 10 points or less

Mobile infrastructure
- Large, decentralized airtime distribution networks

Mobile adoption
- High levels of access to a mobile phone (not necessarily ownership)

DFS regulation
- Lack of regulatory/policy framework

DFS availability
- Fragmented payment system
- Interested but uncertain MNOs and banks

DFS adoption
- < 1% of adult population using DFS
- Transactions mainly P2P and airtime

Start-up – 10–20 points

Mobile infrastructure
- Competitive mobile voice and expanding mobile data services

Mobile adoption
- Medium levels of individual *ownership* of mobile phones

DFS regulation
- Basic guidelines, permitting agent banking and e-money

DFS availability
- MNOs and/or banks launch services
- Providers developing, managing own networks

DFS adoption
- Transactions are mainly airtime and P2P as well as bill pay
- High customer awareness, but low use
- 1-5% of adult population using DFS

Expansion – 20–35 points

Mobile infrastructure
- Mostly reliable electronic infrastructure, low down times

Mobile adoption
- High levels of individual ownership of mobile phones

DFS regulation
- Clear guidelines that allow for a diverse set of providers and consumer protection

DFS availability
- Several players of different types competing in DFS, and a few at break-even
- Widespread agent networks with decent liquidity, starting to reach rural areas

DFS adoption
- Transactions include bill pay, government-to-person, international transfers
- High customer competency, increasing usage
- 5-35% of adult population using DFS

Consolidation – 35–52 points

Mobile infrastructure
- Very reliable electronic infrastructure, multiple technologies

Mobile adoption
- High feature phone adoption; smartphone adoption increasing

DFS availability
- Mobile and card-based systems both available
- Growth in consortiums and third parties among providers
- Interoperability between electronic payment systems
- Fully developed agent networks

DFS regulation
- Well regulated market with consumer protection, move toward standardization of fees

DFS adoption
- New businesses services relying on DFS arise
- Transactions include merchant payments
- >35% of population using DFS

Note: This is a rapid assessment. If you are interested in doing a more complete assessment, check out the NetHope E-Payments Market Assessment Tool.

Adapted from categories originally published by UNCDF

Assessing DFS: Categorization

Identify DFS products related to your Finance Problem! Examples are listed below to get you started. Fill in the worksheet with your answer.

WHAT ARE YOUR FINANCING CHALLENGES? *Examples:*	RELEVANT DFS PRODUCTS
Lack of accessible savings products for farmers	Savings/credit products
Lack of accessible, affordable credit products	Commitment savings accounts linked to digital wallet
Lack of credit history of farmers	Digitally enabled microfinance
Financing gap hindering access to storage	Digitally enabled microfinance
Insecurity around cash	Digital wallet, Merchant payments available at input dealers
Savings groups available but without enough liquidity to meet financing needs	Savings groups linked to a micro-deposit taking institutions
High travel costs for payments to suppliers	Person-to-person payments
Lack of incentives to purchase better inputs	Merchant payments available at input dealers, E-vouchers for incentivizing input purchases
Need for weather-based insurance	Digitally enabled index insurance

By definition, *inception* markets will have the fewest products available, and *consolidation markets* will have the most products available. Use this illustrative list to think about which DFS products can help address your challenges, and the market assessment you just completed to understand whether these products are likely available in your market.

Note that the illustrative list starts with the most basic products available in nearly every DFS market, and moves toward those products only available in more advanced markets.

RELEVANT DFS PRODUCTS *examples*

Digital wallet (encouraging active use through education)
E-vouchers for incentivizing input purchases
Bulk payments
Digitally enabled microfinance
Savings/credit products (i.e., mPawa in Tanzania)
Digitally enabled index insurance
Person-to-person payments
Bill pay
Savings groups linked to a micro-deposit taking institutions
Commitment savings accounts linked to digital wallet
Merchant payments available at input dealers

Think about the obstacles to use of existing financial services you listed in Task 8. How can the relevant DFS solutions help overcome these hindrances?

Putting it All Together

Only carry forward those challenges that have a financing need that's not met. Not everything has a DFS solution. By this point in the exercise you should have a better idea of which challenges do, and you should focus on those as you move onto the next section on interventions.

TABLE 2: Assessing the Value Chain Worksheet Template

FEED THE FUTURE RESULT	VALUE CHAIN GAP(S)	FINANCE NEED	APPLICABLE DFS-ENABLED SOLUTION	DFS SOLUTION DESCRIPTION	DFS SOLUTION AVAILABLE IN YOUR MARKET?	POTENTIAL FSP PARTNERS TO ENGAGE
Increased access to market	Poor use of storage	SHF unable to pay for on-site storage equipment – access to affordable credit needed	Yes	Inventory-based credit	Yes	Microfinance institution

Based on your market assessment + product selection, determine whether this DFS solution is likely already available or not, in your market. If not—don't give up! There are lots of creative solutions in the next section, Intervention Types.

You already listed these in the Assessing Financial Services section, so copy them here. Remember, these can be formal or informal, and could be the DFS provider directly, depending on your product.

III

Intervention Types

By now, you have identified specific challenges in your value chain that can be addressed by DFS, gained an understanding of which DFS solutions are relevant, and assessed whether or not the relevant solution is available based on the maturity of the market in which you are working. Next, it is time to decide on an **intervention**. Although there are variations, interventions will likely fall into one of the listed interventions below, each relevant in different contexts.

INTERVENTION TYPE 1: ***Utilizing Digital Finance along the Value Chain*** explores pathways through which Feed the Future implementing partners can support smallholders farmers to connect to a basic transaction account, thereby exposing beneficiaries to a wide variety of financial services, including: microsavings, affordable credit, credit histories, payments between producers and suppliers and index insurance.

INTERVENTION TYPE 2: ***Organizing Implementing Partners around DFS Solutions*** describes actionable insights towards catalyzing aggregate demand for digital financial services among key Feed the Future implementing partners and private sector providers. These steps emphasize that collaboration can yield opportunities to learn from one another, convene on a country or regional basis, and unite toward cost savings.

INTERVENTION TYPE 3: ***Implementing ICT-enabled Services Before/Simultaneously with DFS in the Value Chain*** emphasizes the role of technology-driven non-financial services in fostering an enabling environment for the uptake or greater expansion of digital financial services. Examples include e-Voucher programs that can be used to deliver input subsidies and agriculture information systems.

INTERVENTION TYPE 4: ***Working with Mission Colleagues to Impact Key Constraints in the DFS Ecosystem*** examines the role and opportunities for USAID to encourage national-level or provider-specific policy adoption to provide a framework for future digital financial service implementation. These include: encouraging the adoption of sound DFS regulations, fostering interoperability, and ensuring consumer protection.

These intervention types are not mutually exclusive, and many complement each other. In fact, intervention types 2–4 are all ways to support intervention type 1, *Utilizing Digital Finance along the Value Chain*.

For each intervention type, we have provided a brief description, examples, and a list of potential next steps to consider. In the next section, there is a detailed case study for each intervention type.

Most of these steps can be used to support existing programs and can be completed without additional funding or a new procurement, using only Mission resources, TDY support from BFS or Lab colleagues from Washington, DC, and/or consultations with implementing partners. The designing of new procurements is an ideal time to consider many of these steps, and to consider integrating the language described in Section V that requires contracting officers and agreement officers to make e-payments the default payments mechanism for implementing partners, in adherence to the 2014 Procurement Executive's Bulletin.

INTERVENTION TYPE 1:
Utilizing Digital Finance along the Value Chain

Most relevant when:

- Challenges in the value chain can be addressed by DFS.
- DFS ecosystem is in *start-up* or *expansion* phase (see case studies for examples in a wide range of markets) and the DFS solution is already available.

Description:

- Digital finance can be used in a variety of ways to address challenges in the value chain.
- Integrating digital finance into the value chain connects farmers to a basic transaction account, which improves household resiliency and the ability to manage nutrition during financial shocks.
- Digital payments and financial services offer a wide variety of solutions to relevant challenges, including: microsavings, affordable credit, credit histories, payments between producers and suppliers, digitally enabled index insurance and others mentioned elsewhere in this Guide.

Example: Feed the Future implementing partners can help buyers transition payments to mobile money, and can also help nucleus farmers to become mobile money agents in order to increase the flexibility of farmers to manage their own liquidity and to cash out from their mobile wallets when necessary. This instant payment can strengthen the relationship between the buyer and the farmer, and is especially useful when payments do not take place in the same location (or at the same time) as the exchange of goods.

Example: Farmers are having trouble keeping money received during harvest on hand until inputs are ready for purchase. Feed the Future implementing partners can help educate farmers on using a mobile wallet for savings by depositing money via a local agent. If available, programs can link farmers to mobile savings products such as mPawa in Tanzania.

Potential Next Steps:

- ❑ Connect with implementing partners and other donors to find out what they are already doing with DFS. Encourage them to ask their staff and beneficiaries how they are using digital payments already, if at all.
- ❑ Consider integrating DFS into existing trainings to help farmers increase their comfort level with electronic payments.
- ❑ Start to send per diems and other payments via DFS to field staff, both to lower the cost of sending cash to the field, and to get field staff increasingly comfortable with using DFS products.
- ❑ Allow IPs to spend resources to engage/train both farmers and agents. Agents are ultimately the responsibility of the DFS provider; however, many IPs have found additional training support necessary to encourage rural agents to work with farmers.
- ❑ Where the agent network is a key constraint (due to lack of agents or low liquidity), consider supporting actors within the value chain (such as farmers groups and cooperatives) to become agents themselves.
- ❑ Assess SHF willingness to pay for services. Is the DFS service clearly demonstrating value to farmer, or is the value more to the agribusiness or program? Whichever actor is receiving the most value from the digital service is likely the one that will be most willing to pay. This is a key step to consider in order to ensure that the integration of DFS remains after the donor funding is over.
- ❑ Encourage financial services providers (identified in the previous section) to adopt new digital channels to reach your target population.
- ❑ Consider a wide variety of agri-finance products, based on your analysis, for example: facilitation of saving for/purchasing quality inputs, secure transportation of cash when transporting goods to market, e-warehousing schemes, etc. As you start to work with farmers on one product or service, it will become much easier to bundle in other services in order to increase overall impact and farmer capability.
- ❑ Try to gain an understanding of how female-headed smallholder households have different access to financial services due to differences in access resulting from gender. Depending on your context, you can reference the CGAP Smallholder Financial Diaries and/or use this resource to help design your own assessment.

INTERVENTION TYPE 2:
Organize Implementing Partners Around DFS Solutions

Most relevant when:

Challenges in the value chain can be addressed by digital financial services, DFS ecosystem is in *start-up* or *expansion* phase, and relevant DFS products are available in the country but may not be available in your region, or are already adapted to the needs of farmers.

Description:

- DFS is a cross-cutting issue that can facilitate conversations across Feed the Future partners, as well as with partners working on sectors including health, humanitarian response, and energy.
- Implementing partners can come together to aggregate demand—often, small projects have trouble getting the attention of private sector DFS providers; however, by coming together and finding areas of mutual interest, partners can approach DFS providers with much larger demand.
- If there are insufficient partners ready to aggregate demand, one implementing partner can potentially negotiate lower fees from service providers with support from the Mission or another implementing partner
- Partners can learn from other implementers who have already piloted DFS in their programs.

Example: In Ghana, some IPs have already successfully piloted DFS for savings groups, while others are just starting to explore the same idea and are unsure of the way forward. Those IPs that have expertise in the subject can share that knowledge with the other IPs interested in the subject.

Example: In Bangladesh, the USAID-funded mSTAR project was able to negotiate prices and fees with DFS providers based on the demand of four implementing partners (see case study in Section IV for more detail.)

Potential Next Steps:

- ❑ Ask Mission and IP colleagues to see which other sectors are using or testing how to advance their objectives with DFS.
- ❑ Connect IPs with overlapping programmatic goals and activities to share lessons learned and/or encourage subcontracts to those partners that have already implemented DFS successfully to do so in other programs.
- ❑ Consider organizing a Digital Development training in your country, or holding your own workshop to bring IPs together to discuss opportunities and challenges with the use of DFS in general.
- ❑ In conversations, if you find that IPs are all reporting similar issues, such as high fees, encourage them to approach DFS providers together to negotiate, or to approach a third party technology provider who may provide better technology and more responsive service. In addition, consider encouraging the private enterprise office or any unit involved in economic development to find other connections to regulators or industry associations that IPs can engage with, together.
- ❑ Identify market facilitators already in place such as the Financial Sector Deepening (FSD) projections in many sub-Saharan African countries. These programs may be great partners for helping with efforts to bring about market changes.

INTERVENTION TYPE 3:
Implementing ICT-Enabled Services Before/Simultaneously with DFS in the Value Chain

Most relevant when:

- Challenges in the value chain can be addressed or need to be addressed by a broader set of digital tools, including e-vouchers and information services.
- DFS ecosystem is in *inception*, *start-up*, *expansion*, or *consolidation* phase. This approach can be valuable when DFS services are available and can be integrated with other digital services, and can also be valuable when DFS are not yet fully available.

Description:

There are many ICT-enabled services that are not financial services, which can nevertheless help address challenges in the value chain. When these services are available and being used, they help to increase implementing partner and beneficiary comfort with technology and provide platforms for implementing DFS. This approach is relevant in nascent DFS markets where mobile services are available and useful. It is also relevant in mature DFS markets where offering multiple ICT tools can help to comprehensively address a broad set of value chain challenges.

Example: E-voucher platforms can be used to deliver input subsidies to farmers. Farmers often pay for a portion of the input cost to encourage the transition towards a commercial input market. E-vouchers do not require agents to have cash on hand (since they are redeemed for inputs, rather than cash) and, therefore, work in places where agent liquidity is a problem. At the same time, they help to move farmers toward the use of DFS, since they bring input dealers onto an electronic payment platform, and get them used to the idea of electronic payments.

Example: Econet Wireless in Zimbabwe developed Ecofarmer, a digital ecosystem offering agricultural information and financial services for smallholder farmers. Ecofarmer bundles crop insurance with free daily SMS weather information, farming tips, and market advisory information. Econet believes that adding information services will help familiarize smallholders with mobile financial services and will therefore increase adoption of savings, credit, and insurance offered through Econet's platform. (Source: CGAP "Serving Smallholder Farmers")

Potential Next Steps:

- ❑ Depending on the value chain challenges identified, other ICT tools such as agriculture extension services may be more relevant at this time. Review the Digital Development Principles as a place to start understanding the broader picture around using ICT in development programming. Also, check out Vodaphone's Connected Farmer work to get more ideas as to how mobile phones can support farmer livelihoods.
- ❑ Encourage IPs in the planning phase to take an integrated approach to digital development, and to consider DFS and other ICT-enabled services together rather than separately. This can be as simple as encouraging the same organization or set of consultants to look comprehensively at ICT, rather than issuing separate, siloed scopes of work.
- ❑ If there are already ICT-enabled agriculture extension services in place, and the DFS market is in an *expansion* or *consolidation* phases, consider integrating DFS wherever payments are made (for example, for payments to extension workers).
- ❑ If the DFS market is *inception* or *start-up* phases, and agent liquidity is insufficient, consider using e-vouchers which are redeemable for goods rather than cash. E-vouchers have also been used to help farmers with short-term savings for inputs (see Zoona case study here for more information).
- ❑ The U.S. Global Development Lab has worked with the GSMA to develop a digital gender gap survey that has been implemented in several countries. The survey is publicly available on the GSMA Connected Women website, and the Lab can provide support in implementing this survey to assess gaps in access before planning an intervention.

INTERVENTION TYPE 4:
Working with Mission Colleagues to Impact Key Constraints in the DFS Ecosystem

Most relevant when:

- Challenges in the value chain can be addressed by digital financial services.
- DFS ecosystem is in *inception* or *start-up* phase and relevant DFS products are not yet available.

Description:

When Feed the Future sees an opportunity to address value chain challenges with DFS, but the DFS ecosystem is not strong enough to do so, USAID has many tools to support the development of the overall ecosystem and/or to work toward very specific regulatory or market changes. USAID has had great success in countries such as India, Bangladesh, Haiti, and others in engaging with regulators and other stakeholders to address common issues, including: encouraging the adoption of sound regulations and guidelines, fostering interoperability, encouraging policies that allow for strong agent networks, and ensuring adequate consumer protection. Often in partnership with CGAP, the World Bank, IFC, and other donors, USAID is able to help to help ensure that the market is shaped for more rapid, pro-poor growth.

Example: In Haiti, the Haiti Mobile Money Initiative (HMMI) helped to incentivize the private sector to launch DFS for the first time. The program, funded by USAID and the Bill and Melinda Gates Foundation, was designed after the 2010 earthquake. During the response to the disaster, the donors saw clearly the benefits of DFS to deliver assistance quickly and effectively, and through HMMI, they were able to spur the launch of two new DFS services in the country where none previously existed.

Example: In Bangladesh, when the USAID-funded mSTAR project published the transactions prices of all DFS providers, the comparison stimulated higher priced providers to make changes to their pricing structure to make it more attractive relative to their competitors.

Potential Next Steps:

- ❑ Research CGAP, GSMA, and Alliance for Financial Inclusion (AFI) websites to see whether there are policy issues being discussed in your country.
- ❑ Engage with the Lab/DFS team, other colleagues in the Mission, and other donors to see what is already happening and where there are mutual areas of interest. Assess whether there are existing projects or initiatives in which you can engage. Remember that key constraints are cross-cutting and may be relevant to colleagues in other sectors as well.
- ❑ Check whether your country is a member of the Better than Cash Alliance. If not, consider encouraging the government to join in order to specify their commitment to digital payments and to get additional technical support.
- ❑ Consider issuing a Broad Agency Announcement (BAA) with the support of the Lab in order to call for new policy, program, or private sector ideas. The BAA is a great way to find new partners and to co-create relevant programs to address key constraints in the market.

IV

Case Studies

INTERVENTION TYPE I:

Utilizing Digital Finance along the Value Chain

As described in the previous sections, digital payments can be used at various points in the value chain to address the challenges experienced by smallholder farmers. The following examples from Haiti, Ghana, and Uganda illustrate how USAID implementing partners (IPs) have leveraged digital financial services (DFS) and show how the varying levels of maturity in the markets had an impact on their approach.

HAITI - NASCENT DFS MARKET

I. Background and Overview of Intervention: The Haiti Hope Project (the Project) was a five-year public-private partnership launched in 2010 among businesses, multilateral development institutions, the U.S. Government and non-profits designed to create sustainable economic opportunities for 25,000 Haitian mango farmers and their families and contribute to the long term development and revitalization of the agricultural sector. As part of efforts to organize and support growers and improve market linkages between producers and exporters, the Project worked with a mango exporter (Perry Export) to use Digicel's TchoTcho Mobile (TTM) (now rebranded *Mon Cash*) to pay the producers.

II. Assessment of Value Chain Challenges: While some value chains in Haiti are more integrated and better organized (e.g. rice) than others (e.g. plantains), most have at least some medium to large-size enterprises that need to process seasonal cash payments either directly to producers or to intermediaries. The mango value chain in Haiti is unique, even among export-oriented commodities, given the number and influence of local and regional traders/transporters. At the lowest level of the value chain, efforts by development organizations over the last several years have increased the number and operating capacity of producer associations in an effort to improve price negotiations with collectors and strengthen linkages with actors further up the value chain. Following a popular development model, the goal was to increase and diversify producer access to markets and eliminate unnecessary intermediaries, thereby securing more advantageous sales terms. These groups also made possible value-added certifications such as organic and fair trade, which in turn gave exporters of certified mangos access to higher-value niche markets.

The mango exporters purchasing from farmer groups faced a critical challenge to expand certified mango sales. In one important way, regional traders paying lower prices had an advantage over farmer groups selling directly to exporters – they paid cash-and-carry or even in advance, while farmer groups lacked the capital to do so. For cash-strapped farmers, mango sales provided critical bridge income in between the main harvests, and so they highly valued speedy payment. Attempts by earlier projects to establish operating funds for farmer groups failed as the funds were quickly depleted through mismanagement, in some cases actually resulting in lower receipts by the farmer groups and reduced quality. Meanwhile, exporters typically paid by check, requiring group leaders to stay overnight in Port-au-Prince waiting for their check, and requiring up to a full day in a regional city bank branch to convert to cash before they could return home. This created security risks as well, travelling in remote areas with a large amount of cash expected by the community. Finally, at the end of each season the exporter needed to make a second payment for fair trade and organic premiums to thousands of farmers distributed around the country, incurring significant travel costs and again, security risk as the program grew.

III. Design of Intervention: The mango value chain presents an interesting opportunity to streamline agricultural payments, which helps with income smoothening. With the exception of the transaction relationship between exporters and national traders, cash is the dominant payment method among other actors along the mango value chain. If one considers just the cash payments made to the lowest level of the value chain (producers), there is a considerable volume of producer payments made each season worth, depending on production and quality, around USD $2 million.

Although a DFS provider could likely only capture a percentage of that value, these payments are relatively reliable, predictable, and recurring. Furthermore, if multiple value chains exist within a specific geographic area and could be converted over to digital payments, this collective transaction stream would present an important revenue component of a more comprehensive strategy to expand DFS ecosystems into rural areas in a commercially viable way. Another component of such a rural expansion strategy could include the acquisition of merchants, retailers, and other service providers (e.g. schools) that constitute the primary transaction relationships for mango producers.

Many agriculture sector organizations have been piloting the use of DFS products in Haiti for a variety of payment and other transaction needs since 2010. For these organizations, the primary incentive is to mitigate the risks and costs associated with handling, distributing and managing cash. While bulk payments and disbursements remain in high demand, especially when recipients are located in more remote rural areas, some organizations have begun experimenting with the integration of DFS products for other purposes. The Project assessed two existing DFS services to facilitate mango payments, the then-named TchoTcho Mobile, and Haiti Pay. In early 2014, Haiti Pay lacked a rural agent network while TchoTcho boasted hundreds of rural agents, and so the project elected to partner with the latter. A series of planning meetings were held between the DFS provider Digicel, their banking partner Scotiabank whom by law the DFS agents represent, and Perry Export. These meetings facilitated Perry's access to the system to make large, frequent transactions, and transfer funds between their bank accounts and the DFS system.

In order to test and scale the DFS system in rural areas, the Project executed the pilot in three stages: an internal pilot using DFS to pay project field staff, an external pilot pay farmers the less time-sensitive post-season premium payments, and finally real-time payments for mango deliveries.

IV. Addressing Constraints and Challenges: A number of constraints and challenges were identified during implementation of this pilot, in particular the first phase. These included unexpected costs to ensure service availability and performance, infrequent communication between the provider's management and its rural agent locations, and customer service levels that were not what many growers were hoping for given the more personal and financial nature of

a cash-out transaction versus purchasing airtime; they also reported a lack of privacy and discretion at multiple agent locations.

Staff reported that, even when liquidity was available, agents would not cash out as much as they requested, setting their own arbitrary limits to cash-outs. As is the case in many nascent DFS markets, most of the agents listed as potential cash out points were in fact not active and/or were not sufficiently trained or supported to properly serve the farmers with cash-out services. The Project responded by selecting a small group of agents covering key mango farmer areas and with above-average liquidity for direct intervention and training. In collaboration with provider staff, the Project trained a select group of agents in three areas of operation: security, liquidity and quality customer service. Following this intervention, the Project proceeded to the second phase of farmer premium payments. In September and October of 2014 nearly two dozen agents were used to make fair trade premium payments directly to 600 farmer group leaders representing 2,091 farmers, totaling approximately $100,000. The project elected to pay group leaders who would then distribute cash to members rather than farmers directly because with payments sometimes as little as 150 HTG ($~3.00 USD), even with DFS, the costs of travel time and expense to and from the nearest agent would have been prohibitive.

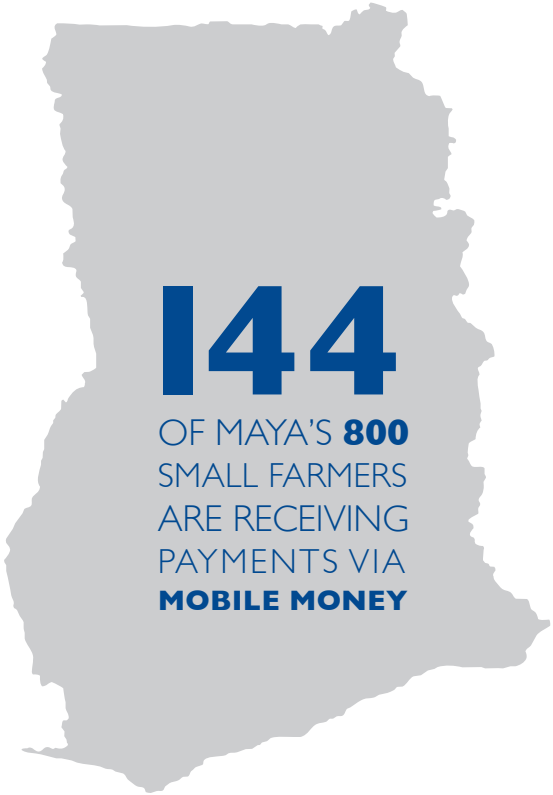
Another challenge was the fact that a cash-out fee is charged on all withdrawals which at the time were minimum 25 HTG per transaction. Since most of the recipient farmers tend to quickly withdraw the entire amount of their digital payment, that cost can be an inhibiting factor for the farmers, in particular for smaller transactions. In the case of the premium payments, the exporter paid the cash-out fee on their behalf since the Fair Trade laws that govern Perry's mango exports require that the farmers receive the full amount of payment for their products.

V. Results and Scaling Up: The effort was successful in that multiple rounds of payments were issued, the farmers were all able to get their cash in a timely manner, and both the exporter and the farmers were more satisfied with the payment method than with cash.

The exporter found digital payments to be substantially cheaper than distributing cash, which it is estimated would have taken up to 4 weeks due geographically remote areas and the several hours needed to convene a meeting in rural Haiti. The cost of incidentals, lodging, a vehicle, and minimum two staff used in prior years would have cost more than $3,600[7], versus less than $2,000[8] in fees paid by the exporter to the DFS provider. In reality, the rapid growth of the Fair Trade program would have rendered this distribution nearly impossible without DFS due to security concerns of travelling with such a large sum of cash.

Despite the start-up challenges cited by TNS, overall satisfaction levels were high enough among growers, cooperatives, and export enterprises that TNS decided to expand its pilot and proceed to the third phase of real-time payments for mango deliveries. At the beginning of the mango season, the exporter asked farmers if they would prefer to be paid through DFS or checks; the majority chose DFS. Over the course of the 2015 mango season, 1,503 farmers received payment via TchoTcho mobile for mango sales, representing over $260,000 in payments. The business case for DFS over alternative methods ensures this network will continue to grow, and may be replicated by other mango exporters buying from these farmers as well as other export-oriented value chains with similar business models.

7. Vehicle with driver $2200, incidentals $440, hotel $1080, staff salary $1500 for 1 month / 22 days.
8. 50htg/payee transfer fee plus 1% of value cash-out fee.



GHANA - EMERGING DFS MARKET

I. Background and Overview of Intervention: USAID/Ghana's Agricultural Development and Value Chain Enhancement (ADVANCE) II project implements a value chain approach to improve linkages between smallholder farmers and markets, finance, inputs, equipment, and information, working along with larger commercial farmers and traders. ADVANCE II has piloted and is currently scaling a program to 1) digitize payments to farmers, 2) support the growth of mobile money agent networks, and 3) encourage farmers to save. As of the date of this publication, ADVANCE II has scaled up digitizing payments to farmers and supporting agent network expansion with multiple MNOs, and will have established 197 Village Savings and Loans Associations (VSLAs) in 27 districts in north Ghana.

II. Assessment of Value Chain Challenges: As part of Ghana's holistic Feed the Future programming, the ADVANCE II project supports the scaling up of agricultural investments to improve the competitiveness of the maize, rice, and soybean value chains in Ghana. The project utilizes a facilitative value chain approach, where smallholder farmers are linked to markets, finance, inputs, equipment, and information through larger commercial farmers and buyers who have the capacity and incentive to invest in smallholder production. These linkages build the capacity of smallholder farmers to increase the efficiency of their farms with improved production and post-harvest handling practices. Two interrelated challenges in linking ADVANCE II-supported farmers to markets are limited access to financial services, especially savings platforms and the inability of agricultural buyers coming primarily from the south to trade and securely make payments to producers in northern Ghana. The project team began examining payments solutions that would increase transaction flows and also enhances savings, and landed on DFS.

III. Design of Intervention: Approximately 35 percent of Ghanaians have accounts at formal financial institutions—which drops to 2% for low-income populations, and an average of 13 percent have mobile money accounts according to *The Guardian's* financial exclusion map found here (based on World Bank Findex data.)

Based upon recent primary research conducted by CGAP, the use of DFS in Ghana is growing rapidly and has been doing so for the past three years. The number of transactions per month has skyrocketed from around 100,000 in 2011 to almost 9 million in 2014, with values also

tripling. Ghana's annualized value of DFS transactions was equal to approximately US $2 billion, roughly 5 percent of the overall 2014 GDP. Mobile money has been available in the Ghanaian market since 2009 and operated by four MNOs (Airtel, Tigo, MTN, and Vodafone). Currently mobile money is being used to disburse LEAP Funds, and pay school fees, electricity, and water payments. The mobile telecommunication companies have partnered with financial institutions, including Ecobank and Fidelity, to design practical, simple and affordable services that enable smallholder farmers to access financial services using mobile money or mobile banking.

ADVANCE II's DFS intervention includes three elements, details of which are provided below. These elements were developed as part of their approach to resolving critical blockages around sales, credit, and payments for beneficiaries at their main intervention entry point – nucleus farmers.

1. Digitizing payments to farmers: The project helped Muvo Farms integrate their back-end systems with MTN mobile money to enable digitized payments to their farmers and also provided strategies for encouraging farmers to participate. With ADVANCE II's support and training, 144 of Muvo's 800 smallholder farmers successfully received payments for their 2014 harvest via mobile money. The greatest benefit of digitization to Muvo farms was security, as managers no longer had to carry large sums of cash to make payments. And in this case, the farmers were willing to pay the 1% cash-out fee to save the fuel or other costs related to the need for travel to receive their cash payments.

2. Support the growth of mobile money agent networks: The availability and capacity of mobile money agents is a key element to the success of any DFS ecosystem. ADVANCE II conducted agent outreach, identified new potential agents who were nucleus farmers in the communities where the farmers would be cashing out, and supported MTN in providing training to them. For the Fidelity Smart Account, the preferred agent profile is a business that already has cash transactions (merchants, chemists, input dealers) and can pay the up-front cost of the required point-of-sale (previously PoS) device. The agent will also need to have a bank account nearby to make it easier to rebalance their physical and electronic cash, as well as ensure they can meet the needs of their customers. In this case, the projected business case for the agent was that their commissions on each transaction should cover the cost of the PoS within six months.

3. Encourage the farmers to save: In addition, an important development goal of the project is to promote savings among farmers as investment into production in order to reduce the burden of financial support from nucleus farmers amid high interest rates (53% on production loans). The first step is to receive payments digitally (and safely), and then to encourage farmers to not immediately cash-out all the funds. The project is looking to integrate and promote the use of savings through partners, such as Fidelity Bank's Smart Account for farmers and Village Savings and Loans Associations (VSLAs).

IV. Addressing Constraints and Challenges: Ghana has fundamental infrastructure, connectivity, and regulatory issues that affect the ability of DFS to scale, but ADVANCE II has been successful in leveraging the current operating environment to provide needed services to its beneficiaries. Some of the telecoms have stronger coverage and better network penetration and connectivity in certain areas than others; ADVANCE II works with MTN, Tigo, and in the future anticipates partnering with Vodafone. Operating in an emerging DFS market, ADVANCE II has focused on promoting and facilitating the use of any DFS platform that is convenient and easy to use in the regions of northern Ghana in which they work—these include Ezwich from GHIPPS and Smart Account (savings account linked to MTN mobile money) from Fidelity. ADVANCE II is currently in discussions with Vodafone, and they are partnering with Esoko in the north, trying to link data from farmers clubs into DFS initiatives. One challenge ADVANCE II will be addressing in the future in coordination with other gender integration efforts is that a high percentage of women in northern Ghana do not own their own mobile phones, so promoting DFS to them has taken time and requires a modified approach, hence the scaling up of VSLAs.

V. Results and Scaling Up: In addition to the tangible benefits of greater cost savings, security, and efficiency, ADVANCE II noted social benefits. Those women who have mobile phones and can avail themselves of DFS have noted that they can better manage household expenditures since no other family member or anyone within the village community knows how much they have received or saved. To maintain discretion, some farmers have traveled to other villages to withdraw money from their mobile wallets. This new-found privacy has high value. Though its DFS activities are just beginning to scale, mobile money is a strategic ADVANCE II effort. Thus far they have reached 65 nucleus farmers and 3,274 outgrowers, and the project will eventually scale its DFS activities to include to the 35,000 farmers connected to the 170 outgrower businesses the project works with in northern Ghana.

UGANDA - ADVANCED DFS MARKET

I. Background and Overview of Intervention: The Feed the Future Commodity Production and Marketing Activity (CPM) is working to achieve sustainable increases in smallholder production and marketing in their three priority product lines by increasing the availability and effectiveness of support services, strengthening buyer/seller relationships to facilitate the movement of products and information, and by increasing access to competitive markets. Operating in an advanced DFS market, CPM has been able to partner with a variety of private sector actors and has seen high levels of adoption of digital payments among target farmers.

II. Assessment of Value Chain Challenges: To address the need for sustainable linkages across the entire value chain, a key strategy of CPM is to scale up services through a value chain approach whereby private sector partners (exporters, buyers, processors) select top traders who have established rural trading networks of village agents (VAs). Each VA works with about 200 farmers to provide a range of services from input delivery to post-harvest handling. CPM is using mobile money throughout the value chain to help address key issues, including the need for farmers to have a safe place to save money to help smooth irregular income, and to access new buyers in order to increase opportunities to sell their product.

III. Design of Intervention: CPM is addressing these issues through multiple activities focusing on 1) training the farmers to receive payments using mobile money, 2) introducing mobile money to specific farmer groups along the value chain, and 3) mentoring new private sector players in the digital space to provide services to the farmers. Given the relatively high usage of mobile money in Uganda, CPM saw the opportunity to integrate mobile payments throughout their program in a variety of ways, especially considering the lack of other financial service options in rural areas. Formal bank usage in Uganda, including deposit-taking microfinance institutions (DMFIs), is not widespread and appeals mostly to men, higher income individuals and urbanites. Although 38 percent of adult Ugandans are considered "financially included," this is driven primarily by mobile money services. Among adults, 33% have active mobile money accounts while only 13% have accounts in commercial banks. The following are two examples of how CPM is integrating mobile money into their value chain work.

ZAABTA, a CPM implementing partner, is a farmer group and SACCO that serves as a "one-stop shop" for its farmer members with buying, processing, and marketing services. Under CPM they are working with eight village agents in the maize and bean value chains to provide production

and marketing services to farmers. Farmers receive their payments through mobile money and can either keep it in their mobile wallets or transfer the funds to their SACCO accounts at no charge. ZAABTA is looking to Ensibuuko (a private sector software provider) to provide mobile banking tools that can connect farmers to their SACCO accounts, allowing them to request, receive, and repay loans, as well as receive account-related SMS notifications. ZAABTA is also a mobile money agent itself thus creating further savings for their farmer members when making payments to them.

In addition, CPM has partnered with Akorion, a software provider that helps farmers create a digital profile that helps to gain access to credit and insurance products. They collect data from farmers on their crops, number of hectares, yields, income, and costs for at least one season, as well as geotagging the exact location of the farm. In a current pilot under CPM, the Uganda Development Bank (UDB) pays Akorion for the information and provides credit on that basis. After the credit is established, Mobi-Pay (another private sector group mentored by CPM) facilitates the transfer of loan payments to the bank.

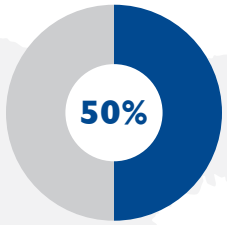
IV. Addressing Implementation Challenges: The key constraints are the relatively high transaction fees in Uganda, which also incur a relatively high government tax that is passed onto consumers. Agent liquidity issues can occasionally be a challenge for farmers, but those concerns are mitigated as they become more comfortable with leaving funds stored in their mobile wallets.

Despite the relatively high fees, all of the farmers interviewed during a field assessment in early 2015 preferred digital payments to cash and recognized the benefits. In the areas where CPM operates, mobile money agents were available within a few kilometers and there were few complaints about the services provided. If problems arise, CPM will train the relevant village agent to help the farmers deal with the issue.

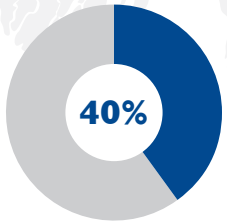
V. Results and Scaling Up: As of January 2016, CPM, in partnership with Akorian, has trained 400 village agents to support the use of mobile money within agricultural activities. In addition, CPM is piloting new partnerships in order to address challenges, such as a partnership with Smart Money, a mobile money start-up that charges fees to agribusiness and provides transactions to farmers free of cost. Due to the success and widespread use of mobile money in CPM projects, they are now looking to more advanced digital services, such as digitally enabled crop insurance, integration with digital information services such as Nokia Farming, and providing continued support to local start-ups, such as Akorian, to ensure that all digital interventions will be provided in the long term through the private sector.

INTERVENTION TYPE 2:

Organizing Implementing Partners around DFS Solutions



Reduction of the rates for organizations to send bulk payments by up to 50%



Reduction of the rates for fees for recipients to collect payments by up to 40%

AGGREGATING DEMAND IN A RAPIDLY EVOLVING DFS MARKET IN BANGLADESH

I. Background and Overview of Intervention: In Bangladesh, an expansion DFS market, IPs were encountering challenges with the use of DFS, including a perception of high prices and inadequate service offerings. In response, the USAID-funded mSTAR/Bangladesh project is working directly with several of the leading mobile financial service providers, including the two market leaders, bKash and DBBL, to negotiate lower rates and improved services by representing the aggregate demand of USAID implementing partners (covering both Feed the Future and health programming).

II. Assessment of Value Chain Challenges: Since the mSTAR/Bangladesh was designed to support all USAID IPs to incorporate DFS into their operations, it did not initially conduct any value chain assessments. For FY16, the project has expanded its scope to focus more specifically on how DFS can be introduced into agricultural value chains, in addition to its use for project operations. To date, mSTAR/Bangladesh has conducted assessments of value chain challenges on a case-by-case basis based on demand from USAID IPs. In mid-2016, the project plans to conduct a larger scale assessment on opportunities and challenges to DFS in agriculture value chains in Bangladesh. It is hoped that the resulting findings will enable more effective intervention design at a portfolio level, instead of on a project-by-project basis.

III. Design of Intervention: mSTAR/Bangladesh conducted an assessment on the state of mobile financial services in Bangladesh, which built off of the research already done by others, including InterMedia and CGAP. These findings were compiled into a report entitled Mobile Financial Services in Bangladesh: A Survey of Current Services, Regulations, and Usage in Select USAID Projects, which has served as a guide for future intervention designs.

In addition, mSTAR/Bangladesh works with USAID IPs to assess the feasibility of using digital financial services on a project-by-project basis. These individualized assessments feed into the intervention design that mSTAR/Bangladesh recommends for each IP.

IV. Addressing Implementation Challenges: As part of its scope, mSTAR/Bangladesh has been providing on-demand technical assistance and trainings to USAID IPs to help them to address implementation challenges that they face. Given the relationships that mSTAR/Bangladesh has established with most of the DFS providers, the team also helps IPs informally by connecting them with the right people at the provider to address challenges and helping to facilitate discussions.

V. Results and Scaling Up: mSTAR/Bangladesh's interventions have resulted in one provider completely eliminating its bulk payment disbursement fees for USAID IPs for the next year (down from the standard charge of 0.50%) and another reducing the fees for recipients to collect payments by up to 40%, in addition to offering free person-to-person transfers based partly on advice from mSTAR/Bangladesh to spur usage in rural communities.

mSTAR/Bangladesh has also been able to advocate on behalf of implementing partners for service improvements by DFS providers. To date, this has included improvements to reports of payments sent by IPs to recipients. Previously some IPs reported receiving those reports on an irregular basis; now, they are received on a regular, monthly schedule. In addition, mSTAR/Bangladesh has promoted new service offerings that better serve the needs of USAID IPs and their beneficiaries; as of September 2015, two DFS providers are planning to test new products with USAID IPs based on these recommendations.

Partly due to the support provided by mSTAR/Bangladesh, the number of USAID IPs that have used DFS increased from just three in June 2014 to nine by November 2015. Since transitioning to mobile payments, some of those IPs are already experiencing positive results. For instance, WorldFish realized BDT 1,455,565 (~ US $19,150) in annual savings as a result of their shift to mobile payments and reduced the administrative burden on technical staff by 600 days annually. Meanwhile, Dnet saved the equivalent of roughly 20 full-time staff per year in reduced administrative tasks while realizing a financial benefit of BDT 4.75 million (~ US $60,900).

INTERVENTION TYPE 3:

Implementing ICT-enabled Services Before/ Simultaneously with DFS in the Value Chain

THE USE OF E-VOUCHERS FOR AGRICULTURAL SUBSIDIES IN NIGERIA

I. Background and Overview of Intervention: The Government of Nigeria (GoN) facilitated a fertilizer supply program to serve smallholder famers, alleviate poverty, and spur agricultural growth for nearly 20 years. The distribution of government subsidized fertilizer was well-intended but consistently corrupted as inputs procured to be directly delivered by the government to those most in need were frequently diverted to large-scale farmers or others that profited from the resale, resulting in delivery of the product to less than 10–15% of targeted beneficiaries. The government terminated the program in 1997 but farmers had become dependent on this subsidy and after its removal fertilizer sales decreased by 95%.[1] The private sector could not fully sustain the market and in 1999 the GoN reintroduced a subsidy but at a lower rate of 25%.

II. Assessment of Value Chain Challenges: The agriculture value chain of Nigeria suffered due to the private sector's lack of support in the establishment of buy-in from key market actors. The effectiveness of the subsidy hinged on its re-targeting toward smallholder farmers who had been marginalized from a system originally intended to benefit them the most. The subsidy provided by the GoN, which had previously distorted the market, required recalibration from reliance on public goods to a market-led system.

III. Design of Intervention: To address these needs, in 2008 the International Fertilizer Development Center (IFDC) collaborated with the National Programme for Food Security of Nigeria to pilot a small-scale voucher system in two Nigerian states. This program helped subsidies reach their targeted beneficiaries while building the private sector's ability to provide this high-demand product. This successful pilot was scaled up in 2009 yet saw room for improvement.

1. Kiger, B., Adodo, K. "Getting Fertiliser into Farmers' Hands," http://www.inter-reseaux.org/IMG/pdf/p31-32_IFDC.pdf

The program pilot scaled up to national roll-out within several months and was able to reach **4.3 million smallholders** by 2013.

Based on this experience, the Federal Ministry of Agriculture and Rural Development enacted the Growth Enhancement Support (GES) scheme to launch a pilot in 2011 to transition the provision of vouchers for fertilizer subsidies to electronic wallets using mobile phones.

IV. Results and Scaling Up: Compared to the paper vouchers, the e-wallet system was able to better monitor and control distribution by assigning a database-linked GES personal identification number (PIN) to each farmer via mobile phone using technology by Cellulant Nigeria Limited. Farmers registered electronically to a core system and then receive an SMS message that supplies were ready to be retrieved.

The program pilot scaled up to national roll-out within several months and was able to reach 4.3 million smallholders by 2013. In the second phase, the National Agriculture Payment Initiative (NAPI) was developed, and is now distributing PIN-enabled national identity cards to farmers. These cards not only hold individual subsidy information, but also provide access to financial services such as loans and grants—demonstrating how an e-voucher program can help with the transition toward full digital financial inclusion.[2] E-vouchers and the subsequent integration of payment cards have ensured that more inputs reach their intended targets. Moreover, millions of smallholder farmers have gained increased exposure to ICT and financial tools that have benefited their livelihoods.

2. Senyo, I., "Kogi Govt Accredits over 145,000 Rural Farmers for NAPI Loans," World Stage. 21 June, 2015. http://www.worldstagegroup.com/worldstagenew/index.php?active=news&newscid=22955&catid=36.

ZIMBABWE - ECONET AND ECOFARMER

Econet developed the EcoFarmer suite of products, offering affordable crop insurance, farming tips, and market prices to over **260,000** smallholder users

Note: This case study was adapted from a CGAP publication, Designing Digital Financial Services for Smallholder Families: Lessons from Zimbabwe, Senegal, Rwanda, and Cambodia, by Max Mattern and Michael Tarazi.

I. Background and Overview of Intervention: Smallholder households are the engines that drive Zimbabwe's economy. But even in a country where 67% of the population reside in the rural areas and mainly depend on agriculture as a major source of their livelihoods, financial services providers have, to a large extent, failed to reach this important client segment. Recognizing the importance of serving smallholder families, Econet Wireless LTD is investing in financial products and services that overcome the numerous challenges that they face, including limited access to banking services, information, markets, and insurance. In addressing these challenges, Econet developed the EcoFarmer suite of products, offering affordable crop insurance, farming tips, and market prices to over 260,000 smallholder users. But even as EcoFarmer's agronomic advisory information services have grown in popularity, these users have been reluctant to adopt broader mobile financial services such as EcoCash$ave and EcoCashLoan. Faced with this mixed success, Econet has begun to grapple with how best to package and market their products in a way that enables smallholders to reap the most benefits from all that Econet has to offer. Recognizing the need for DFS that better respond to smallholder demand, CGAP, in collaboration with Mercy Corps and the design firm IDEO.org partnered in early 2015 with Econet to design a new generation of smallholder-specific digital financial products and services through a human-centered approach to product design.[3]

II. Assessment of Value Chain Challenges: With most approaches to financial services for smallholders focusing exclusively on financing agricultural activities, financial services providers often overlook the variety of other needs and aspirations, such as education. Conversations with smallholders in Zimbabwe (and other countries) revealed that agriculture often takes a back seat to aspirations like education, weddings, and home improvements. These competing household expenses, while not directly related to agriculture, can redirect resources away from important

3. Nyakanda, B, "Econet Embraces HCD to Develop Digital Ecosystem for Smallholders" CGAP Blog, March 16, 2015.

farm investments, or force families to sell valuable assets at a loss, with significant consequences for a household's income-shaping strategies. This is especially true of noncommercial smallholders or those only loosely connected to value chains, who may place lower priority on agricultural investments than the commercial smallholders with tight connections to value chains typically targeted by agricultural credit products.

III. Design of Intervention: Through the human-centered design approach, Econet worked to address these four challenges—limited access to banking services, information, markets, and insurance—with the theory that by addressing the major pain points of different players in the agricultural sector, Econet can build a digital ecosystem that lays the foundation for the introduction of a broad array of mobile-enabled financial services. Concepts developed through the research collaboration with CGAP include:

- Save 4 School: A mobile-enabled, goal-based savings account designed to help smallholder families plan ahead for their children's school fee payments.
- My Yearly Package: A smartphone/tablet app designed for use by agridealers that allows customers to input data about their farms and receive a tailored package of inputs bundled with financing (featuring remote credit approval, weather-indexed insurance, and customized mobile information services).
- "I am Ecofarmer": A marketing campaign designed to overcome smallholder mistrust of financial services by appealing to their pride as farmers.

IV. Addressing Implementation Challenges: Perhaps the biggest challenge when rolling out a new smallholder-focused financial product or service, digital or otherwise, is overcoming the mistrust that smallholder families harbor toward the formal financial system. Nowhere was this mistrust of formal financial services as pronounced as in Zimbabwe, where memories of the country's 2009 experience with hyperinflation and dollarization remain fresh. Almost overnight, Zimbabweans who had entrusted their money to banks saw their life savings wiped out, shaking the country's confidence in the formal financial system. With the banking system in disarray, some smallholders turned to alternative credit providers to finance farm inputs, only to find themselves the victims of scams: several smallholders recounted their experiences with an input provider that offered input on credit in return for a modest down payment, but then never delivered the inputs.

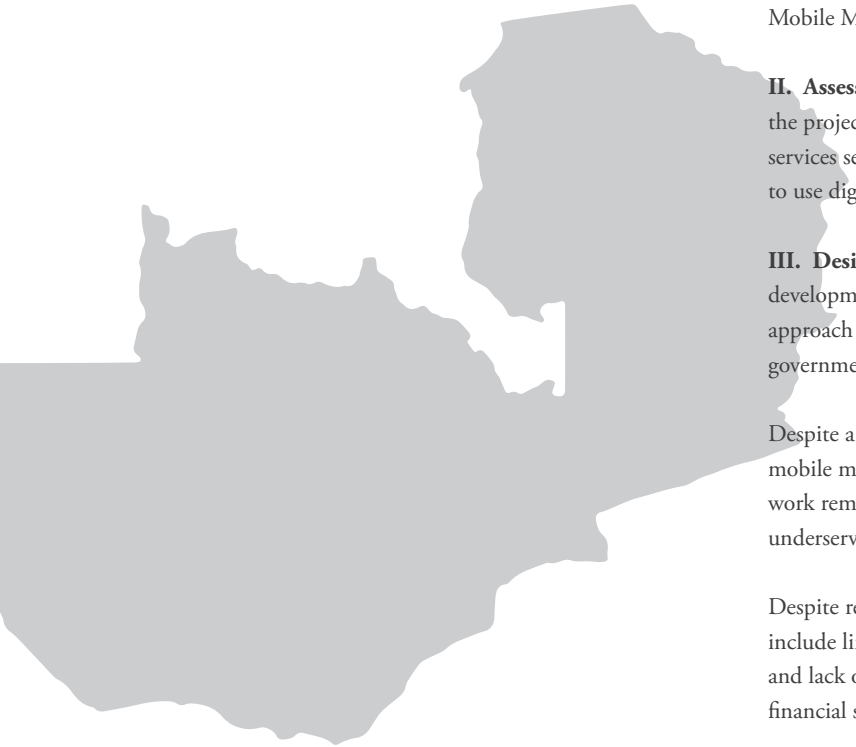
Designers in Zimbabwe recognized early on that Econet would need to reposition its brand if it wanted to win the trust of the country's smallholder families. As it turns out, their inspiration for the rebranding came from smallholders themselves, many of whom expressed strong pride in the role that farmers play in the country's success: "Farming is the foundation of the economy," offered one smallholder when asked about how she perceived her livelihood. The idea that smallholder families are proud of their work gave designers an idea: if Econet could tap into the pride that smallholders feel, perhaps it could also drive greater adoption of its EcoFarmer suite of digital services. In response, they proposed a marketing campaign, titled "I am EcoFarmer" that would feature real smallholders telling stories about their experiences and successes on posters, billboards, radio, television, and SMS messages.

V. Results and Scaling Up: Each of the three products maintains a clear business case for Econet, all of which come together to promote a strong digital ecosystem. Save 4 School helps to mobilize deposits, driving smallholder adoption and the use of EcoCash. My Yearly Package helps to collect data on agridealers, a large but unknown customer segment, expands the number of EcoCash users and merchants, and increases smallholder use of merchant payments. Finally, the "I am Ecofarmer" Campaign raises awareness of the EcoFarmer brand, increases the customer base, and builds knowledge of the smallholder market, including key drivers of smallholder engagement.

A key lesson here is also the need for a portfolio approach when developing financial services products. For example, designers envisioned that Save 4 School customers could expand their savings behavior to save for inputs using the My Yearly Package product, while smallholder families deemed creditworthy could also choose to take advantage of the product's option to borrow for inputs.

INTERVENTION TYPE 4:

Working with Mission Colleagues to Impact Key Constraints in the DFS Ecosystem



SUPPORTING THE INCLUSIVE GROWTH OF A NASCENT DFS MARKET IN MALAWI

I. Background and Overview of Intervention: In September 2012, USAID awarded the two-year Malawi Mobile Money Acceleration Program (MMAP) to FHI 360, which focused on scaling the adoption and usage of mobile money to boost financial inclusion. Despite high levels of mobile network coverage across Malawi, prior to the launch of MMAP, the mobile money sector was still in a nascent stage of development, with only one MNO offering mobile money services. In May 2013, a second MNO entered the mobile money market, providing competition and lowering product prices. The project's work found success in integrating digital finance into USAID's agriculture Zones of Influence, thus it was renamed the Feed the Future Malawi Mobile Money and given an extension through 2016.

II. Assessment of Value Chain Challenges: To foster and organize demand for mobile money, the project performs pilot activities with interested organizations in the agriculture and financial services sectors. Each pilot activity includes a detailed analysis of the value chain and the viability to use digital financial services to ease some of the challenges within the value chain.

III. Design of Intervention: Feed the Future Malawi Mobile Money has supported the development of several different interventions and achievements, taking a market facilitation approach that focuses on building the capacity and cohesion of the private sector and the government to drive mobile money adoption throughout the country.

Despite a progressive expansion of digital financial services—from less than 200,000 registered mobile money users in September 2012 to more than 2,000,000 in September 2015—much work remains to expand Malawi's ecosystem to support financial inclusion for rural and underserved populations.

Despite recent gains, 46% of the population is still financially excluded. Key barriers to access include limited accessibility of financial service points, high transaction costs, capacity constraints, and lack of harmonization between public and private initiatives to promote better access to financial services. A survey conducted by the project found that there still remains a lack of

awareness around mobile money and the mobile money is still mainly used for only two services, airtime purchased and remittances.

To address challenges in access to and usage of mobile money products, the project takes a holistic approach to developing the ecosystem, from the policy and regulatory level to the ability to operate a mobile phone and conduct a transaction at the individual level. While ensuring that the regulatory environment is conducive to the growth of mobile money, the project also ensures that each pilot activity includes:

- Financial and digital literacy training, including an introduction of products available on the market;
- Agent training and liquidity assurance prior to transfer of funds;
- Costing analysis and transaction mapping;
- Support liaising, trouble-shooting, and negotiating with service providers; and
- Monitoring and evaluation to feed data back to service providers.

IV. Addressing Implementation Challenges: The MMAP project has not seen as much progress in working with the government to roll out government-to-person payments as initially planned. Early in the project implementation, some headway had been made exploring teacher salary payments via mobile money. However, changes in government staffing defeated all progress that had been made. MMAP has had to retool its approach and explore different pathways to work toward G2P payments. For example, the Government of Malawi has decentralized some of its processes and the project is working directly at the district level to explore G2P stipend payments for local leaders (chiefs).

V. Results and Scaling Up: One area in which Feed the Future Malawi Mobile Money has been particularly successful is in facilitating the creation of the Mobile Money Coordination Group (MMCG) to bring together a range of stakeholders who embody a broad spectrum of interests and aspirations related to mobile money. The MMCG was established to support the implementation of an action plan, which seeks to promote broad uptake and usage of mobile money in Malawi, with an emphasis on reaching unbanked and under-banked market segments. The MMCG brings together stakeholders from a variety of backgrounds, including the private sector, regulatory bodies, international NGOs, and inter-governmental organizations to:

1. Champion mobile money initiatives throughout the country and develop performance targets intended to increase the efficacy and efficiency of digital financial services;
2. Act as a knowledge repository, helping to manage and distribute information regarding best practices, operations, guidelines, enrollment, market intelligence, and training tools relevant to digital financial services;
3. Coordinate market research and data analysis efforts to improve the performance of mobile money programs;
4. Act as a project pipeline, leveraging both ongoing programs and new programs to implement and improve the delivery of mobile services; and
5. Monitor and report on successes and ongoing challenges in the DFS sector.

It is a testament to its value and performance that the MMCG has been formally incorporated into the National Payments Council (NPC), which is made up of the Reserve Bank of Malawi, Ministry of Finance and a consortium of financial institutions. This case study illustrates how USAID can facilitate, through a markets systems approach, local stakeholders to support the inclusive growth of a nascent DFS market.

V

Procurement Language

In August 2014, USAID issued a long-anticipated Procurement Executive's Bulletin (PEB) requiring its contracting officers and agreement officers to make e-payments the default payment mechanism for implementing partners. The bulletin disallows the use of cash and requires that all new procurements require organizations receiving funds from USAID to only use e-payments. This applies to payments throughout an organization's project budget, unless an exception is granted.

What does this mean for you? First, USAID realizes that each market is unique and, even within the same country, multiple markets may exist in different regions. Therefore, use of this PEB language requires a thoughtful review of the market conditions—fits perfectly with this Guide, which should have already helped you to assess your market and the opportunities and challenges presented by the integration of DFS.

To help, we've added examples from three agriculture procurements in Bangladesh, Haiti, and Afghanistan in which Missions added language around the use of DFS to meet their specific goals within the context of the larger project goals. We've also added some more generic sample language to help you in your own procurement drafting, based on the intervention type that you've identified.

1. 2014 Bangladesh RFI Feed the Future Strengthening Agriculture Production and Market Systems (SAPMS)

a. *Under expected Results Framework Section 2.2: Improve access to the finance needed to invest in intensification and diversification*

Despite the skyrocketing increase the number of mobile money accounts, agent outlets, and digital transactions between 2011 and 2013, almost all transactions in the rice value chain between farmers, millers, traders, and wholesalers in Bangladesh continue to be in cash (Minten and Murshid, 2012). Moreover, digital payments are not yet integrated into financial services, such as disbursing loans, collecting repayments, or linking remittances to other financial services. Although the expansion of mobile phones and mobile money is exploding in Bangladesh, digital payments are used primarily for people-to-people remittances. Wider use of digital payments could have a number of advantages, including timeliness, security, trust, and help farmers access inputs, information, and new financial products and services. However, digital payment platforms need to be further developed in Bangladesh in order to be used more extensively in commercial transactions at the retail level and within supply chains.

"…increasing access to finance through channels that are inclusive of marginal and small farmers, women, youth and create incentives the adoption of new technologies by producers can help to ensure depth and breadth of benefits of intensification of rice and diversification of field crops and other off farm activities."

Digital payments have potential for strengthening market systems, and for promoting inclusion. For example, they could lower the barriers for women in farm households to access inputs, information, and financial services, to engage in market transactions (if they are remote), to get paid for their work. Digital finance has potential for women to exercise more control over the income they earn and actively use a wider array of financial services. Digital technologies are increasingly a day-to-day part of young people's lives, and they can play an important role as first adopters and can teach their parents. Digital finance requires the development of retail and supply chain acceptance networks in order to support the growth, development, and transformation processes underway in rural Bangladesh. Given the sheer volume of cash transactions in the rice system, for example, it is a potential entry point for scaling digital payments, increasing financial inclusion of small and marginal farmers, and contributing to the purpose of SAPMS.

SAPMS: Innovations are based solidly on the financial needs, behaviors, and aspirations of small and marginal farming households as well as other value chain actors. *SAPMS could partner with others and/or promote new mechanisms to increase access to financial services, whether formal or informal.* For example, SAPMS could collaborate with USAID's AVC to scale successful approaches they are testing, and align work with other USAID partners developing new finance products, instruments, and models tailored to the needs of farmers and other value chain actors. Opportunities to build on other USAID work to leverage finance for inclusive growth and promote financial inclusion should also be considered. *In sum, increasing access to finance through channels that are inclusive of marginal and small farmers, women, and youth creates incentives for the adoption of new technologies by producers can help to ensure depth and breadth of benefits of intensification of rice and diversification of field crops and other off farm activities.* Increasing access to innovative value chain financing

by millers, traders, and other actors can improve product quality, reduce post-harvest losses and increase value. In addition, it will contribute to growth, competitiveness and the resilience of the market system. Introducing digital payments, where feasible can contribute to the development of a strong digital ecosystem with potential benefits for the overall market system.

- Uptake of agricultural finance by men, women, small, and marginal farmers increased
- Use of finance for technology adoption by farmers increased (men, women, small, marginal)
- Use of finance to support diversification and value addition increased
- Use of digital payments in the rice and related market systems increased (e.g., by farmers, millers, wholesalers, input dealers, and other value chain actors)
- New approaches for linking market actors through value chain finance tested and lessons learned documented

2. 2013 Afghanistan Request for Proposal (RFP) Regional Agricultural Development Program – South SOL-306-13-000022

SECTION C: DESCRIPTION/SPECIFICATIONS/STATEMENT OF OBJECTIVES: C.6 ELECTRONIC PAYMENTS. USAID, through the Financial Access for Investing in the Development of Afghanistan (FAIDA) program and other programs, has encouraged the use of electronic payments, including mobile money, to extend affordable and accessible payments to low-income populations, create cost savings, promote economic development, increase transparency, strengthen security, and broaden financial sector inclusion. The contractor should utilize these services to the greatest extent feasible within its company policy to strengthen the efficiency and security of financial transactions at all stages of value chain activities.

3. 2012 U.S.-Haiti Feed the Future Partnership: Northern Corridor

SECTION C — DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK: C.6.3.3 SUB RESULT 3.3: INCREASED ACCESS TO FINANCIAL PRODUCTS

Market actors in Haiti's agricultural value chains have insufficient access to financial products, notably credit. Lack of access to financial products results in difficulty in conducting basic financial transactions, underinvestment in farms and agribusinesses, greater difficulty in managing risk, and other challenges. This is partly due to supply-side constraints, such as the lack of availability of appropriate financial products and undercapitalization of banks, credit unions, and other financial institutions; these challenges are being addressed by USAID/Haiti's HIFIVE (Haiti Integrated Finance for Value Chains and Enterprises) Project. It is also related to the inability of value chain actors—farmer associations, small agribusinesses, etc.—to demonstrate to financial institutions that they are credit worthy. This results from poor internal systems (accounting, management, etc.) as well as from lack of understanding of how to interface with the financial sector.

The Contractor shall work with farmer associations, agribusinesses, and other value chain actors to assist them with access financial products from financial institutions. The Contractor shall consider both credit and non-credit financial products. Interventions shall be demand driven (e.g., cost sharing for trainings, business services, etc.) and sustainable (e.g., building capacity of local service providers) The Contractor shall consider financial products from non-financial institutions (i.e., value-chain finance). Such arrangements can take very simple forms, for example a farm supply shop extending inputs on credit. Although value-chain finance is not widespread in Haiti, innovative value-chain finance programs in other countries have been very successful and might be adaptable to the Haitian context. *The Contractor shall also explore the possibility of utilizing mobile money technology for conducting financial transactions (payments for purchases, cash transfers, payroll, credit disbursements, credit repayments, etc.).* USAID/Haiti, along with the Gates foundation, has supported the launch of a mobile money platform through its HIFIVE activity. For more information, visit http://www.microlinks.org/HIFIVE.

SAMPLE TEMPLATE LANGUAGE

Suggested language for inserting a Special Contract Requirement into Section H can be found in the Procurement Executive Bulletin.

Suggested generic language to insert into Section C regarding DESCRIPTION/SPECIFICATIONS/STATEMENT OF OBJECTIVES follows. Note that this is generic language that can (and likely should) be modified to meet your specific context and program needs, as the previous examples illustrate.

More than 1.5 billion people live on the world's roughly 500 million smallholder farms that supply about 80 percent of the developing world's food. But these farms are also home to the majority of people living in absolute poverty. Most smallholders lack funds to invest in their farms, and without inclusive market systems, they are unable to access financial tools and services. Evidence suggests there is a $430–440 billion shortfall in serving the global demand for smallholder finance.

In most countries, common approaches to meet this demand remain insufficient. Donors play a critical role in ensuring the creation of well-functioning financial systems. These systems must meet a wide range of needs (such as savings, credit, payment, and risk management), and serve farmers at scale in a financially sustainable way. Indeed, in addition to ongoing agricultural finance efforts supported by Feed the Future, the U.S. Government has added digital financial services (DFS) to its toolbox. It is also investing in mobile technology and information, communications and technology (ICT) platforms supported by Feed the Future and the New Alliance for Food Security and Nutrition.

DFS are uniquely positioned to deliver financial products cheaply, mitigate risk for both providers and consumers, and provide efficiency and cost savings at transaction points. For example, DFS can:

- Make it easier for farmers to save for their future and ongoing expenses
- Increase access to new and existing credit products
- Increase farmer household resilience
- Enable farmers to buy the inputs they need when they need them
- Address the needs of women

In light of USAID's 2014–06 PEB and the advantages DFS and electronic payments can provide to USAID Programs, this award/contract mandates respondents to include an incorporation of use of digital financial services to address specific needs within the needs of this agricultural program. For examples of types of interventions that can be advanced by DFS, see the USAID Guide for Feed the Future and Digital Finance.

This Guide to the Use of Digital Financial Services in Agriculture
is made possible by the generous support of the American people
through the United States Agency for International Development (USAID).
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