

# Farm to Market Alliance (FtMA)

## Gender Impact Study: Final Consolidated Report

Report completed by Busara and Dalberg on behalf of Mercy Corps AgriFin

April 2021



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# Study Objectives

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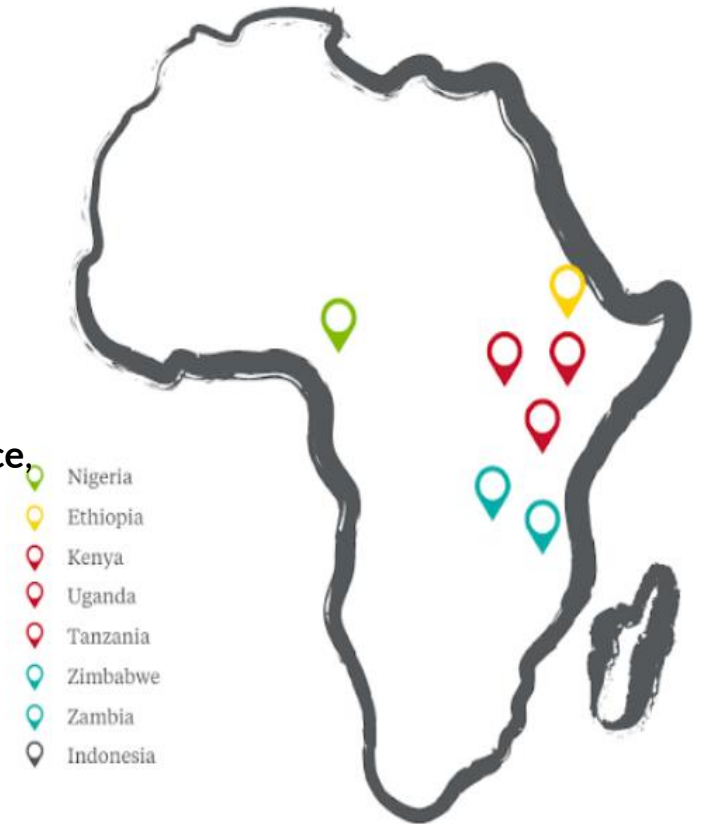
# About Mercy Corps AgriFin

We work with over 9 million farmers and 150 partners across Africa

Mercy Corps' AgriFin Digital Farmer (ADF) Program is funded by the Bill and Melinda Gates Foundation to help organizations design, test and scale digitally-enabled services for Africa's smallholder farmers.

- Objective is to develop services that increase **farmer income, productivity and resilience**, with 50% outreach to women.
- Work with **private & public sector scale partners** such as banks, mobile network operators, agribusinesses, technology innovators and governments.
- We help our partners develop bundles of digitally-enabled services, including **smart farming, financial services, market access and logistics** supporting data-driven partnerships.

The AgriFin Digital Farmer (ADF) program is championing the development and deployment of a range of full-service digital ecosystems to support end-to-end farming activity across East Africa.



# Context

Women account for nearly half of the world's smallholder farmers and greatly contribute to agricultural activity yet are disproportionately affected by systemic challenges in the agricultural sector such as access to markets, credit, inputs, knowledge, and land. Digital solutions have potential to revolutionize the livelihoods of farmers, however, **challenges that constrain meaningful use of digital services by female users limit sustainable impact for women smallholder farmers.**

The agriculture sector in Africa has been facing systemic challenges over the past decades including issues around markets, credit, quality inputs as well as knowledge and networks. These **challenges disproportionately affect female smallholder farmers** who contribute greatly to agricultural labor and productivity.

**Digital solutions have potential to revolutionize the livelihoods of farmers,** however, consistent challenges that constrain meaningful use of digital services by female users limit sustainable impact for female smallholder farmers.

The Bill and Melinda Gates Foundation has engaged AgriFin to understand **the impact of digital services on women smallholder farmers,** and the factors driving and inhibiting their adoption and usage of the services.

This study consisted of 3 phases of research and this report highlights the key learning from each phase.

Source: World Economic Forum, "Women grow 70% of Africa's food. But have few rights over the land they tend", 2018

# Objectives

This assessment was conducted to map the impact of digital product and services on women farmers, and factors driving its adoption and use by farmers, particularly women.

This report presents the results of a gender impact assessment of FtMA's Farmer Service Center (FSC) based service to farmers, particularly women. The main objectives of the study were centered around understanding knowledge/attitudes towards digital solutions/services, engagement with FtMA by gender, factors that drive adoption and use of FtMA services, particularly by women as well as impact on women smallholder farmers' livelihoods and learnings for delivering digital solutions for women.

This report is structured to convey the following insights inline with the objectives outlined above:

- User engagement statistics of a selected sample of men and women engaging with FSCs
- Factors influencing adoption and engagement with FtMA from qualitative interviews with farmers and key informants,
- Elicitation of mental models that inform women's decision making around uptake and engagement with FtMA
- Overall impact of FtMA on women's livelihoods
- Recommendations on lessons learned for improving adoption, utilisation, and impact of FtMA, particularly for women.

# Executive Summary

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# Executive Summary

FtMA is a multi-stakeholder partnership that supports smallholder farmers through a network of farmer service centres (FSCs) to transform food value chains. FSCs are managed by local entrepreneurs and groups and serve as key service hubs to connect FtMA with smallholder farmers. FtMA offers a range of services to support farmers, centering on: **capacity building and training**, **access to affordable finance**, **access to inputs and mechanization** and **access to markets and post harvest support**. FtMA-Kenya has also launched digital services to support its FSCs and farmers, which include Interactive Voice Response (IVR) calls, SMS and Kuza Leadership Academy to provide digital trainings; digital loans; YARA Connect and Hello Tractor to enhance access to inputs and mechanization respectively; and Twiga Foods and Farm2Go to enhance market facilitation. This study explores the factors that drive or affect use and engagement of both women FSC-leads and women farmers on FtMA in Kenya for the following

- ❖ **FtMA onboarding through Agribusiness Coordinators (AC) and Farmer Service Center (FSC)**
- ❖ **Farmer Participation in farm training, trade fairs and engagement with IVR interventions**
- ❖ **Farmer Access to Markets**
- ❖ **Access to Input Loans**

Our assessment explored both quantitative data analysis of a selected sample of FtMA farmers and qualitative interviews with farmer participation in FtMA training, access to markets, access to finance and Crop Protection (CP), trade fairs which gave farmers the chance to learn and purchase a variety of agrochemical products.

Participation in Good Agricultural Practices Training (GAP) and Post Harvest Handling Training (PHH) was 24% while participation in Crop Protection (CP) trade fair attendance was much lower at 5%. Women participated more than men in PHH training and significantly less in CP trade fairs. Loan access was fairly equitable between genders, although disparities did exist between short rains and long rains seasons, with women accessing more loans during the short rains. Overall men had more farm acreage and were more likely to sell of more bags of harvest than women.

# Executive Summary- Divers and Barriers to Adoption

## Drivers

- **Use of FSC leads who are local** entrepreneurs enhances women farmers' trust of FtMA and subsequent joining as the FSC leads are familiar to them, which helps in gaining trust and buy-in from women farmers. Similarly, success of FSC leads and group leaders' farms sparks interest among women farmers and generates awareness and trust of FtMA.
- **Use of farmer groups and in-person registration support** has been particularly effective in recruiting women as women farmers comprise the majority membership in these groups compared to male farmers. In addition the presence of in- person FtMA representatives provides a trusted source of information for guidance and reassurance, as well as support for (digital) literacy challenges
- **High-quality inputs** are a key reason women farmers join FtMA - The high-quality of inputs creates an incentive for women FSC leads and farmers to join FtMA. Women farmers are more involved in the planting and cultivation stages of farming compared to men farmers and are therefore more likely to appreciate access to high-quality inputs
- **Trainings are also a key value proposition for women farmers** to join FtMA - Trainings are one of the main reasons women farmers join FtMA. Women farmers are attracted to the trainings as they offer knowledge on how to improve cultivation on the farm, which is primarily seen as women's roles, and the trainings are interactive in nature
- **A guaranteed market for produce** is also highly valued by women farmers - Women farmers appreciate the guaranteed market for certain crops

## Barriers

- **Variation in FSC leads' recruitment & onboarding** results in variation in the support FSC leads can provide farmers, which can hinder FSC leads from fully supporting some farmers. This is felt more by women farmers who need more handholding and guidance in using FtMA's products than men farmers.
- **Household responsibilities and required permission from husbands** can limit women's attendance to trainings.

# Executive Summary- Drivers and Barriers to Use

## Drivers (Digital Products)

- **IVR and SMS** provide targeted and easy-to-understand content through IVR calls and SMS encourages continued use by women farmers. The **Kuza Academy** empowers women with the provision of tablets, high-quality content and mentors (Kuza digital champions) that leads to engagement by women.

## Drivers (Non-Digital Products)

- **Access to markets** and competitive prices relative to middlemen or other off-taker agreements incentivize women farmers to sell produce through FtMA as opposed to other channels. **High-quality inputs** not only drive uptake but help sustain continued engagement by women season after season as a result of the higher yields gained. Access to interactive **training** allows women gain hands on experience and ask questions, see demonstrations and network with other farmers, which encourages continued engagement.

## Barriers (Digital Products)

- **Limited awareness that FtMA is the provider of IVR and SMS** trainings in some cases results in low engagement by some women farmers as they do not know and therefore do not trust the source of the information. **Time constraints** given household responsibilities and higher time poverty levels also negatively affects continued use. Women FCSs have numerous demands on their time which limit their ability to interact with Kuza content to the same extent as male FSC leads. **Digital literacy challenges** also serves as a barrier to use and operation of the tablet to access **Kuza Academy content** for both men and women FSC leads, but women FSC leads are more likely to experience challenges
- **Limited awareness of digital loan providers** by FSC leads drives lower applications for digital loans. Women farmers may be less likely to receive digital loans because the current credit scoring model of digital providers advantages those with greater input purchases and greater off-taker contracts, who tend to be men.
- **Women are less likely to benefit from App** based service offerings such as **YARA connect and Hello Tractor** FSC leads are less likely to benefit from the YARA Connect App, as fewer women FSC leads own agrovet stores compared to men. The Yara Connect app targets FSC leads who own agrovet stores, but women farmers are less likely to own agrovet stores than men farmers.
- **Hello Tractor:** Women FSC lead's limited access to smartphones compared to men FSC leads impedes their use of the Hello Tractor App, which requires a smartphone.

# Executive Summary- Drivers and Barriers to Use and Women Segments

## Barriers (Non-Digital Products)

- **Gendered roles** determine women's attendance of the trainings. Fewer women compared to men participated in the Crop Protection Trade fairs because it was viewed as more of a man's responsibility. **Social norms** around spousal approval from husbands to travel for trainings can be a barrier for women farmers to attend trainings.
- Time constraints due to women's household responsibilities also limit participation in trainings.
- **Limited sole ownership of collateral** drives women farmers' risk aversion to both non digital and digital loans. Negative past experiences with group loans as well as with insurance payouts have made farmers, particularly women, reluctant to take more input loans and trust insurance.
- **Logistical challenges** result in farmers sometimes experiencing delays in accessing inputs in a timely manner from agrovet stores. This challenge is felt more by women farmers due to their time and mobility constraints. Mobility constraints also limit women's access to markets and their ability to sell produce through FtMA - Women's household responsibilities result in time and mobility constraints that may limit women's ability to take produce to aggregation points.

## Women Segments

- Based on the qualitative insights gathered as well as farmer demographics 3 segments of women farmers were identified:
  - Community Leaders: They are the most active women users of FtMA and are likely to be chosen to be an FSC lead.
  - Certainty Seekers: They are moderately digital savvy and constitute the average-user segment of FtMA.
  - Path Followers: These form the segment of women that engage with FtMA the least.

# Executive Summary-Impact

Overall, we find that FtMA has positively impacted the livelihoods of women farmers and FSC leads, as shown below:

## ***Farm productivity:***

- **Women farmers have seen improved yields and productivity given the FtMA training** on good agronomic methods and practices such as the best time to plant, when and how to use inputs. **Increased access to certified and quality seeds and inputs** from agrovets run by FSC leads closer to home and input partners such as Yara has facilitated increases in yields. Women farmers have been able to diversify their farming practices and now practice mixed farming- crops and livestock.

## ***Incomes:***

- Better farming practices such as pest management have resulted in **increased incomes. FtMA trainings have encouraged FSC leads and farmers to shift from subsistence to commercial farming** and facilitated the shift by enhancing access to markets, which has resulted in higher incomes. **FtMA has helped women FSC leads diversify income streams.** FSC leads can more easily venture into Agribusiness and other ventures e.g. Agrovets, through business coaching provided by FtMA through Kuza. Additionally, FSC leads gain commission for every farmer they onboard, increasing their income streams. **Women FSC leads have reported enhancement of their entrepreneurship and business skills** through mentors and training on good business practices such as bookkeeping. They have been able to strengthen their entrepreneurship skills, translating to higher incomes.

## ***Time-savings:***

- **Women farmers save time as they do not have to spend time looking for markets,** as they are linked to off-takers directly. **Women farmers have access to timely information from FSC leads,** saving women time to search for information on farming, markets, etc..

## ***Decision-making power:***

- **There is increased decision-making power by women in the household** as spouses trust the knowledge received from the trainings, and therefore allow women to make more contributions to farming decisions. **Some women mentioned their husbands now consult them on business and financial decisions,** especially after observing women FSC leads and farmers diversify their activities and incomes.

# Executive Summary- Recommendations

To amplify impact and continue supporting women farmers, the following opportunity areas emerge as high-priority for FtMA:

## Awareness and onboarding to encourage adoption

- **Work with implementing partners to proactively recruit more women through through channels** Such as farming groups and cooperatives. **Review and standardize the recruitment process** used by implementing partners to recruit FSC leads to ensure the process is gender-inclusive. For example, requesting for evidence of farming success (yield wise) in FSC recruitment may result in women being less likely to qualify as FSC leads, as on average, women farmers have less acreage and yield than men farmers.

## Product design and roll-out to encourage active use

### *Digital products*

#### *IVR & SMS*

- **Indicate the origin of IVR calls and SMS** as from FtMA and standardize the list of phone numbers making IVR calls to increase trust, buy-in and engagement by FSC leads and farmers
- **Follow up IVR calls with a summary on SMS** for farmers to have a repository of content for reference
- **Ensure timing of content delivered through IVR calls and SMS is aligned with the season or current farming events** to enhance engagement

### *Digital loans*

- **Ensure FSC leads are aware of all loan provider options** through trainings/IVR/SMS to ensure they recommend the full range of provider options to farmers
- **Work with digital loan providers to review creditworthiness criteria and data** to ensure the loan review and qualification process is gender inclusive

# Executive Summary- Recommendations

## *Non-digital products*

### *Trainings*

- **Work with implementing partners and FSC-leads to offer more trainings at the local level** for farmers, to address challenges of attending distant trainings for women farmers
- **Ensure implementing partners recruit training attendees from farmer groups or through the FSC-leads** to ensure higher chances of recruiting women farmers

### *Loans*

- **Provide individual loans to farmers in addition to group loans** to mitigate challenges of collective penalization in group loans

### *Insurance*

- **Work with insurance partners to ensure farmers are compensated in a timely manner** in case of crop losses to shift negative perceptions of insurance not making payments when needed
- **Offer trainings on insurance to FSC leads and farmers** to enhance awareness and understanding of insurance and shift negative perceptions e.g. through SMS, use of FSC leads, etc.

### *Access to markets*

- **Encourage FSC-leads to collect produce from women from their farm or homes** as additional support to help address women's time and mobility constraints from accessing markets
- **Work with offtaker partners to ensure that forward contracts are honored** for all farmers

A person is visible in the background, partially obscured by a red overlay. They appear to be in a field or garden, looking down. The overall scene is bathed in a deep red light, creating a dramatic and somewhat somber atmosphere. The person is wearing a light-colored shirt.

# Study Methodology

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# Study Methodology

➤ To achieve the learning objectives, a mixed approach is applied and executed by Busara and Dalberg over three phases:



**Data Analytics:** Data analysis of a selected sample of administrative data on farmer usage of DigiFarm by gender.



**Qualitative Research:** Explores farmer experiences and journeys for each partner product with in-depth interviews with a subset of farmers and stakeholders.



**Behavioral Mapping:** Identifies shared mental model themes (from the farmer interviews) of how farmers perceive the DigiFarm value proposition and the behavioral barriers and levers that may be driving decision making around usage.

- Four partners have participated in this study:
  - Arifu
  - AgriPay (by Zanaco)
  - DigiFarm
  - FtMA (Farm to Market Alliance) Kenya

# Study Methodology

## Research method

## Description



### LITERATURE REVIEW

We reviewed **key documents**, including past AgriFin, Dalberg, BMGF and external research on FtMA, and best practices in reaching women farmers through digital and non-digital services. Key reports reviewed include:

- Mercy Corps and Dalberg: Farm to Market Alliance (FtMA): Digitization and lessons learned
- FtMA Kenya Country Brief and FAO - The role of women in agriculture
- Mercy Corps/Dalberg/WFP: FtMA Kenya HCD Insights and recommendations



### Data Analytics

We conducted **quantitative data analysis of a subsection of FtMA data on farmers onboarded through their farmer service centers. This covered analysis on** participation in trainings and trade fairs, farm yield and access to markets, access to finance and engagement with IVR interventions.



### KEY INFORMANT INTERVIEWS

We conducted **key informant interviews with the following key 5 FtMA partners.**

- Cereal Growers Association (CGA)
- Remington Africa
- Apollo
- Hello Tractor
- Kuza



### AGENT AND FARMER INTERVIEWS

We conducted **25 Human Centered Design (HCD)-inspired interviews with FSC leads and farmer.** We spoke to a total of 25 people, including:

- 16 FSC leads (9 female, 7 male)
- 3 farmer group leads (2 female, 1 male), 5 farmers (4 female, 1 male)
- 1 Syngenta agent (male)

Note: We targeted our recruitment to ensure a diversity of women's experiences would be captured, including using selection criteria around age, education level, marital status, and smartphone ownership. The full breakdown of farmers and agents interviewed is available in the annex.

A person is visible in the background, partially obscured by a red overlay. They appear to be in a field or garden, with plants and a bowl of produce visible in the foreground. The overall scene is bathed in a deep red light, creating a dramatic and focused atmosphere.

# About FtMA

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# FtMA Model

FtMA is a public-private consortium of organizations seeking to transform food value chains in emerging markets by building long-term linkages between suppliers (farmers), buyers and other key market players. FtMA is a multi-stakeholder partnership that supports smallholder farmers through a network of Farmer Service Centres (FSC) It currently operates in Rwanda, Tanzania, Zambia and Kenya. FtMA takes a demand-led and holistic approach, tackling farmer challenges with partners through a recently-launched, innovative Farmer Service Centre (FSC) model.

## FtMA Partners


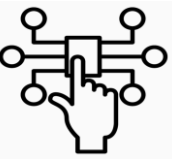


Since its launch in 2017 FtMA Kenya has been delivering a full set of services through a network of Farmer Service Centers (FSCs).

- FSC are lead by influential local business leaders and groups and serve as key service hubs linking private and public sector partners with smallholder farmers. Prior to late Q4 2019, farmers were on boarded onto FtMA service streams through FtMA field officers or Agribusiness Coordinators (ACs) that worked through local farming groups. These groups were predominantly self help groups that served as a platform for offering farming services and products. In contrast to ACs FSCs provide direct linkages to local farmers through influential and trusted business leaders.
- FSC's earn income by delivering to smallholder farmers quality agricultural products and service at the village level , thus reducing extra cost and inconvenience faced due to last mile delivery challenges. FtMA aggregates local smallholder farms through established agribusiness entrepreneurs while driving revenue for these entrepreneurs. FtMA supports 394 FSCs across 12 counties well above the FtMA 2020 target of 360. The FSCs are projected to serve 72,500 farmers by the end of 2020.

# FtMA Service Offerings: Digital and Non-Digital

This engagement focused on a subset of FtMA's digital and non-digital products and services offered to FSCs and smallholder farmers

	Capacity building trainings	Access to affordable finance	Quality inputs and mechanization	Access to markets and post harvest services
<p><b>Non-digital services</b></p> 	<p><b>Trainings:</b> to build capacity for farmers on topics such as Good Agricultural Practices (GAP); Post Harvest Handling (PHH) and Crop Protection (CP) through trade fairs, exhibitions, etc.</p>	<p><b>Loans:</b> FtMA supports farmers in accessing loan products to purchase quality inputs from loan providers such as KCB bank</p> <p><b>Crop insurance:</b> crop loss insurance is provided to protect farmers against losses caused by external factors, from planting to harvest</p>	<p><b>Inputs:</b> farmers access quality and certified inputs at bulk prices from FtMA's partners (e.g. Yara)</p> <p><b>Mechanization:</b> FtMA's FSC leads link farmers with mechanization services (e.g. for ploughing)</p>	<p><b>Forward delivery contracts:</b> FtMA equips smallholder farmers with forward delivery contracts with commercial buyers such as Transu and Dash Crop. The platform also offers post harvest support and resources such as sale of Tarpaulins, Hermetic bags, Hygrometer and Silage bags.</p>
<p><b>Digital services</b></p> 	<p><b>Interactive Voice Response (IVR) calls and SMS:</b> Agricultural trainings are delivered to FSC leads and farmers through IVR calls and SMS</p> <p><b>KUZA leadership Academy:</b> Offers business coaching to FSC leads</p>	<p><b>Digital loans:</b> FtMA has partnered with digital loan providers e.g. AgriWallet, Farmdrive, and Apollo, to add to its offering of loans to farmers</p>	<p><b>Yara Connect:</b> offers a reward-based loyalty program and expert farming knowledge to FSC leads with agrovet stores selling Yara's inputs</p> <p><b>HelloTractor:</b> connects farmers with tractor owners</p>	<p><b>Farm2Go:</b> enables FSC leads to collect digital, real-time data from farmers. The application aims to increase effectiveness and efficiency across the value chains.</p>

Source: AGRIFIN Gender Impact Assessment, Farmer Interviews, 2020; Note: This assessment focused on the digital services which have been rolled out to women FSC leads and therefore did not cover Twiga Foods and Farm2Go, which have not yet been used by women FSC leads.



# FSC Leadership Engagement

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# FSC Sample Engagement Statistics



We observed from a sample of 365 FSCs that the FtMA service delivery model through FSCs is dominated by men. This is mostly likely due to the greater number of male agro entrepreneurs across most counties that can be leveraged as FSCs. However, we see little to no disparities by gender in the uptake of digital training interventions offered to build capacity among FSC in farmer aggregation.

## Fewer FSCs led by women

- 31% of FSCs are led by women unlike local farm group based channels that tend to have more female leadership.

## Equal engagement in digital mentorship

- We see an almost equal proportion of men and women engaging with the Kuza digital mentorship (62% of men and 61% of women)

## Men Led FSCs had more income streams & transactions

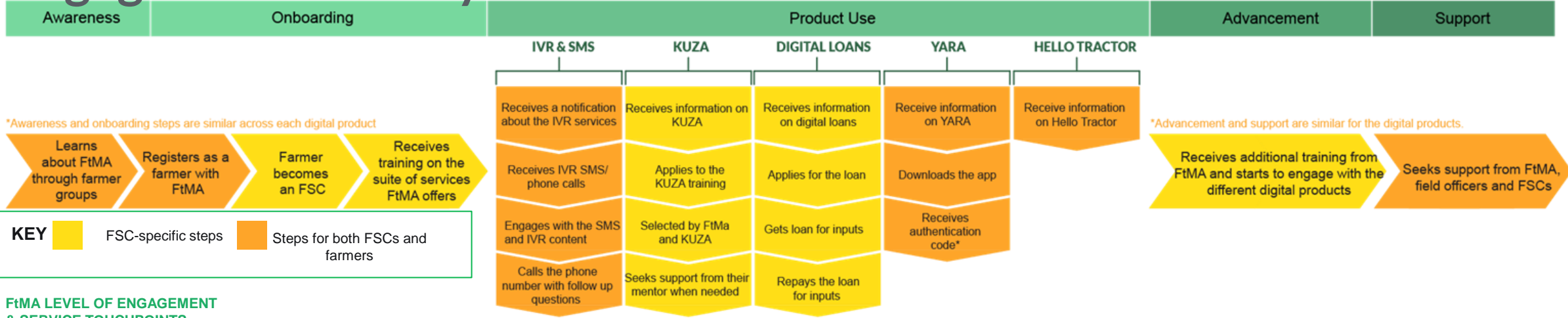
- 2-5 was the range of income streams most male FSCs had while most women only benefited from 1-2 FtMA income streams. 44% Of FSC transactions with farmers were conducted by male FSCs

## Fairly equal use of digital solutions like Hello Tractor

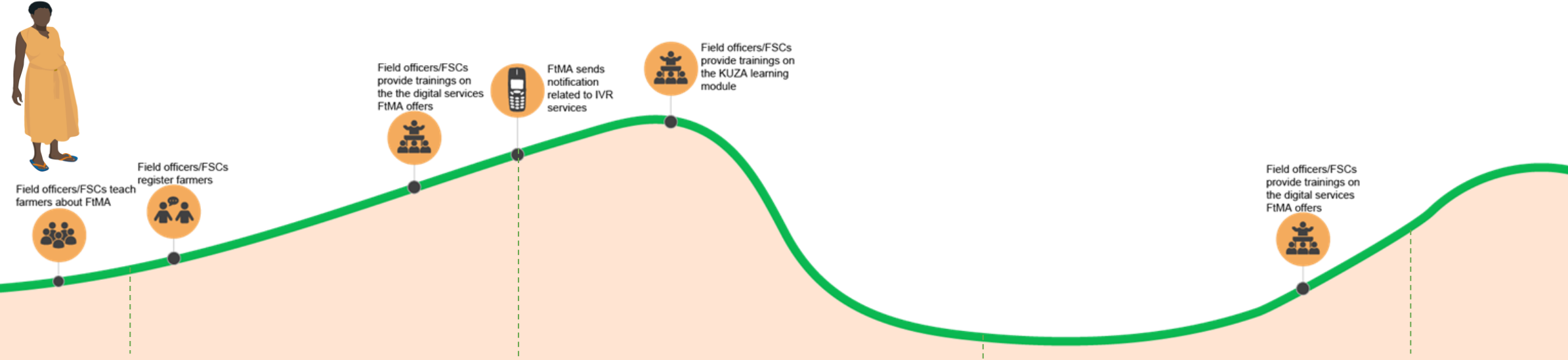
- Although overall use of digital solutions like Hello Tractor and Yara Connect was less than 50% for both men and women, we observed little disparities in usage between gender. Farm2Go had lowest uptake off all digital solutions and the highest disparities by FSC gender (5% men and less than 1% of women).

# Engagement Journey of Women FSC Leaders

FtMA PRODUCT JOURNEY



## FtMA LEVEL OF ENGAGEMENT & SERVICE TOUCHPOINTS



### FSC LEAD AND WOMAN FARMER QUESTIONS

- What are digital services? Which ones are available?
- How can they be used to my benefit?
- What digital services does FtMA offer?
- Will I be able to use the digital services?
- When will I receive the IVR? Will it be at a convenient time for me?
- FSCs: Will I be able to understand the KUZA training and perform well?
- Will I qualify for a digital loan?
- What are the loan requirements?
- What happens if I default on the loan?
- What do I need to use Yara Connect?
- How will it benefit me?
- How can I use Hello Tractor?
- Will it be useful for me and my fellow farmers?
- Who can offer me support if I am not sure how to use the apps?
- FSCs: How do I support farmers to use digital services?

Source: AGRIFIN Gender Impact Assessment, Farmer Interviews, 2020; Dalberg Analysis

# Factors that Drive the Engagement of Women FSC Leads with FtMA

## Access to Digital Products and Mentorship Support

FtMA's provision of tablets to FSC leads, and high-quality, pre-downloaded content on the tablet drives usage. For FSC leads, this translates to easy access to the training (rather than a need to find or purchase or device to access the trainings), and limited data requirements and costs.

While all FSC leads are paired with mentors on Kuza, women FSC leads are more appreciative of the support system offered by the mentors compared to men FSC leads. Women FSC leads mentioned more frequently than men that the mentor offering is one of the services they value most about the academy as it gives them the ability to direct any questions or discuss challenges with mentors. This further indicates women's preference for interactive learning.

## Desire for Leadership and Business Skills

Men FSC leads value social-focused aspects of the training on Kuza, while women FSC leads value economic-focused modules more. Men valued modules such as leadership skills and relating and communicating with groups, while women FSC leads appreciated and highlighted modules that taught business skills such as record-keeping and competition more. This could be because men are more likely to have other channels of business knowledge and information than women, while women are more likely to be well-versed with social aspects, given their higher likelihood of being part of groups, but have few other sources of business knowledge.

*"I have been really happy with the learnings. It taught us about mindsets and action plans and to put plans together for record keeping of the income you have received."*

WOMAN | FARMER/FSC lead | 48 | THARAKA NITHI

*"I will praise the mentor I had. She was reachable and can help any time. She is available for any questions in general, not just Kuza"*

WOMAN | FARMER/FSC lead | SIAYA

# Factors that Limit the Engagement of Women FSC Leads with FtMA

## Logistical Challenges

The distance of Hello Tractor's tractors dissuades FSC leads and farmers from using Hello Tractor compared to closer services. FSC leads have stated that Hello Tractor does not have tractors close to the farmers, which sometimes require tractors to be brought in from long distances, which requires farmers to pay transport costs. The additional costs are a disincentive for farmers in using the service and therefore impact farmers from both a financial and time perspective.

Hello Tractor's minimum acreage requirement is also a barrier to usage, as it is sometimes difficult to aggregate farmers with the same mechanization needs to meet the requirement. In addition, farmers usually need mechanization services quite rapidly after requesting them, and are unlikely to be able to wait for days for the minimum acreage to be met.

## Poor Digital Infrastructure

Access to electricity to charge the tablet also constraints FSC leads' ability to keep up with the modules and engage with content frequently. Given time constraints, women FSC leads may find it more challenging to take their tablets to town to charge them.

*"I bought a smartphone yesterday. I had not used Hello Tractor yet because I did not have one. I have put it [my phone] on charge and I will download the Hello Tractor app"*

WOMAN | FARMER/FSC lead | 40 | BUSIA

*"They need minimum acreage (10 acres) before they can come. By the time it is time for ploughing, you have no time to arrange for a tractor"*

MAN | FARMER/FSC lead | 70 | SIAYA

# Factors that Limit the Engagement of Women FSC Leads with FtMA

## Time Constraints

Given household responsibilities and higher time poverty levels, women FCSs have numerous demands on their time which limit their ability to interact with Kuza content to the same extent as male FSC leads. This limited time to learn and review information may impact their retention of information learnt and their performance, as well as their ability to apply learnings.

## Low Digital Literacy

Digital literacy is a barrier to use and operation of the tablet to access Kuza content for both men and women FSC leads, but women FSC leads are more likely to experience challenges. Women farmers were more likely to reach out to mentors and family for assistance compared to men FSC leads. In addition, **Women FSC lead's limited access to smartphones compared to men FSC leads impedes their use of the Hello Tractor App.** FSC leads assert that there is a need to have a smartphone to access Hello Tractor Trainings. Women are less likely to have a smartphone compared to men, implying women FSC leads are less likely to access the app than men FSC leads. The low number of women FSC leads on Hello Tractor may then have an influence on the proportion of women farmers encouraged to use tractor services.

## Cost of Engagement Low Digital Literacy

The cost of data bundles to update the app and Kuza platform, when updates are required is a disincentive for FSC leads to engage with modules. This can be more challenging for women FSC leads given their lower transaction values, and women's lower disposable income on average, compared to men.

*“On weekdays I had too much work so I would not have a moment to look into the Kuza information”*

WOMAN | FARMER/ FSC lead | 48 | THARAKA NITHI



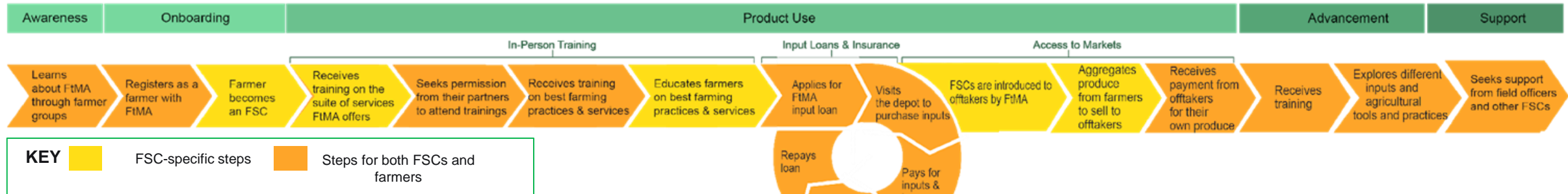
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# Farmer Engagement with Farmer Service Centers (FSC)

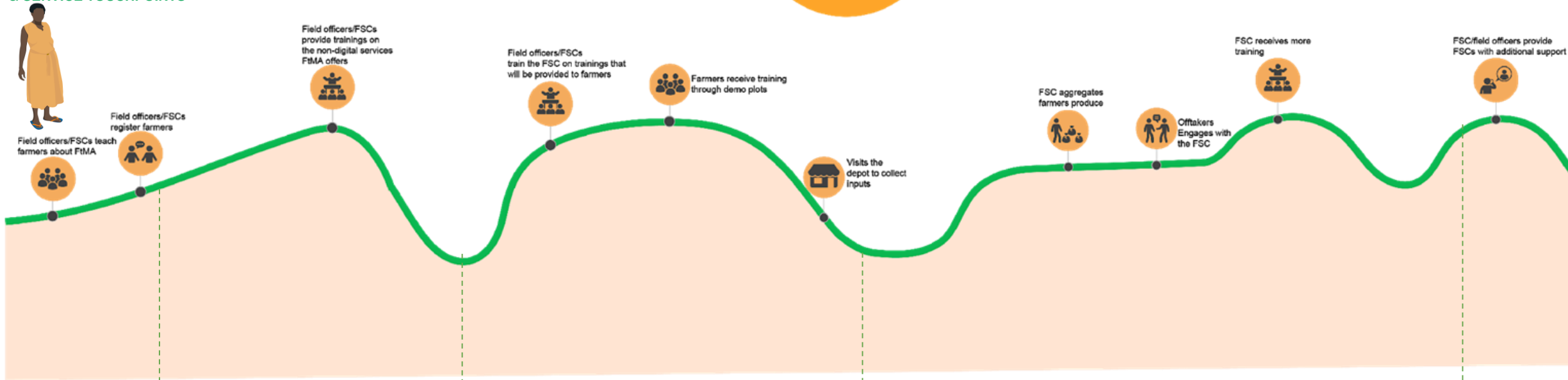
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# Engagement Journey of Women Farmer

FtMA PRODUCT JOURNEY



## FtMA LEVEL OF ENGAGEMENT & SERVICE TOUCHPOINTS

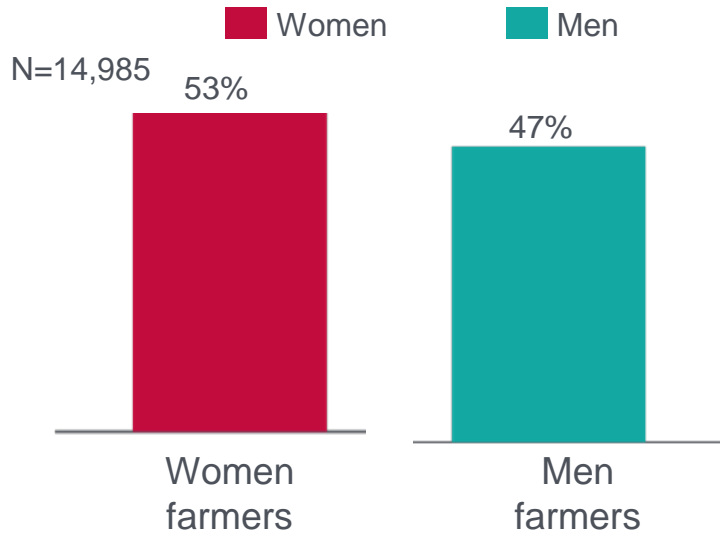


### FSC LEAD AND WOMAN FARMER QUESTIONS

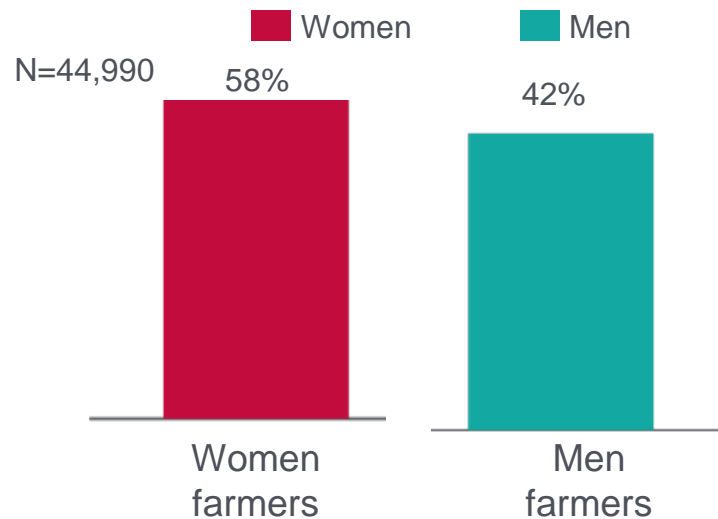
- How easy is it to apply?
- What do my peers think about FtMA?
- How will the services help me?
- What information will be needed?
- What are the documentation requirements? Can I meet them?
- What would my husband think of me attending the training?
- How much will it cost me to commute to the farmers?
- How far are the FtMA trainings?
- How can I plan my time better to attend the trainings?
- How/Where can I access additional services?
- How do I apply for the loan?
- Do I qualify for the loan requirements?
- How will insurance help me? Can I trust it?
- How will I find market for my produce? Who can I lean on for guidance?
- What price can I get for my produce?
- FSCs: How do I address the farmers questions?
- FSCs: Who can offer me support if I am unable to answer farmer questions?
- When will additional services be launched in my region?

# FSC Distribution by Gender and Farmers Reached

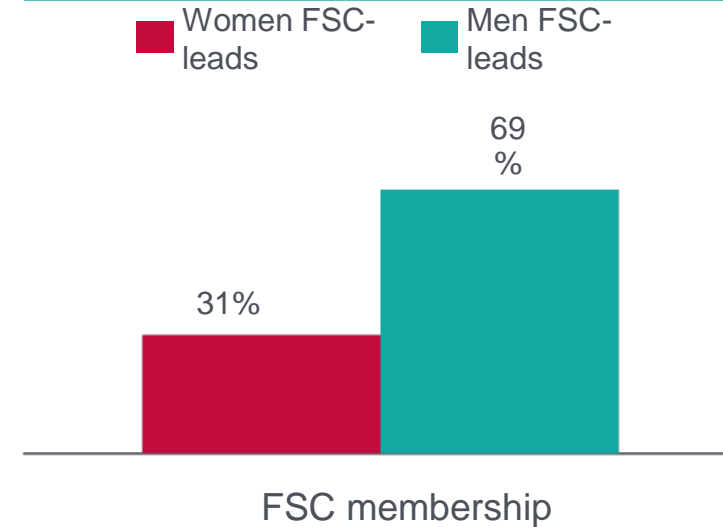
FtMA farmer membership by gender  
[Kenya, 2018]



FtMA Farm Membership by gender  
[Kenya, 2019/2020]



FtMA FSC membership by gender  
[Kenya, 2020]



Based on the sample of farmers reached in 2018 and 2019/2020 FtMA has grown the proportion of women reached. We observed the old service delivery model via Agribusiness Coordinators was particularly successful in reaching a large proportion of women mostly due to leveraging female led farming groups given the higher levels of women's participation in farmer groups.

Under the FSC model, FSC leads are mostly men (69%). Men-led FSCs served on average 19 more farmers than women-led ones.

# Demographics of Farmer Sample Served by FSCs



FSCs were successful in onboarding roughly 15% more women than men from a sample of 44,990 farmers (2019/2020). Most farmers served were middle aged and predominantly in Tharaka Nithi, followed by Homabay.

## Sorghum and Soya most common crops

- Over 85% of farmers both men and women grow mostly sorghum and Soya

## Fewer women served in Narok county

- Although the proportion of women served by FtMA has grown from 2018- 2020, over 50% of farmers are concentrated in Tharaka nithi, Homabay and Busia counties. Narok had the least amount of women farmers served

## Average acreage of women is less than men

- Average acreage for women farmers is 1.6 with men on average farming on 2 acres and above.

# Factors that Drive Awareness and Adoption Among Women

## Community Based Groups (Local Farming Groups)

The most common sources of awareness for women farmers are farmer groups, facilitated by FtMA partners such as CGA. Women farmers are more likely to be in groups and comprise the majority membership in these groups compared to male farmers, and therefore mostly learn about FtMA in the groups.

## Credibility of FSC (Role Models in Society)

FtMA's use of FSC leads who are local entrepreneurs enhances women farmers' trust of FtMA and subsequent joining. FSC leads are local community members who are familiar to farmers, often trusted and even looked up to, which helps in gaining trust and buy-in from women farmers who typically have lower trust of new services compared to men farmers. The physical presence and familiarity of the FSC leads helps to get women farmers' buy-in.

Success of FSC leads and group leaders' farms sparks interest among women farmers and generates awareness and trust of FtMA. Women farmers are keen and inquisitive about the observed success and are more proactive in getting answers on how to improve their farming. This results in women farmers gaining awareness of FtMA and registering onto the platform. The success of FSC leads' farms also increases women's trust of FtMA. Women are more inquisitive compared to male farmers about FSC leads and group leaders' farms.

*“All the attention of farmers will be directed to the FSC leads in how they are performing on their farms. If the woman sees the neighboring farmer has produced 100 bags she will want to know why and she will go to ask, but men will wait for the revelation to come”*

MAN | SYNGENTA AGENT | 42 | OLKARAU

# Channels that Drive Engagement Among Women Farmers

## Use of SMS and IVR Communication

The provision of relevant and targeted content through Interactive Voice Response (IVR) and SMS to the value chains that women engage in, drives usage. Women farmers mentioned that they value the availability of this content as it enables them to plant more effectively and better protect the crops they are farming. Farmers also indicated the content was **simple, easy to understand and practical**, as the content clearly highlighted which products, e.g. pesticides, to use.

FSC leads appreciate the provision of the IVR and SMS content as they are then able to share the information with farmers. FSC leads mentioned that this was especially helpful when they could not manage to visit the farmers in-person to offer the advice.

SMS messages are valued by both women FSC leads and farmers as they enable them to go back to information for a refresher when content is forgotten.

*“Farmers are pleased when I share learnings from the calls with them.”*

WOMAN | FARMER/FSC lead | 34 | NAKURU

*“I share information from the SMS learnings with farmers, and tell them to buy certain pesticides from SMS learnings.”*

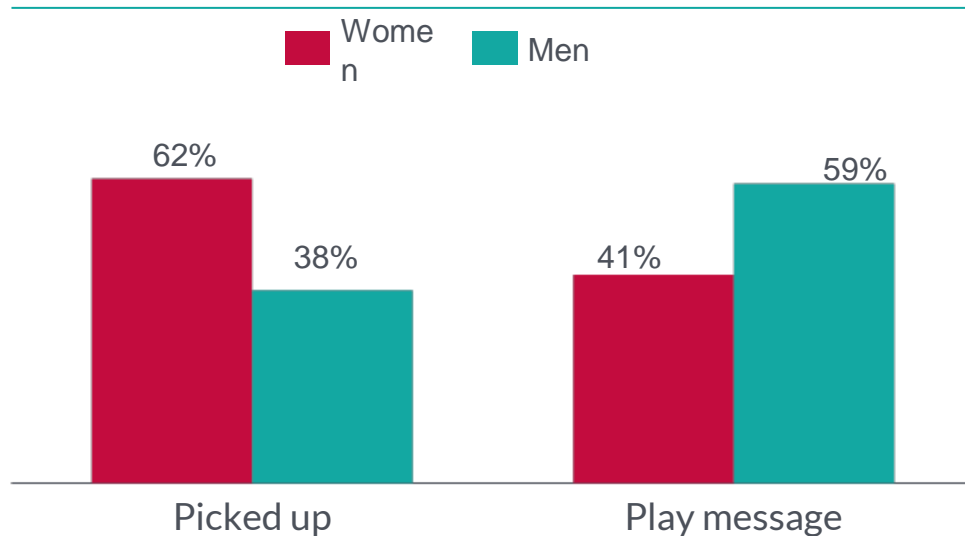
WOMAN | FARMER/FSC lead | 50 | MERU

*“SMSs are better because I can go to the farm with my phone and read the information.”*

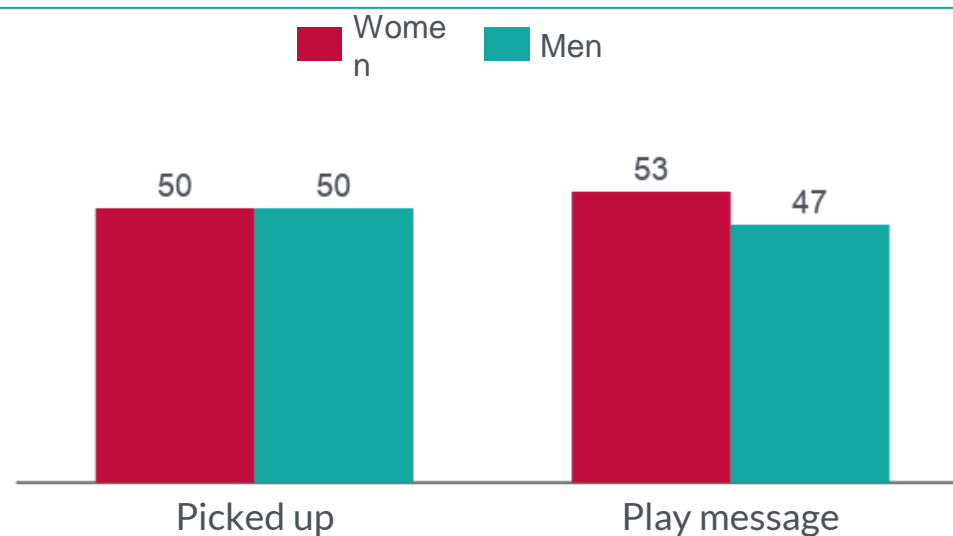
WOMAN | FARMER/FSC lead | 34 | NAKURU

# Channels that Drive Engagement Among Women Farmers

Call status of potato content by gender, [%, 2018]



Call status of Fall Armyworm (FAW) content for Sorghum and maize, by gender [%, 2018]



**Well-timed delivery of IVR content drives engagement with IVR by women farmers.** Women mentioned they appreciate when the content they receive through IVR and SMS is timely e.g. receiving content on land preparation and planting before the planting season. In 2018, more women farmers engaged with the call content on the Fall Armyworm than potatoes because of the timeliness of the call addressing the Fall Armyworm (FAW), which farmers were having challenges with at the time, contributing to higher playback rates for FAW.

# Factors that Limit Awareness and Adoption Among Women

## Low Tech Registration

FtMA's non-digital registration process through FSC leads encourages women farmers' registration. FtMA's registration process involves a non-digital form for farmers to fill with a few basic questions. The forms require the farmer's name, ID number, phone number, location, and farming activities. The non-digital nature of registration eases the process for women farmers as it eliminates the digital literacy barrier.

## In-Person Touch Points

The availability of in-person support in the registration process (through FSC leads), facilitates women farmers' registration, as they have a trusted source of information for guidance and reassurance, as well as support for literacy challenges. FtMA representatives' or FSC leads' availability in assisting them to fill in registration details gives women farmers the confidence to join the platform. FSC leads are also trusted individuals who encourage registration and can answer any questions that arise.

*“When we joined, we had a huge meeting attended by officers, and my husband and I both registered there. We had someone who helped us. They had a form, and they would ask for our details and fill it out for us, this was very helpful as some people are illiterate and can't even write their names.”*

WOMAN | FARMER/FSC lead | 32 | NAKURU

# Factors that Limit Engagement Among Women Farmers

## FSC Recruitment Bias

FSC leads mentioned variation in how they were recruited to be FSC leads, which **might** create room for unconscious gender bias. Some FSC leads have mentioned that they were required to demonstrate leadership qualities, while others mentioned needing to demonstrate farming success through previous yields, while others were simply recommended by extension officers and their farmer groups and did not need to demonstrate anything. A standardized tool to recruit FSC leads exist but in practice, the variation in the FSC lead recruitment process might introduce bias in selection which may contribute to a higher number of male FSC leads. For example, on average, women farmers have less yields than men farmers, so requiring yield information may result in women being less likely to qualify as FSC leads compared to men.

## Inconsistent Training of FSC

Differences in the onboarding and training provided to FSC leads limits FSC leads' knowledge of the full spectrum of services offered. Some FSC leads were unaware that certain services were offered by FtMA, while others were aware of the full suite of services. This resulted in variation in the help and guidance FSC leads were able to offer to farmers.

*“[FtMA representatives] asked me questions about leadership, whether I would be able to do the job, and whether I have enough time to do it. They came to ask me questions more than once.”*

WOMAN | FARMER/FSC lead | 50 | MERU

*“My group of farmers and I have only received loans from SACCOs, we have never heard of FtMA loans, we would appreciate receiving this service if it is available.”*

WOMAN | FARMER/FSC lead | 50 | MERU

# Channels that Limit Engagement Among Women Farmers

## Limited Awareness of Source of IVR and SMS

Limited awareness that FtMA is the provider of IVR and SMS trainings may be causing low engagement by women farmers. Some women farmers who received the IVR and SMS indicated that they were not aware that FtMA was the provider of the information. Women have lower trust levels on average compared to men for new information and digital services and are therefore less trusting of information from an unknown source.

## Variation in Delivery

There is variation in the delivery of IVR and SMS which could limit engagement. Farmers who received IVR calls indicated variation in the phone numbers that called them - some received a message giving them notice to expect the IVR call; some were asked which time would be most convenient for them; while others did not receive any communication prior. Post-call, some farmers received a message with contact details for follow-up questions, while others did not get this information. This variation limited engagement e.g. some farmers were not able to pick the IVR call because they were busy with other activities. This may be more of a challenge for women given their household responsibilities driven by social norms.

## Preference for In-person Training

Although women appreciated IVR and SMS, they prefer in-person trainings to IVR and SMS due to their more interactive nature. In-person trainings offer the opportunity to ask questions, see examples more visually, and offer networking and interaction opportunities with other farmers and the trainers, which women farmers expressed a stronger preference for compared to men. This preference is because of the interactive nature of in-person trainings rather than due to digital literacy challenges of digital trainings.

*“I was sent messages – I didn't know where the messages came from.”*

WOMAN | FARMER/FSC lead | 50 | MERU

*“Sometimes I don't have my phone with me, and they can't reach me, but they also did not send an SMS.”*

WOMAN | FARMER/FSC lead | 50 | MERU

*“I prefer the meetings because you learn so much, you get to ask so many questions.”*

WOMAN | FARMER/FSC lead | 48 | THARAKA NITHI

# Factors that Influence Uptake of Loans via FSCs

## Digital loans

Loans provided by gender, [%, 2018]



**Limited awareness of digital loan providers by FSC leads drives lower applications for digital loans.** Farmers typically ask FSC leads for guidance about input loans. The provider farmers apply to is therefore mostly driven by FSC leads' awareness of options and recommendations. Most FSC leads were not aware of some digital loan providers such as FarmDrive and Credit Factory, and as a result, farmers were more likely to apply to providers like KCB Bank and Agriwallet, which FSC leads are more familiar with.

**Women farmers may be more likely to qualify for non-digital loans because of the group nature of non-digital loans.** Non-digital providers like KCB Bank offer loans to farmers as group loans, and women farmers are more likely to be in farmer groups than men. This likely contributed to more women farmers receiving loans offered by KCB than men farmers.

**Women farmers may be less likely to receive digital loans because** the current credit scoring model of digital providers advantages those with greater input purchases and greater off-taker contracts, who tend to be men. Digital receipts from input purchases are used to assess creditworthiness, but women purchase less inputs than men on average, partially due to having less acreage to farm. Women are also likely to have contracts of less volumes/value than men, due to farming less acreage and having lower yields.

# Factors that Limit Uptake of Loans via FSCs

## Risk Aversion to Group Lending

**Negative past experiences with group loans have made farmers, particularly women, reluctant to take more input loans.** Some of the loans offered through FtMA are offered to groups instead of individuals and hold the entire group of farmers liable if they opt-in for the loan. As a result, a farmer who has good repayment rates may still be penalized because of a delayed repayment by another member of the group. Women farmers who had taken group loans where members failed to repay, or farmers who knew about such incidents, were highly averse to taking a loan again.

**Limited sole ownership of collateral drives women farmers' risk aversion to loans.** Women farmers hesitate from taking loans because they fear being unable to pay the loan and having land and property seized as a result. Given that land and property are typically owned by the husband or jointly-owned, women farmers are averse to the loans because the repercussions would also be detrimental to the relationship.

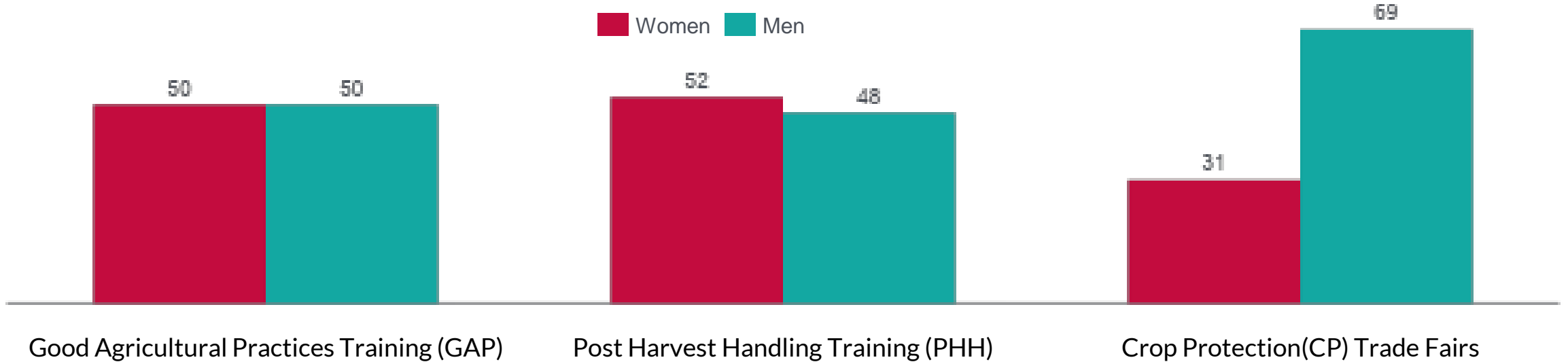
*“Us women follow our husbands' rules because if you take a loan and fail to repay it, it could end in disaster for both of you. It is better to discuss with your husband first.”*

WOMAN | FARMER/ FSC lead | 32 | NAKURU



# Factors that Drive Engagement with FtMA Trainings

Farmer Participation in FtMA trainings by gender, [%]



- **Trainings are one of the main reasons women farmers join FtMA, but gendered roles influence the likelihood of women attending the trainings.** Women farmers consistently mentioned trainings as one of the key reasons why they joined FtMA, unlike men, who mentioned a variety of FtMA's other services. Women farmers are attracted to the trainings as they primarily do the cultivation in the farm, and the trainings are interactive in nature and offer networking opportunities with other farmers. However, fewer women than men participated in the Crop Protection Trade fairs despite contributing to a large proportion of the sample data set. This was partly driven by farmers viewing the topic of the fair (application of chemical inputs such as herbicides and pesticides) as a man's role on the farm rather than a woman's.

# Factors that Limit Engagement with FtMA Trainings

## Gender Roles

**Women's household responsibilities due to cultural norms limit their ability to attend trainings that are far away from their homes.** Women farmers are less likely to attend seminars, trade fairs and exhibitions which are far from their homes and farms due to their roles as caretakers in the family, which require them to remain close to home to take care of their family. This results in women farmers being more likely to attend trainings that are close to their homes and less likely to attend trainings that may require travel or overnight stay.

**Required permission from husbands to travel for trainings can be a barrier for women farmers to attend trainings.** Women farmers often require permission from their husbands to go for trainings, especially if they are far from home and may require overnight stay. This is partially because of social norms where the man is the head of household, but also because of women's household and childcare responsibilities that require them to be close to home.

**The mode of recruiting farmers who attend the trainings can inhibit women's attendance of trainings.** In some cases, farmers are recruited from agricultural cooperatives to attend the trainings, which can be a barrier for women as membership in the cooperatives is primarily men. In contrast, recruiting attendees from farmer groups increases the likelihood of women attending trainings, as membership of farmer groups is mostly women.

*“On the ground training is still better as we do not have to use any money and it saves time which I [can then] mostly spend in the farm.”*

WOMAN | FARMER/FSC lead | 32 | NAKURU

*“We have been mobilizing farmers [to attend trade fairs/exhibitions] from cooperatives – majority of board members are males, there is little to no female representation, so few women attend.”*

FTMA PARTNER

# Factors that Drive Women's Usage of Access to Market Services

## Transparency in Prices

A guaranteed market through forward contracts is one of the offerings from FtMA women farmers value the most. Women farmers appreciate the guaranteed market for certain crops such as sorghum, as well as the transparency in prices as it helps them know beforehand their potential incomes and earnings. This is particularly valued by women farmers who may be breadwinners in the family e.g. women whose spouses may be in other towns/cities.

*“The FtMA supervisor tells you the price of produce before you start planting, so you know the market before production.”*

WOMAN | FARMER/FSC lead | 34

## Higher Earnings

High prices offered by FtMA relative to middlemen or other off-taker agreements also incentivize women farmers to sell produce through FtMA as opposed to other channels. Women farmers mentioned that the prices offered by FtMA are more attractive compared to brokers', and they felt they got better value for their produce. However logistical challenges result in farmers sometimes experiencing delays in accessing inputs in a timely manner from agrovet stores.

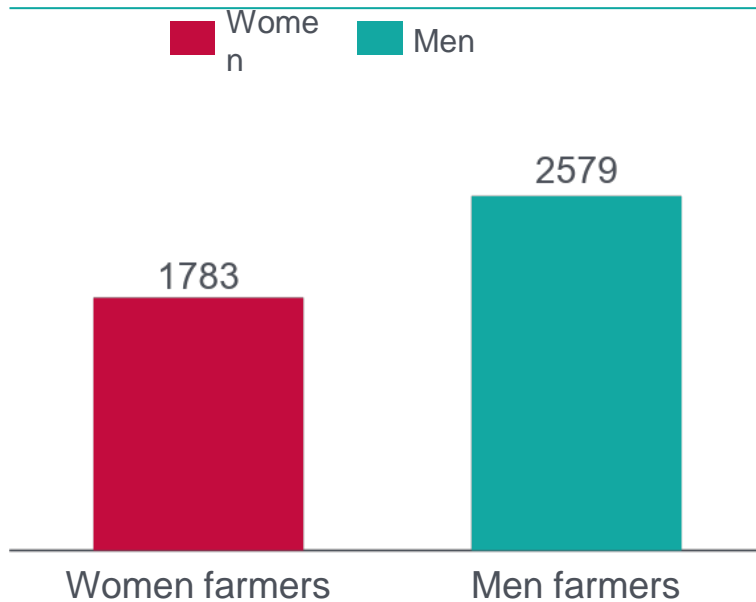
*“Before, prices were at 150/= per kg but FtMA offers higher prices at 500/=.”*

WOMAN | FARMER/FSC lead | 34

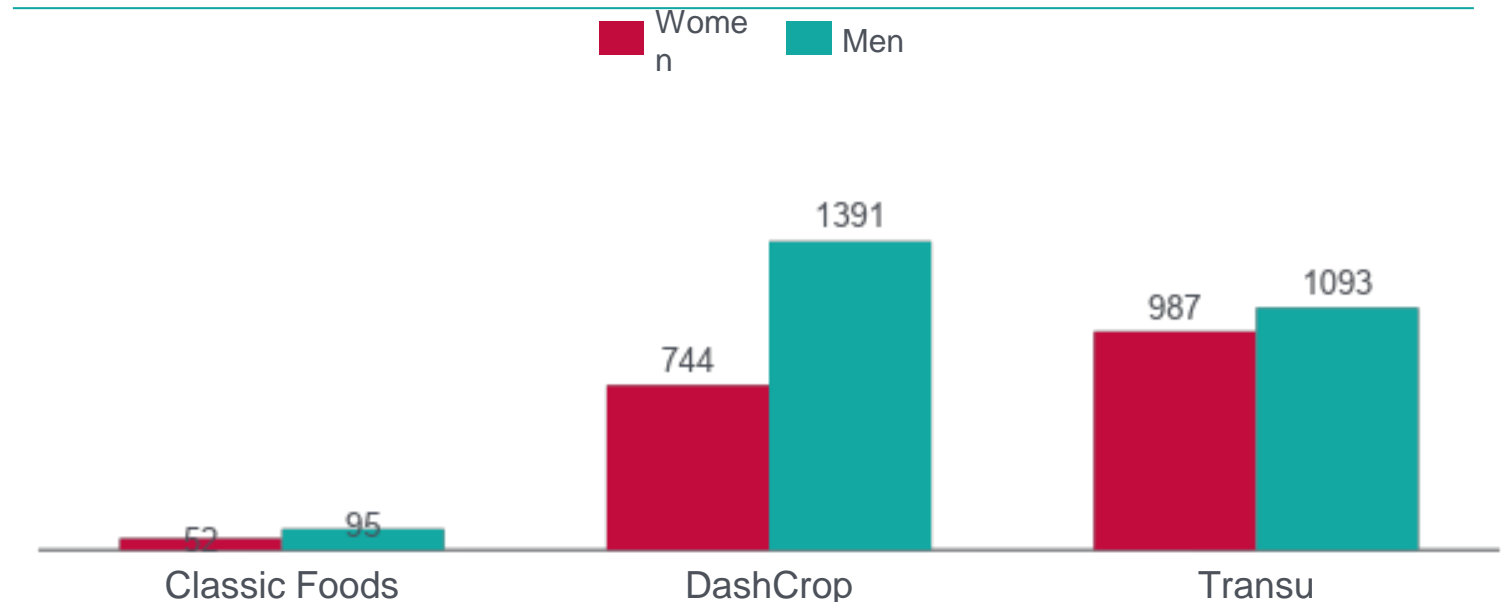
# Factors that Limit Women's Access to Markets

Women farmers sell lower volumes of produce on average, compared to men farmers. This is partially driven by lower acreage farmed by women

**Volume of harvest sold, by gender,**  
[Number of bags sold, 2018]



**Volume of harvest sold by off-taker, by gender,**  
[Number of bags sold, 2018]



**We observed that 40% of all bags sold through FtMA were from women farmers while 60% were from men. Less acreage farmed and lower yields contribute to women having less produce to sell than men.** Men had higher average farm acreage in 2018, and the average yield during the short-rains season of 2017 was 107 bags for women compared to 155 for men. This contributed to men selling 3 bags more than women on average.

# Factors that Limit Women's Usage of Access to Markets Services

## Gender Roles

Gendered roles in farming result in men being more likely to take produce to market than women. Some women farmers indicated that while they may have done the cultivation on the farm, their husbands are primarily responsible for taking produce to market.

## Perceived Trust

In some cases, FSC leads encounter challenges with aggregators and off-takers, when they do not honor their contracts. This results in farmers having to sell produce through middlemen or other off-takers, lowering trust of FtMA and FSC leads by farmers, when agreements are not honored.

## Poor Coverage

Limitations in FtMA's coverage result in some farmers not benefitting from access to markets. Some FSC leads and farmers have not received the access to markets service from FtMA due to the region they are in or the crops they farm.

## Time Constraints

Women's household responsibilities result in time and mobility constraints that may limit women's ability to take produce to aggregation points, resulting in them selling to middlemen instead. In some cases, men farmers are able to get to the market earlier than women, fulfilling off-taker quotas before women, for value chains where quotas (not contracts) are used. In addition, men are more likely to own modes of transportation such as boda-bodas and bicycles and can therefore more easily take produce to market compared to women.

*"Sometimes husband and wife come together [to bring produce to market] so you can't differentiate between men and women, but mostly women are without power - a woman can farm but the husband gets the money."*

WOMAN | FARMER/FSC lead | SIAYA

*"There were so many aggregators, but some failed to collect the produce. The real challenge is that some are not honest."*

WOMAN | FARMER/FSC lead | SIAYA

Source: AGRIFIN Gender Impact Assessment, Farmer Interviews, 2020

A woman is visible in the background, working in a field. The entire image is overlaid with a semi-transparent red filter. The woman is positioned in the upper right quadrant, looking down. The field is filled with green plants, and a basket is visible in the lower left foreground.

# Women Segments and Mental Models

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In this section, we created a framework to understand users' segments and mental models of women users

# Segments of Women and their Mental Models



*Through the analysis of drivers and barriers to adoption/engagement, several segments of women users emerged, and some degree of insight into their psychometric traits was possible.*

*We explored these beliefs and attributes further, to deepen our understanding around drivers/barriers of product use by applying a mental models analytical framework to the emergent segments.*

*Through this framework we were able to distill some of the key beliefs, value propositions and cognitive biases that may be affecting decision-making around adoption/engagement with products.*

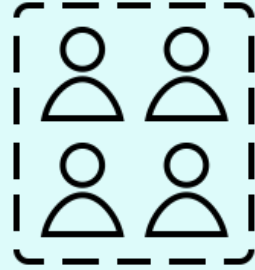
# Segmentation Methodology

We used four dimensions to segment and better understand women users of FtMA

## DIGITAL USAGE PATTERNS

*What are the usage patterns across the customer journey of FtMA (awareness, onboarding, product use and advancement)?*

High, average and low usage



## DEMOGRAPHICS

*What are the socioeconomic characteristics of women users that drive their usage patterns?*

Age, location, marital status, education, digital literacy, livelihoods and household context

## BEHAVIOR

*What is the financial and social behavior of women users that drives their usage patterns?*

How likely are women users to have a bank or mobile wallet account, save, borrow, budget, etc.? Which community activities do women users engage in that affect their usage patterns of FtMA?

## PSYCHOLOGY\*

*Which are the psychometric traits that could explain women usage patterns on FtMA?*

Women's sense of control, self efficacy, openness, trust, optimism, conscientiousness, and dependability

Note\*: The Psychometric traits used are based on The Human Account of Kenya Women Smallholder farmers, created and developed by Dalberg with Rockefeller Philanthropy Advisors and funded by the Bill & Melinda Gates Foundation in 2019. The Human Account (THA) is a three-dimensional research framework aiming to better understand customers in emerging markets based on their contextual, behavioural, and psychological dimensions.

# FtMA Women Segments



## THE COMMUNITY LEADER (High users)

**Overview:** They are the most active women users of FtMA and are likely to be chosen to be an FSC lead.

### Demographics

- Mostly live in peri-urban or rural areas
- Have the highest education levels of all segments.
- Mostly own smartphones
- They have a strong penchant for technology and leverage multiple online channels to educate themselves further on agriculture
- They are more likely to farm commercially and hire labor to support them in farming.
- Besides farming, these women have an entrepreneurial spirit and multiple income streams they rely on, sparking their interest to become an FSC lead, to increase incomes.
- They participate in groups and are often the leaders of their groups.
- In households, they are likely to participate equally in decision-making with spouses.

### Psychometrics:

- They value their community and have acquired trust from others in the community, making them most likely to qualify as an FSC lead.
- They are most likely to constitute the Educated Planners segment of Kenyan women in The Human Account.



## THE CERTAINTY SEEKER (Average users)

**Overview:** They are moderately digital savvy and constitute the average-user segment of FtMA.

### Demographics:

- Mostly live in peri-urban or rural areas
- Their highest level of education is high school.
- They may be a group leader and may aspire to be an FSC lead in the future.
- Some own a smartphone while others own feature phones. Women of this segment farm both for subsistence and commercially.
- Agriculture is most likely to be their primary source of income. They may rent land or farm on jointly-owned land.
- In some cases, they require some permission from their partners, especially on financial decisions.

### Psychometrics:

- They have moderate levels of openness to digital services/tools, optimism and trust levels compared to other Kenyan women farmers
- They most closely resemble the Careful Strivers segment in The Human Account of Kenyan women farmers.



## THE PATH FOLLOWER (Low users)

**Overview:** They form the segment that engages with FtMA the least.

### Demographics:

- Mostly live in rural areas
- Have primary school or secondary school as their highest level of education.
- They have low levels of digital-savviness
- Are least likely to own a feature phone.
- If married, they do not participate equally in the household decision making and often rely on their partners approval in financial and farming decisions.
- They are more likely to solely depend on crop farming for their livelihood and are most likely to grow one type of crop in their farm.
- Due to their limited income streams, they do not outsource additional labour and support and are more likely to farm for their household food security before selling to off-takers.

### Psychometrics:

- They have lower trust of digital services than other segments and are likely to rely on in person trainings, farming groups and trusted members in the community for agricultural information.
- They are mostly like the Reserved Individualists in The Human Account of Kenyan women farmers.

# The Community Leader: Product Use

## AWARENESS

- **Channel for first exposure to FtMA:** Most have heard about FtMA through involvement with other partner organizations e.g CGA and are reintroduced to the service through their farming groups.

## ONBOARDING AND TRAINING

- They are likely to be targeted to become FSC leads during registration because of their farm success and community leadership.
- These FSC leads are likely to fill registration forms themselves.

## PRODUCT USE

They are more likely to be inquisitive about the information they receive from FtMA about how the services will enhance their and farmers lives.

### (DIGITAL)

- **IVR and SMS:** This segment is likely to pick up calls and listen to IVR content, read the SMSs when they have time, use the information and ask follow up questions to FtMA representatives when they need support.
- **KUZA:** They easily navigate the KUZA platform and engage with learning modules on time. They reach out to mentors for advice on how to engage their group as well as on other farming or business challenges.
- **Digital Loans:** They are likely to use and recommend digital loans through their groups.
- **Yara:** Those with agrovets have registered for YARA.
- **HelloTractor:** Those with smartphones have downloaded the app, but have likely not engaged with the service.

### (NON-DIGITAL)

- **Training:** They attend most, if not all trainings for FSC leads. They engage and train farmers on the tools and information they have received. They do not need to ask their partners for permission and are encouraged by their husbands to attend trainings and conduct trainings for farmers in their groups.
- **Loans / Insurance:** Attempted to use the loan product but had a negative experience.
- **Inputs:** They are likely to be linked to multiple input providers and have experience using various inputs in the past. Thus, they are able to recommend inputs to farmers and facilitate the purchase of inputs to farmers and receive a commission. They may have an agrovet where they stock the inputs and make profits after sale to farmers.
- **Access to markets:** They assist farmers to aggregate their produce and link them to offtakers.

## ADVANCEMENT

- Are likely to adapt better farming methods which increases their yields.
- They are likely to be aware of all the services offered by FtMA.
- They are looking forward to additional services that will be on the platform.

## ONGOING SUPPORT

- They act as the sources of support to other farmers and consult FtMA representatives when they require support themselves.

# The Certainty Seeker: Product Use

## AWARENESS

- **Channel for first exposure:** Most have heard about FtMA through their farming/savings groups. A few may have heard of FtMA from CGA.

## ONBOARDING AND TRAINING

- They are likely to register to FTMA as farmers and some might later become FSC leads.
- Likely to fill in the registration forms themselves.

## PRODUCT USE

- They are less likely to be inquisitive about the information they receive from FtMA. However, any negative experiences with FtMA products and services will cause them to be more wary and ask multiple questions.

## (DIGITAL)

- **IVR and SMS:** This segment is likely to pick up and listen to IVR calls if they consider them relevant, read the SMSs when they have time, use the information and some may ask follow-up questions to FSC leads. This segment would need to review SMS content to refresh their memory and remind themselves of the content.
- **KUZA :** If an FSC lead, they have challenges with navigating the KUZA tablets in the beginning, but they adapt and engage with the learning modules. They may sometimes need to repeat or review the content modules. They reach out to their mentor for troubleshooting or content related challenges.
- **Digital Loans:** Some may have taken digital loans, but most have not.
- **Yara:** They have heard of the app but have not engaged with the service.
- **HelloTractor:** They have likely not used the service.

## (NON-DIGITAL)

- **Training:** They try to attend most trainings especially when they are closer to their home or business. They need to consult with their partners to attend the trainings.
- **Loans / Insurance:** Attempted to use the loan/insurance product but had a negative experience.
- **Inputs:** They value the high-quality inputs they are able to receive from FtMA.
- **Access to markets:** They are proactive in taking their produce to the aggregation centre.

## ADVANCEMENT

- Without the hand holding or support from CGA or field officers, they are less likely to advance to other services.
- People that attend the training are more likely to expand their knowledge, which results in better farming methods, increasing their yields.
- Given the phased implementation of FtMA products, this segment is less likely to progress onto additional products that have not been introduced in their locality.

## ONGOING SUPPORT

- They consult FSC leads or other fellow members for support.

# The Path Follower: Product Use

## AWARENESS

- **Channel for first exposure to FtMA:** Most hear about FtMA through their farming or savings groups.

## ONBOARDING AND TRAINING

- They are likely to register to FtMA as a farmer group member – they are not likely to be group leaders.
- Are likely to need clarification or assistance from the field officer during registration.

## PRODUCT USE

- They are less inquisitive about information from FtMA. However, any negative experiences with FtMA products and services will cause them to be more wary and ask multiple questions.

## (DIGITAL)

- **IVR and SMS:** This segment is not likely to listen to IVR content - they may briefly listen to the content but not engage further because they do not know the origin of the content. Some may read SMS messages.
- **KUZA, Yara and Hello Tractor:** They do not qualify to use these services as they are exclusive for FSC leads
- **Digital Loans:** They have not heard of or taken digital loans.

## (NON-DIGITAL)

- **Training.** They attend trainings if they are of interest and if granted permission by spouses.
- **Loans / Insurance:** Attempted to use the loan product but had a negative experience.
- **Inputs:** They purchase inputs from FSC leads
- **Access to markets:** They aggregate their produce through FSC leads that link them to offtakers that partner with FtMA.

## ADVANCEMENT

- Without handholding or support from FSC leads, they are less likely to advance to other services.

## ONGOING SUPPORT

- They often turn to the field officer or FSC leads for support.

# Shared Mental Models of Women: Elicitation Methodology

Mental models are the sum of beliefs and attitudes about a product or service, and they heavily influence the extent to which people engage with a product or service and for what purpose.

Based on the women segments identified, we added a behavioral lens to identify beliefs, aspirations and values systems that are most likely underpinning decision making to use digital solutions and current observed trends in uptake and usage for each segment.

Our Approach to eliciting the shared mental models across the women segments involved 3 stages:

- Understanding user beliefs and aspirations and linkages to perceived value of FtMA.
- The actual perceived value and how this differs from the conceptual value proposition.
- Identifying the cognitive dimensions and biases driving decision making around uptake and usage of FtMA.



## User Beliefs, Values And Aspirations

Through content analysis based on the Means End Chain Theory elicitation method of qualitative interviews, we identified user farming and non farming specific goals. This aids in understanding underlying motivations for usage and advancement in using digital solutions.

## User Perceived Value Proposition

We unpacked the user expectations and perceptions of the product value and how this may link to aspirations. We identify the features that users perceive to be the most valuable through self reported and quantitative data.

## Cognitive Dimensions and Cognitive Biases

We categorise user decision making under 4 broad cognitive dimension that can be defined by 2 systems of thought. System 1, a subconscious system that uses deep seated beliefs and biases to make quick judgements. System 2: a more deliberate and methodical system that seeks new information or evidence for

# Shared Mental Models of Women: Beliefs and Aspirations

User values, belief systems and aspirations play a significant part in guiding a broad range of decision making and behavior. We elicited some of the underlying beliefs and personal aspirations that shape women's thinking around their farming and uptake of digital solutions such as FtMA.

## Women are seen as crucial players in farming

Both men and women acknowledged that women play a crucial role in farm activities, particularly the pre-planting and planting phases, from selecting seeds and getting inputs to attending group trainings and meetings and day-to-day care. Most women have accepted such labor division within the household and some of them regard it as an opportunity to empower themselves.

## Women want expert advice

Women farmers express the trust in and appreciation for the training contents and information coming from experts such as agronomists and experienced farmers. They also trust the institutional channels that have provided services or products of good quality. Women seek to learn and grow their capacity for farming and this shapes part of their motivation to engage with FtMA.

## Women aspire to more independence and freedom

"Earning income so that I do not have to rely on my husband" is a strong aspiration shared by women farmers. Women aspire to improve their farming outcomes and access competitive market prices. Women have been further encouraged to stay with FtMA to achieve these goals and other economic goals tied for financial independence and freedom.

*"Most of the farming is done by women because men are reluctant, some are in higher jobs, they go to town so women are left behind, the husbands think meetings are for women."*

WOMAN | FARMER and Aggregator | THARAKA NITHI

*"Farmers want more messages. The messages usually inform us on when to grow, sometimes they give us weather updates, inform us on when to spray. They even inform us on what to do when cows are sick."*

WOMAN | FARMER | 52 | Meru

*"My husband and I live happily now because he is happy that he can rest. We used to rely on him to provide everything but now we help each other."*

WOMAN | FARMER | 54 | Meru

# Shared Mental Models of Women: Perceived Value

Perceived value or benefits of a product or service has an impact on user decisions on uptake and thereafter continued use. We distilled how women collectively perceive the value or benefits of FtMA services.

## Long-term benefit

Women perceived value of all the service offerings under FtMA to be more long term than short term. Hence this long term expectation helped drive the motivation for continued use and advancement. This has made farmers confident that they will continue to grow with strengthened capabilities. This aligns with the themes of trust and credibility that were crucial factors in driving uptake and usage for women.

## Exposure to information

Among all of the benefits, the expanded exposure to relevant information on farming techniques is of particular value to women who own a smartphone and have been proactively seeking for more information and solutions through social networks before engaging with FtMA.

## Better production and prices

One of the most consistent themes that has emerged from discussions with women is their desire for improved agricultural outcomes and profitability. We observed these are the main factors shape perceived value for platforms like FtMA.

*“Now I have a huge network that I can explore to help farmers. They have also given me employment and to build our resilience. It is teaching a farmer to fish.”*

WOMAN | FARMER | 41 | THARAKA NITHI

**To what extent does farmer mental models of perceived value align with product conceptual models?**

Of all the services offered and their conceptual value propositions, women farmers mostly perceived the value of lifelong learning from trainings and access to markets for fair prices. By applying the knowledge and techniques learned from training, they have observed visible increase in farm production. This is true as well for most of the men we interviewed.

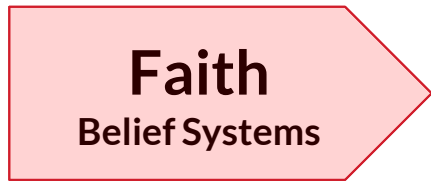
# Cognitive Dimensions of Women's Decision Making

## Common Cognitive Dimensions

## Observed Cognitive Biases (System 1)

System 1

System 2



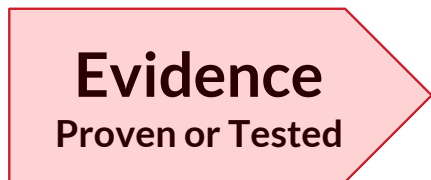
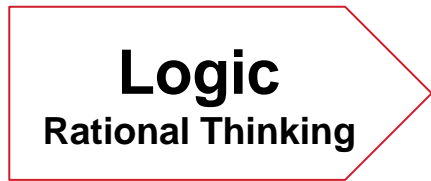
### Belief/Aspiration

The common belief in farming as more than a business but as a way of life creates passion and resilience, but in some cases leads to default mental states that rely on already established routines and farming practices that are less accepting of new solutions.



### Preference

Preference for learning from trusted individuals and institutional channels and the preference of learning from in-person interactions have made the training and FSC model appealing to farmers.



### Evidence

One of the most compelling evidence of FtMA's positive impact comes from the visible increased farm production, save costs of input and and higher value of output. Successful cases in the community have motivated more farmers to join and encouraged them to continue engaging with FtMA.

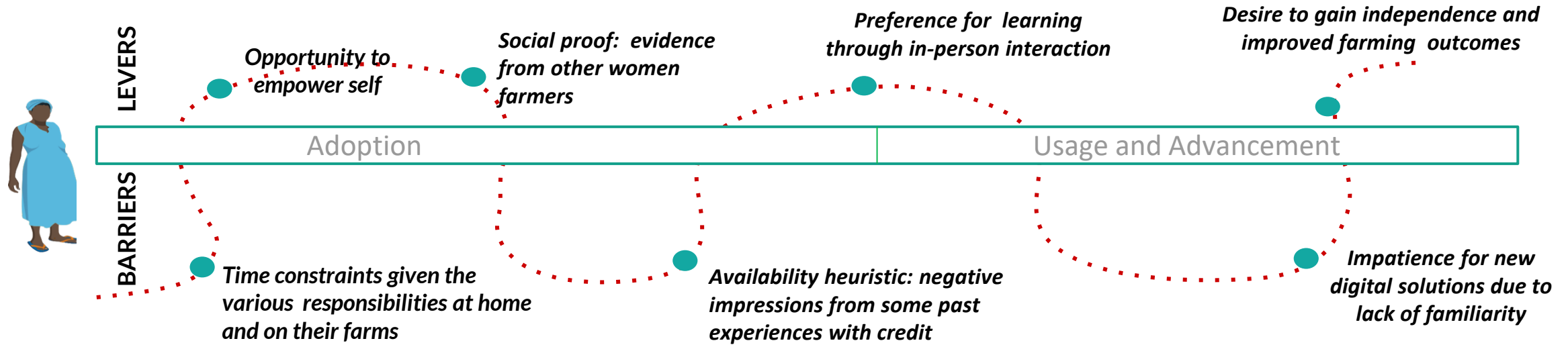
### Availability Heuristic

Heuristic is a mental shortcut that people take to judge and make decisions quickly. It might lead to some biases. Availability heuristic refers to when you make a judgment about something based on how available examples are in your mind. This happens to a number of farmers who have seen or heard about undesirable experiences from others, such as a group of farmers applying for inputs but nearly no one got it. It has left negative impression of such digital services for some farmers and made them hesitant to try some services provided by FtMA.

### Social Proof/Social Norms

Some farmers, especially the Path Followers rely heavily on social signalling in deciding on engagement with initiatives like FtMA and other farming services. They seek the validation from others through testimonials. Remote engagement channels are the least effective for women who demonstrate this bias as they require in-person interactions and social cues to convince them of the value add. FtMA engagement through well known local farming entrepreneurs leverages social proof well.

# Mental Model Summary



## Community Leaders and Certainty Seeker Mental Models

Women in this segment share a strategic mental model. They typically possess a smartphone and run some form of agribusiness in addition to farming. They are sensitive to what information and technology can bring in to their lives and are proactively seeking for ways of improving their farming practices using digital services. They are also empathetic for other women's challenges and are motivated to initiate positive changes for not only themselves but also other women. Their decision making is driven more by preferences for community impact, the logical use cases of both digital/non-digital service offerings and less by traditional

practices.

## The Path Follower Mental Model

Women in this segment have a persistence mindset which has supported them through various life challenges. They hope for positive changes in life but do not necessarily want to take the risk of trying new solutions or know how to go about it. Positive experiences of others (especially those they know) or proven positive outcomes give them confidence to adopt new ways of farming. They are more likely to have limited decision making power rely more on non digital traditional farming solutions.



A person is seen working in a field, possibly harvesting or tending to crops. The entire image is overlaid with a semi-transparent red color. In the foreground, there are some plants and a bowl containing what appears to be harvested produce.

# Engagement Impact

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# Impact on Farm Productivity and Yields

Impact category		Key findings	Quotes
Livelihood	Farm productivity and yields	<ul style="list-style-type: none"> <li>Women farmers have seen improved productivity and yields given the FtMA training on good agronomic methods and practices such as the best time to plant, when and how to use inputs.</li> <li>Increased access to certified and quality seeds and inputs from agrovets run by FSC leads closer to home and input partners such as Yara has facilitated increases in yields.</li> <li>Women farmers have been able to diversify their farming practices and now practice mixed farming- crops and livestock.</li> </ul>	<p><i>“When we farm how we are taught by FtMA we get very good harvests. I used to harvest 8 bags now I harvest 30 bags.”</i></p> <p>WOMAN   FARMER   40   THARAKA NITHI</p>
	Incomes	<ul style="list-style-type: none"> <li>Better farming practices such as pest management have resulted in increased incomes.</li> <li>FtMA trainings have encouraged FSC leads and farmers to shift from subsistence to commercial farming and facilitated the shift by enhancing access to markets, which has resulted in higher incomes.</li> </ul>	<p><i>“I do not go on a loss anymore as I have certified inputs. My yields have also increased significantly and now we have less diseases on the farm.”</i></p> <p>WOMAN   FARMER   32   NAKURU</p>

# Impact on Incomes and Business Skills

Impact category		Key findings	Quotes
Livelihood	Multiple income streams	<ul style="list-style-type: none"> <li>FtMA has helped women FSC leads diversify income streams. FSC leads can more easily venture into Agribusiness and other ventures e.g. Agrovets, through business coaching provided by FtMA through Kuza. Additionally, FSC leads gain commission for every farmer they onboard, increasing their income streams.</li> </ul>	<p><i>“Before FtMA, I had challenges with brokers, where they bought my produce for lower prices and I didn't have a choice.”</i></p> <p>WOMAN   FARMER   34</p>
	Strengthen business skills	<ul style="list-style-type: none"> <li>Women FSC leads have reported <b>enhancement of their entrepreneurship and business skills through mentors and training</b> on good business practices such as bookkeeping. The strengthened entrepreneurship skills has translated to higher incomes.</li> <li><b>Increased bargaining power and higher prices</b> of produce is achieved by aggregating harvest of all women farmers and backing up by FtMA. Women farmers are at a <b>better position to bargain</b> for higher prices without involving middlemen, thus increase income received from harvest.</li> </ul>	<p><i>“We get better prices than we would have before joining FtMA.”</i></p> <p>WOMAN   FARMER   42   MIGORI</p>

# Impact of Time Saved

Impact category		Key findings	Quotes
Lifestyles	Time saving	<ul style="list-style-type: none"> <li>• Women farmers save time as they do not have to spend time looking for markets, as they are linked to off-takers directly.</li> <li>• Women farmers have access to timely information from FSC leads, saving women time to search for information on farming, markets, etc..</li> <li>• Having an FtMA agent (FSC lead) close by saves women farmers' time when they need their services e.g. accessing inputs or aggregating produce.</li> <li>• Training on efficient farming practices such as use of herbicides allows women farmers to spend less time on farming activities such as weeding and more time on other responsibilities such as housework and childcare.</li> <li>• Training on time management has helped women FSC leads and farmers learn how to effectively plan their time between farming and personal obligations.</li> <li>• Women farmers report being able to hire extra help with additional income, allowing them time to pursue other activities.</li> </ul>	<p><i>"Before we used to go to the market and go round searching for a buyer but now, we aggregate, and the buyer comes directly to us and gives us our payment on the spot."</i></p> <p>WOMAN   FARMER/DVA   50   MERU</p> <p><i>"Because of FtMA, I have been able to hire labor when I have an opportunity to go to meetings and when I come back, the work at home is still going well."</i></p> <p>WOMAN   FARMER/FSC lead   48   THARAKA NITHI</p>

# Impact on Decision Making

Impact category	Key findings	Quotes
<p>Lifestyles</p> <p>Decision-making power and household dynamics</p>	<ul style="list-style-type: none"> <li>• There is increased decision-making power by women in the household as the husband trusts the knowledge received from the trainings, and therefore allow women to make more contributions to farming decisions</li> <li>• Some women mentioned their husbands can now consult them on business and financial decisions, especially after observing women FSC leads and farmers diversify their activities and incomes.</li> <li>• Women farmers can now make independent spending decisions, without relying on the husband for financial support resulting in increased control of their finances.</li> </ul>	<p><i>“Now my husband can also take my inputs on issues as I have gone to training and have knowledge.”</i></p> <p>WOMAN   FARMER   32   NAKURU</p> <p><i>“After FtMA training, crop farming became lucrative, and my husband joined farming too.”</i></p> <p>WOMAN   FARMER   50   MERU</p>

# Recommendations

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# Recommendations- Onboarding and Training

FtMA can more proactively recruit FSC leads and provide comprehensive and inclusive training to FSC leads

User journey step	Recommendations
Onboarding and Training	<p>Priority: ● High ● Medium ● Low</p> <ul style="list-style-type: none"><li>● <b>Work with implementing partners to proactively recruit women FSC leads</b> to ensure equal gender split of FSC leads as women leads can help increase engagement of women farmers<ul style="list-style-type: none"><li>• <b>Review and standardize the recruitment process</b> used by implementing partners to recruit FSC leads to ensure the process is gender-inclusive</li></ul></li><li>● <b>Equip and onboard FSC leads so they can onboard and train farmers more inclusively:</b><ul style="list-style-type: none"><li>• <b>Enhance and increase trainings for FSC leads</b> to comprehensively understand the full suite of FtMA services and their functions. Provide FSC leads more information to share with farmers, such as introductory flyers, or information packs that explain FtMA services.</li><li>• <b>Provide gender-sensitivity training to educate FSC leads</b> on some of the additional challenges women farmers may face and the best approaches to recruit and support them.</li><li>• <b>Offer incentives, e.g. additional commission,</b> for the number of women FSC leads recruit and onboard into FtMA</li></ul></li></ul>

# Recommendation- Digital Solutions

FtMA can enhance women FSC leads and farmers' user experience of digital products by adapting them to their needs and challenges (1/2)

Product / Service		Recommendations
Digital	IVR & SMS	<p>Priority: ● High ● Medium ● Low</p> <ul style="list-style-type: none"> <li>● <b>Indicate the origin of IVR calls and SMS</b> as from FtMA, and standardize the list of phone numbers making IVR calls to increase trust, buy-in and engagement by FSC leads and farmers</li> <li>● <b>Follow up IVR calls with a summary on SMS</b> for farmers to have a repository of content for reference</li> <li>● <b>Ensure timing of content delivered through IVR calls and SMS is aligned with the season or current farming events</b> to enhance engagement</li> <li>● <b>Provide an opt-in option to create more ownership/commitment to training received through IVR &amp; SMS</b>, as well as customizability               <ul style="list-style-type: none"> <li>• Opt-in should provide FSC leads and farmers the opportunity to select frequency and timing preferences for the IVR calls and SMS</li> </ul> </li> <li>● <b>Consider investing in a toll-free callback number</b> that farmers can call back after receiving IVR calls and SMS to enhance the interactive nature of the training</li> </ul>
	Kuza Leadership Academy	<ul style="list-style-type: none"> <li>● <b>Provide free data bundles</b> to FSC leads when app updates are needed for the tablets to address cost challenges</li> <li>● <b>Provide solar-powered charging kits</b> to FSC-leads to mitigate challenges accessing electricity to charge tablets</li> <li>● <b>Consider offering a longer learning track for women FSC leads</b> to complete Kuza leadership training, to address the time constraints faced by women. Currently, the program is 16 weeks, this can be increased slightly for women to accommodate their time constraints.</li> </ul>

# Recommendations- Digital Solutions

FtMA can enhance women FSC leads and farmers' user experience of digital products by adapting them to their needs and challenges (2/2)

Product / Service		Recommendations
		Priority: ● High ● Medium ● Low
Digital	Digital loans	<ul style="list-style-type: none"> <li>● <b>Ensure FSC leads are aware of all loan provider options</b> through trainings/IVR/SMS to ensure they recommend the full range of provider options to farmers</li> <li>● <b>Work with digital loan providers to review creditworthiness criteria and data to ensure the loan review and qualification process is gender inclusive</b></li> </ul>
	YARA Connect	<ul style="list-style-type: none"> <li>● <b>Offer incentives to women FSC leads</b> who open agrovet stores and use the YARA Connect app e.g. by offering more benefits to women FSCs on the app to enhance their uptake</li> <li>● <b>Ensure FSC leads</b> who own an agrovet store, particularly women, <b>fully understand services offered by YARA Connect and its benefits</b></li> </ul>
	Hello Tractor	<ul style="list-style-type: none"> <li>● <b>Enrol more tractor owners Hello Tractor</b>, particularly from the regions where FtMA operates to ensure the tractor services are closer to the farmers, to mitigate the time and cost challenges that currently serve as a disincentive for farmers to use the service</li> <li>● <b>Provide training on how to use the app to mitigate digital literacy challenges</b> for FSC leads to use the service, particularly women.</li> <li>● <b>Work with Hello Tractor</b> to explore additional ways of accessing Hello Tractor's services without requiring a smartphone, e.g. investing in USSD codes as an alternative method for FSC leads to access the services</li> </ul>

# Recommendations- Non- Digital Solutions

The following are opportunity areas for FtMA to support women FSC leads and farmers in their use of non-digital products (1/2)

Product / Service		Recommendations
		Priority: ● High ● Medium ● Low
Non-digital	Trainings	<ul style="list-style-type: none"> <li>● <b>Work with implementing partners and FSC-leads to offer more trainings at the local level</b> for farmers, to address challenges of attending distant trainings for women farmers</li> <li>● <b>Ensure implementing partners recruit training attendees from farmer groups or through the FSC-leads</b> to ensure higher chances of recruiting women farmers</li> <li>● <b>Communicate upcoming trainings well in advance</b> so women can better plan their time to attend and to give them the opportunity to consult their partners if needed</li> </ul>
	Loans	<ul style="list-style-type: none"> <li>● <b>Increase offering of individual loans to farmers in addition to group loans</b> to mitigate challenges of collective penalization in group loans</li> </ul>
	Insurance	<ul style="list-style-type: none"> <li>● <b>Work with insurance partners to ensure farmers are compensated</b> in case of crop losses to shift negative perceptions of insurance not making payments when needed</li> <li>● <b>Offer trainings on insurance to FSC leads and farmers</b> to enhance awareness and understanding of insurance and shift negative perceptions and minimize misaligned expectations</li> </ul>
	Inputs	<ul style="list-style-type: none"> <li>● <b>Expand the inputs delivery network to increase coverage of rural areas by enrolling more agrovets and input stores as FSCs</b>, to reduce some of the access issues faced by women</li> </ul>

# Recommendations- Non-Digital Solutions

The following are opportunity areas for FtMA to support women FSC leads and farmers in their use of non-digital products (2/2)

Product / Service		Recommendations
Non-digital	Access to markets	<p>Priority: ● High ● Medium ● Low</p> <ul style="list-style-type: none"> <li>● <b>Encourage FSC-leads to collect produce from women from their farm or homes</b> as additional support to help address women's time and mobility constraints from accessing markets</li> <li>● <b>Work with offtaker partners to ensure that forward contracts are honored for all farmers</b></li> <li>● <b>Expand value chains that FtMA works with</b>, particularly those engaging a lot of women farmers e.g. poultry</li> </ul>



# Appendix

# We have interviewed a total of 25 FtMA FSC leads and farmers of various ages, education levels and locations (1/2)

## Interview participants

We have conducted 25 farmer, group lead, FSC, and agent interviews

Gender	Age	Location	Education
Female	30	Migori	Primary school
Female	34	Nakuru	High school
Female	40	Tharaka Nithi	Primary school
Female	54	Meru	Secondary school
Female	55	Meru	Primary school
Female	32	Nakuru	College
Female	34	Not provided	Diploma
Female	40	Busia county	Form 6
Female	42	Meru	Diploma
Female	48	Tharaka Nithi	Secondary school
Female	48	Tharaka Nithi	Not provided
Female	50	Meru	Primary school
Female	52	Meru	High school
Female	Not provided	Siaya	Secondary school
Female	32	Migori	Not provided

# We have interviewed a total of 25 FtMA FSC leads and farmers of various ages, education levels and locations (2/2)

## Interview participants

We have conducted 25 farmer, group lead, FSC, and agent interviews

Gender	Age	Education	Location
Male	42	Meru	Secondary school
Male	42	Migori	Diploma
Male	53	Karamei (Mauche)	Secondary school
Male	44	Elgeyo Marakwet	University degree
Male	49	Kakamega	Certificate
Male	55	Tharaka Nithi	High school
Male	58	Nyandarua	Secondary school
Male	60	Migori	Secondary school
Male	70	Siaya	Diploma
Male	42	Olkarau	Diploma

# CONTACT

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