



FINANCE

FINANCE

EQUITABLE GROWTH, FINANCE & INSTITUTIONS INSIGHT

Women in Agriculture Using Digital Financial Services

Lessons Learned from Technical Assistance Support to DigiFarm,
Fenix, and myAgro

Authors:

Panos Varangis

Juan Buchenau

Toshiaki Ono

Rachel Sberro-Kessler

Asuka Okumura



WORLD BANK GROUP

Some rights reserved.

This work is a product of the staff of The World Bank with external contributions. The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of The World Bank, its Board of Executive Directors, or the governments they represent. The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of The World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

Nothing herein shall constitute or be considered to be a limitation upon or waiver of the privileges and immunities of The World Bank, all of which are specifically reserved.

Rights and Permissions



This work is available under the Creative Commons Attribution 3.0 IGO license (CC BY 3.0 IGO), <http://creativecommons.org/licenses/by/3.0/igo>. Under the Creative Commons Attribution license, you are free to copy, distribute, transmit, and adapt this work, including for commercial purposes, under the following conditions:

Attribution—Please cite the work as follows: 2021. Women in Agriculture Using Digital Financial Services. EFI Insight-Finance. Washington, DC: World Bank.

Translations—If you create a translation of this work, please add the following disclaimer along with the attribution: *This translation was not created by The World Bank and should not be considered an official World Bank translation. The World Bank shall not be liable for any content or error in this translation.*

Adaptations—If you create an adaptation of this work, please add the following disclaimer along with the attribution: *This is an adaptation of an original work by The World Bank. Views and opinions expressed in the adaptation are the sole responsibility of the author or authors of the adaptation and are not endorsed by The World Bank.*

Third-party content—The World Bank does not necessarily own each component of the content contained within the work. The World Bank therefore does not warrant that the use of any third-party-owned individual component or part contained in the work will not infringe on the rights of those third parties. The risk of claims resulting from such infringement rests solely with you. If you wish to reuse a component of the work, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright owner. Examples of components can include, but are not limited to, tables, figures, or images.

All queries on rights and licenses should be addressed to World Bank Publications, The World Bank Group, 1818 H Street NW, Washington, DC 20433, USA; e-mail: pubrights@worldbank.org.

Cover design and layout: Maria Lopez / lopez.ten@gmail.com



Contents

Executive Summary	7
Chapter 1: Overview Of Context, Players, and Technical Assistance Provided	10
Fenix in Uganda	14
Safaricom’s DigiFarm in Kenya	15
MyAgro in Tanzania	16
Chapter 2: Insights on the Specificities of Female Farmers and Impact on Product Design and Marketing	18
Insights from Uganda and Product Prototypes for Fenix	18
Insights from Kenya and Product Prototypes for DigiFarm	20
Insights from Tanzania and Product Design and Marketing Adjustments for myAgro	22
Chapter 3: Lessons Learned and Recommendations for Financial Service Providers	24
A One-Size-Fits-All Approach Does Not Exist	24
Gender Gaps in Mobile Phone Ownership and Mobile Money Accounts Can Jeopardize Product Uptake	25
Segmenting Female Clients into Subgroups Is a Necessary Foundation for an Effective Design Process—it Helps Reveal Similarities and Differences Between Women That Will Influence Product Uptake and Usage	25
Gender Considerations Must Be Embedded throughout the Research Planning, Implementation, and Prototype Design Processes	29
Quantitative Data Analysis, Complemented by Human-centered Design or Another Qualitative Research Methodology, Is a Powerful Tool for Designing Impactful Solutions	29
The Economics of Serving Female Smallholder Farmers Can Be Challenging in Some Markets and Establishing a Business Case Is Key to Generate Internal Buy-in	30

Chapter 4: Lessons Learned and Recommendations for Development Institutions	31
Select Providers That Are Gender Sensitive or That Demonstrate a Strong Interest in Reorienting Their Business Systems, Culture, and Processes Toward Gender Equality	32
Align Technical Assistance Funding to Partner Firms' Existing Interests, KPIs, Partnerships, and Timelines	32
Include a Rigorous Business Case Analysis Within the Partner's Existing Business Model	32
Targeted Technical Assistance in Early Stages Can Have an Impact, but Additional Mechanisms Such as Risk-sharing Facilities and Investments May Be Needed at a Later Stage to Support Implementation and to Scale-up Viable Services	33
APPENDIX A: Background to the Project	34
APPENDIX B: Women's Life-stage Framework	37
REFERENCES	40

Figures

Figure 1.1: Compared Importance of Agriculture, Levels of Agricultural Value Added Per Worker, and Mobile Money Penetration in Kenya, Uganda, and Tanzania	11
Figure 1.2: Scope of Services for Fenix (Uganda), myAgro (Tanzania), and DigiFarm (Kenya)	12
Figure 1.3: Objectives of Technical Assistance to Help Providers Move Toward the DFS–Gender–Agriculture Nexus	13
Figure 1.4: Scope of TA and Stage at Which It Was Delivered	14
Figure 2.1: Personas of Fenix's Rural Female Customer Base	18
Figure 2.2: Segmentation in Four Clusters in Kenya	21

Tables

Table 3.1: Female Farmers' Characteristics, Based on Insights from Fenix, Safaricom, and myAgro Segmentation Exercises	26
--	----



Abbreviations and Acronyms

AFA	AgriFin Accelerate program
CGAP	Consultative Group to Assist the Poor
DFI	development financial institution
DFS	digital financial services
FSP	financial service provider
HCD	human-centered design
KPIs	key performance indicators
KYC	know your customer
MNO	mobile network operator
SHS	solar home system
SIA	Strategic Impact Advisors
TA	technical assistance
VSLAs	Village Savings and Loans Associations



Acknowledgments

This report is part of the Mobile Technology and Digitized Data to Promote Access to Finance by Women in Agriculture project, which has received support from the Umbrella Facility for Gender Equality, a World Bank Group multidonor trust fund.

This report was prepared by Panos Varangis, Juan Buchenau, Toshiaki Ono, Rachel Sberro-Kessler, and Asuka Okumura. It is based on an in-depth assessment of the project that was provided by Olga Morawczynski and Anna Maftai. The authors wish to thank Shelley Spencer and Nicholas Leshar from Strategic Impact Advisors, Leesa Shrader from the Mercy Corps AgriFin Accelerate Program, Ravi Chhatpar from Dalberg Design, Chris Emmott and Abena Oppon-Kusi from Fenix International, Grant Adams from myAgro, and Emilia Klimiuk for sharing their insights and for their contributions to the report. In addition, this report has benefited greatly from comments and insights by Niraj Verma and Anderson Caputo, and by peer reviewers Jamie Anderson, Margarete Biallas, Sarah Anne Simons, and Uloaku Oyewole.



Executive Summary

Women in rural areas, and in particular female farmers, have significantly less access to financial services than their male counterparts. Such limited access is harmful to female farmers and their families and significantly impedes their ability to grow and prosper. In particular, female farmers tend to have limited access to formal savings and credit, which limits their ability to manage shocks and invest in seasonal inputs or in durable goods and productive assets. It is estimated that closing the gender gap in access to productive assets could lead to a 20–30 percent yield increase per household, which would benefit not only female farmers, but also their families (FAO 2011). One of the main issues that keeps financing out of the reach of female farmers is that women tend to be time constrained, which indicates the need for easy access to and convenience of financial products. Suitability, ease of use, and convenience are important determinants of access to financial services for women in agriculture.

Digital financial services (DFS) have the potential to unlock financial services for women in agriculture; however, currently, significant gender gaps exist in DFS access and usage. By allowing female farmers to make financial transactions without the need to go to the branch of a financial institution, DFS can offer them a safe, private, and convenient way to save money, access loans, make and receive payments, or access insurance. However, many DFS providers see an imbalance in the uptake and usage of financial services by gender.

In 2018, the World Bank provided technical assistance (TA) to three financial service providers (FSPs) to help them deliver financial services to female farmers using digital means. The World Bank ran a crowdsourcing exercise to solicit proposals from providers with existing DFS offerings that expressed an interest in reaching out to rural female farmers. Following a competitive selection process, three providers were chosen: Fenix,¹ a Ugandan off-grid solar home system (SHS) provider; Safaricom, a Kenyan mobile network operator (MNO), together with Mercy Corps, a technical partner for Safaricom's DigiFarm platform; and myAgro, a social enterprise with a presence in Tanzania. Technical assistance was provided to these firms with the goal to close the gap in access to finance between female farmers and their male counterparts through a financial needs assessment and the design and development of digital financial products. The selected technical assistance providers were Dalberg (for DigiFarm), Strategic Impact Advisors (for Fenix), and an individual consultant for myAgro.

1. Fenix has become ENGIE Energy Access as of summer 2020. In this document, we will use "Fenix," which was the name the company had during project implementation.



Although the three FSPs operated in different country contexts, with different motivations and scope of services, and received TA that varied in scope and in timing, the following common trends emerged from market research:

- **Male and female smallholder farmers can lead different economic lives despite living in the same household.** This can be because of social norms that dictate which farming activities and types of crops women can participate in, as well as what life stage a woman is in. The balancing act between productive and reproductive responsibilities often limits the types of economic activities in which women can participate.
- **A woman's agency—her ability to make choices and act on those choices—can be influenced by her life stage and her marital conditions.** For example, in certain areas of Tanzania where polygamy is common, women who do not live under the same roof as their husbands may have fairly broad agency and decision-making power over farming activities. Insights from Kenya and Uganda suggest that agency can increase with age and can depend on marital status.
- **Low levels of literacy do not necessarily affect women's ability to make use of digital financial services.** Women develop workarounds, like relying on younger family members for help with making transactions, that allow them to access and make use of mobile-based financial services.
- **Female farmers may need different financial products than their male counterparts, and those products may need to be marketed differently.** Financial service providers need to better understand the specificities of female farmers to design and market suitable products. Research in Kenya showed that women save at an average rate compared with the rest of the population despite facing, on average, 2.5 times as many emergencies as Kenyans overall. Such insights showed the potential for formal savings products among women. In Tanzania, research showed that women commonly used “allocation” to refer to savings behavior, rather than using the language of paying “little by little,” which can be associated with loan repayment. MyAgro adopted this preference when describing mobile layaway to some female farmers, which was met with greater acceptance.

Insights from the research were used to make recommendations on how to launch new solutions, or tweak existing ones, to better serve the female client base, and those solutions were implemented, with varying degree, by the providers. In the case of myAgro, a product with gender-sensitive marketing was launched, but it did not lead to a strong uptake from female farmers because of a variety of external challenges. In the case of DigiFarm, insights from the TA were used to design an agricultural finance product that is tentatively planned to be launched with a commercial bank. In the case of Fenix, the company decided to invest in new tools to better garner feedback from its female clients in a cost-effective manner and it used these tools in other countries of operation (for example, Benin).

This report offers a summary of the process to assess financial needs and conditions of female clients, the process to design suitable solutions for women, the challenges faced along the way, and the outcomes from each of these engagements. The aim of this report is to build sectoral knowledge on what it takes to improve service offerings for rural female clients, and what types of support providers require to make those improvements.

For FSPs, developing products and approaches for female farmers can help improve sales and profitability, but it requires a complex process. Lessons learned and recommendations for FSPs emerging from the three TA engagements are as follows:

- A one-size-fits-all approach does not exist and DFS providers must understand the specific conditions of their female clients.
- Gender gaps in mobile phone ownership and mobile money accounts can jeopardize product uptake.
- Segmenting female clients into subgroups is a necessary foundation for an effective design process because it

helps reveal similarities and differences between women that will influence product usefulness for women and, in consequence, uptake and usage.

- Gender considerations must be embedded throughout the research planning, implementation, and prototype design processes.
- Quantitative data analysis, complemented by human-centered design (HCD) or another qualitative research methodology, is a powerful tool for designing impactful solutions.
- The economics of serving female smallholder farmers can be challenging in some markets and establishing a business case is key to generate internal buy-in.

For development institutions that are supporting FSPs in developing financial services to a new underserved segment such as the one of female smallholder farmers, taking advantage of innovative DFS technologies is an undertaking that has many “moving parts.” Lessons learned and recommendations for development institutions that implement projects to increase access to finance for women in agriculture emerging from the three TA engagements are as follows:

- Select providers that have taken explicit steps to become gender sensitive, or that demonstrate a strong interest in reorienting their business systems, culture, and processes toward gender equality.
- Align technical assistance funding to partner firms’ existing interests, key performance indicators, partnerships, and timelines.
- Include a rigorous business case analysis within the partner’s existing business model.
- Targeted technical assistance in early stages can have an impact, but additional mechanisms such as risk-sharing facilities and investments may be needed at a later stage to support implementation and scale-up of viable services.



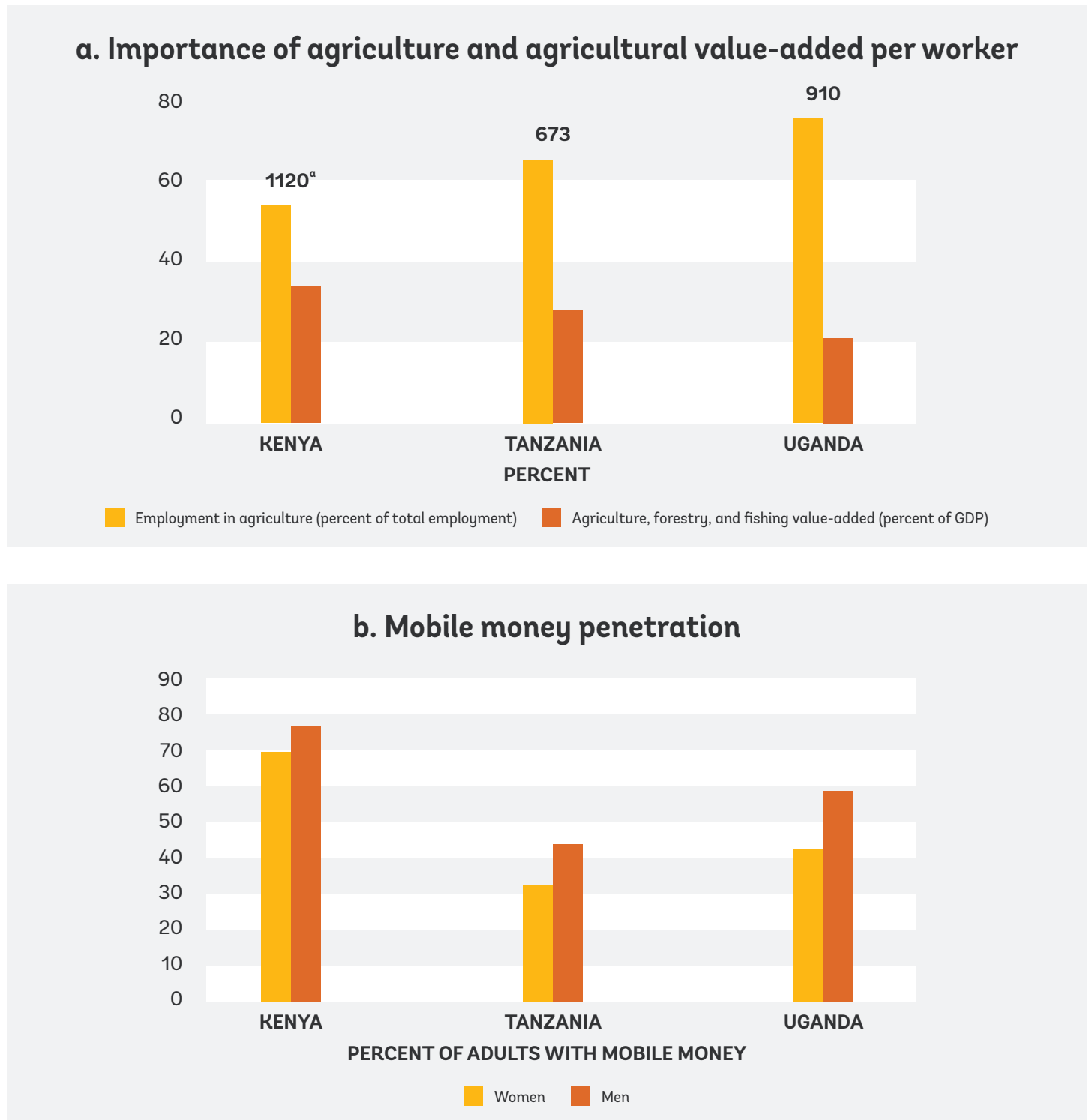
Overview of Context, Players, and Technical Assistance Provided

The World Bank supported three financial service providers (FSPs) in improving their understanding of female farmers to help them develop digital financial services for female farmers. The three providers operated in different country contexts, with different motivations and scope of services, and received technical assistance (TA) that varied in scope and in timing. An overview of these differences in context, players, and TA follows.

The TA was provided to FSPs in three different countries with various levels of agricultural development, digital financial services (DFS) development, and gender inequality (see figure 1.1). Though agriculture plays a key economic and social role in all three countries, Kenya has the highest agriculture value added per worker (US\$1,120), followed by Uganda and Tanzania. Kenya is also the country with the highest penetration of mobile money accounts (73 percent), followed by Uganda (50 percent) and Tanzania (38 percent). Although gender gaps exist in all three countries, Uganda is the country with the widest gender gaps both in terms of general human development (the Gender Development Index is 0.86² compared with 0.93 in Kenya and Tanzania) and mobile money penetration (gender gap of 16 percentage points compared with 11 in Tanzania and 8 in Kenya). These differences have an effect on the demand and supply of digital financial services for female farmers.

2. The Gender Development Index (GDI) measures gender gaps in human development achievements by accounting for disparities between women and men in three basic dimensions of human development—health, knowledge, and living standards. A value equal to 1 indicates development equality between genders, while values further from 1 have less development equality between genders (United Nations Development Programme 2018).

FIGURE 1.1 - Compared Importance of Agriculture, Levels of Agricultural Value Added Per Worker, and Mobile Money Penetration in Kenya, Uganda, and Tanzania



Source: FINDEX 2017 and World Development Indicators Database.

Notes: Data on employment in agriculture is from 2020. Data on agriculture, forestry, and fishing value added as percent of GDP is from 2019 in Kenya and Uganda and from 2017 in Tanzania.

a. For each country, the number in the box is the agriculture, forestry, and fishing value added per worker (constant 2010 US\$).

The scope of services offered by each FSP to farmers was different (see figure 1.2). Fenix is an off-grid solar home system (SHS) provider developing lending solutions for its rural last-mile customers. MyAgro offers a bundle of inputs, technical assistance, and financial services. And DigiFarm offers a broad range of both financial (credit, insurance) and nonfinancial services (access to inputs, markets, training). At the time of the project, these three providers had the status of social enterprises aiming to maximize both social³ and financial returns.

> > >

FIGURE 1.2 - Scope of Services for Fenix (Uganda), myAgro (Tanzania), and DigiFarm (Kenya)



Source: World Bank data.

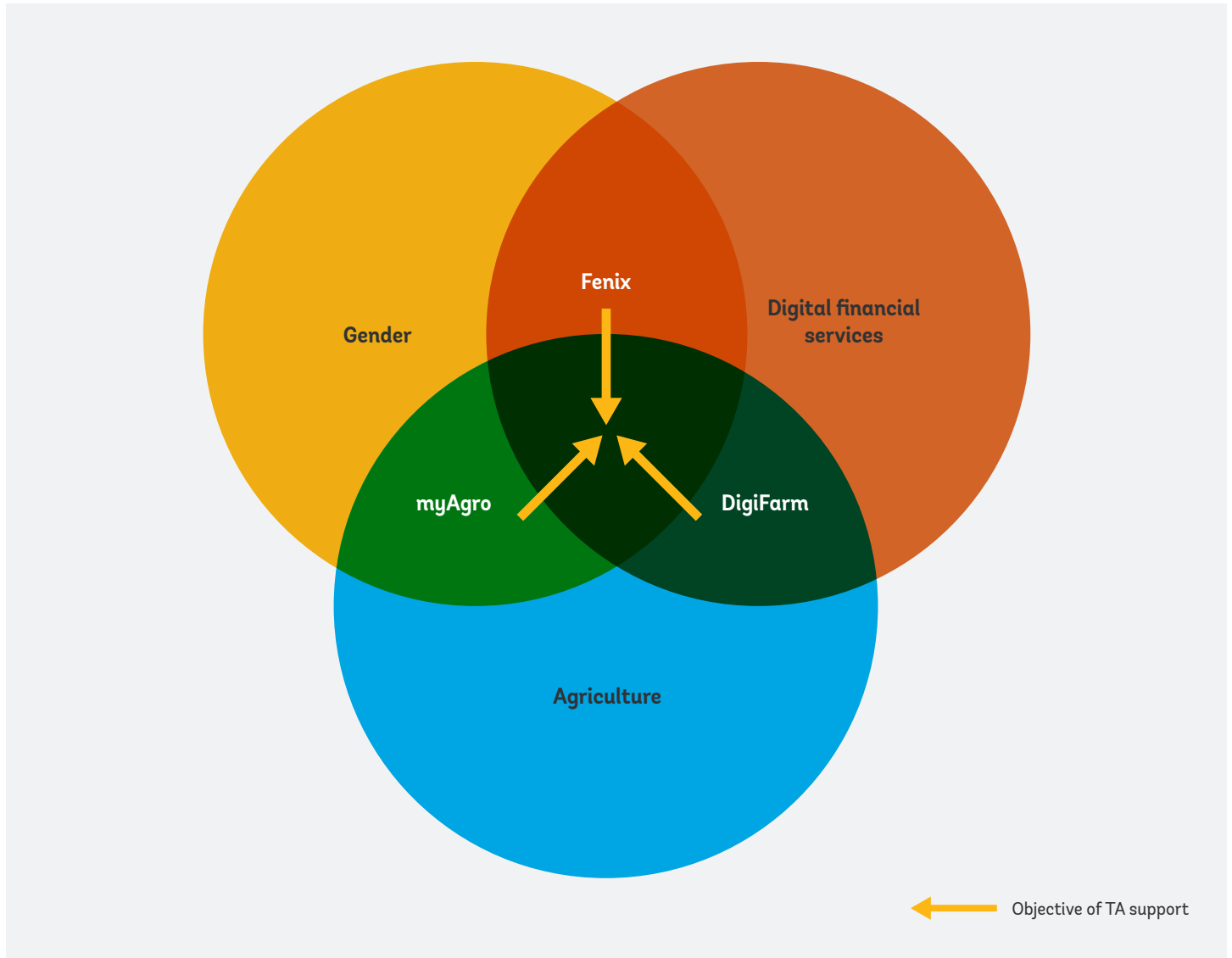
For each provider, moving toward the “gender–agriculture–DFS nexus” meant understanding a new market (see Figure 1.3). For myAgro, which had developed a business model to improve women’s access to quality agricultural inputs, one of the key challenges was to move to a fully digital offer (from scratch cards to mobile money payments). For Fenix, which was already using DFS (pay as you go for SHS and school fee loans) and serving women (42 percent of its customer base), the new challenge was to develop a product specifically for agriculture that could be adapted to its female clients. For DigiFarm, which had developed a suite of financial and nonfinancial services for farmers but with relatively low uptake among women, the objective was to better understand women’s needs and to develop a product adjusted to those needs.

The scale and scope of TA as well as the stage at which it was delivered in each FSP’s journey toward the gender–agriculture–DFS nexus varied widely (see Figure 1.4). Technical assistance provided to myAgro aimed at adjusting myAgro’s planned product bundle to female farmers’ needs and developing an effective marketing approach and materials. Specifically, the TA aimed to ensure that the planned product (combination of digital financial service + inputs delivery + training) would be valued by female clients in the new market (that is, Tanzania). To the contrary, the TA provided to Fenix and DigiFarm was much larger in scale and scope because it aimed at developing new products on the basis of insights generated by market research focusing on female clients. Although the TA to myAgro was delivered close to product launch phase, the TA delivered to Fenix and DigiFarm focused more on market research and product prototyping.

3. Providers that are primarily motivated by client outcomes offer services to increase the income, well-being, independence, and resilience of the rural household or small and medium enterprise. The services themselves are a means to an end: the end being a richer, more resilient household or business.

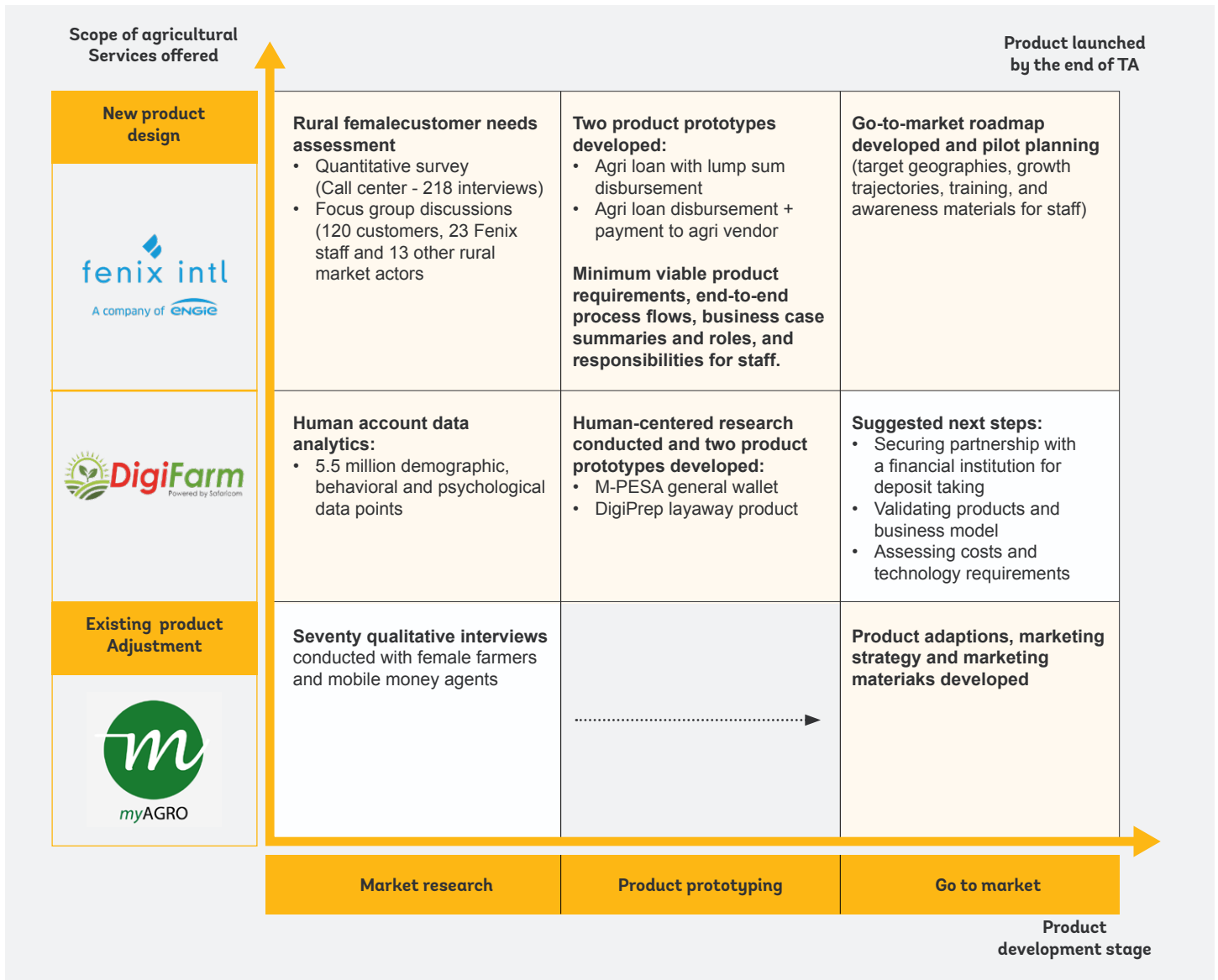
> > >

FIGURE 1.3 - Objectives of Technical Assistance to Help Providers Move Toward the DFS–Gender–Agriculture Nexus



Source: World Bank data.

FIGURE 1.4 - Scope of TA and Stage at Which It Was Delivered



Source: World Bank data.

Fenix in Uganda

Company Profile and Objectives

Fenix⁴ is an off-grid SHS provider that offers a “lease-to-own” or “pay-as-you-go” kit. Over the past eight years, the company has seen rapid and impressive growth. More than 600,000 customers and 2.5 million people use Fenix products across six markets in Sub-Saharan Africa. At the time of the project, the flagship product was ReadyPay Power,⁵ which can be used by households for a wide range of energy needs including lighting up their home, charging their mobile phone battery,

and powering their radio. To access the SHS, customers pay a deposit upfront. The balance for the product can be repaid over the course of 12–30 months. Both the deposit and the balance can be paid using mobile money. Fenix uses geographic information system–based technology combined with a SIM card to enable remote locking of the SHS kits in case of late repayments or defaults.

Because Fenix collects payments using mobile money, it had more than 19 million power payments go through its platform. This payment data became a powerful source for credit scoring. In Uganda, Fenix leveraged the data to develop a school fees

4. Fenix has become ENGIE Energy Access as of summer 2020. In this document, we will use “Fenix,” which was the name the company had during project implementation.
 5. At the time of publication of this report, the flagship product is Fenix Power.

lending product in partnership with the Consultative Group to Assist the Poor (CGAP). During the testing, 942 school fee loans were made to Fenix clients. Repayment rates were high on this lending product, which led the Fenix team to want to explore the development of additional credit products that would meet the financial needs of its customers. At the time of the project, Fenix's vision was to move beyond an SHS provider to also become a financial services provider offering lending solutions that are applicable to its rural last-mile customers.

In analyzing repayment data on the school fees product, Fenix realized that repayment rates went through a seasonal dip. When it investigated why this dip occurred, it learned that clients increased their spending around planting or harvest season for agricultural inputs and labor. Running a survey on school fee loan customers, Fenix realized that about 10–20 percent of customers used some part of the school fee loan to fund an agricultural expense. This led Fenix to realize that school fee loans were fungible.

On the basis of these findings, Fenix wanted to design a more flexible loan product that also allowed its users to invest in revenue-generating activities. Fenix considered the agricultural input loan product to be a win-win for both the business and clients: through this loan, Fenix would generate additional revenue from interest on loans, and its clients could use the credit to invest in their farms or businesses, thus increasing their productivity and income.

Although Fenix was not necessarily looking to design financial products for women only, analytics on its existing data suggested that when women are handling household money, repayment is better.⁶ This realization led Fenix to seek support to explore the design of a gender-sensitive credit product.

Scope and Methodology of TA Support

Technical assistance was segmented into three phases: phase 1, a rural female customer needs assessment; phase 2, product design, prototyping, and testing-in; and phase 3, a go-to-market road map and pilot planning.

Phase 1: A mixed-methods approach to the needs assessment involved the use of a quantitative survey administered via Fenix's call center as well as two waves of focus group discussions and key informant interviews.

Phase 2: A design summary document presented two prototypes with value propositions for the female farmers,

minimum viable product requirements, end-to-end process flows, business case summaries, and roles and responsibilities for Fenix staff.

Phase 3: A go-to-market road map provided Fenix with the specifics necessary to launch a pilot such as target geographies and growth trajectories, as well as training and awareness materials for Fenix staff.

Safaricom's DigiFarm in Kenya

Company Profile and Objectives

Safaricom is the largest mobile network operator in Kenya and one of the most profitable companies in East and Central Africa. The company offers a range of services including mobile telephony, mobile money, e-commerce, and cloud computing. It is most well-known for launching M-PESA, a digital finance service. Safaricom has a subscriber base of approximately 33 million, which accounts for about 64 percent of the Kenyan market.

In 2016, Safaricom formed a partnership with Mercy Corps's AgriFin Accelerate (AFA) program, a Mastercard Foundation-funded initiative. The aim of the partnership was to leverage the M-PESA platform and communications services to transform the agricultural sector and to improve the lives of farmers. From this partnership emerged DigiFarm, a Safaricom-backed digital platform that offers smallholder farmers access to a suite of services including the following:

- Loans, based on credit scoring done by a technology company called FarmDrive, which uses historical farm data in its algorithms
- Farm inputs, such as seed and fertilizers, via a partnership with the technology provider iProcure, which has depots across Kenya
- Agronomic training and financial education via Arifu, a mobile-based training services provider
- Market access, via a product called DigiSoko, which connects farmers to buyers via a web-based platform

Performance data on the DigiFarm platform showed that only 10 percent of the input credit on DigiFarm was being taken up by female clients. The Safaricom team was concerned about this low figure because the target that it had set for the program was that 50 percent of its clients should be female, to align with M-PESA's 51 percent female customer base. This

6. Interview notes, Nick Leshner.



concern over low input credit usage among female clients made it easier for the Mercy Corps AFA program to generate buy-in for the TA engagement among Safaricom senior management.

The consultancy firm Dalberg was retained to support Safaricom. Dalberg had a long-standing working relationship with Safaricom because it has been engaged by Mercy Corps to provide direct support to the DigiFarm product under the AFA program. Thus, Dalberg had been involved in several engagements with Safaricom and had strong ties to several individuals within the organization.

Scope and Methodology of TA Support

A first phase of work was done in advance of the TA engagement, during which the Dalberg team conducted a gendered analysis of the Human Account data.⁷ The Human Account is a database of 5.5 million data points to capture the contextual, behavioral, and psychological dimensions of the financial lives of people in six countries (including Kenya); it was derived from a large survey funded by the Bill and Melinda Gates Foundation. Dalberg clustered and mined the data to create four Kenyan female farmer segments on the basis of female clients' behavior characteristics from the data survey: careful strivers, cautious independents, disciplined pragmatists, and educated planners.

In the second phase of work, Dalberg used qualitative human-centered design techniques to flesh out those segments and to test hypotheses on behavior, product fit, and channel strategy, culminating in new product concepts that were prototyped and evaluated.

MyAgro in Tanzania

Company Profile and Objectives

MyAgro is a social enterprise operating in West Africa. The company has developed a layaway savings program that enables smallholder farmers to save for agricultural inputs such as seed, fertilizers, and tools to improve their productivity by using a prepaid scratch card model. The service also includes the delivery of agricultural inputs and agronomic training for farmers as input packages. Farmers can save to purchase input packages for the next planting season by purchasing myAgro scratch cards at village stores. Each scratch card can be purchased for a nominal cost, allowing farmers to save incrementally. Once the farmers buy enough cards for any input packages they have picked, myAgro delivers the inputs and the training service selected (training costs are included in the total package price).

In 2018, myAgro reached 50,000 farmers in Mali and Senegal and more than 65 percent of its client base was female. To reach 1 million farmers by 2025, myAgro has two key strategies: (1) partnering with existing savings group networks, and (2) digitizing its operations and introducing mobile money. Since inception, myAgro has sought to leverage partnerships with networks of savings groups to reach a larger population of female farmers and to reduce delivery costs. Approximately 80 percent of these groups are female clients. Using savings groups as a distribution channel not only helps myAgro minimize the number of its own field staff, but it also reduces costs related to customer acquisition and mobilization. Leveraging savings groups is a key factor in driving down

7. For details, visit <https://www.thehumanaccount.com>

the field cost of service delivery for myAgro from US\$200 per farmer in 2012 to approximately US\$52 per farmer in 2018.

As part of this strategy, myAgro aimed to pilot a fully digitized operation in Tanzania, where a robust mobile money network exists. MyAgro's solution is a savings product that allows farmers to safely and privately invest in their farms, while providing access to high-quality inputs and training. The fully digital mobile layaway platform allows farmers to prepay for input and training packages directly using their mobile phones. The platform uses bill pay technology offered by local mobile network operators to provide a quick and easy mobile payment solution. Clients can make payments directly with their own mobile devices, or they can use the mobile devices of friends, relatives, or mobile money agents. The intended delivery channel for the fully digital product was Aga Khan Foundation's savings groups.

MyAgro decided to focus the fully digitized operation in Tanzania on maize and sunflower farmers. Maize was chosen because myAgro had already conducted multiple successful harvest trials in Mali and Senegal, and therefore it felt confident it could guarantee increased harvests and incomes for farmers, which could help build trust in the targeted communities. Sunflower was chosen because of Aga Khan Foundation's existing

expertise in the crop, and because it allowed myAgro to take advantage of a favorable agricultural calendar that allows for both crops to be marketed to farmers in the same year. In the areas where myAgro decided to deploy its operations, cashew is the primary source of farmers' income. Although maize and sunflower are not the main crops, they have the potential to diversify and stabilize farmers' revenues. MyAgro's solution would give farmers an opportunity to save portions of their cashew profits toward agricultural inputs for maize and sunflower and, therefore, improve and stabilize their revenues. The TA engagement focused on analyzing how to adapt these two packages to increase uptake among women.

Objectives and Methodology of TA Support

MyAgro requested a more limited engagement than the two other providers. Rather than developing a new product, the pilot project was about making service model adaptations to myAgro's existing product bundle.

There were 70 interviews conducted during the pilot project with female farmers and mobile money agents. The learnings from the survey were used to make recommendations on product adaptation and implementation (see next section).



Insights on the Specificities of Female Farmers and Impact on Product Design and Marketing




This section provides a summary of the insights from the market research conducted in the three countries and their influence on product development and marketing for financial service providers.

Insights from Uganda and Product Prototypes for Fenix

Fenix’s existing rural female customer base was segmented into three personas (see figure 2.1).



FIGURE 2.1 - Personas of Fenix’s Rural Female Customer Base

	 Digitally savvy, younger, and recently married	 Married in a joint decision household	 Elderly-widowed or unmarried
Agency	High, yet narrowly concentrated	Broad, yet still shaped by spouse	Unrestricted
Roles and responsibilities	Restricted	Many but shared	Sole provider
Digital technology	Aware and capable	Aware, some capability	Aware, varied capability

Source: Strategic Impact Advisors.



Although not homogeneous, some overarching trends across the three personas were identified, including the following:

- **Female farmers do not have the upfront capital necessary to invest in preharvest activities like purchasing inputs or hiring farm labor.** Their current funding sources are often limited to Village Savings and Loans Associations (VSLAs), which can be unreliable borrowing sources because of lack of funds or delayed loan disbursement. Interest rates from the VSLAs are also fixed at 10 percent per month and loans must be repaid in three months, regardless of harvesting cycles or income flows. VSLA members must also repay the loan in person at weekly meetings in cash.
- **Inputs and fertilizer usage among women are minimal because of lack of information** on proper agronomic practices. Formalized, reliable sources of information on input application, new seeds, and market pricing are needed.
- **Female farmers in the target regions have more agency than anticipated** when it comes to accessing a

mobile phone, controlling and managing household and farm finances, and participating in pre- and postharvest activities.

- **Despite female farmers' lower levels of education, digital financial literacy is not a barrier to mobile money adoption or uptake.** The convenience and low know-your-customer (KYC) requirements make it a more attractive value proposition than a traditional financial institution.
- Female farmers value the community-based support that VSLAs provide but they **prefer to bear the risk of a loan alone.**
- **The economic activity patterns of Fenix female customers and the diversity of their revenue-generating activities highlight the need for long grace periods and repayment windows.** Such features would make loans both more attractive to women and also more likely to generate revenue for both Fenix and the customer, by allowing them to sell their agricultural output at better prices.

Using the data, the technical assistance provider, Strategic Impact Advisors (SIA), produced a design summary document that included prototypes, value propositions for female farmers, minimum viable product requirements, end-to-end process flows, business case summaries, and proposed roles and responsibilities for Fenix staff. Specifically, SIA recommended the following solutions:

- **My Farm Loan/My Risk:** A cash loan disbursed directly to clients on the basis of their solar home system repayment activity, along with their self-reported and Fenix-verified farming activity. This product is designed to be flexible and offer female clients the ability to request their preferred loan value and set their repayment period within Fenix's predetermined ranges.
- **My Farm Loan/Fenix Covers One Expense:** A loan that clients can redeem at an agri-vendor of their choice. A portion of this loan is paid directly to a preferred agricultural input provider identified by the female client and approved by Fenix. This payment is meant to mitigate the potential diversion of loan funds and to ensure that at least a portion of the loan is spent on farming expenditures.

On the basis of research insights, SIA also strongly recommended that Fenix develop a partnership with a local agricultural information service provider to address the information gap faced by female clients. In Uganda, SIA identified five providers of nonfinancial agricultural services (such as access to markets, information, extensions services, and inputs). SIA argued against a sizeable investment in developing these capacities in-house and suggested a partnership with one of the five identified providers (EzyAgric, WeFarm, M-Omulimisa, Mkulima Young, and TruTrade).

A preliminary high-level business case for the suggested products was also proposed with two growth scenarios outlining the estimated number of borrowers, gross lending revenue, lending costs, monthly profits, and annual profits.

Follow-up to the Technical Assistance

- **Thanks to the technical assistance (TA), Fenix was able to gain a much richer understanding of the needs and financial behaviors** of its female clients, which should inform the design of future solutions for this segment.
- **Fenix leveraged those insights to make improvements across product lines and geographies** and aligned its marketing efforts to more effectively target women.

- **Fenix also acquired some powerful tools, including storyboards and prototypes, that it can use to garner feedback from its female clients in a cost-effective manner.**
- **The tools were used by Fenix in other markets, such as Benin,** to ensure that women's feedback is captured in the solution design process.
- **Fenix began discussions with two of the suggested agricultural information service providers, and developed a pilot plan with one of them (EzyAgric),** to use their agent network and expertise to sell inputs financed by Fenix.

Insights from Kenya and Product Prototypes for DigiFarm

Insights on Female Farmers

Analysis of the Human Account data revealed several attitudinal and behavioral insights that could provide context for the low uptake of DigiFarm solutions by female farmers:

- **Women's financial strategies are shaped by emergencies.** Female farmers experience on average 2.5 times as many emergencies as Kenyans overall.
- **Female farmers are more frequent borrowers than Kenyans overall.** They prefer to borrow small amounts mainly from family, friends, and social groups. They are only moderately comfortable holding debt, driven by worries of their own dependability, which is why they prefer borrowing through more flexible social channels and are hesitant to take out large loans.
- **Women view loans as a mechanism for topping up their income or savings to meet their needs, rather than as a vehicle for growth.**
- **Female farmers are strong savers** despite facing frequent emergencies that derail their saving goals.

On the basis of demographic, behavioral, and attitudinal data points, the segmentation exercise identified four clusters of women careful strivers, cautious independents, disciplined pragmatists, and educated planners.

FIGURE 2.2 - Segmentation in Four Clusters in Kenya



Source: Dalberg Design and Mercy Corps AFA.

Thanks to this research, Safaricom was able to get a more nuanced understanding of women’s attitudes toward digital credit and it realized the importance of digital savings to them. A key insight from the research was that women likely do not have the financial buffer to effectively address emergencies. Considering that women’s financial strategies are shaped by emergencies, saving—rather than borrowing—is the safer choice for them to help manage that volatility. To Safaricom, this insight highlighted the importance of offering a savings product in conjunction with lending on its platform.

“Female farmers manage to save at the same rates as Kenyans overall. Their ability to save at an average rate reflects a deeply felt need and strong discipline in putting aside money through tight control over their spending.”

– Lessons learned from Dalberg Design’s Safaricom engagement

Product Prototypes

On the basis of research insights, the Dalberg team made recommendations on two new savings product concepts:

- **The DigiPrep layaway product**, which gives female farmers the ability to prepare for seasonal agricultural needs by putting away money toward specific agricultural goals, locking in prices and discounts in advance, while also building up an emergency relief fund, thus protecting their investment savings from being spent down, and tracking progress over time. Women can access a top-up loan for agricultural inputs on unmet savings goals.
- **A flexible multipurpose wallet**, to help farmers save for a particular goal (for example, education, investment, health) with the flexibility to withdraw a portion of the savings for emergencies. Farmers can save small amounts of money in an open savings wallet to meet near-term goals and access loans up to twice the amount of their savings at any given time.

The proposed next steps toward building a savings product on DigiFarm include the following:

- Safaricom to secure a partnership with a financial institution for deposit taking and loan products in the proposed concept.
- Safaricom to validate the value proposition of the savings product and design business model and go-to-market strategy.
- Assess and cost the development and technology requirements and timeframes to build out the platform and the key features proposed to enable female farmers to build up their savings.

Follow-up after the TA

- Following the TA, DigiFarm partnered with **commercial bank Stanbic**.
- Insights from the TA were used to design an **agricultural finance product** that was significantly delayed by COVID in 2020 but is planned to be launched in 2021.
- In addition, **DigiFarm's credit product has significantly improved its outreach to women**. Women now account for more than 48 percent of DigiFarm's active portfolio—a major improvement over the status two years before. The major advances in women's inclusion in DigiFarm resulted from the introduction of the market access service, which was driven forward by field staff who met women at their

farms and began to engage with women's groups to help build trust, understanding, and active adoption and also to show convenience. These field-based engagements were a game changer, together with effective links to markets in value chains in which women are active.

Insights from Tanzania and Product Design and Marketing Adjustments for myAgro

Insights on Female Farmers

In myAgro's case, the solution design process did not start with a rigorous segmentation exercise. MyAgro had already decided that its pilot would focus on rolling out the maize and sunflower layaway packages. Key findings from small-scale field research include the following:

- **The main source of income in the region is cashew production, and women's limited role in the marketing of cashews means that they are entirely dependent on their husbands for the bulk of their income.** This dependency generates an uncertainty for female farmers in myAgro's catchment areas, making them engage in multiple income-generating activities, usually microenterprises run out of their homes, to help finance their myAgro sunflower and maize packages.
- **The most important value proposition would be on-time delivery of the reliable inputs package with proper training services.**
- **Paying little by little is not (yet) a popular idea** in the region, in part because of the cash in-flow pattern, which relies heavily on income from cashews at the end of the year.
- **Although penetration of mobile money is relatively high in Tanzania, women are less likely to own a phone because phone ownership is based on mobility.** MyAgro assumed that Tanzania's relatively high penetration of mobile money usage could serve as an ideal testing ground to integrate digital processes into myAgro's business model. However, in the areas where the pilots took place, women's usage of mobile money was quite limited. Phone ownership and usage is based mostly on mobility, and because women are often at home managing the household, they are less likely to have expendable income and, therefore, less likely to own a phone.

- **Previous use of mobile money does not mean trust or fluency in how to send money.**
- **Farmers prefer a face-to-face relationship.** They also appreciate a follow-up phone call to confirm a successful payment significantly more than an SMS (short message service) confirmation or balance check.
- **Providing additional training and sending payments in pairs** (such as two savings group members) increases confidence to send a payment.

Product Adjustments and Marketing

On the basis of the research findings, the pilot product was fine-tuned and implemented. A gender-specific approach was designed, including leveraging influential female leaders to enroll friends and showing groups of female farmers targeted videos on myAgro's work and impact in Mali and Senegal. Marketing visuals were designed with an emphasis on female farmer representation to encourage women to enroll, and marketing visuals used female farmers' language based on the findings from the field research. For example, interviewed female farmers commonly used "allocation" to refer to savings activity, rather than using the language of paying "little by little," which can be associated with loan repayment. MyAgro adopted this preference when describing mobile layaway to female farmers, which was met with greater acceptance. Other key takeaways include diminishing the minimum package size and reducing the price to make it more accessible, hiring former savings group leaders as community-based sales agents to build trust and establish face-to-face touch points, introducing an SMS confirmation process for the farmers' comfort, and leveraging mobile money dealers as part of marketing channels.

Follow-up After the TA

Over the course of the 18-month pilot, myAgro established program operations in Tanzania's southern region of Mtwara. In total, more than 500 farmers were reached during the pilot period. However, this number was below the original target of 1,000 farmers because of unexpected registration difficulties at the pilot's outset, as well as severe cashew market volatility in Tanzania. In the areas in which myAgro decided to deploy its operations, cashew production has become the primary

source of farmers' income since the disappearance of two key cash crop markets in recent years (green gram and pigeon pea). The cashew harvest season takes place between September and November, with payments for harvested cashew typically arriving between December and February. In 2018, however, because of unfavorable international cashew market conditions, the buying price for cashews was about 50 percent of the buying price in 2017. As a result, the Tanzanian government decided to intervene by buying cashew harvests directly from farmers, raising the buying price to minimize farmer losses. But government intervention delayed payments significantly, and farmers did not begin receiving payments until January. For many, payments did not arrive until mid-March, which severely restricted cash availability in communities. Uncertainty and price volatility in the cashew market created significant challenges for smallholders in the region, which affected their ability to set aside payments far enough in advance to be able to access myAgro's product.⁸ In addition, myAgro was not able to market the maize and sunflower packages to customers via the Aga Khan groups because of coordination issues. As a result, myAgro had to rely on its own marketing activities to build awareness, and enrollment had to happen on an individual basis. Customer acquisition was mainly through village meetings by reaching out to village leaders, which probably resulted in limited outreach to women.

Uptake of the product among women was relatively low. During the 2018/19 season, myAgro delivered packages of high-quality maize inputs to 164 farmers. Only 27 percent of these packages were delivered to women. In the following season, for the sunflower inputs package, 34 percent of the total 273 farmers reached were women. As a point of reference, myAgro's Mali portfolio is made up of 60 percent female clients, and in Senegal, 40 percent of its total clients are women. It is possible that the relatively low uptake among women was due to limited market research (see next section on lessons learned), but also due to the fact that the product was not marketed through savings groups because of coordination issues with Aga Khan. During the 2018/19 season, farmers who received myAgro's service increased their maize harvests 114 percent over control farmers, investing about US\$47 on inputs on average, with most planting with hybrid seeds and fertilizer for the first time.

8. Although the government intervention in the cashew value chain increased prices, its design also had negative effects for female farmers. Farmers are required to sell cashews through village associations, which are then responsible for coordinating a series of auctions. Farmers are also required to have a bank account to have their cashews sold in the auction. Many women have mobility constraints, which impedes their ability to travel to a bank to open an account or withdraw cash. As a result, most cashew sellers are men.



3

Lessons Learned and Recommendations for Financial Service Providers

Developing products and approaches for female farmers can help improve sales and profitability but requires a complex process. This section lays out lessons learned and recommendations for financial service providers (FSPs) looking to move toward the “gender–agriculture–digital financial services” nexus.

A One-Size-Fits-All Approach Does Not Exist

Part of the complexity of serving female smallholder farmers is developing a nuanced understanding of the various dynamics and forces that can have a significant impact on their ability to adopt and make consistent use of financial products and services. In some cases, all that is needed is adaptation of an existing financial solution to be more gender sensitive. This adaptation could mean a change to the value proposition, or to the marketing and sales approach. But in other cases, it makes sense to introduce a new solution because the existing ones truly do not resonate with female clients. Before effort is made to design something new, providers should first identify what they have in their existing portfolio that could be tailored to their female clients.

Developing financial solutions requires a deep understanding of customers: of the drivers to their behavior; of how their needs shift over time; and of how their context influences the types of activities, products, and people that they can interact with. This understanding is even more necessary for female customers, given the additional constraints and challenges they face. Female farmers often face significant barriers in accessing the skills, networks, and assets needed to implement successful transitions toward higher-value, more remunerative farming activities. These barriers limit their agency and mobility across different livelihood strategies and thus their ability to effectively access and use financial products.



Regardless of the approach chosen—either adapting an existing product offering or designing a new solution—providers must consider the enabling environment, with a specific focus on the educational, sociocultural, legal, and regulatory barriers that might negatively affect women’s ability to access financial services, information, assets, and markets that are crucial for their equal participation in the economy.

In addition to these contextual constraints, where female farmers are in their life stage can also affect their economic trajectories. Appendix B provides an illustrative framework that seeks to outline the key dynamics at play as women transition through various life stages, and how this might influence financial service provision (Maftei and Colina 2019).

Gender Gaps in Mobile Phone Ownership and Mobile Money Accounts Can Jeopardize Product Uptake

MyAgro believed that Tanzania’s relatively high penetration of mobile money usage, compared with other countries of operations, could serve as an ideal testing ground to integrate digital processes into myAgro’s business model. It saw an opportunity to offer farmers a layaway product that did not need to rely on scratch cards, as it does in Mali and Senegal. However, in the areas in which the pilots took place, women’s usage of mobile money is quite limited. Phone ownership and usage is mostly based on mobility, and because women are often at home managing the household, they are less likely to have expendable income, and therefore less likely to own a phone. In some cases, women are given a phone by their husbands simply to be able to receive money from them. This means their digital literacy is limited and they often must rely

on proxies within their community or family to help them make use of the product. This extra step can have a negative impact on their ability to put money into the layaway system. The challenge of digital finance usage among female customers did not materialize in Uganda or Kenya, where mobile money penetration and usage rates are high, including among women.

Segmenting Female Clients into Subgroups Is a Necessary Foundation for an Effective Design Process—It Helps Reveal Similarities and Differences between Women That Will Influence Product Uptake and Usage

The multidimensional nature of the challenges that women face in building resilient livelihoods requires providers to take a systemic approach to understanding the dynamics that prevent or inhibit women’s full access to, and usage of, financial products. Women, and especially rural women, face many educational, sociocultural, and legal or regulatory constraints that often make it harder for them to access financial services, employment or entrepreneurship opportunities, information, and technology compared with men. However, merely focusing on the differences between male and female clients masks more important differences between women themselves, including those arising as they transition through various life stages and as they take on different responsibilities within their household and communities. Table 3.1 highlights the heterogeneity of female farmers’ experiences in the three technical assistance (TA) engagements across five key dimensions: agency, decision-making power, sources of income, level of comfort with digital technology, and existing use of financial services.

TABLE 3.1 - Female Farmers’ Characteristics, Based on Insights from Fenix, Safaricom, and myAgro Segmentation Exercises

	Fenix	Safaricom	myAgro
Agency	<p>Differing, according to life stage and age:</p> <ul style="list-style-type: none"> • Younger, recently married women have restricted agency when it comes to both managing the finances in the household and making farming decisions. • Older married women or widows exhibit more influence on decisions relating to agricultural productivity and household income. 	N/A	<p>Highly dependent on marital status and presence of husband in the home:</p> <ul style="list-style-type: none"> • In polygamous households where the husband lives elsewhere, women’s levels of agency are relatively higher, however, men maintain control over most household decisions.
Decision-making power	<ul style="list-style-type: none"> • Varying levels of responsibility over household and farm finances, with differences influenced by regional sociocultural norms that dictate what types of crops men and women control. 	<ul style="list-style-type: none"> • Almost two-thirds of female farmers jointly participate in household decisions. • Just over a quarter of women are primary decision-makers, constraining their ability to fully control home finances. 	<ul style="list-style-type: none"> • Men tend to make all major financial decisions in the household, regardless of whether or not they live in the house. • Because women have no rights on the land their husbands own, their decision-making power over farming activities tends to be limited.
Sources of income	<ul style="list-style-type: none"> • As an income diversification strategy, women farm six to eight different crops, some of which are considered lower value by men and therefore not of interest to them. This strategy ensures that women also have control over the marketing and income generated from that crop. 	<ul style="list-style-type: none"> • High levels of income volatility mean that in two of the four segments identified, more than a third of women rely on family or friends for their income. 	<ul style="list-style-type: none"> • Income generated from farming may not stay with women; despite doing most of the manual farming labor, the man is in charge of selling the harvest and allocating the income. • Most women keep a microenterprise on the side as an income diversification strategy; time and mobility constraints because of household responsibilities means that these businesses are usually run out of their homes.

Table 3.1- continued

	Fenix	Safaricom	myAgro
Level of comfort with digital technology	<ul style="list-style-type: none"> • Digital financial literacy is not a barrier to mobile money adoption and uptake. • Convenience and low know-your-customer requirements of mobile money are more attractive than a traditional financial institution. 	<ul style="list-style-type: none"> • Nearly all female farmers interviewed own mobile wallets. • Two-fifths of them find financial services complex, suppressing usage. 	<ul style="list-style-type: none"> • Low literacy is not a major barrier to using technology; women have developed work-arounds, like relying on younger family members for help with making transactions. • Phone ownership and usage are mostly based on mobility; because women are often at home managing the household, they are less likely to get expendable income and therefore less likely to own a phone. In villages where it is common for both men and women to have nonfarming jobs, women's use of technology seems to be equal.
Existing usage of financial services	<ul style="list-style-type: none"> • High rates of membership in local village savings and loans associations; this structure provides women with community-based support around encouraging good financial habits. • Women have a strong preference for bearing the risk of a loan alone. 	<ul style="list-style-type: none"> • Female farmers save at an average rate compared with the rest of the population despite facing, on average, 2.5 times as many emergencies as Kenyans overall. • Female farmers are more frequent borrowers than Kenyans overall; they mostly borrow from family, friends, and groups to manage their day-to-day household expenses. 	<ul style="list-style-type: none"> • For many, informal savings groups remain the only saving and credit tool available. • Mobile money usage is common among women when a husband and wife do not live in the same home because women use it to receive money from their husband.

The diversity among female clients came out strongly during the fieldwork with Fenix. Originally, it was perceived that women could not make the decision on their own to purchase a solar unit, or to take out a loan. When the Strategic Impact Advisors (SIA) team went out in the field, it learned that there was substantive variation in a woman's agency across key categories: farming, household financial management, and the use of financial services and mobile technology. In fact, some groups of women had the decision-making power to purchase the solar unit for their household while others were restricted because of their limited agency.

For example, recently married women had restricted agency when it came to both managing the finances in the household and making farming decisions. They were thus less likely to pursue a loan from Fenix because doing so would cause marital tension, especially if they were to receive the loan directly. This was not the case for older women or widows, who were responsible for managing the farming activities and the household finances, and therefore exhibited more influence on decisions related to agricultural productivity and household income streams. These two segments were better positioned to receive and effectively manage a loan without the risk of negative backlash within the household or community.

Regional differences in sociocultural norms may also be a factor in determining a woman's role and level of agency within her household and community. For example, women in the north of Uganda are responsible for the management of certain crops on the farm. They were able to take loans directly and handle the responsibility of these loans being repaid based on specific farming activities that were not of interest to the men in the households. This was not necessarily the case in other regions in Uganda, which means that there could be some regional variation in terms of how the solution is designed and marketed.

The Dalberg team segmented Safaricom's female clients on the basis of demographic, behavioral, and attitudinal data points and came up with four clusters of women: careful strivers, cautious independents, disciplined pragmatists, and educated planners. The team then created attitudinal and savings profiles for each cluster and made tailored recommendations to Safaricom on product features and marketing approaches for each segment. This process then allowed them to design four customer personas, to bring the data to life. This design resonated well with senior-level managers who often have to decide why a solution needs to go to market and be prioritized. As was the case with Fenix, the segmentation also found that older women in two segments (careful strivers and

cautious independents) were more likely than their younger counterparts to participate in household decision-making. This finding suggests that in some cases, as women get older, they gain agency and decision-making power in the household, which could influence their ability to adopt and make use of digital financial services products. But this is based on anecdotal evidence, therefore, it cannot be generalized to entire populations.

In the case of myAgro, the scope of the TA did not include a rigorous market research and segmentation. Uptake of the product by women was significantly lower in Tanzania (27 percent of total customers for maize and 34 percent of total customers for sunflower) than in other countries where myAgro operates (60 percent of customer base in Mali and 40 percent of customer base in Senegal). It is not possible to say with certainty what lies behind the relatively low enrollment figures for women. It could simply be because myAgro had to use a different marketing channel to drive uptake. However, because there was not a robust segmentation exercise done to help inform the pilot, it is also possible that myAgro rolled out two product offerings that were not strongly aligned to women's preferences, needs, or behaviors. In this region of Tanzania, cashew is currently the dominant cash crop for farmers. The cashew value chain is highly mandated by the government, and farmers are required to have a bank account (which most women do not have convenient access to) to participate in the auction process. It is possible that this drastically affected female participation in the pilot, and thus the uptake and usage of the layaway product. In addition, married women in the target areas are unlikely to own the land that they farm and they do not have any property or inheritance rights in the event of divorce. Given the high rates of polygamy and divorce in the region, it is possible that what was identified as a lack of "pre-existing culture of investing in their farms" among female farmers is in fact a completely rational decision to avoid investing money and time in an activity for which women may not see long-term returns.

“Most married women have no property rights to their husband's house, and since divorces are very common, women tend to focus their personal savings on building a house for themselves, which they see as a hedge against the risk of divorce.”

– myAgro Tanzania market study

Gender Considerations Must Be Embedded throughout the Research Planning, Implementation, and Prototype Design Processes

Both Fenix and myAgro ensured that they had female staff involved throughout the research and ideation process. In the case of the Fenix engagement, the SIA team had a female researcher kick off the focus group discussions to help make the women more comfortable. This setup increased engagement from the female participants, and it led the women to open up more quickly about personal topics such as their finances and their position in the household. This setup was especially important when interviews were conducted in northern Uganda, given the restrictive gender norms in that area that influence women's level of participation in the public sphere. Most of the field staff that conducted the field interviews were also Ugandan, which meant that the interviews were undertaken in the local dialect. This detail increased the quality of the insights

by ensuring nothing was lost in translation and because the local researchers were able to extract relevant meaning from each of the interviews.

Consideration for women's household and unpaid care responsibilities is fundamental to conducting effective research activities. There are certain times of the day when it is more difficult to mobilize women for interviews and testing, and this availability changes throughout the year according to the farming cycles. For example, women often are less available during planting and harvest season, when they have increased responsibility on their farms. Commitments at home, from preparing meals in the late afternoon to fetching water in the morning, can also affect a woman's availability to engage in research. Such availability might differ by region, depending on sociocultural norms that dictate the responsibilities they take on within their household. It is important to have an understanding of women's schedules before trying to mobilize this segment for fieldwork, and to schedule interviews during a period when women have fewer commitments.

“More women require assistance from family members, myAgro representatives, and mobile money agents to navigate the mobile money payment platform than men—this may be due to a greater degree of experience men have as active mobile money users (45 percent of Tanzanian men are active mobile money users, versus only 34 percent of Tanzania women).”

– myAgro Tanzania market study

Quantitative Data Analysis, Complemented by Human-Centered Design or another Qualitative Research Methodology, Is a Powerful Tool for Designing Impactful Solutions

Human-centered design (HCD) had been used and appreciated by each of the three providers (for example, myAgro in Mali and Senegal, Fenix as part of its early product innovation efforts, DigiFarm since inception) but the combination of HCD with quantitative data analysis as part of this technical assistance project has proved particularly powerful.

The Dalberg team kicked off the research process with a large-scale data analytics process. It leveraged Mercy Corps's Human Account data to build rich segments, which represented the psychometric profiles of millions of women across Kenya. Such an analysis is critical to effectively make the business case to providers that scaling a solution makes sense and is worth the upfront investment into building the technology and marketing efforts. This approach also gave Dalberg a strong starting point on which to build the prototype plan, by focusing on the priority segments Safaricom was interested in, and key product design features it knew would be attractive based on the behavioral insights provided by the Human Account data.

The SIA team deployed a mixed-method approach and leveraged Fenix's call center to interview women before conducting focus group discussions. This approach allowed

SIA to develop initial hypotheses on female segments, which it was then able to test and sharpen during focus group interviews. This mixed-method approach also allowed SIA to develop a more detailed profile of the different segments of female farmers and to make a more compelling case to Fenix on the scalability of the proposed solution.

Because myAgro was a new entrant in the Tanzanian market, there was no existing data to conduct any large-scale analysis. The market research that was undertaken as part of TA included 70 qualitative interviews, which helped identify five customer profiles. These profiles did not give a representative sample, but rather were meant to showcase a range of living situations, challenges, and behaviors observed during the fieldwork. These observations were useful to the extent that they helped myAgro identify a set of gender-specific opportunity and risk areas to consider as the product was rolled out. However, they provided only limited information from which to develop more robust and insightful customer personas that could help drive future service model improvements.

When available, quantitative data from providers proved to be a powerful enabler of a cost-effective process that allowed providers to gain rich insights into the different customer segments. Although it was difficult to access the data from the providers, a clear lesson is that a mixed-method research approach, leveraging providers' existing demographic and transactional data with qualitative approaches, can deliver powerful inputs to any design process. Furthermore, because solutions that target harder-to-reach customer segments will most likely require cross-subsidization from existing products for a certain period of time, such data can be valuable to develop an initial business model for the prototype.

Although a large and quantitative dataset can help uncover the characteristics, behaviors, and needs of female segments, qualitative and human-centered design techniques can help uncover why these behaviors and needs exist. Qualitative techniques also can help develop powerful value propositions that align with the long-term goals and desires of female users, which can lead to increased uptake and usage among women. Qualitative research is crucial to helping providers understand what decisions or activities women have control over within a household. Without such insights, there is a risk—especially in the case of loan products—that women take on debt without being able to capture the value (that is, income) generated from that loan, which leaves them exposed to over-indebtedness and affects the provider's portfolio quality.

The Economics of Serving Female Smallholder Farmers Can Be Challenging in Some Markets and Establishing a Business Case Is Key to Generate Internal Buy-in

Female smallholder farmers tend to require a package of services that is delivered in a higher-touch manner. This, coupled with often smaller transaction values, means that the economics of serving female smallholder farmers could be particularly challenging in some markets. The potential differences in the underlying profitability between male and female customers means that products that target women might require some initial support, for instance through cross-subsidization, at least temporarily, until they reach scale (Maftei and Colina 2019).

Arigorous business case analysis can help providers understand how female smallholder farmers differ from male smallholder farmers, including also from a profitability standpoint. Although some female farmer segments may offer profitable business opportunities, others—who for example may rely on small staple crop production without other income sources—would be costlier to serve. Understanding how much additional support is needed, and the length of time that such support would be required for the product to be viable, is crucial for the provider's ability to mobilize resources internally to bring the product to market. The business case analysis also can take into account other key business indicators that can be used to make the case for the product, aside from just profitability, that are important to providers, such as increased customer retention, decreased churn, and increased customer lifetime value, to name a few. Clearly articulating these other indicators is important in the business case analysis.

Access to data can be of critical importance to track key business indicators, to conduct a profitability analysis of the existing product, and to generate different profitability scenarios of the proposed new or improved gender-sensitive product. A data analytics process helps inform the business case and go-to-market strategy, allowing for modeling out the addressable market, and understanding the revenue potential and cost drivers of the proposed product. Scenario planning for all of the different ways a product can evolve and be monetized is hugely important to generate buy-in among senior decision-makers, allowing for a product to move from pilot phase to rollout.



Lessons Learned and Recommendations for Development Institutions

Supporting financial service providers (FSPs) in developing financial services to a new underserved segment such as female smallholder farmers, while taking advantage of innovative digital financial services (DFS) technologies, is an undertaking that has many “moving parts.” Firms that are attracted to providing such financial services are in many cases young enterprises that may undergo frequent changes as they adapt and grow. Such changes may include shifts in their ownership structure, the establishment of new partnerships, high staff turnover, as well as changes to their market strategy, to name a few. These changes, which are part of the growth process, may generate some level of instability and organizational shifts that could create competing priorities, which in turn affect the execution of technical assistance (TA) engagements. In addition, the complexity of expanding the supply of services to new underserved segments, sometimes in new countries, and making use of new technologies that are evolving, should not be underestimated. This section lays out lessons learned and recommendations for development institutions looking to support increased DFS adoption among female farmers, based on the outcomes of the three TA projects.

Select Providers That Are Gender Sensitive or That Demonstrate a Strong Interest in Reorienting Their Business Systems, Culture, and Processes toward Gender Equality

The high concentration of private sector actors in the DFS innovation space who, under pressure to monetize services quickly, prioritize the most profitable or easy to reach farmers and rural micro, small, and medium enterprises, means that a majority of the products in the market currently are not built to be gender sensitive (Maffei and Colina 2019). If gender sensitivity is not embedded in a provider's way of doing business from the very beginning, it could be challenging to retrofit systems and internal processes to be gender sensitive. Although initiatives, such as the one supported by the three TA engagements, can result in the design or adaptation of products to be more gender-sensitive, at the same time there needs to be support for a shift at the organizational level toward prioritizing female clients. Otherwise, institutions take the risk that the impact of development they support will remain limited to a single product, rather than having a more systemic effect on the provider itself. In addition, the newly launched, gender-sensitive product might fail when it goes to market because internal systems and processes were not aligned to ensure its success.

When providing TA to promote gender-inclusive finance, it is recommended to select organizations that have already taken steps internally to become more gender sensitive. For example, they could have a clear and compelling gender strategy, have established and regularly tracked key performance indicators (KPIs) on gender outreach, have defined workplace antidiscrimination policies, and have internal initiatives that support the promotion and leadership of women. For those organizations that are not quite at that stage, assistance could aim toward organizational change support that lays the groundwork in a first phase.

Align Technical Assistance Funding to Partner Firms' Existing Interests, KPIs, Partnerships, and Timelines

All three firms that received TA support were already operating with—and within—an ecosystem of partners and funders. To reduce the risk of failure, it is critical that funding make the

best use of or complement already existing initiatives and partnerships, rather than attempting to reinvent the wheel.

To make the best use of TA funding and increase the chances of getting the project recommendations implemented, it is also advised to consider engaging with technical assistance providers that have already developed a strong understanding of the providers they are supporting. This consideration increases the chances that these TA providers have access to a broad network of champions within an organization, which helps mitigate the negative impact that unforeseen staffing changes may have on the outcomes of the project.

Entering new market segments requires a high level of support, and timing can be important to align the business cycles to the dynamics of the project (especially in agriculture). Serving a new market entails significant uncertainty in terms of the returns and efforts that are required. Most providers operate on quarterly business cycles that set the direction and priorities for that quarter. Aligning on timing for the engagements is critical because it increases the chances that the project will have continued support from both the leadership team and in-field staff. Any engagements in agriculture present a particular challenge due to seasonality, which affects the availability of female farmers for fieldwork interviews or early testing of solutions.

Include a Rigorous Business Case Analysis within the Partner's Existing Business Model

TA can support short-term product or service model innovation and help providers chart a course toward product profitability or scale. Indeed, the TA provided to Safaricom, Fenix, and myAgro revealed previously unknown or misunderstood attitudinal characteristics, financial behaviors and preferences, and economic activity patterns of female customers. Although this is a crucial step toward making the case internally for a gender-focused product, it is necessary to further provide a more rigorous business case analysis customized for each provider.

Any TA initiative that seeks to shift private sector actors toward more gender-sensitive product design and service delivery should integrate a business case analysis component that helps providers understand how female smallholder farmers differ from male smallholder farmers, including from a profitability standpoint.

This component can help development institutions direct future grants or other forms of investment to private sector players in the most efficient and impactful way. Ultimately, funders should be able to articulate how TA relates to the other instruments at their disposal or available in the market. A better understanding of the economics of serving female smallholder farmers helps funders understand how to balance grants and subcommercial or commercial capital in a way that incentivizes providers to serve this segment sustainably and over the long-term.

Targeted Technical Assistance in Early Stages Can Have an Impact, but Additional Mechanisms such as Risk-Sharing Facilities and Investments May Be Needed at a Later Stage to Support Implementation and to Scale-up Viable Services

TA is a powerful tool to support an early research, ideation, and prototyping process, but not necessarily to ensure that recommendations are implemented or that solutions go to market. Indeed, the scope of the TA was limited to support early research, identifying the needs of female clients and helping in the design of new products and approaches that would help increase access to finance for such clients. Although providers may understand that female clients can be a lucrative market to pursue, they may not be clear on how to assess those opportunities or be confident that the upfront investment that is needed to effectively target women would make commercial sense. And in many cases, the initial investment and risks associated with launching a product to design and scale a product can be high. This risk could deter many providers from actively pursuing potentially profitable female segments.

TA could function as a strong incentive to start this direction of work. TA can be used by providers to undertake a rigorous market analysis and segmentation of female customer segments. The insights from the analysis can then be used to

adapt existing products or service delivery models to better suit female clients, or to introduce into the market an entirely new product or service.

Although TA can make the case to design women-centric products and services, additional measures may be required to support providers to better target and serve large numbers of female clients in agriculture. The required measures are highly dependent on the market context and the specific needs of the provider of financial products to women. For some such providers, risks in entering a new market segment may be of important consideration, in which case dedicated credit guarantees and risk-sharing facilities or structures could alleviate the initial perception of risks until a track record has been established. In other cases, the provider may need additional liquidity, and access to a dedicated line of credit to cater to loans for female clients may be considered.

In addition, other cases may require equity investments (preferably from gender-sensitive investors) to support gender mainstreaming throughout the business and to incentivize this longer-term shift. These long-term growth investments can incentivize a number of activities that are critical to gender reorientation including developing and tracking female-focused KPIs; ensuring gender balance of staff across all departments, functions, and levels within an organization including in senior management and the board; designing, testing, and implementing gender-sensitive internal policies; and consistently tracking progress in the journey toward gender mainstreaming and making adjustments at the highest levels when necessary. These activities, if done correctly, will mark a substantive shift in how a provider does business. Thus, they require long-term, patient capital and ample guidance and oversight. By taking a share of a company's equity and sitting on the board, the investor will be able to ensure that the aforementioned activities will be prioritized and effectively executed. There is a growing community of gender-lens investors. This community is an investing field that is growing rapidly in size and impact, with US\$4.5 billion deployed through structured vehicles with a gender-lens mandate (Biegel 2018).



APPENDIX A: Background to the Project



Access to finance and technology is a key pillar of the World Bank Group's Gender Strategy (2016–23). But research undertaken by the World Bank Group and other international development institutions shows that women in rural areas, and in particular female farmers, have significantly less access to financial services than their male peers. Such limited access harms women in agriculture and their households, significantly impeding their ability to grow and prosper. As an example, it may be mentioned that female farmers' limited access to loans reduces their ability to invest in seasonal inputs. It is estimated that closing the gender gap in access to productive assets such as inputs could lead to a 20–30 percent yield increase per household, which would not only benefit female farmers, but would benefit their entire family (FAO 2011).

Although digital finance and big data can significantly unlock access to and usage of financial services, approaches will need to be developed to address the specificities of agricultural markets and of female farmers. This development is needed because the educational, sociocultural, and legal constraints that women face—combined with the specific life-stage transitions or disruptions that may compound the effect of those constraints on their agency⁹—means that women lead fundamentally different economic lives than men and therefore may need to be served differently by service providers (Maftei and Colina 2019).

In 2017, the World Bank initiated, with support from the Umbrella Facility for Gender Equality, a project to explore how digital financial services (DFS) could better serve the specific needs of women in agriculture, with the intention of generating knowledge on the potential of mobile technologies and of digitized data to expand female smallholder farmers' access to finance, and to close the gap between them and their male counterparts.

The first phase of this body of work consisted of a global stock-taking exercise in which DFS solutions and initiatives targeting rural women were identified, and the ecosystems in which these solutions were developed were examined.

This first phase helped gain a better understanding of the current ecosystem and helped identify gaps that could be filled with targeted financial and technical assistance (TA). The findings of the stock-taking exercise were presented in the 2017 report *Mobile Technologies and Digitized Data to Promote Access to Finance for Women in Agriculture* (World Bank 2017).

In the 2017 report, four recommendations are made to help guide efforts to reduce the gap in financial access between male and female farmers:

1. Leverage the role of savings groups by digitizing them to increase their efficiency and transparency.
2. Select companies already successfully offering savings, insurance, and credit but who have not targeted women as a key customer segment, and provide them with assistance in marketing and promotion to women.
3. Invest in the design of gender-responsive bundled service offerings that meet the financial priorities and life cycle needs of female farmers.
4. Drive collection and use of digitized data to expand bank (financial institutions) offerings and financing to women in agriculture.

With these recommendations in mind, the next phase of the project consisted in identifying three TA engagements. This involved running a crowdsourcing exercise to solicit proposals from providers that already had a DFS offering and wanted to better adapt the existing product to suit the needs of rural female customers. Through a competitive process, three providers, across three markets, were selected:

- **Fenix in Uganda:** An off-grid solar home system provider that enables rural households to rent-to-own solar home systems, financed through mobile money instalments.
- **Safaricom's DigiFarm in Kenya:** An integrated mobile platform that offers smallholder farmers access to inputs, agronomic training, and financial services to help increase their farm's productivity.
- **MyAgro in Tanzania:** A mobile-based lay-away system that helps farmers to save money for seed and fertilizer purchases.

Each provider received TA to either design a new solution or adapt its existing offering to better suit the needs of female farmers. The TA's focus was to assess the unique needs of female farmers and to make recommendations on how each provider's offering could be improved to better respond to those needs.

9. Agency is defined as the ability to make choices and act on those choices.

This report synthesizes the lessons learned from these three TA engagements with a specific focus on the following learning questions:

- **On process**

- What were the main motivations of each of the providers to participate?
- What were the lessons learned from the process of working with each partner and consultant?
- What level of effort was needed to conduct gender assessments of each partner's service offering?

- **On challenges**

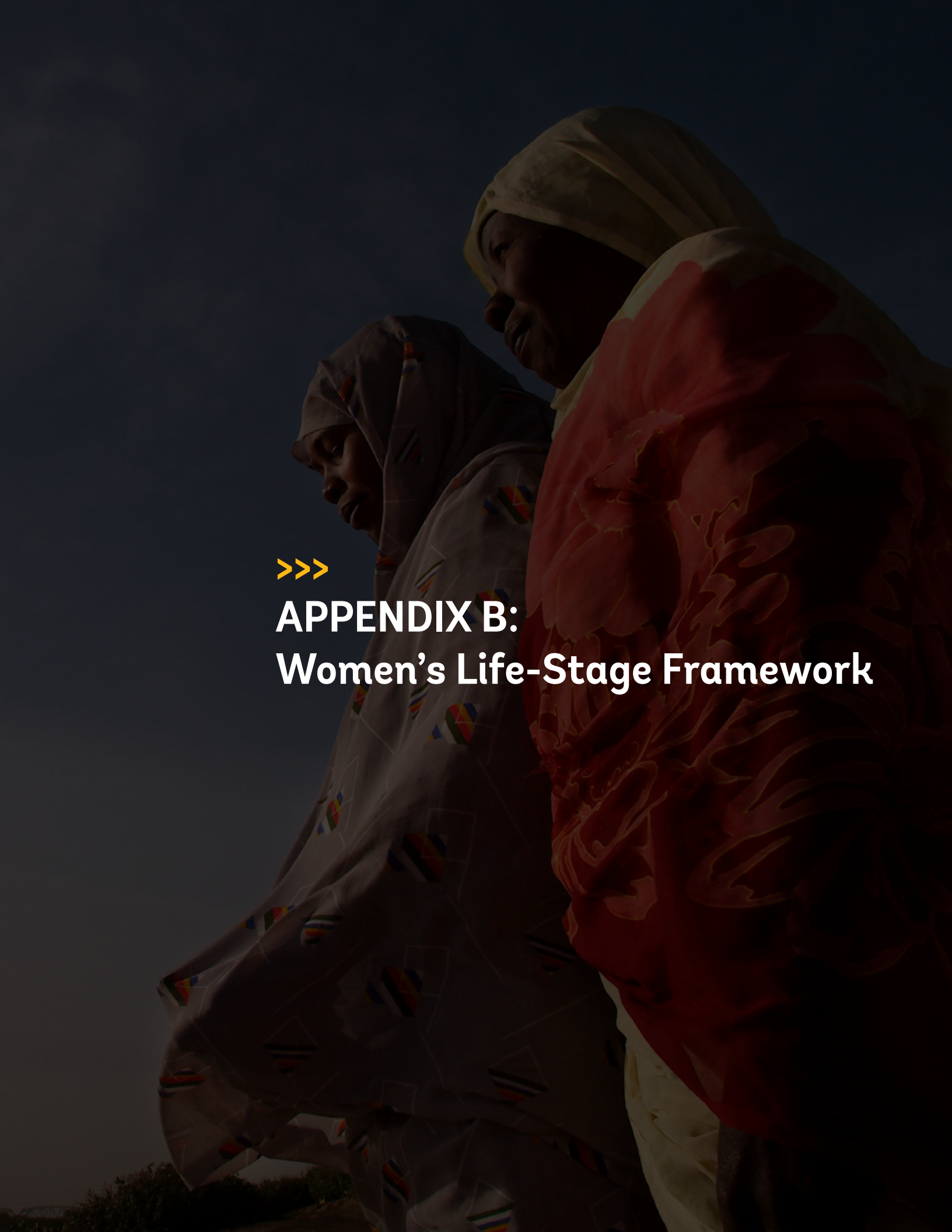
- What challenges arose over the course of each engagement and how were they addressed?
- To what extent did the support provided by the TA add value to each partner's offering? And if yes, how exactly?

- **On outcomes**

- What recommendations were made to each provider on how to make its offering more attractive to female clients?
- What improvements, if any, were made by each provider as a result of the TA?
- How did the TA change the perceptions of each provider about the business case for making extra efforts in serving female clients?



APPENDIX B:
Women's Life-Stage Framework



Life stage	Gender dynamics	What does this mean for financial service provision?
<p>Childhood</p>	<p>Gender inequality starts in early childhood. In many rural households, girls are often forced to stay home to care for siblings, conduct housework, or work on the family farm. Some households prioritize child marriage over education, particularly during climate or market shocks when it can ease the financial pressure of having too many mouths to feed. For instance, the drought that has affected large portions of southern Africa for the last five years has led to a rise in the rate of adolescent girls being forced into marriage (Naranjo 2020).</p> <p>Across all regions, girls who live in rural areas are more likely to become child brides than their urban counterparts, which affects their ability to complete their education. Because lower educational levels are correlated with lower access to agricultural resources and assets, girls who are married early—and by extension their families—are more likely to remain in poverty.</p>	<p>Rural households that are more vulnerable to economic shocks (and thus more likely to marry their girl children off) could benefit from financial services that help boost their resilience, such as savings products and health or long-term disability insurance.</p> <p>In areas in which early marriage is prevalent, providers should tailor their service offering to account for low levels of educational attainment among female clients, which leads to lower levels of financial and digital literacy, limited financial management capacity, and a human capital gap that might influence the types of income-generating activities they engage in.</p>
<p>Young adulthood</p>	<p>As girls become young women, the burden of paid and unpaid work increases considerably. This burden not only dictates how they spend their time, it also contributes to undervaluing their potential as economic actors. Their ability to access and complete secondary education is often determined by their household's financial stability. In countries with particularly restrictive social norms or legal discrimination, marriage can worsen constraints, as women's legal status and rights—including land tenure rights—are transferred to their husbands.</p> <p>In many cases, childbirth forces young women out of the educational system to take care of the child or to seek additional income-generating opportunities. When controlling for education and experience, gender gaps in access to finance lose significance. Thus, lower levels of educational attainment affect young women's ability to access financial services to grow their farm or start a microenterprise.</p>	<p>In some contexts, in which women's asset and land ownership are limited, women may have trouble meeting collateral requirements for credit products. Providers should consider flexible collateral and know-your-customer requirements, such as risk-based customer due diligence to overcome this challenge.</p>

Life stage	Gender dynamics	What does this mean for financial service provision?
<p>Middle age</p>	<p>Throughout middle age, women perform a balancing act between productive and reproductive responsibilities. Social norms that dictate how mothers spend their time greatly limit their ability to fully participate in income-generating activities.</p> <p>The average fertility rate in low-income countries is 4.6 births per woman. Women's complete responsibility for reproductive and unpaid care work undermines their ability to fully engage in income-generating work, especially if it requires leaving the home. In Tanzania, for instance, rural women currently work 14 more hours than men per week. The unequal distribution of care within the household is both time-consuming and resource-intensive, meaning that transitions to higher-value, more remunerative farming activities are likely to stall during this life stage.</p>	<p>Childcare and other household responsibilities limit women's mobility. Providers must adapt the ways in which they deliver their products and services. For instance: agronomic training should be delivered in a place and at a time that ensures women's participation and should offer childcare services.</p> <p>Note: Increasing women's access to credit without taking into account their unpaid care load might have the unintended consequence of increasing the total number of hours in a day that women spend on work to repay the loan.</p>
<p>Elderly years</p>	<p>Once children are grown, women may regain some time and flexibility. Separation, divorce, or the death of a spouse can also result in increased agency and mobility. However, in many contexts, customary norms or discriminatory laws related to land rights and inheritance put female farmers at risk of being pushed off the land by their in-laws, leaving them destitute.</p>	<p>Financial services that help female farmers establish a financial buffer or support their income diversification strategies both on and off the farm can help mitigate against the risk of losing everything as a result of losing their spouse. Remittance or payment products can help women at this life stage cultivate and maintain a social financial network</p>



References

Biegel, Suzanne. 2018. "What Is Gender-Smart Investing?" Catalyst at Large. <http://www.catalystatlarge.com/what-is-gendersmart-investing>.

FAO (Food and Agricultural Organization of the United Nations). 2011. *The State of Food and Agriculture 2010–2011*. Viale delle Terme di Caracalla, Rome.

Maftai, Anne, and Clara Colina. 2019. *Pathways to Prosperity: Understanding Women's Rural Transitions and Service Needs*. ISF Advisors and the Mastercard Foundation Rural and Agricultural Finance Learning Lab, Washington, DC.

Naranjo, Jose. 2020. "[La locura climática provoca una grave hambruna en el sur de África.](https://elpais.com/elpais/2020/02/13/planeta_futuro/1581614081_589765.html)" *El País*, February 26, 2020. https://elpais.com/elpais/2020/02/13/planeta_futuro/1581614081_589765.html.

United Nations Development Programme. 2018.

World Bank. 2017. *Mobile Technologies and Digitized Data to Promote Access to Finance for Women in Agriculture*. Washington, DC: World Bank. <http://documents1.worldbank.org/curated/en/855471513670397514/pdf/122110-WP-PUBLIC-DFSforwomeninagrireport.pdf>.

