



# SDM: Musoni Final Report

*Public version*

July 2021



# IDH Introduction

## Introducing to the Service Delivery Model (SDM)

### Importance of Service Delivery

Agriculture plays a key role in the wellbeing of people and planet. 70% of the rural poor rely on the sector for income and employment. Agriculture also contributes to climate change, which threatens the long-term viability of global food supply. To earn adequate livelihoods without contributing to environmental degradation, farmers need access to affordable high-quality goods, services and technologies.

Service Delivery Models (SDMs) are supply chain structures which provide farmers with services such as training, access to inputs, finance and information. SDMs can sustainably increase the performance of farms while providing a business opportunity for the service provider.

A solid understanding of the relation between impact on the farmer and impact on the service provider's business brings new strategies for operating and funding service delivery, making the model more sustainable, less dependent on external funding and more commercially viable.

### About this study

To accelerate this process, IDH is leveraging its strength as a convener of key public-private partnerships to gain better insight into the effectiveness of SDMs. IDH developed a systematic, data-driven approach to understand and improve these models. The approach makes the business case for service delivery to investors, service providers, and farmers. By further prototyping efficiency improvements in service delivery, IDH aims to catalyse innovations in service delivery that positively impact people, planet, and profit.

### Thanks

IDH would like to express its sincere thanks to Musoni for their openness and willingness to partner through this study. By providing insight into their model and critical feedback on our approach, Musoni is helping to pave the way for service delivery that is beneficial and sustainable for farmers and providers.



# Musoni Introduction

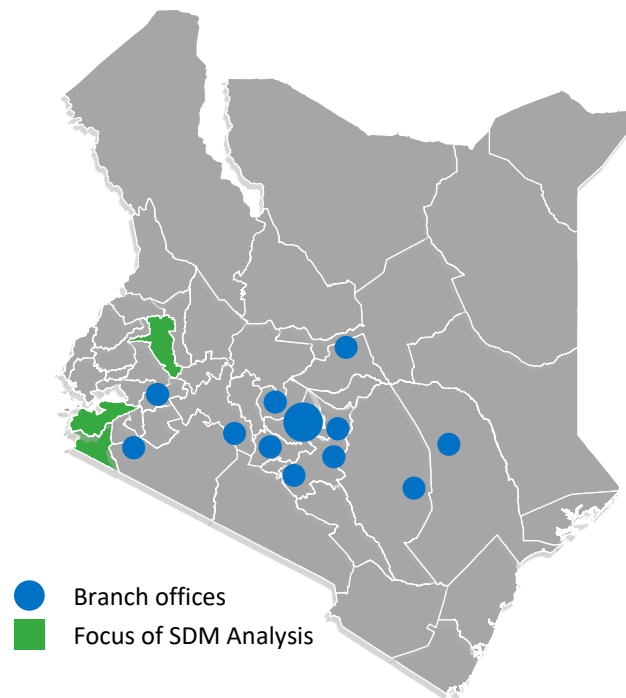
As a completely cashless microfinance institution, Musoni is a pioneer in the digital lending space, with an expanding client based and broad, flexible loan product offering

## Company description <sup>1)</sup>

- Musoni, established in 2010, is a completely cashless microfinance institution. The organization enables customers to receive and repay their loans via Safaricom's M-PESA system
- Musoni has grown quickly, with an extended network of 37 branches across Kenya
- Musoni seeks to create financial and social impact for women, youth and smallholder farmers through its broad portfolio of flexible lending products
- Based on a research partnership with Grameen Foundation, Musoni designed a loan product specifically for smallholder farmers, known as Kilimo Booster (kilimo meaning "agriculture" in Swahili), a loan product with flexible terms and a customizable grace period based on a farmer's seasonal cash flow
- As Musoni clients are required to have access to both a mobile phone and an M-PESA account, the widespread, near-ubiquitous nature of M-PESA platform in Kenya, and high levels of mobile phone access and connectivity, support Musoni's digital model and operations

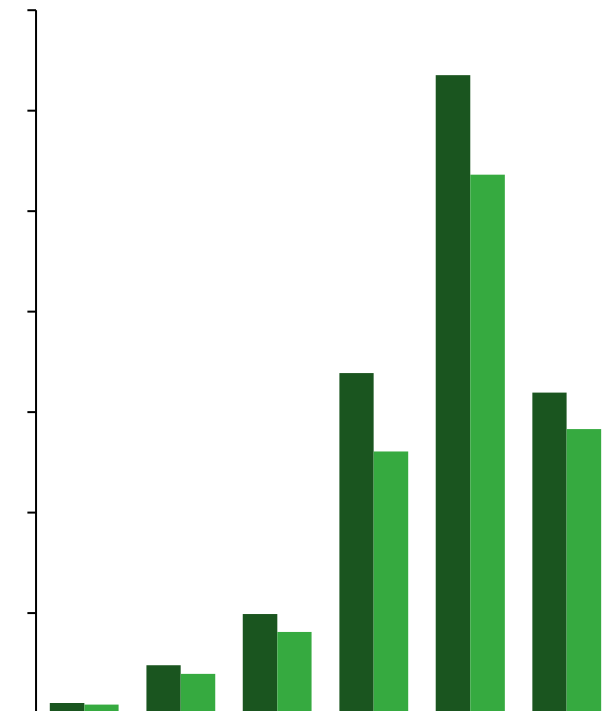
## Musoni has two branch offices close to the SDM <sup>1) & 3)</sup>

Location of Musoni's branch offices and SDM area.



## Covid-19 halted the exponential increase client and products<sup>2)</sup>

Kilimo loan portfolio of client and disbursals;



Sources: 1) [Brand \(2017\)](#); 2) Musoni Client-data (2015-2020); 3) PDC Data Sorghum / Maize

# SDM objectives

The SDM process sought to assess Musoni's social and economic impact across a few potential dimensions, including impacts accruing to borrowers, employees, value chain partners, and the local community



# EXECUTIVE SUMMARY

Impact and opportunity

# Executive summary – *strengths and impact*

Musoni has created substantial impact to date and has a strong platform to build on moving forward; farmers, particularly women and youth, value its services and funders continue to support the organization

As the **first cashless MFI in Kenya and the first African MFI to be certified by the Center for Financial Inclusion's Smart campaign**, Musoni has many strengths and has gained significant traction. In 2019, Musoni served **~31K farmers, including ~22K women and ~11K youth**. Historically, Musoni has been differentiated by its promise of **low cost, cashless convenience; accessibility and efficiency have been central to its value-proposition** and survey feedback confirms that the organization delivers on both; on time payments, finance at a low cost, and high-quality services are seen as key strengths across segments.

While Musoni-specific farmer income uplift is difficult to attribute, **impact studies confirm the importance of accessible and affordable finance in building livelihoods and farmers state that they value Musoni's services and use loans to make critical productive investments.**

Adult men receive larger loans sizes on average, but this is largely due to better access to collateral and larger farms and men typically exhibit higher write-offs; **Musoni aims to mitigate difficulties with access to credit for women and youth** and actively invests in expanding impact and enhancing customer experience for these segments, both of whom see larger increases in loan size over their time with Musoni than Men. **While female CLTV remains lower than male, increased scale will improve economics and tactical investments in increasing value-add (e.g. VCP relationships) could remedy discrepancies and improve economics;** with 70%+ women borrowers, **Musoni is a valuable platform for change.**

Musoni's **broad and flexible lending product offering, which includes Agricultural (Kilimo), Small business (Nawiri), Emergency (Wepesi), Asset, and Education loans, also appears well suited to its customer base**, who typically earn income from two or more sources and actively state that they value access to loans tailored to diverse expenditure needs. Musoni's activities also **support ~390 jobs directly, ~50% of which support the ag portfolio (staff count)**, in addition to indirectly **supporting the livelihoods of its 31K ag borrowers**, the **8K on-farm FTEs** they hire, and up to **~25K jobs in part** induced through the expenditure of both direct and indirect job support; this impact is expected to grow as Musoni expands its agriculture portfolio and broadens its engagement with other value chain players. As a result of these strengths, Musoni retains a **strong brand**; funders have observed the organization's successes and continue to actively support the its's ambitions to grow its agriculture portfolio, to which ~80%+ of grant value is committed.

# Executive summary - vision

With successful implementation, Musoni can become a more valuable player in the local ecosystem offering a deeper value-proposition to customers, while retaining quality customer service in its core lending business

## TODAY

- Musoni has advanced digital operation, but loan officers remain heavily involved in origination and loan servicing processing, generating high costs, particularly for Kilimo Group loans
- Applications are insufficiently robust to limit credit / default risk without adequate human support limiting available labor hours for other value-added services
- With limited additional value-added services, disintermediation through further digitization could undermine strength of customer-Musoni relationship and reduce stickiness

## TOMORROW

- Improved platform and risk assessment tools have reduced risk of lighter touch loan origination and servicing
- Loan officers with improved agricultural training spend time focused particularly challenging cases and offering value-added services, including agricultural training and value chain partnerships to borrowers
- Borrowers see value in Musoni's highly accessible lending platforms, but continue to engage in in-person interaction with the organization to benefit from its value-added services and ecosystem partnerships
- Economic and social value measurably increases across the economic system



# MUSONI'S OPERATING CONTEXT

Understanding Musoni's context and how this might impact the organization



# State of the sector

While the use of mobile phones and connectivity is significantly increasing, women and youth in rural areas remain financially constrained due to a lack of formal collateral, credit history, and existing debt.

## State of the (digital) MFI sector

- Mobile phone access and connectivity are increasing significantly in Kenya with the number of unique mobile subscriptions reaching 90% of the population in 2018 <sup>2)</sup> (2015: 42%<sup>1)</sup>), and 3G coverage of 85% of the population (2015: 19%<sup>1)</sup>).
- Increase in mobile subscriptions and 3G coverage has boosted the use of digital financial service (DFS), with DFS diversifying from basic money transfer and bill payment to credit, savings, insurance, and other financial products. <sup>11)</sup>
- The increasing use of digital financial services (DFSs) has led to a competitive market with multiple providers and resulted in borrowers shifting seamlessly between providers. <sup>2)</sup>
- In Kenya there still remain groups of borrowers of whom financial needs are not met yet. These groups are an untapped opportunity to financial service providers, with an increased understanding of the borrowers' needs and characteristics. <sup>4)</sup>

## Gender

- Women find it more challenging to access finance relative to men, due to limited financial literacy, physical access, lack of clarity of bank terms of access and the inability to provide collateral or personal guarantees. <sup>9)</sup>
- To increase the uptake of digital apps and digital finance solutions, MFIs should use text-free interfaces, women based examples, profiles without gender indication, increase confidence by providing training, and stimulate women leadership.

## Youth

- Main reasons for youth to use digital services are obtaining market information on price, diseases and pest control, and farming techniques/practices, keeping records of yield, and communicating with other farmers. <sup>13)</sup>
- Youth (18- 34 years old) are mostly denied formal agricultural loans due to low savings, limited credit history, and current level of debt to repay. <sup>14)</sup>

## COVID-19 effects on MFI sector

- By the end of 2020, the focus is shifting away from immediate liquidity needs and damage control to building a stronger and more resilient microfinance sector for the future. <sup>7)</sup>
- Portfolios will continue to be under stress as a result of lending to households with volatile income and no assets, and long-term economical effect due to COVID-19. <sup>8)</sup>
- The pandemic has shown the relevance of, <sup>7)</sup>
  - the establishment of new channels (e.g. platforms) through which clients are serviced and reached;
  - Increased importance of capacity of digitizing and managing customer data for example effective credit risk management and new product design;
  - product diversification to meet customers' demand and enhance loyalty;
  - flexible core IT and data management systems with shared IT solutions being a possible game changer.

Sources: 1) [GSMA - industry \(2019a\)](#); 2) [Microsave \(2019\)](#); 3) [GSMA - gender \(2019b\)](#); 4) [FSD Kenya/CGAP \(2020a\)](#); 5) [FSD Kenya/CGAP \(2020b\)](#); 6) [AMFI \(2018\)](#); 7) [FinDev Gateway/CGAP \(2020\)](#); 8) [Odi \(2020\)](#); 9) [SNV \(2018\)](#); 10) [IFAD \(2012\)](#); 11) [AfPI \(2018\)](#); 12) [USAID WomenConnect \(2021\)](#); 13) [CGAP \(2019\)](#); 14) [FAO \(2020\)](#)

# Enabling Environment | Maize / Sorghum

Although pressured by climate change, volatile prices, and limited transparency, the digitizing environment of Kenya, provides Musoni a fertile ground to develop its business and generate impact.

Definition	Situation	Impact on SDM	Definition	Situation	Impact on SDM
<b>Technology</b>	<ul style="list-style-type: none"> <li>Due to repeated, high-frequency borrowing, digital loans are the single most common type of loan in use in Kenya.<sup>9)</sup></li> <li>Digital loans are predominantly used by youth (18 – 35 years) from urban areas, where youth and adult farmers in rural areas still mainly use informal sources of credit.<sup>9)</sup></li> </ul>	<ul style="list-style-type: none"> <li>Increase in adoption of digital credit increases potential customer-base for Musoni.</li> </ul>	<b>Trading System</b>	<ul style="list-style-type: none"> <li>Maize and sorghum reach markets through wholesalers and brokers, and are consumed domestically.</li> <li>Kenya is a net importer of both maize and sorghum, consecutively importing an additional 14% and 70% of its locally produced maize and sorghum in 2018.<sup>11)</sup></li> </ul>	<ul style="list-style-type: none"> <li>Pivotal value-chains create a strong base to develop value-chain partnerships for product development.</li> </ul>
<b>Environment</b>	<ul style="list-style-type: none"> <li>Kenya is highly reliant on rainfed agriculture. Erratic rainfall, coupled with severe droughts, is the biggest risk facing Kenya's agriculture sector, with profound impact crop production.<sup>3)</sup></li> <li>Pests and diseases are also a major concern. Improper use of agrochemicals continue to cause health and environmental issues.<sup>3)</sup></li> </ul>	<ul style="list-style-type: none"> <li>Worsening and less predictable environment increase the risk of non-performing loans due to lost harvest.</li> </ul>	<b>Pricing &amp; Competition</b>	<ul style="list-style-type: none"> <li>Prices (especially for maize) vary seasonally. Farmers who can hold their produce can benefit of storage capacity. Few farmers have the means and infrastructure to do so and as a result lose out on higher incomes.<sup>3)</sup></li> </ul>	<ul style="list-style-type: none"> <li>Volatile prices increase the risk of farmers to default if prices go down.</li> </ul>
<b>Infrastructure</b>	<ul style="list-style-type: none"> <li>Poor infrastructure result in high transactions costs for farmers and inaccessibility to input and output markets.<sup>4)</sup></li> <li>Kenya scores 4.3 (Sub Saharan Africa: 2.9) on the Infrastructure Index.<sup>10)</sup></li> </ul>	<ul style="list-style-type: none"> <li>Poor infrastructure puts pressure on profitability of SHF, and risk of default.</li> </ul>	<b>Institutional Stability</b>	<ul style="list-style-type: none"> <li>Kenya has made significant political, structural and economic reforms that have largely driven sustained economic growth, social development and political gains over the past decade.<sup>7)</sup> These reforms have resulted in the country's stable institutions.</li> </ul>	<ul style="list-style-type: none"> <li>Stability and clear policies will increase effectivity and efficiency with which Musoni can operate.</li> </ul>
<b>Labor</b>	<ul style="list-style-type: none"> <li>The Kenyan economy is characterised by a large share of jobs in the informal sector including small scale farming. These constituted 83.6% of total employment in the country in 2018.</li> <li>The monthly basic minimum wage for unskilled labour in the agricultural sector is KES 6,736 (USD 67).<sup>5)</sup></li> </ul>	<ul style="list-style-type: none"> <li>Development of jobs will decrease unemployment and possibly increase food security.</li> </ul>	<b>Land Tenure</b>	<ul style="list-style-type: none"> <li>Costs related to registering land and acquiring titles are too high for most smallholders. Consequently, the majority of rural smallholders do not hold title deeds proving them as the rightful landowner.<sup>8)</sup></li> </ul>	<ul style="list-style-type: none"> <li>Increasing need for non-collateral depended credit-scoring mechanisms.</li> </ul>
<b>Inputs &amp; Financing</b>	<ul style="list-style-type: none"> <li>Only 4% of the Kenya's total credit is channelled to agriculture. Lack of collateral to access credit has resulted to poor inputs access, low productivity and low income for the SHFs.<sup>6)</sup></li> </ul>	<ul style="list-style-type: none"> <li>Increasing need for non-collateral depended credit-scoring mechanisms.</li> </ul>	<b>Social Norms</b>	<ul style="list-style-type: none"> <li>In Kenya, women are highly involved in the agricultural workforce, though, mostly in harvesting as this is a generally, low-earning farming activity. This is in addition to their traditional domestic responsibilities.<sup>8)</sup></li> <li>Women's access to schools and healthcare is limited <sup>8)</sup>, with only 48% having access to primary school.<sup>12)</sup></li> </ul>	<ul style="list-style-type: none"> <li>Increasing need for financial training for good product use and adoption.</li> </ul>

Sources: 1) [GSMA - industry \(2019a\)](#); 2) [Microsave \(2019\)](#); 3) [World Bank \(2015\)](#); 4) [FAO \(2013\)](#); 5) [KNBS \(2020\)](#); 6) [Centre for Financial Inclusion \(2017\)](#); 7) [World Bank \(2020\)](#); 8) Africa research institute (2017); 9) [FSD Kenya \(2019\)](#); 10) [World Bank \(2020\)](#); 11) [FAOstat \(2018\)](#); 12) [KNBS \(2014\)](#);

## Impact

Positive Average Negative

# Gender | Maize / Sorghum

Although the majority of women are self-responsible for farm-related decisions, their involvement in farm activities is still limited to low-income activities such as land preparation and harvesting.

Gender Dynamics				
Category	Decision making		Decision making on Productive activities	
Data	<div>Women's involvement in decisions <sup>1)</sup></div> <div><div>Own healthcare</div><div>Major HH purchases</div><div>Visit to family</div><div>What food to cook</div></div> <div><div><div>39%</div><div>40%</div><div>21%</div></div><div><div>20%</div><div>53%</div><div>27%</div></div><div><div>23%</div><div>50%</div><div>26%</div></div><div><div>83%</div><div>11%</div><div>5%</div></div></div> <div><div>Female</div><div>Male</div><div>Joint</div></div>		<div>Decision making responsibility in farm</div> <div><div>Maize</div><div>FOF**</div><div>MOF*</div></div> <div><div>Sorghum</div><div>FOF**</div><div>MOF*</div></div> <div><div><div>57%</div><div>43%</div></div><div><div>4%</div><div>43%</div><div>53%</div></div><div><div>54%</div><div>46%</div></div><div><div>2%</div><div>41%</div><div>57%</div></div></div> <div><div>Partner/Other HH member</div><div>Joint</div><div>Self</div></div>	
Category	Description of involvement	Detailed description of risk	Expected Impact	
Involvement in household activity	<div>Activities undertaken:</div> <div><div>98 - 99% of the women are involved in HH activities such as cooking, cleaning, fetching water, washing clothes or buying food</div><div>62 - 68% of the women are involved in buying clothes for the HH</div><div>84 - 87% of the women care for school going children while 64 - 71% care for an ill HH member</div></div>	<div><div>Disproportionate load of unpaid care work</div><div>Limited time to engage in productive/economic activities.(time poverty)</div></div>	<div><div>Women's exclusion of effective participation in agricultural value chains.</div><div>Lower Farm yields</div><div>Unsustainable agricultural value chains</div></div>	
Involvement in farm activity	<div>Activities undertaken:</div> <div><div>In maize farming, women are mainly engaged in planting (90%),land prep (88%), harvesting (84%), and crop maintenance (83%)</div><div>In sorghum farming, women are mainly engaged in land prep (87%), planting (83%), crop maintenance (78%), and harvesting (71%)</div><div>28% (maize) and 23% (sorghum) are taking out a loan for agriculture</div></div>	<div><div>Uneven agricultural value distribution-women focused on production, low income activities</div><div>Little women distribution in value chains</div></div>	<div><div>Role of women invisible in agricultural value chains</div><div>Unequal distribution of value along the agricultural value chain</div></div>	

Sources: 1) [KNBS \(2014\)](#);

\* Male owned Farm, \*\* Female owned Farm

# Food Security | Eldoret

Maize farmers in Eldoret face both cash and food shortage mimicked to the harvest calendar, with a high shortage in the first half and limited shortage in the second half, harvest-time, of the year.

Farmer’s overall Food Security status													<div><div>&gt; 30%</div><div>20 - 30%</div><div>10 - 20%</div><div>&lt; 10%</div></div>																																																																																																																							
Category	Cash-flow (Stability & Access)												Food Security (Access & Availability)												Assets (Stability)																																																																																																											
Data	<div>Cash flow</div> <div>% of female and male farmers that expressed they are cash-strapped during this month of the year, mostly in January.</div>												<div>Food Security</div> <div>% of farmers that expressed that they face food shortages during this month of the year, mostly before October.</div>												<div><ul style="list-style-type: none"><li>• <b>Ownership:</b> 71.9% of the female and 74.3% of the male farmers own the land on which they farm</li><li>• <b>Farm size:</b> 1.71 acres (female) and 2.00 acres (male)</li><li>• <b>Crop farm size:</b> 1.13 acres (female) and 1.17 acres (male)</li><li>• <b>Other crops:</b> Both female and male farmers focus mainly on growing maize and diversify with beans, kale, and sugar cane.</li><li>• <b>Animals:</b> 66% of female and 69% of male farmers own livestock. Livestock reared is primarily chicks (F: 52%/M: 56%) and cows (F: 44%/M: 48%) by both female and male farmers.</li></ul></div>																																																																																																											
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Data	<div><ul style="list-style-type: none"><li>• <b>Produce sold:</b> female 71% / male 70% sold of maize</li><li>• <b>Crop loss:</b> female 2% and male 2% of maize</li><li>• <b>Own consumption:</b> female 22% and male 25% of maize</li><li>• <b>Price:</b> female 34 KES/kg and male 32 KES/kg</li><li>• <b>Price volatility:</b> N/a</li><li>• <b>Income from crop:</b> female 22% and male 22% of total income</li><li>• <b>Other crops &amp; livestock income:</b> female 65% and male 60% of total income</li><li>• <b>Off-farm income:</b> female 13% and male 18% of total income</li><li>• <b>Poverty line:</b> N/a</li><li>• <b>Household size:</b> female 6 and man 6 people</li></ul></div>												<div><ul style="list-style-type: none"><li>• <b>Per capita food production variability:</b> 5.8 <sup>1)</sup></li><li>• <b>Global production:</b> Kenya was ranked 25th worldwide in 2020 based on corn production estimated at 4,000K MT2. <sup>5)</sup></li><li>• <b>Export vs Import:</b> Kenya is a net importer of maize. The country imported an additional 14.2% of its locally produced maize in 2018. <sup>6)</sup></li><li>• <b>Local market:</b> Maize reaches markets through wholesalers and brokers. Since produce is mostly consumed domestically, these tend to be characterized by limited transparency.</li></ul></div>												<div><ul style="list-style-type: none"><li>• <b>District level nutrition status:</b> On average, 11.8 million Kenyans are undernourished. The prevalence of stunting among children under five years if age is 26.2% nationally. <sup>2)</sup></li><li>• <b>National average dietary energy supply adequacy:</b> 97% <sup>2)</sup></li><li>• <b>Access to clean water:</b> Yes. At least 58.9% of Kenyans have access to basic drinking water services. <sup>3)</sup></li><li>• <b>Access to sanitation:</b> 29.1% of the population has access to at least basic sanitation services. <sup>4)</sup></li></ul></div>																																																																																																											

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# Food Security | Homa-Bay / Migori

Although Sorghum farmer in Homa-Bay perceive food shortage less around the harvest period, they perceive cash shortage all year around.

Farmer’s overall Food Security status													<div><div>&gt; 30%</div><div>20 - 30%</div><div>10 - 20%</div><div>&lt; 10%</div></div>																								
Category	Cash-flow (Stability & Access)												Food Security (Access & Availability)												Assets (Stability)												
Data	<div>Cash flow</div> <div>% of female and male farmers that expressed they are cash-strapped during this month of the year, mostly in January.</div> <div><div>Female</div><div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div><div>7</div><div>8</div><div>9</div><div>10</div><div>11</div><div>12</div><div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div></div></div></div> <div><div>Male</div><div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div><div>7</div><div>8</div><div>9</div><div>10</div><div>11</div><div>12</div><div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div></div></div></div> <td colspan="12"><div>Food Security</div><div>% of farmers that expressed that they face food shortages during this month of the year, mostly before October.</div><div><div>Female</div><div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div><div>7</div><div>8</div><div>9</div><div>10</div><div>11</div><div>12</div><div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div></div></div></div><div><div>Male</div><div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div><div>7</div><div>8</div><div>9</div><div>10</div><div>11</div><div>12</div><div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div></div></div></div><td colspan="12"><div><ul style="list-style-type: none"><li>• <b>Ownership:</b> 79.2% of the female and 79.2% of the male farmers own the land on which they farm</li><li>• <b>Farm size:</b> 2.21 acres (female) and 3.02 acres (male)</li><li>• <b>Crop farm size:</b> 0.89 acres (female) and 1.23 acres (male)</li><li>• <b>Other crops:</b> Both female and male farmers focus mainly on growing maize and diversify with sorghum and beans.</li><li>• <b>Animals:</b> 65% of female and 64% of male farmers own livestock. Livestock reared is primarily chicks (F: 56%/M: 56%) and cows (F: 35%/M: 38%) by both female and male farmers.</li></ul></div></td></td>												<div>Food Security</div> <div>% of farmers that expressed that they face food shortages during this month of the year, mostly before October.</div> <div><div>Female</div><div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div><div>7</div><div>8</div><div>9</div><div>10</div><div>11</div><div>12</div><div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div></div></div></div> <div><div>Male</div><div><div>1</div><div>2</div><div>3</div><div>4</div><div>5</div><div>6</div><div>7</div><div>8</div><div>9</div><div>10</div><div>11</div><div>12</div><div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div></div></div></div> <td colspan="12"><div><ul style="list-style-type: none"><li>• <b>Ownership:</b> 79.2% of the female and 79.2% of the male farmers own the land on which they farm</li><li>• <b>Farm size:</b> 2.21 acres (female) and 3.02 acres (male)</li><li>• <b>Crop farm size:</b> 0.89 acres (female) and 1.23 acres (male)</li><li>• <b>Other crops:</b> Both female and male farmers focus mainly on growing maize and diversify with sorghum and beans.</li><li>• <b>Animals:</b> 65% of female and 64% of male farmers own livestock. 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	Category	Income (Access & Availability)												Market (Availability)												Health & Sanitation (Utilization)											
	Data	<div><ul style="list-style-type: none"><li>• <b>Produce sold:</b> female 51% / male 100% sold of sorghum</li><li>• <b>Crop loss:</b> female 5% and male 3% of produce</li><li>• <b>Own consumption:</b> female 16% and male 39% of produce</li><li>• <b>Price:</b> female 45 KES/kg and male 45 KES/kg</li><li>• <b>Price volatility:</b> N/a</li><li>• <b>Income from crop:</b> female 4% and male 9% of total income</li><li>• <b>Other crops &amp; livestock income:</b> female 79% and male 68% of total income</li><li>• <b>Off-farm income:</b> female 17% and male 23% of total income</li><li>• <b>Poverty line:</b> N/a</li><li>• <b>Household size:</b> female 6 and man 7 people</li></ul></div>												<div><ul style="list-style-type: none"><li>• <b>Per capita food production variability:</b> 5.8 <sup>1)</sup></li><li>• <b>Global production:</b> Kenya was ranked 25th worldwide in 2020 based on corn production estimated at 200K MT2. <sup>5)</sup></li><li>• <b>Export vs Import:</b> Kenya is a net importer of sorghum. The country imported an additional 69.4% of its locally produced sorghum in 2018.<sup>6)</sup></li><li>• <b>Local market:</b> The lack of a formal value chain of sorghum allows for agents and middlemen to put pressure on farmers to sell at lower prices. Poor market price awareness among farmers additionally lead to low bargaining power.<sup>7)</sup></li></ul></div>												<div><ul style="list-style-type: none"><li>• <b>District level nutrition status:</b> On average, 11.8 million Kenyans are undernourished. The prevalence of stunting among children under five years if age is 26.2% nationally.<sup>2)</sup></li><li>• <b>National average dietary energy supply adequacy:</b> 97% <sup>2)</sup></li><li>• <b>Access to clean water:</b> Yes. At least 58.9% of Kenyans have access to basic drinking water services.<sup>3)</sup></li><li>• <b>Access to sanitation:</b> 29.1% of the population has access to at least basic sanitation services.<sup>4)</sup></li></ul></div>											

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# Food Security | Musoni clients

Baseline clients perceive less cash flow and food shortage around the harvest period compared to Musoni clients, suggesting that loan repayments dampen the perceived abundance of cash and food.

Farmer’s overall Food Security status												<div><div>&gt; 30%</div><div>20 - 30%</div><div>10 - 20%</div><div>&lt; 10%</div></div>																								
Category	Cash-flow (Stability & Access)												Food Security (Access & Availability)												Assets (Stability)											
Data	Cash flow												Food Security												<ul style="list-style-type: none"><li>• <b>Ownership:</b> 63% of the Baseline and 81% of the Musoni farmers own the land on which they farm</li><li>• <b>Farm size:</b> 1.6 acres (Baseline) and 2.3 acres (Musoni)</li><li>• <b>Crop farm size:</b> 1.0 acres (Baseline) and 1.2 acres (Musoni)</li><li>• <b>Other crops:</b> Both Baseline and Musoni farmers focus mainly on growing beans and kale.</li><li>• <b>Animals:</b> 69% of Baseline and 64% of Musoni farmers own livestock. Livestock reared is primarily chicks (B: 49%/M: 56%) and cows (F: 46%/M: 40%) by both Baseline and Musoni farmers.</li></ul>											
	% of farmers that expressed they are cash-strapped during this month of the year, mostly in January.												% of farmers that expressed that they face food shortages during this month of the year, mostly before October.																							
	Baseline												Baseline																							
	Musoni												Musoni																							
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# Climate Resilience | Eldoret

Change in consecutive days of moisture stress changes the distribution, onset, and cessation of rainfall seasons making it increasingly difficult to plan agricultural operations.

Farmer sensitivity and exposure to	Exposure	Detailed description of risk	Sensitivity	Expected impact
Changing temperatures	Medium	• Current temperature trend (1980 – 2005) indicates an increase of 0.5°C and 0.3°C in both first and second season temperatures respectively. <sup>1)</sup>	High	• Increased prevalence of pests and diseases and emergence of new disease and pest types • Water stress due to droughts and floods affect yield
Changing rainfall patterns and soil conditions	High	• Slight increase in precipitation in the wet season and change in consecutive days of moisture stress changes the distribution, onset, and cessation of rainfall seasons making it increasingly difficult to plan agricultural operations. <sup>1)</sup>	High	• Decrease in the reliable cropping days • Higher incidences of crop failure • Increase in post-harvest loss due to increased rotting • Increasing need to invest in modern land preparation equipment, increase access to high quality inputs, and training on GAP.
Frequent climate extremes	Medium	• Increase in the frequency of intense extreme weather events like rainfall and floods. <sup>1)</sup>	Medium	• Water stress due to droughts and floods affect yield • Floods destroy crops, erode the soil and limit farm and market accessibility due to damage to the infrastructure

Farmer adaptive capacity																															
Category	Climate issues faced	Coping mechanisms	Region																												
Data	<p><b>Climate issues faced in Eldoret <sup>2)</sup></b></p> <p>■ % of participants</p> <table><thead><tr><th>Climate issue</th><th>% of participants</th></tr></thead><tbody><tr><td>Changes in rain patterns</td><td>64%</td></tr><tr><td>Droughts</td><td>25%</td></tr><tr><td>Heat waves (temperature rise)</td><td>4%</td></tr><tr><td>Floods</td><td>11%</td></tr><tr><td>Hail storms</td><td>32%</td></tr><tr><td>No crop loss</td><td>10%</td></tr></tbody></table>	Climate issue	% of participants	Changes in rain patterns	64%	Droughts	25%	Heat waves (temperature rise)	4%	Floods	11%	Hail storms	32%	No crop loss	10%	<p><b>Coping mechanisms Eldoret <sup>3)</sup></b></p> <p>■ % of participants</p> <table><thead><tr><th>Coping mechanism</th><th>% of participants</th></tr></thead><tbody><tr><td>None</td><td>51%</td></tr><tr><td>Cash/mobile money</td><td>27%</td></tr><tr><td>Savings or assets</td><td>22%</td></tr><tr><td>Agricultural inputs</td><td>7%</td></tr><tr><td>Specific forms of comm.</td><td>2%</td></tr><tr><td>Techniques learned in a training</td><td>22%</td></tr></tbody></table>	Coping mechanism	% of participants	None	51%	Cash/mobile money	27%	Savings or assets	22%	Agricultural inputs	7%	Specific forms of comm.	2%	Techniques learned in a training	22%	<p>Eldoret</p>
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Sources: All data from farmer PDC except specified otherwise; 1) [CGAIR \(2018\)](#); 2) N of Eldoret = 295; 3) N of Eldoret = 221; 4) Percentage shown in the graph may exceed 100%, due to multiple selection of answers.

# Climate Resilience | Homa-Bay / Migori

Intensifying rainfall, increasing frequency of floods, and less reliable cropping days increased the risk of crop loss resulting in farmers going default on loan payments.

Farmer sensitivity and exposure to	Exposure	Detailed description of risk	Sensitivity	Expected impact
Changing temperatures	Medium	• Future climatic predictions indicate possible annual temperature increase of 0.4°C between 2021-2065. <sup>1)</sup>	High	• Increased prevalence of pests and diseases and emergence of new disease and pest types • Water stress due to droughts and floods affect yield
Changing rainfall patterns and soil conditions	High	• Increase in precipitation of 0.7% and 3% in the first and second wet season, and change in consecutive days of moisture stress changes the distribution, onset, and cessation of rainfall seasons make it increasingly difficult to plan agricultural operations. <sup>1)</sup>	High	• Decrease in the reliable cropping days • Higher incidences of crop failure • Increase in post-harvest loss due to increased rotting • Increasing need to invest in drainage and irrigation structures, storing techniques, and training on GAP.
Frequent climate extremes	Medium	• The intense extreme weather events like rainfall and floods will become more frequent. <sup>1)</sup>	Medium	• Water stress due to droughts and floods affect yield • Floods destroy crops, erode the soil and limit farm and market accessibility due to damage to the infrastructure

Farmer adaptive capacity																															
Category	Climate issues faced	Coping mechanisms	Region																												
Data	<p>Climate issues faced in Homa-Bay / Migori <sup>2)</sup></p> <p>■ % of participants</p> <table><thead><tr><th>Climate issues faced</th><th>% of participants</th></tr></thead><tbody><tr><td>Changes in rain patterns</td><td>69%</td></tr><tr><td>Droughts</td><td>46%</td></tr><tr><td>Heat waves (temperature rise)</td><td>9%</td></tr><tr><td>Floods</td><td>13%</td></tr><tr><td>Hail storms</td><td>25%</td></tr><tr><td>No crop loss</td><td>4%</td></tr></tbody></table>	Climate issues faced	% of participants	Changes in rain patterns	69%	Droughts	46%	Heat waves (temperature rise)	9%	Floods	13%	Hail storms	25%	No crop loss	4%	<p>Coping mechanisms Homa-Bay / Migori <sup>3)</sup></p> <p>■ % of participants</p> <table><thead><tr><th>Coping mechanisms</th><th>% of participants</th></tr></thead><tbody><tr><td>None</td><td>44%</td></tr><tr><td>Cash/mobile money</td><td>27%</td></tr><tr><td>Savings or assets</td><td>14%</td></tr><tr><td>Agricultural inputs</td><td>6%</td></tr><tr><td>Specific forms of comm.</td><td>4%</td></tr><tr><td>Techniques learned in a training</td><td>14%</td></tr></tbody></table>	Coping mechanisms	% of participants	None	44%	Cash/mobile money	27%	Savings or assets	14%	Agricultural inputs	6%	Specific forms of comm.	4%	Techniques learned in a training	14%	
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Agricultural inputs	6%																														
Specific forms of comm.	4%																														
Techniques learned in a training	14%																														

Sources: All data from farmer PDC except specified otherwise; 1) [CGAIR \(2016\)](#); 2) N of Homa-Bay/Migori = 172; 3) N of Homa-Bay/Migori = 158; 4) Percentage shown in the graph may exceed 100%, due to multiple selection of answers.



# BUSINESS MODEL OVERVIEW

Understanding Musoni's vision and how the organization has evolved

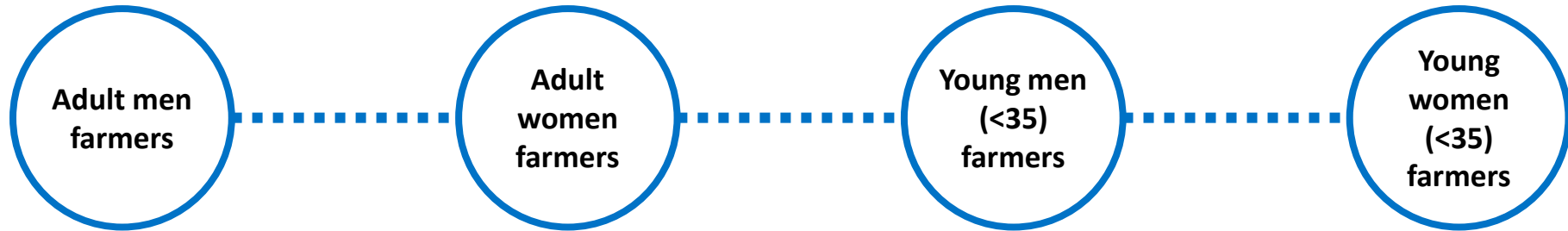
# Vision

Musoni is the first cashless MFI in Kenya offering affordable lending services to women, men and youth farmers through a light touch and accessible digital lending model

## Overall aims

Musoni aims to maximize the potential of the businesses of the low income and unbanked of Kenya through the provision of digital, affordable and customer-oriented financial services. Musoni has a strong focus on microenterprise, women, youth and smallholder farmers.

## Farmer segments served



## Products

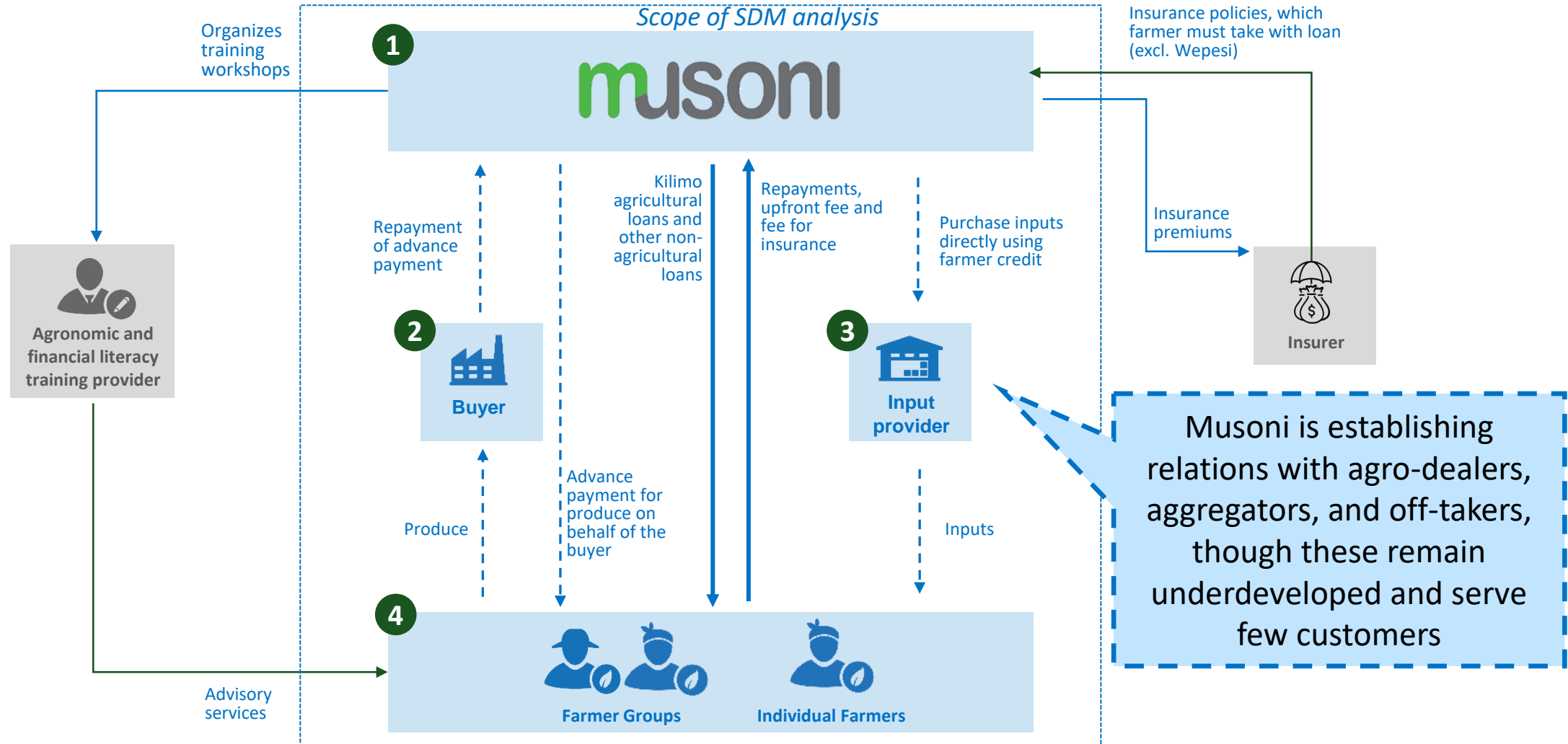
Agriculture products	Cross- sold products
<ul style="list-style-type: none"><li>• <i>Loans to purchase inputs / make farm improvements (Kilimo)</i></li><li>• <i>Agricultural asset loans</i></li></ul>	<ul style="list-style-type: none"><li>• <i>Education loans</i></li><li>• <i>Emergency loans (Wepesi)</i></li><li>• <i>Business loans (Nawiri/Stawi)</i></li><li>• <i>Other asset loans</i></li></ul>

## Key elements of value-add



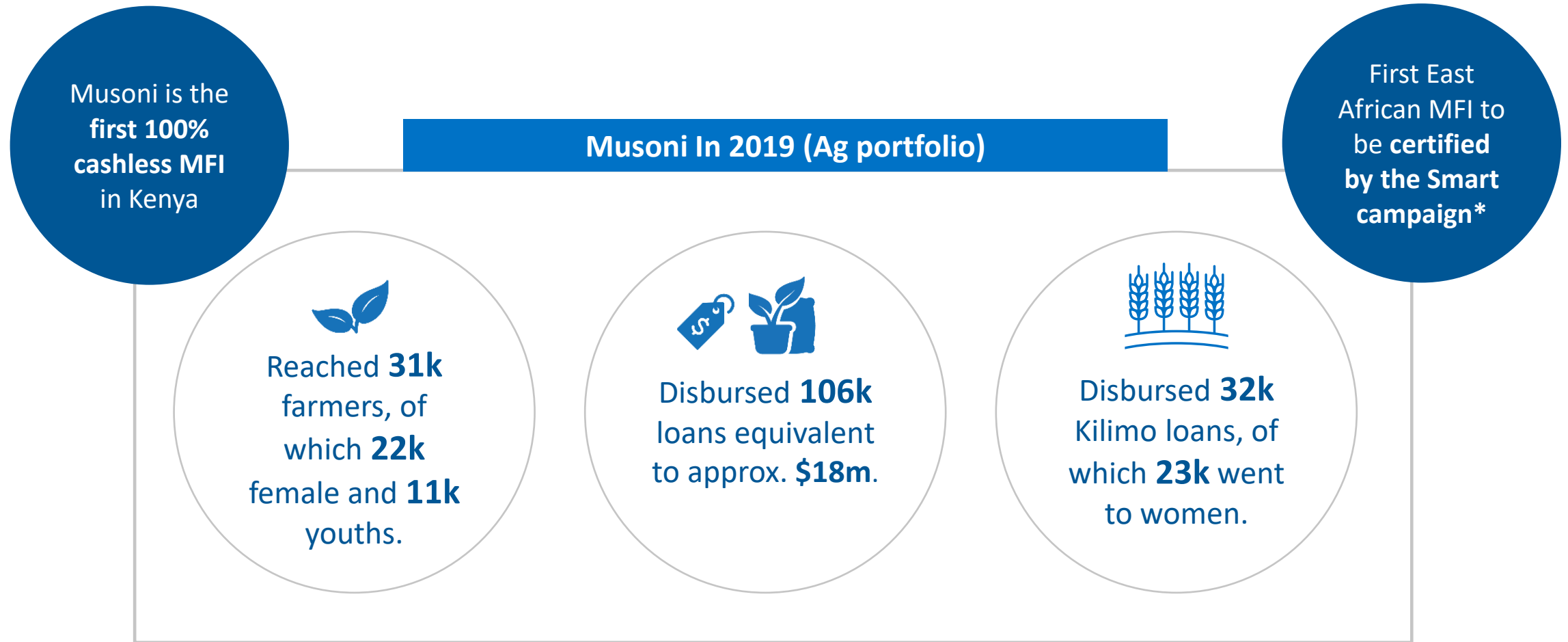
# Service delivery model

Today Musoni's business primarily focuses on a suite of loans made directly to farmers and small businesses; while Value Chain Players have a small role, relationships are underdeveloped and serve few borrowers



# Achievements to date

Musoni has had considerable success in growing its business and extending its impact, serving more than 30K farmers in 2019

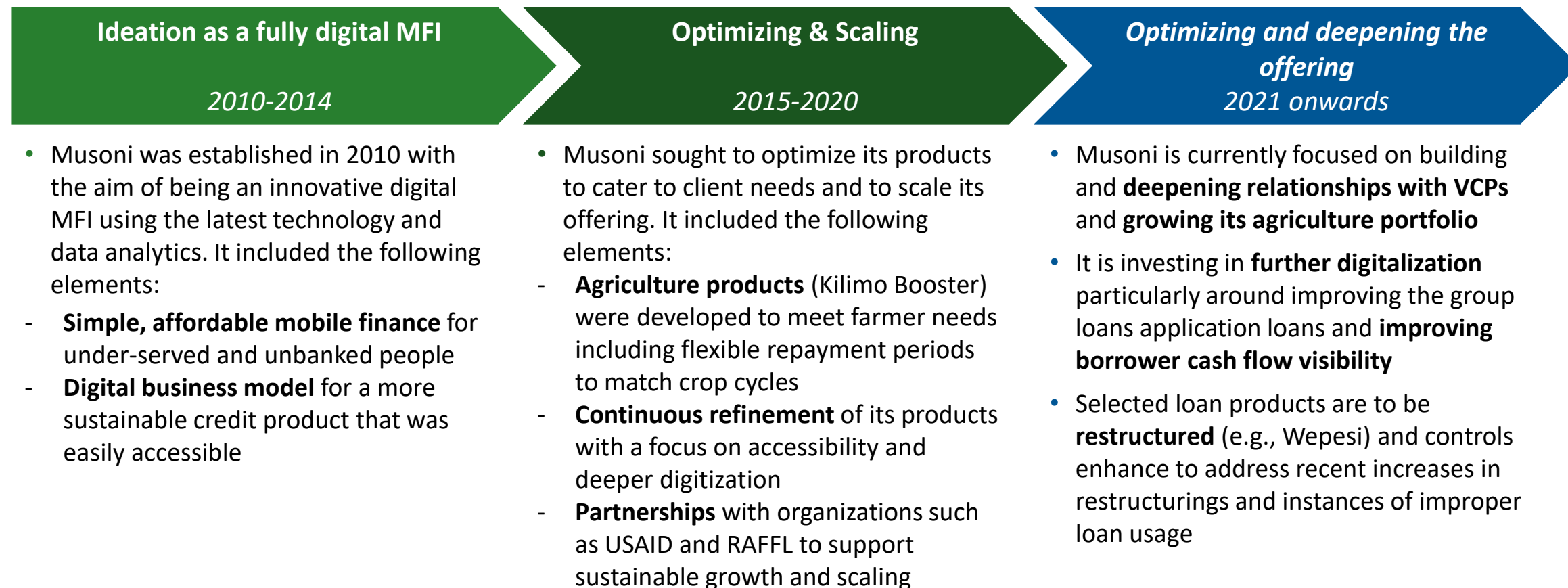


*\*Note: The Smart Campaign is the Center for Financial Inclusion's program to support increased consumer protection for low-income borrowers.*



# Musoni's evolution

As the digital lending industry has grown, Musoni has sought to scale and refine its business model with a focus on efficient and accessible loan delivery; moving forward resilience and differentiation are priorities



# CUSTOMER BORROWING BEHAVIOR

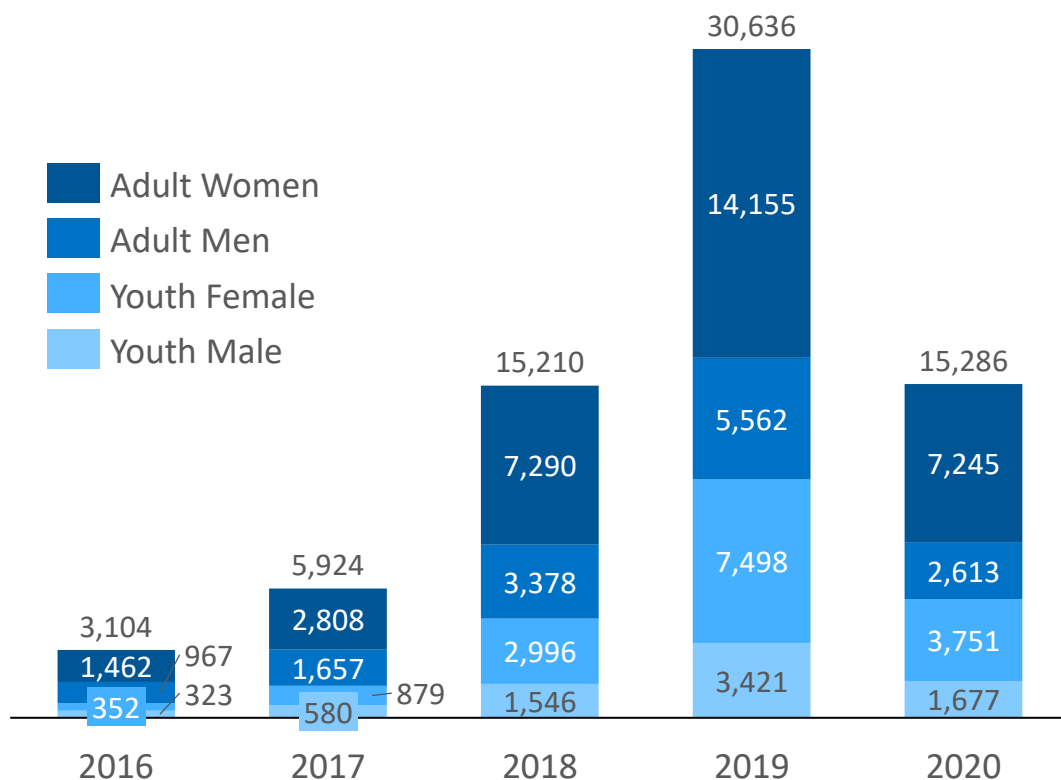
Understanding customer loan taking behavior

# Active customer growth

Musoni exhibited rapid growth in its customer base from 2016-2019, before a COVID-driven drop in 2020 ; Female borrowers, both Adult and Youth grew ~10X over the period as Musoni expanded its operations

## Number of active clients 2016-2020

Number of agriculture\* clients that took out a loan in each year



- Musoni has achieved significant growth in active customers since 2016
- Adult and youth women have grown particularly quickly during this time
- However, COVID-19 had a clear impact with a sharp fall in the number of active customers across all segments in 2020
- The number of active customers in 2020 has trended back towards 2018 levels

## Increase in clients 2016-2019

Adult female	Adult male	Youth female	Youth male
8.5x	4.7x	20x	9.5x

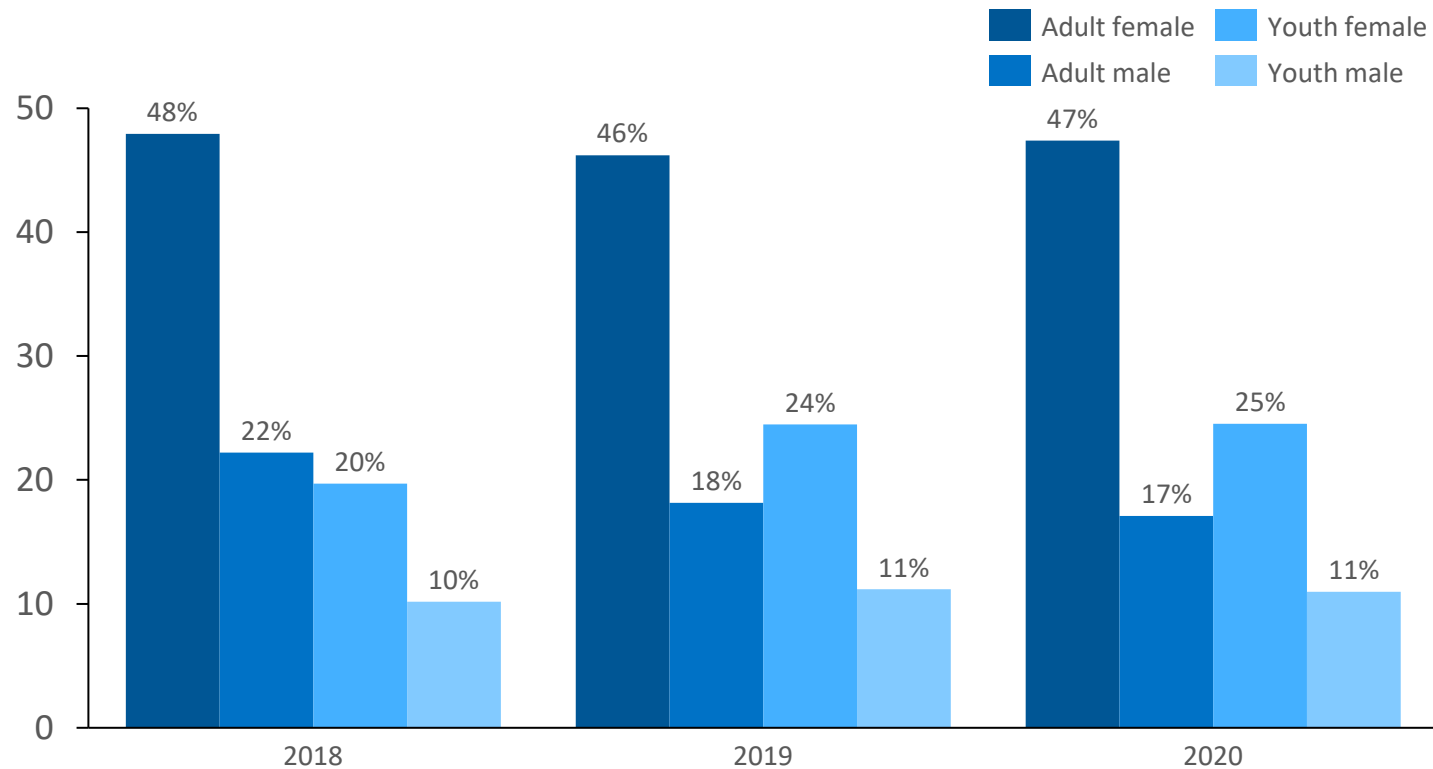
Note: \*Agriculture clients are borrowers that typically take out agricultural loans

# Agriculture portfolio by segment

Despite COVID volatility in 2020, since 2018 women have consistently constituted 70%+ of Musoni's agriculture borrower base and outnumber men 2:1 in both age cohorts; youth (<35) constitute ~30-35% of customers

## Proportion of total borrowers by persona

Borrowers refer to individuals that have received loans in the observed years; Proportion (%) 2018 - 2020



Note: Adults are individuals above the age of 35 years and youth fall between 18 and 35 years

Source: Musoni Agriculture Clients Loan File, Dalberg Analysis, 2021

- Musoni's group lending focus, loan flexibility, and intentional female recruitment has succeeded in attracting Women and Youth borrowers to the platform's agricultural lending products
- For both the Adult and the Youth (<35 years) cohorts, women are overrepresented 2:1 relative to men
- Strong relationships with a sizeable female customer base continue to make Musoni a valuable partner in for agriculture-related gender initiatives in Kenya



# Borrower behavior – *summary takeaways*

Overall, Musoni's product offering has been successful in attracting customers and delivering services to women and youth; borrower behavior suggests that moving forward, enhanced focus on product differentiation and loan structuring and monitoring may be key



## Gender

- Musoni serves a broad ag customer base; 70%+ of Musoni's clients are women, 30%+ youth
- Across loan types, **women receive smaller loans; men exhibit higher write off ratios**
- Overall, Musoni has **succeeded in attracting and serving female and youth** borrowers and **women may see relatively higher financial access benefits** than men



## Differentiation

- Churn rates have increased recently and are consistently higher for male borrowers
- **Investment in offerings that improve the customer experience or enhance value add for farmers may become increasingly important to improve stickiness and extend lifetime value**



## Product optimization

- In 2019, Wepesi loans were taken out by **50%+ of borrowers, 4+ times a year** on average indicating clear demand for shorter term, small denomination loans
- However, as loans were not always optimally used, a deeper focus on understanding borrower cash flow and optimizing loan approval and structuring could help optimize the offering

# IMPACT TODAY

Assessing the financial sustainability and impact of Musoni's current business model

## Financial performance – P&L, CLTV, and financing

Farmer performance – Financial and social impact

Employment creation – Direct and indirect employment support

# Musoni financial performance (Ag P&L and CLTV) - *summary*

The analysis unearthed opportunity areas for Musoni to improve future profitability and borrower impact, particularly for women and youth

## Opportunities from profitability analysis

### Customer growth

Musoni's profitability is highly dependent on **customer and loan size growth**. Given that Musoni lost some customers in 2020, there is a need to **continue to target customer acquisition**

### Profitable loan products

Given its profitability, Musoni could consider increasing loan disbursements of the Kilimo individual loan especially among **female borrowers who have better write-offs, though proper structuring and diligence would be required**

### Affordable interest expense

Musoni could consider accessing **concessional debt to reduce interest expenses and realize higher lending margins**

### Staff costs

Given that staff costs are one of the highest contributors to the staff losses, Musoni could **accelerate its digitization efforts to faster reduce the variable costs that grow with loan disbursements**

## Opportunities from CLTV analysis

### Women youth and lifetime

While Adult men present a higher CLTV today, given the higher levels of customer loyalty among female borrowers and youth, **Musoni should seek opportunities to improve economic value for these segments to both enhance impact and potentially support higher loan sizes and associated income in the future**

### Default costs

There may be an opportunity for Musoni to better tailor the customer trainings and initiatives amongst male borrowers to **reduce their write-offs; improved cash flow visibility would help**

### Servicing and retention costs

An opportunity exists for **Musoni to leverage digital loan processing solutions to lower costs per borrower, though this must be done prudently to ensure appropriate diligence**

Source: Dalberg Analysis, 2021

# IMPACT TODAY

Assessing the financial sustainability and impact of Musoni's current business model

Financial performance – P&L, CLTV, and financing

**Farmer performance – Financial and social impact**

Employment creation – Direct and indirect employment support

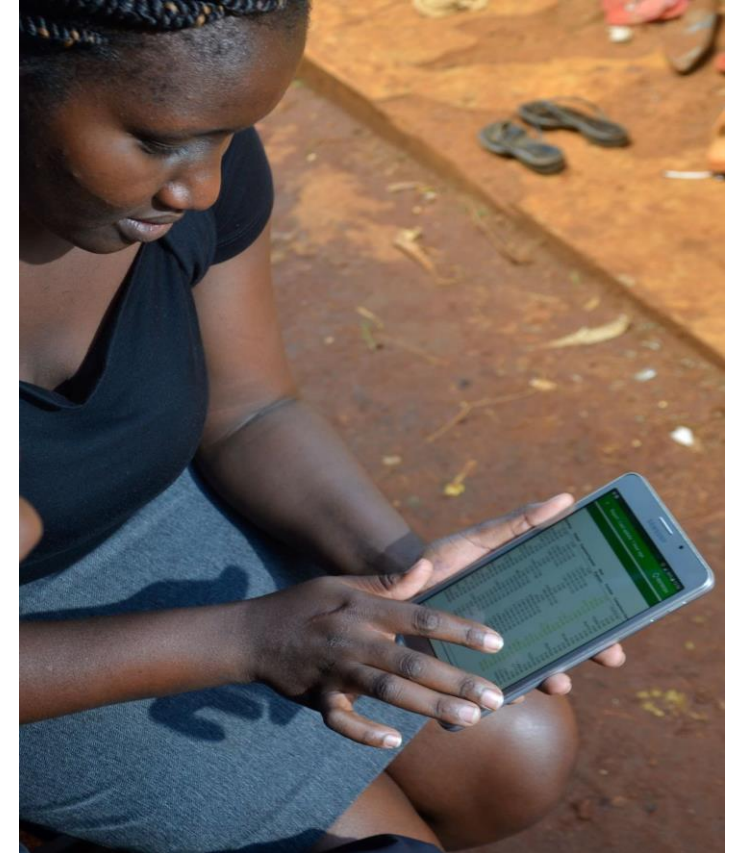
# Farmer performance

While the ubiquity of similar financial services makes measurable economic uplift challenging to attribute, Musoni's service offering clearly creates value; it improves access to credit for women and youth, provides the flexibility needed to support varied income generating activities, and improves livelihoods

**Access to finance:** Women and youth exhibit higher increases in borrowing activity over time with Musoni relative to men and state the importance of the flexibility and accessibility of its services

**Farmer economics:** While it is difficult to attribute Musoni-specific economic uplift for farmers, many farmers see Musoni's services as a critical input into their businesses, enabling incremental investment in inputs, labor, and income smoothing

**Livelihoods:** Farmers and particularly women also cite improvements in their livelihoods attributable to Musoni, including improved access to education for their children, modern housing structures and better storage facilities for clean water



Source: Musoni SDM, IDH and Dalberg Analysis, 2021



# Access to credit

Borrower focus groups and farmer survey responses confirm the value of Musoni's services in supporting economic ambitions - Musoni has provided valuable capital needed to start and expand business operations

## Business start-up



- Through internal initiatives and partnerships with organizations such as Seed of Hope, Musoni has provided loans to youth borrowers to start their businesses
- Youth borrowers report that they had limited access to finance before they received Nawiri and Asset loans from Musoni

## Business expansion



- Musoni borrowers report that the loans have been crucial in providing capital funds to expand their business and working capital to support ongoing operations
- Youth borrowers in Migori stated that the Asset loans have enabled them to purchase motorcycles with each repayment and one is now purchasing a bus

## Farm improvement



- Across geographies, farmers have reported using the Musoni loans to purchase high quality farming inputs including seeds, fertilizers and pesticides. On average, a Musoni funded farmer spent KES 7,556 on inputs
- Farmers have also used the loans to purchase farm improvement assets such as water tanks, livestock and mechanization tools

## Job creation



- The business and farm expansion realized from accessing Musoni loans have enabled borrowers and farmers to increase number of employees and labor in their activities'
- One female borrower cited that Musoni enabled her to start a clothing retail business and with continued loan repayment she has now hired 4 more employees

Source: Musoni SDM, Focus Group Discussions and Surveys, 2021; Musoni Social Media Pages, Client testimonials, 2021

# Access to credit

Commendable customer service, structured interest rates, flexible repayments and the availability of short term Wepesi loans have all been cited by farmers as key reasons for choosing Musoni

## Value proposition and differentiation

Musoni operates in a competitive market with key competitors including Kenya Women, ECLOF, Juhudi Kilimo, Faulu and SMEP. Several key strengths and points of differentiation allow Musoni to attract customers and compete in this environment:



### Cashless

- **Digital lending** that enables lenders to repay loans in any day and time
- Musoni has received positive customer feedback from the digital lending process, and they believe that continued use of Fintech is additive and valuable for the company and its customers



### Customer service

- Borrowers state that Musoni has commendable customer service with staff members that are respectful and collaborative in the **loan processing and repayment stages** and offer friendly **incentives or messages in special holidays including** International Women's Day and Customer service week, among others



### Clear financial terms

- Borrowers report that Musoni clearly communicates its repayment schedule, with fixed payment, declining balance interest rates with no hidden fees



### Shorter turn around time

- Musoni has a shorter turnaround time compared to its competitors. Musoni loans typically take 72 hours to disburse while ECLOF takes 1 week



### Flexible repayments

- Musoni has flexible repayment structures that allows some borrowers to pay monthly as opposed to weekly, while also restructuring repayment terms for borrowers in arrears



### Stability

- Strong partnerships and working history with organizations like Grameen Foundation help provide stability that increases customer trust in the organization

Source: Musoni SDM, Focus Group Discussions, 2021

# Standards of living

Borrowers report that access to credit from Musoni has helped to improve standards of living, quality of life and self-esteem, confirming evidence in the literature that as part of an ecosystem of MFIs, Musoni's model is critical in supporting valuable economic activity

## Modern housing

- Across focus group discussions and client testimonials, farmers have reported that proceeds from Musoni loans, have enabled them to improve from traditional, thatched structures to modern houses

## Literacy

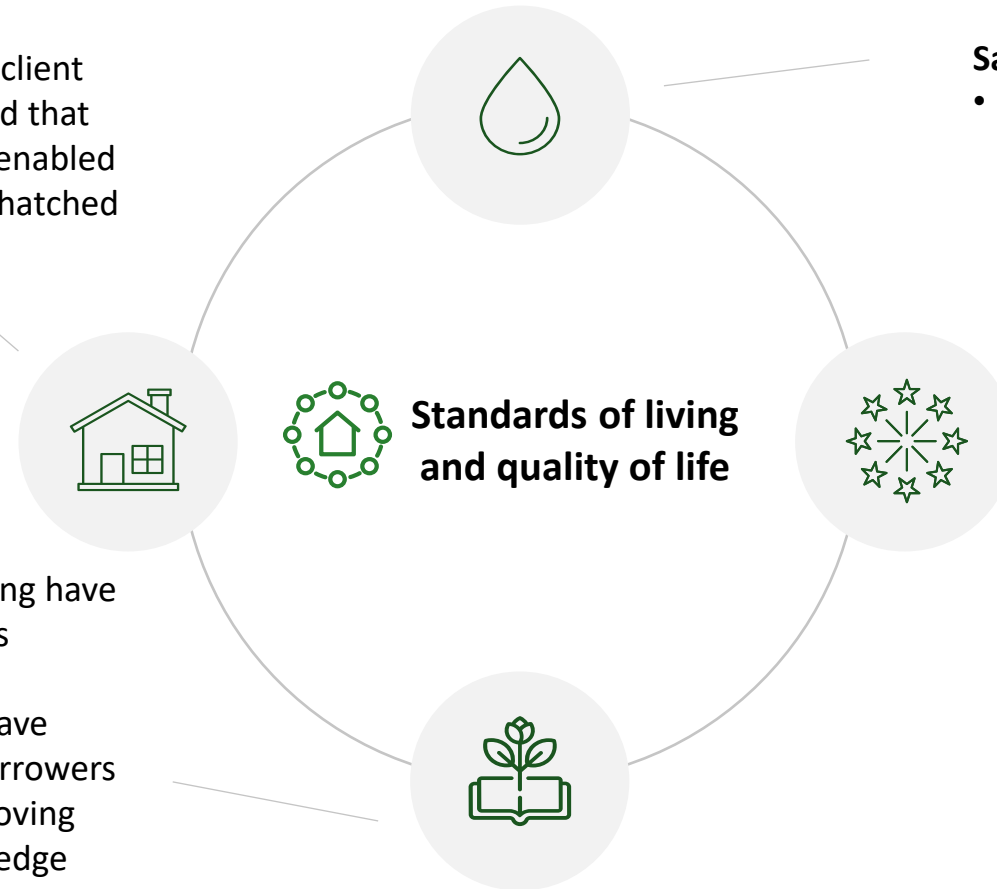
- Musoni's financial and digital training have progressively built the literacy of its borrowers and their communities
- Additionally, the education loans have progressed the literacy levels of borrowers and their children, effectively improving their standards of living and knowledge

## Sanitary wellbeing

- Musoni loans have enabled farmers to access water tanks and other storage facilities that allow them to store clean water and improve their sanitary standards

## Independence

- Access and use of Musoni loans have enabled women and youth borrowers to develop financial independence and reduce reliance on others
- As reported, the realized financial independence builds the self-esteem and dignity of the borrowers



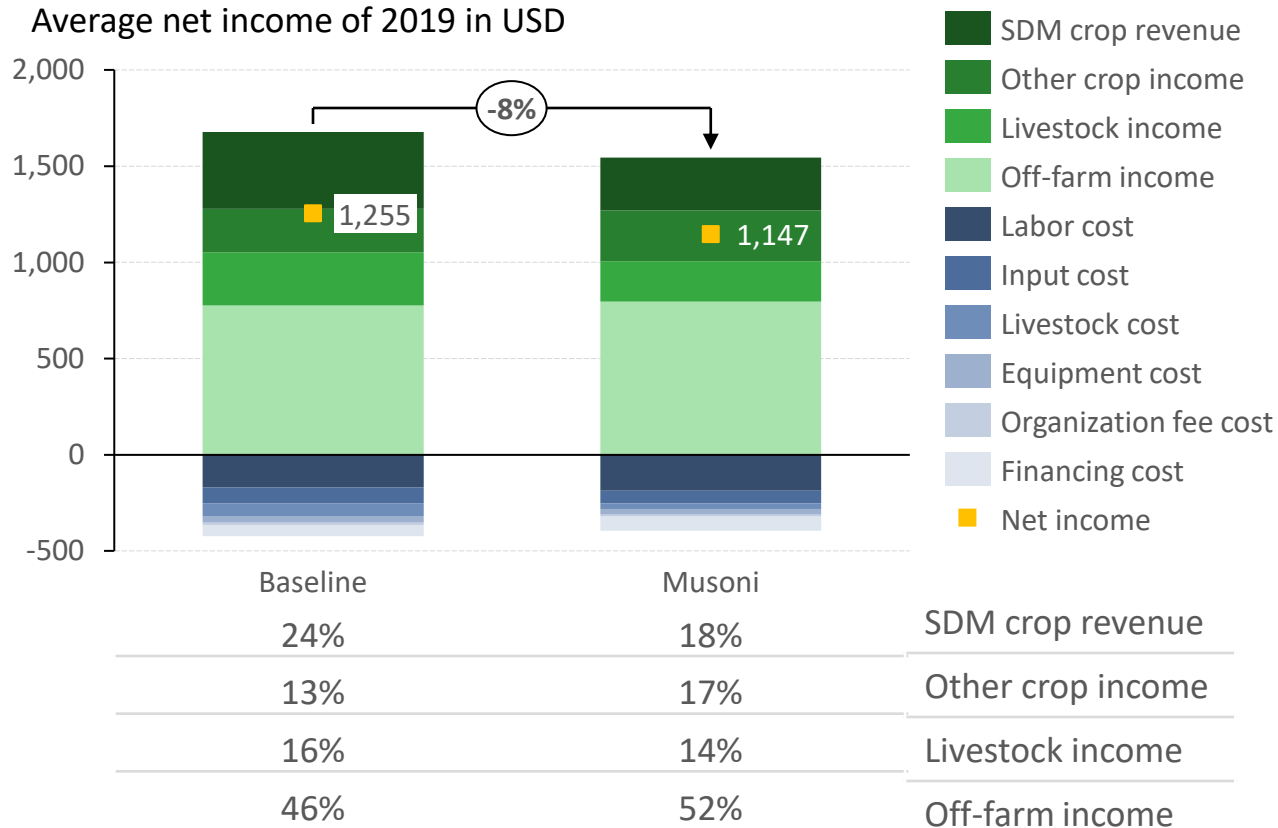
Source: Musoni SDM, Focus Group Discussions and Surveys, 2021

# Farmer economics

Musoni's varied and flexible product portfolio is well suited to support the diverse income streams of its borrower base; however, there appears to be little discernible income uplift associated specifically with retaining Musoni's services

## PRIMARY: Baseline versus Musoni clients

Average net income of 2019 in USD



\*SDM – Service Delivery Model

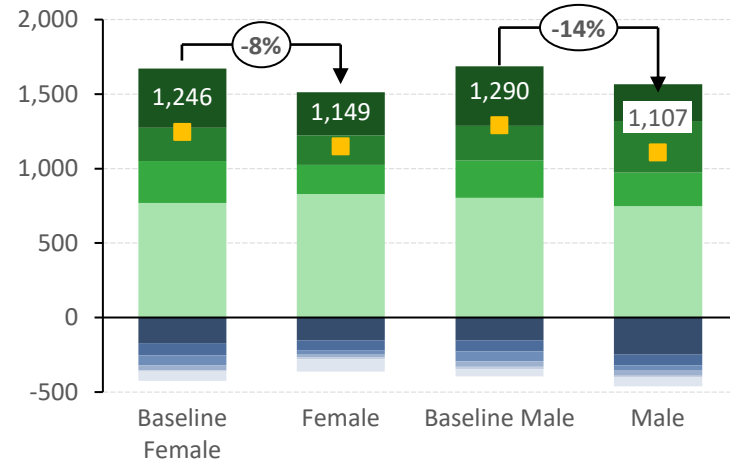
- Farming income, including income from the farmer's primary crop, other crops and livestock, accounted for approximately half of the total income earned by both Baseline and Musoni customers
- Whilst the P&Ls show that both Baseline and Musoni customers earned a positive net-income in 2019, the average net income for Musoni customers was 8% lower than the Baseline customers, making it challenging to attribute economic uplift to unique features of Musoni's business model
- Similarly, survey outputs shows marginal differences in yields of Baseline and Musoni farmers across maize and sorghum value chains

# Farmer economics

The story changes little when analysed by segment; Musoni specific income uplift appears limited across key customer segments

## GENDER: (Baseline) Female and (Baseline) Male

Net income of 2019 in USD



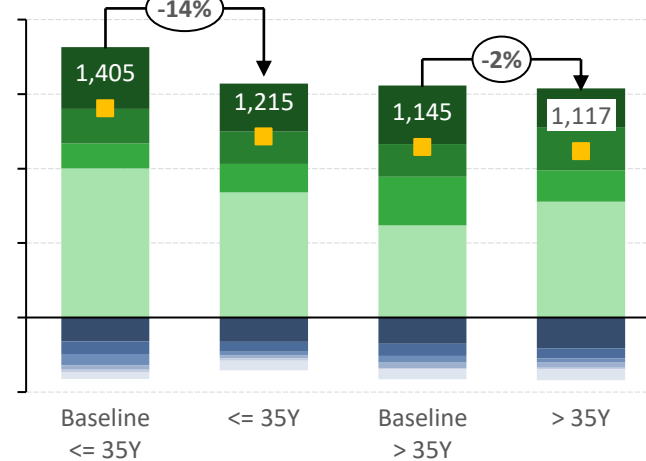
### Discussion

- Female Musoni customers have a marginally higher performance than their male counterparts.

24%	19%	24%	16%
13%	13%	14%	22%
17%	13%	15%	14%
46%	55%	48%	48%

## AGE: (Baseline) Youth and (Baseline) Adult

Net income of 2019 in USD



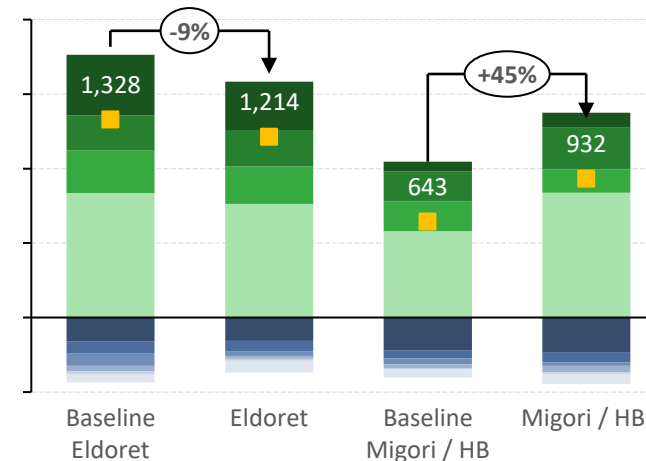
### Discussion

- Both Baseline Youth and Adult customers appear to have a higher performance than their Musoni counterparts.

23%	20%	25%	17%
13%	14%	14%	19%
9%	12%	21%	14%
55%	54%	40%	51%

## CROP / REGION: (Baseline) County

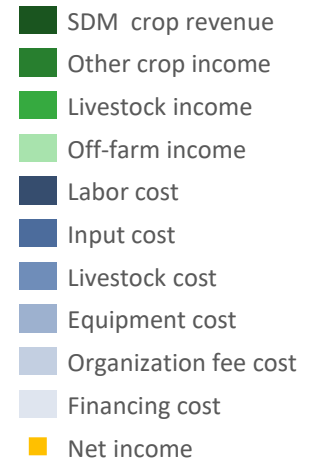
Net income of 2019 in USD



### Discussion

- Both Baseline and Musoni customers in Eldoret have higher income compared to customers from Migori and Homa-Bay counties.

23%	20%	6%	7%	SDM crop revenue
13%	16%	19%	21%	Other crop income
16%	16%	19%	11%	Livestock income
47%	48%	56%	61%	Off-farm income



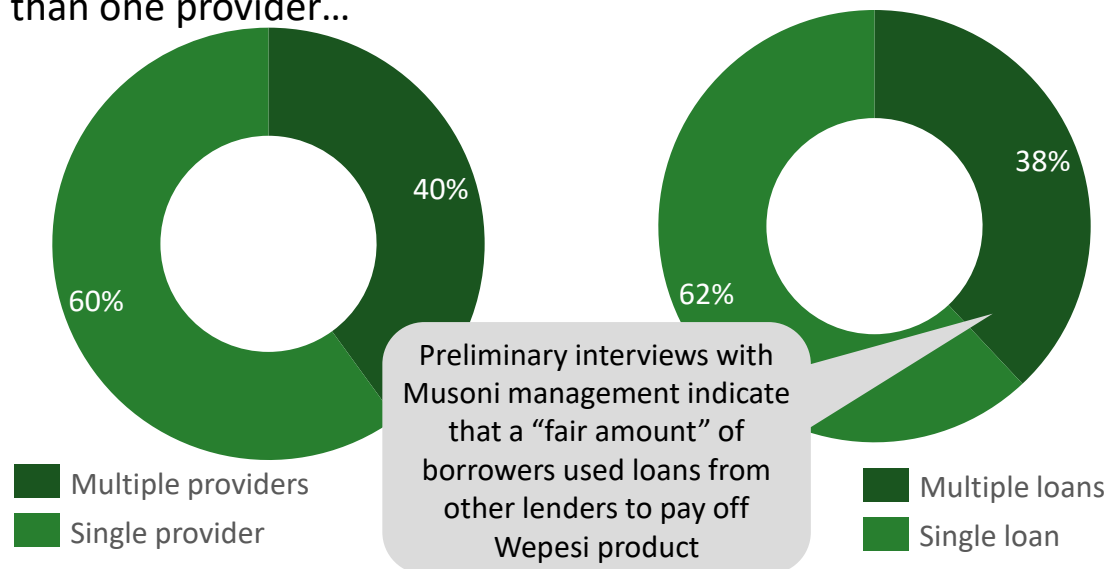
# Competition and commoditization

While Musoni's business model may offer attractive customer service and flexibility, substitute loan products are increasingly available elsewhere

**Already in 2017, the relative ease of switching digital lenders meant that ...**

**40%** of digital borrowers in Kenya borrowed from more than one provider...

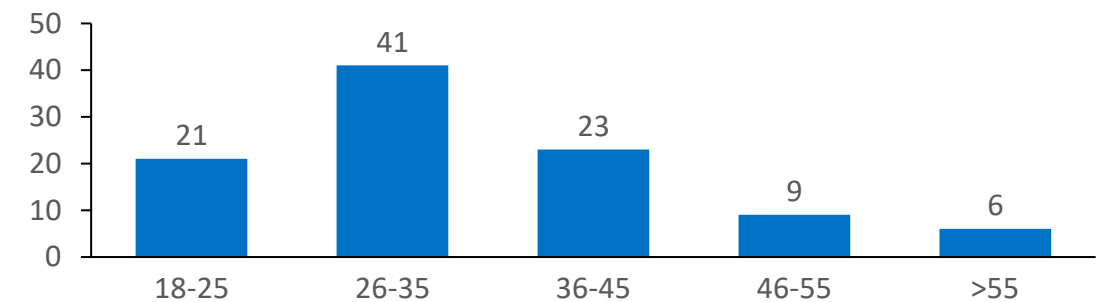
...and **62%** of digital borrowers had more than one digital loan.



**Higher digital adoption by youth means ease of switching will only increase**

**Age distribution of digital borrowers in 2017 - Kenya**

Percentage of total



- The digital credit landscape is expanding rapidly; more than 50 fintech companies entered the market since 2016
- Regular digital borrowers are less loyal to their initial provider and shift more easily between products and providers

→ *As the digital lending market becomes more competitive and commoditized, relative cost advantages of a "cashless" business model are reduced; opportunities for Musoni to differentiate may depend increasingly on tighter loan structuring and monitoring and provision of other value-added services*

Sources: "Making Digital Credit Truly Responsible" (2019) by Microsave consulting; Survey carried out by FSD Kenya. "The Digital Credit Revolution in Kenya: an assessment of market demand 5 years on".



# IMPACT TODAY

Assessing the financial sustainability and impact of Musoni's current business model

Financial performance – P&L, CLTV, and financing

Farmer performance – Financial and social impact

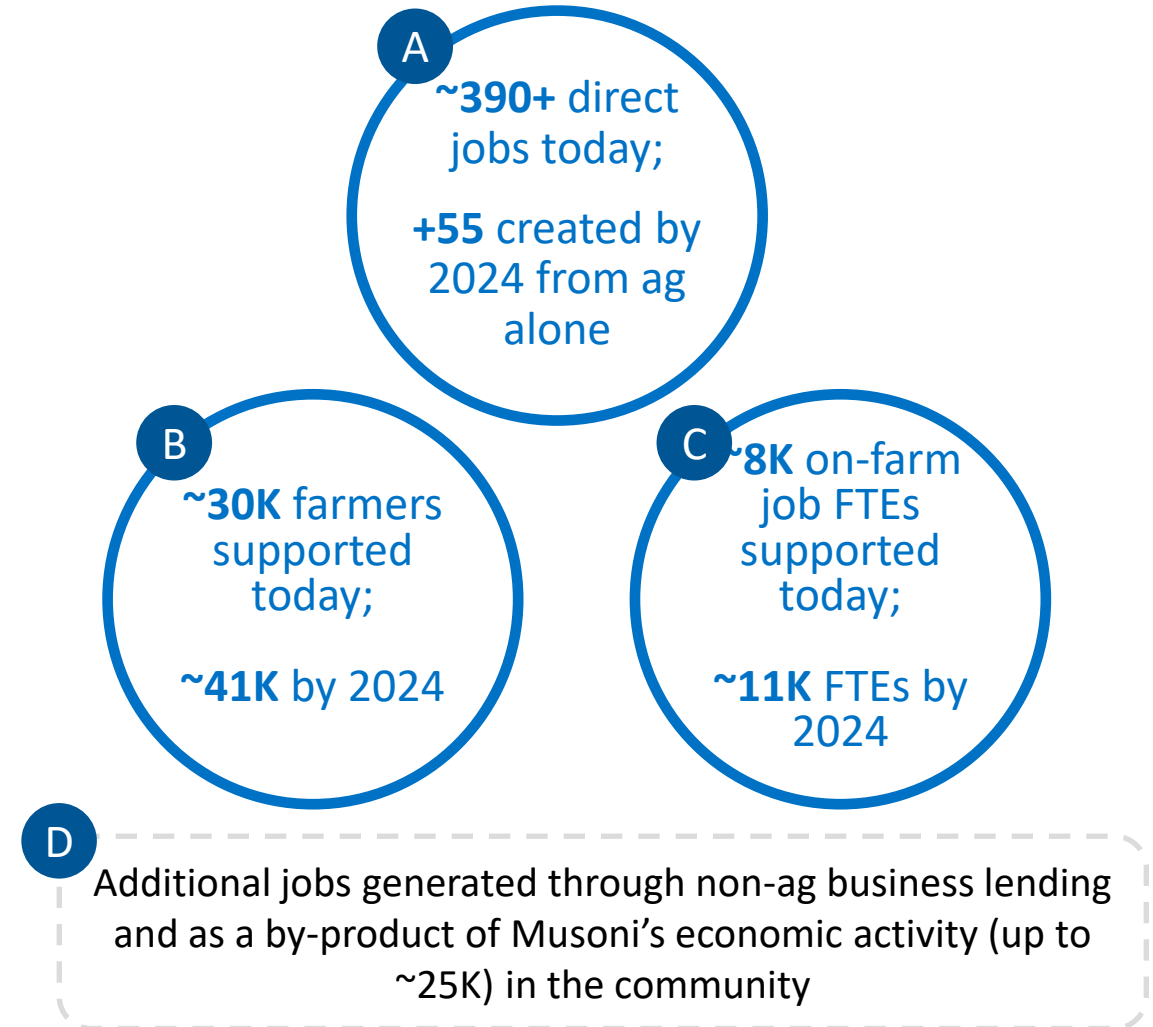
**Employment creation – Direct and indirect employment**

# Employment creation

Musoni also generates impact by both supporting jobs today and creating them in the future; in 2019 alone, Musoni supported 390+ jobs directly and ~40K FTE jobs through its direct support of farmers and the laborers hired on their farms\*

- Today Musoni supports ~390 FTE jobs directly through its own hiring (ag and non ag), up from ~150 in 2015 (net job creation = ~240); gender balance is roughly even in aggregate and gender-based hiring initiatives are in place, though men disproportionately occupy executive positions
- While Musoni's relatively narrow service offering obscures measurement of job creation uplift, its agricultural services are valued and support ~30K farmers + ~8K on-farm labor FTEs today, increasing to 41K farmers and up to ~11K on farm FTEs by 2024 in the Baseline forecast; while unmeasured, additional jobs are also likely created through non-ag lending
- Musoni's economic activity also generates value; expenditure on inputs and other non-staff costs help stimulate local economies and create additional indirect jobs; up to 25K additional jobs may be in part induced by Musoni's activities.

*\*Throughout the document, jobs "supported" refers to total jobs related to Musoni's economic activities (a stock variable); jobs "generated" is used only in reference to prospective jobs created by activities over time (a flow variable)*



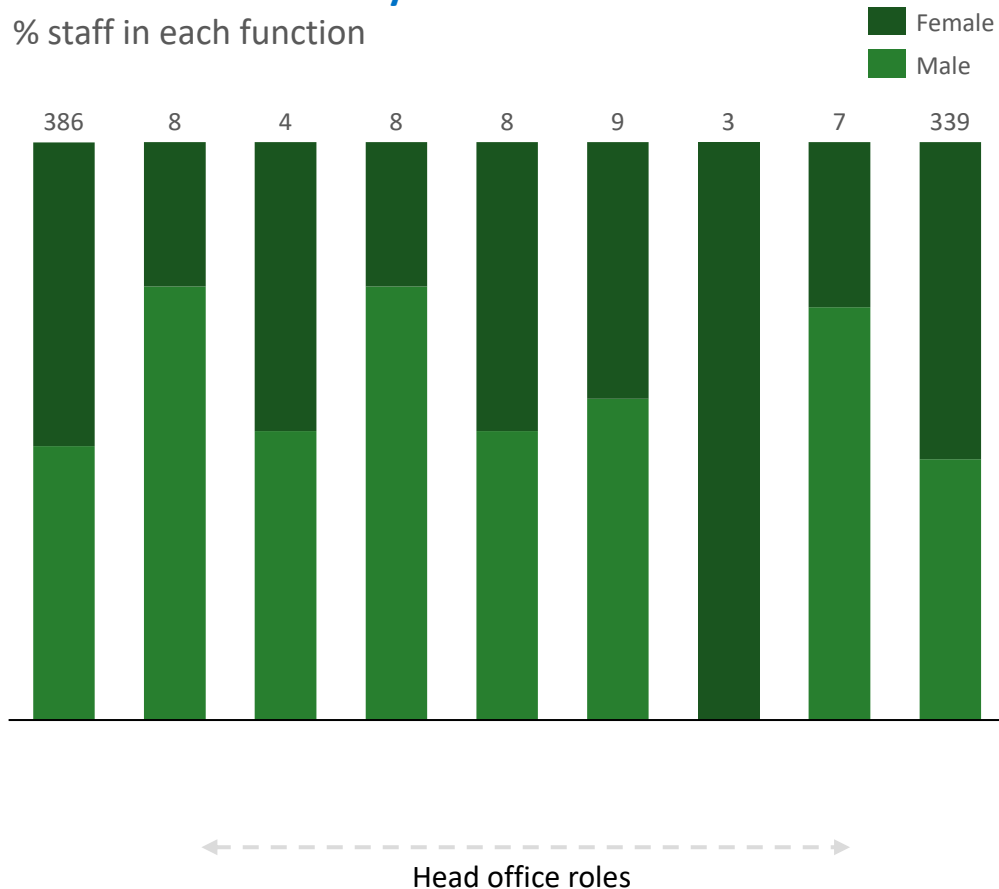
# Direct employment creation – gender

A

While Musoni has created a roughly equal number of jobs for men and women, men hold the majority of HQ and executive roles

## Gender breakdown by role 2019

% staff in each function



- Musoni has increased its share of female employment from 47% in 2015 to 53% in 2019, striking a roughly even gender balance on aggregate in jobs created
- However, these statistics obscure a compositional difference by role; 70%+ of HQ roles, including executive roles, IT and finance are dominated by men; HR is the single exception
- Musoni is cognizant of the gender imbalance in management and has set hiring targets for women employees. Musoni targets include women comprising 70% of loan officers, 40% of mid-level managers and 50% of executives
- Musoni also has sound internal policies and mitigations to tackle sexual harassment and gender-based violence among its staff and clients

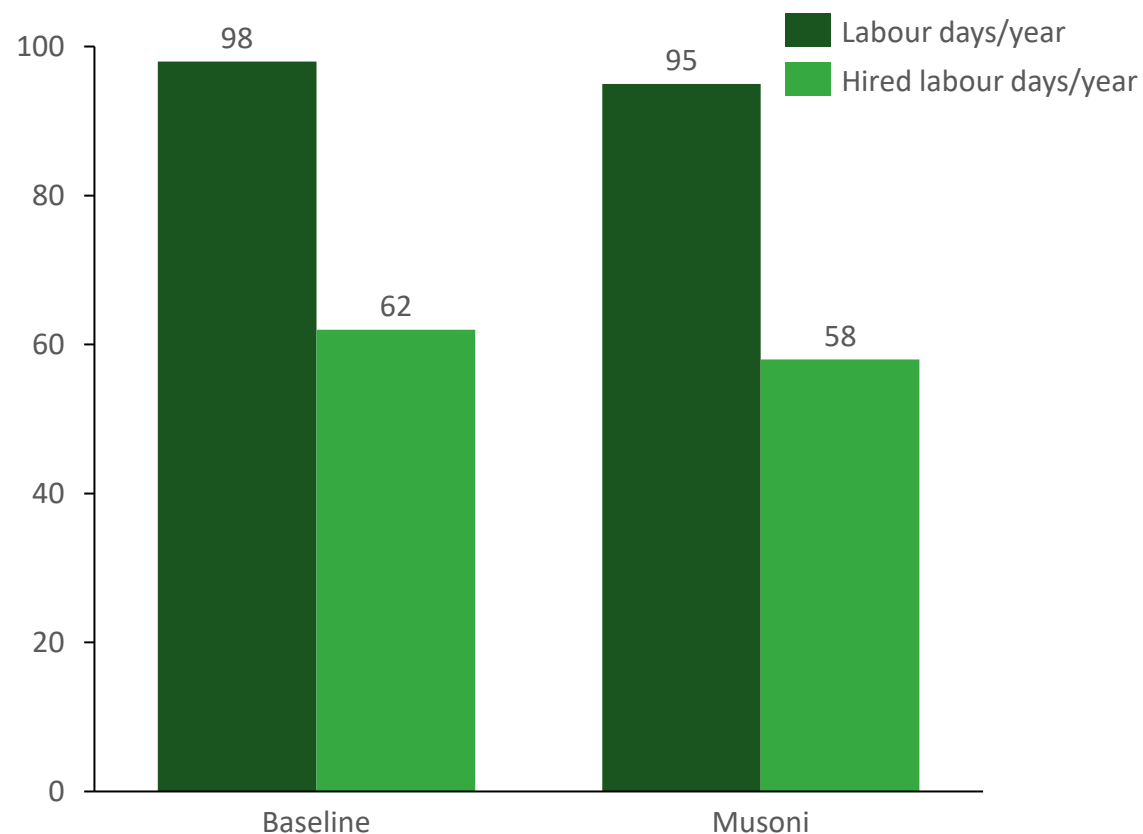
# On-farm employment creation

B

Given the ready availability of credit in Kenya, as with income uplift, measuring on farm employment creation attributable to Musoni is challenging; survey responses don't evidence material uplift

## Borrower labor utilization: baseline relative to Musoni clients

Average labour days and hired labour in 2019



- Across respondents, hired labor days constitute ~60% of total on-farm labor days; 40% is provided either by the farmer him / herself or by family members
- Survey responses suggest that borrowers that have been with Musoni for fewer than 3 months use roughly the same number of labor days per year than longer-term Musoni borrowers, suggesting time with Musoni is not a meaningful driver of on-farm hiring
- While borrowers state they value access to Musoni because of the capacity it provides to make business investments, much as with income uplift, availability of other options confounds attribution

Outliers excluded if cost of labour/day < 100 and > 1,000 KES per labourer.

# On-farm employment creation

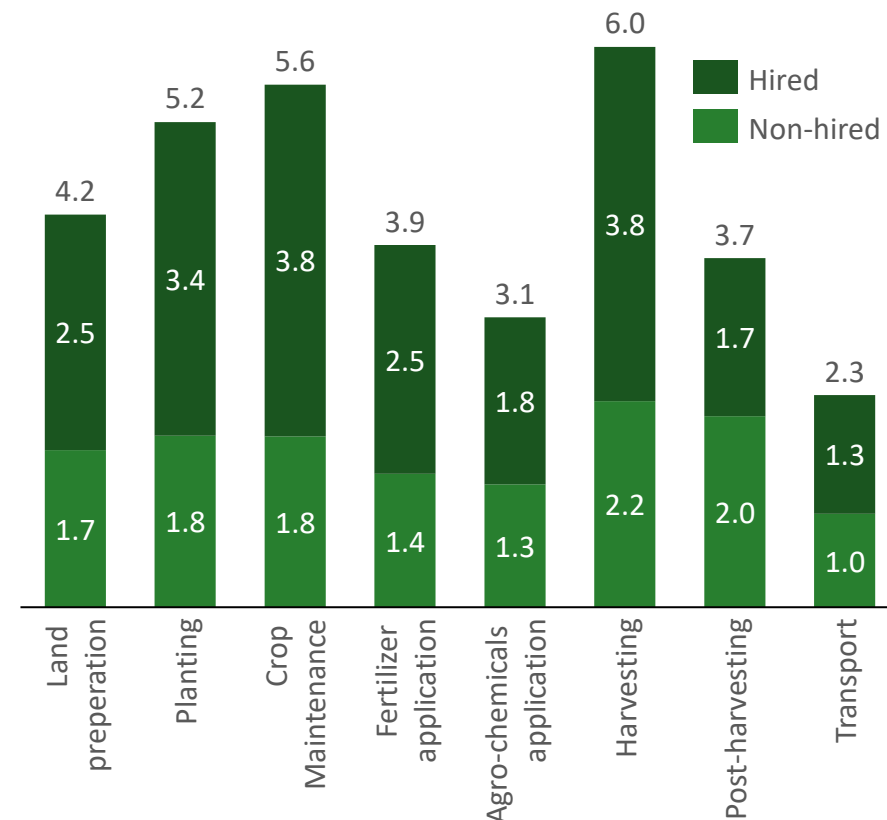
However, Musoni is clearly a valuable source of business support for farmers whose agricultural activity supports an estimated ~40K FTEs; additional employment is likely supported through borrower's non-agricultural activities

Observation	2019	2022	2023	2024
<b>Number of agriculture borrowers</b> (Baseline forecast)	■	■	■	■
On-farm hired labor days per borrower			■	
Labor days per FTE			■	
<b>FTEs supported</b> (Baseline forecast)	7.9K	8.9K	9.6K	10.7K
<b>TOTAL jobs supported</b>	<b>39K</b>	<b>43K</b>	<b>47K</b>	<b>52K</b>

- Assuming 230 labor days = 1 FTE, Musoni's on-farm hiring yielded 8K FTEs in 2019, increasing to ~11K by 2024 in the Baseline case. Including farmers supported, Musoni supports 40-50K FTEs p.a..
- As shown on the right, non-hired labor is also used, and on-farm work is split roughly evenly across a variety of tasks
- Additional jobs are likely supported through non-ag borrowing, though they have not been quantified in this study

## On-farm job creation

Laborers used by function per year - hired and non-hired, 2019



# Economic activity and job creation

Musoni's economic activity also likely supports job creation and as Musoni explores deeper relationships with value chain players the potential to enhance Musoni-specific job creation and increase systemwide effects will accelerate

- Musoni's economic activity also likely supports indirect employment creation; in 2019, Musoni directly spent [REDACTED] on non-staff expenses that created demand for local services; Musoni farmers on the other hand spent [REDACTED] on inputs and equipment, further increasing indirect job creation along the value chain
- As the organization explores opportunities to build deeper and broader relationships with aggregators, off-takers, and agro-dealers, the job creation impact could increase further
- Enhanced farmer scale and productivity could generate additional on-farm employment, and increased aggregator and supplier scale from working with Musoni borrowers could accelerate VCP hiring
- Increases in broad economic activity associated with a higher-efficiency value chain would also have knock-on employment effects from higher incomes and associated consumption expenditure increases





# Economic activity and job creation

A 2017 study by CDC\* estimated that each direct job created in developing economies is linked to 5+ additional jobs created along the value chain and 2+ jobs induced through employee expenditure

- In a sample of 484 African and South Asian businesses, CDC found that for every direct job created by a business, 5.5 additional jobs were created along the value chain and 2.4 jobs were created as a byproduct of increased expenditure from the wages of direct employees (induced employment)\*.
- The estimates provide a sense of the expanding scope for impact; assuming the findings hold for Musoni, the **organization's ~390 hires today also create impact by supporting up to ~970 local jobs via expenditure in the local community and today's 11K on farm FTEs supported by Musoni's farmers, induce up to 25K additional jobs in the community**
- If, with new initiatives discussed in the following section, Musoni's farmers and partners are able to increase hiring as a byproduct of improved agricultural know-how or value chain connections, each on-farm and VCP job created would induce further employment creation



\*"Measuring Total Employment Effects: a lean data methodology for a portfolio of investments in developing countries", CDC, February 2017



# ANNEX: SUPPORTING DETAILS

# Farmer survey overview

To build an understanding of borrower behavior and P&Ls, a survey of 469 borrowers was completed in March; respondents have been segmented along several dimensions: time with Musoni, age, gender, and primary crop type

## Survey segmentation

Primary		Gender		Age		Crop (area)	
≤ 3 months (N: 157)	All clients	≤ 3 months (N: 120)	Female	≤ 3 months (N: 59)	≤ 35 years	≤ 3 months (N: 126)	Maize (Eldoret)
> 3 months (N: 312)		> 3 months (N: 182)		> 3 months (N: 92)		> 3 months (N: 169)	
		≤ 3 months (N: 37)	Male	≤ 3 months (N: 98)	> 35 years	≤ 3 months (N: 31)	Sorghum (Homa Bay / Migori)
		> 3 months (N: 130)		> 3 months (N: 220)		> 3 months (N: 143)	

 Musoni client  
 Baseline client

- Borrowers with Musoni for <3 months are used as a proxy for “baseline” borrower behavior
- While respondents were segmented by primary crop type, analysis recognizes the varied crop and non-crop income streams of Musoni’s broad borrower base

Total farmers in Survey (N) 469

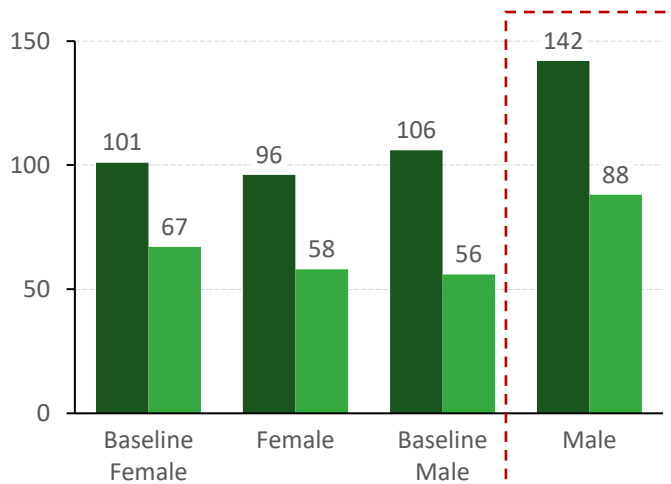
N = sample size in segment

# Labor utilization and job creation

While male Musoni borrowers average labor days is ~40% higher than baseline, given limited changes in loan size, we cannot attribute causality to Musoni lending; older and male clients tend to use the most on farm labor

## GENDER: (Baseline) Female and (Baseline) Male

Average labour days and hired labour in 2019

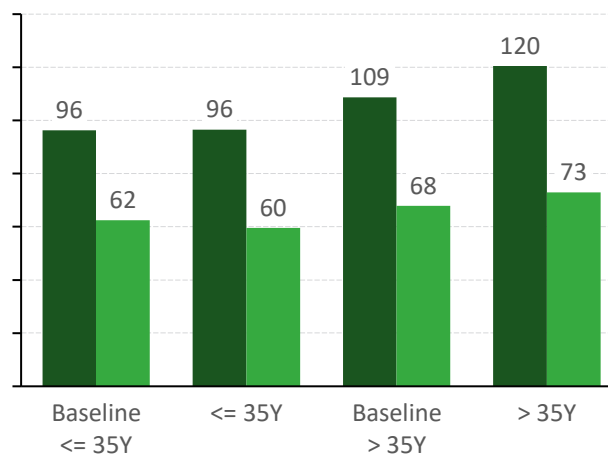


### Discussion

- Male Musoni borrowers do appear to exhibit relatively higher (~40%) labour employment than Baseline borrowers; a relationship that does not hold for women
- On average, Male borrowers appear to use more labour compared to Females, consistent with larger business and farms

## AGE: (Baseline) Youth and (Baseline) Adult

Average labour days and hired labour in 2019

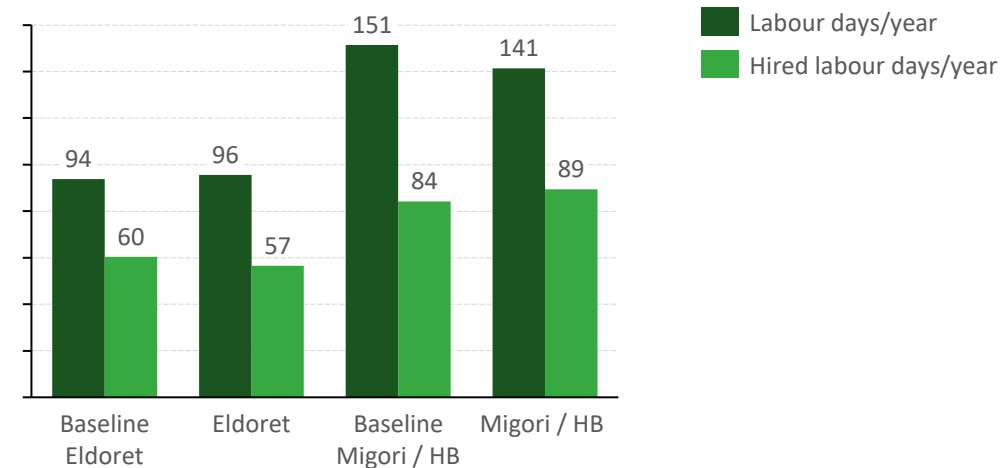


### Discussion

- Adult clients, on average, use more (hired) labour compared to Youth clients, as they likely often have smaller farm sizes and poorer access to collateral.

## CROP / REGION: (Baseline) County

Average labour days and hired labour in 2019



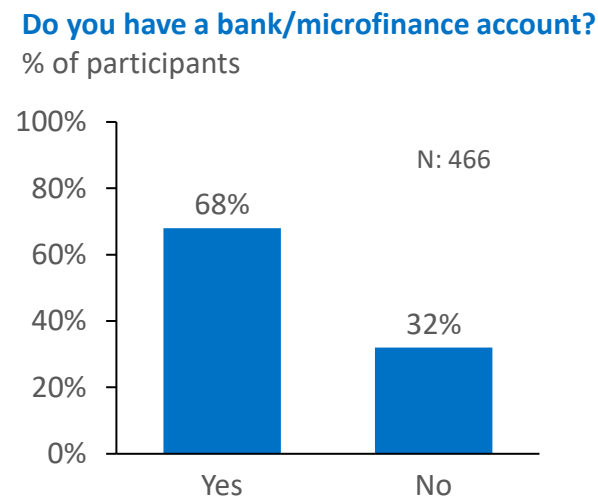
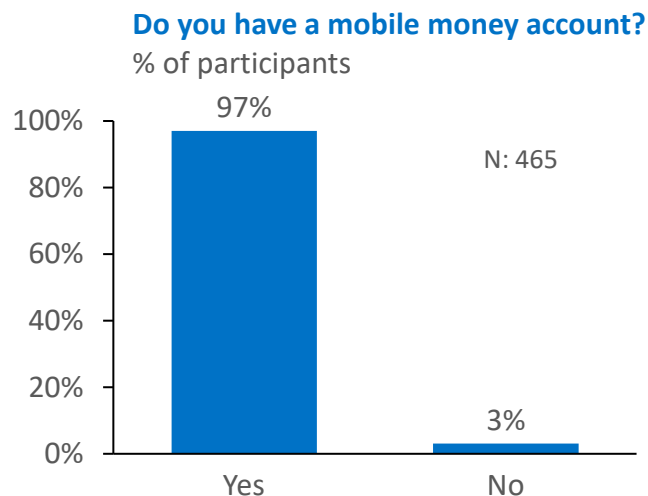
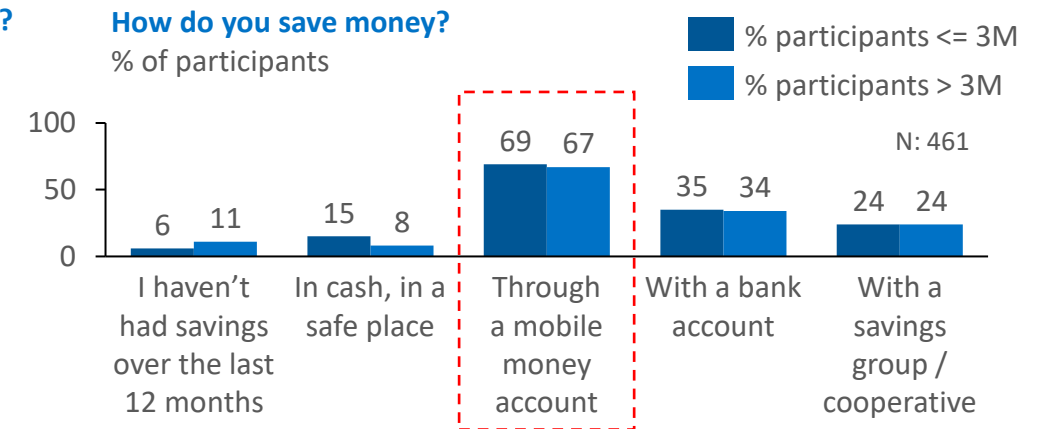
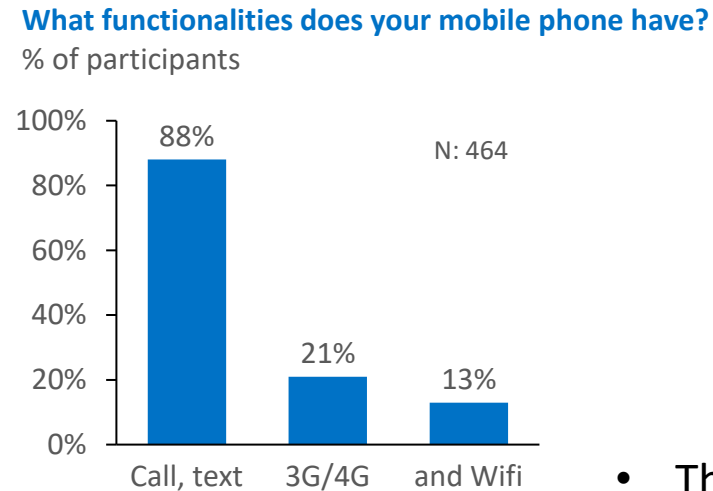
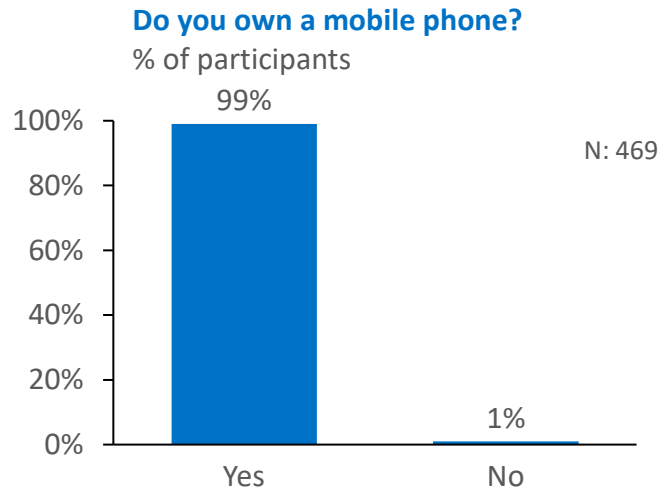
### Discussion

- Clients from Migori / Homa-Bay use more (hired) labour compared to clients from Eldoret, which could be explained by more use of mechanisation in Eldoret (Maize) compared to Migori / Homa-Bay (Sorghum)

Outliers excluded if cost of labour/day < 100 and > 1,000 KES per labourer.

# Competition and commoditization

Looking forward, as digital options proliferate, differentiation will be a challenge; 90%+ of respondents own a mobile phone and mobile money; the vast majority have access to some form of formal saving



- The vast majority of Musoni customers surveyed own a mobile phone (99%) and use mobile money (97%) and 20% of respondents also have internet on their phones
- Widespread digital access offers a range of opportunities to access non-traditional financial services, and borrow from a broader set of loan providers
- Differentiation will become increasingly important as digital offerings drive financial inclusion

# Benefits of microfinance as a sector

However, there is ample evidence in the literature that as part of an ecosystem of MFIs, Musoni's model is critical in supporting valuable economic activity, as focus group feedback suggests

Citation	Country	Product	Liability	Production	Income	Consumption	Resilience
Agriculture specific products							
Abraham et al. (2018)	Nigeria	Access to credit	Individual		✓		
Nzomo et al. (2015)	Kenya	Access to credit	n/a	✓	✓		
Fink et al. (2014)	Zambia	Input credit	Individual		✓	✓	✓
Beaman et al. (2014)	Mali	Baloon loan	Group	✓			
Small business products							
Awunyo Vitor et al. (2012)	Ghana	Loan	n/a		✓		
Crepon et al. (2014)	Morocco	Loan	Group		✓		

"Estimating the effects of financial access on poor farmers in rural northern Nigeria", Terfa Abraham (2018). "Effect of Types of Agricultural Credit Programmes on Productivity of Small Scale Farming Businesses in Kenya: A Survey of Kimilili Bungoma Sub County", Nzomo, M., & Muturi, W (2015). "Seasonal Credit Constraints and Agricultural Labor Supply: Evidence from Zambia", Fink, G., Kelsey Jack B., & Masiye F. (2014). "Selection into Credit Markets: Evidence from Agriculture in Mali", Beaman, L., Karlan, D., Thuysbaert, B., & Udry, C (2014). "Women participation in microcredit and its impact on income: A study of small-scale businesses in the central region of Ghana", Awunyo-Vitor, D., Abankwah, V., & Kwansah J (2012). "Estimating the impact of microcredit on those who take it up: Evidence from a randomized experiment in Morocco", Crepon, B., Devoto, F., Duflo, E., & Pariente, W (2014).



# CONTACT DETAILS

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