

# SDM: Public Case Report Bulamu, Uganda

Service Delivery Model Assessment

November 2019



# Bulamu Executive Summary (1/2)

- **Bulamu Group is a group of companies that started with a focus on coffee and has now expanded to a diversified group of companies, including an animal farm focused on pork production, restaurants and hotels.**
  - Bulamu owns and operates its own coffee processing factory, converting FAQ into graded green beans. Currently most of its coffee is sold locally to other exporters and only a small portion is exported directly.
  - The animal farm produces high quality piglets and pigs, both of which are sold on domestic markets and to Bulamu's restaurants/hotels. The animal farm also is used for farmer trainings on how to do diversified farming as well as increasingly moving into the animal feed business.
- **Within its coffee business, Bulamu has focused primarily on Robusta purchases from agents and is now looking to source directly from smallholder farmers to decrease bulking costs as well as open up opportunities for certified coffee sales that receive a premium.**
  - In order to cut out the middlemen (agents), Bulamu is registering farmers, forming them into groups of 25 farmers, and organizing these groups into Depot Committees (DC) of approximately 10 groups per DC.
  - The group structure will be used to deliver services (e.g. trainings, inputs, certification) as well as to collect the coffee, as Bulamu will provide transport of the coffee from the group storage to the hulling station and then pay farmers for FAQ, as opposed to dried cherries, which is currently common practice.
  - The group structure and direct farmer purchases also allow for the traceability Bulamu needs to reach the certified, direct export market, which will increase the export price per kilo by an average of 15%, of which 30% is paid to the farmer.
- **Diversification is a key component in making the SDM work for the farmers and improving their livelihoods by:**
  - **decreasing risk**, by diversifying income streams for farmers so that they are less reliant on coffee income.
  - **smoothing out cash flow**, by having income streams at various times of the year, farmers are not as cash-strapped just before coffee harvesting, allowing them to leave coffee on longer and get better volumes/quality
  - **increasing food security**, most of the diversified crops and animals (bananas, beans, maize, pigs, chickens, and cows) are also consumed by the household itself, reducing the need to buy food and ensuring a diversified diet.
- **Currently, baseline coffee farmers are below the poverty line, 5.4M, but diversification plus increases in coffee yield provides a significant increase in incomes, moving small and large Bulamu farmers out of poverty.**
  - Baseline farmers will make about 2.2M UGX, small farms 9.9M UGX and large farms 35.1M UGX, after the interventions. Small farms pass in year 3 while large in year 2. Baseline farmers are highly dependent on coffee, with 48% of their income from coffee, while Bulamu farmers rely on it for only about 25% of their income.
  - Pigs are the biggest additional driver to income, driving 38-50% of the net income for Bulamu farmers. They also provide manure that can be used to increase coffee productivity, reducing fertilizer costs.

## Bulamu Executive Summary (2/2)

- **Farmers do not benefit significantly from certification, with only about a 15% increase in net income, and selling as FAQ does not add significant additional value.**
  - Assuming the same production rates as non-certified farmers, farmers only make 15% more net income. If organic production actually reduces production by more than 15%, compared to traditional practices, farmers actually lose money producing certified coffee.
  - Selling to Bulamu means selling FAQ and, after year 5, graded FAQ. While farmers are paid a premium for this, the additional income is quite small, and they actually make more from selling FAQ than graded FAQ
- **The SDM allows Bulamu to source more and higher quality coffee, and to do so more efficiently. In our analysis, this creates enough value to justify covering the net costs of providing the various SDM services to farmers**
  - Diversification is the only service that yields commercial revenues as well, which is more than enough to make up for its costs. Therefore this service in itself is profitable. While profits are small compared to coffee, the service provides farmers with diversified income and more touch points with Bulamu.
  - Due to large upfront investments, the SDM as a whole (including sourcing) generates a net loss in the first 2 years, but after year two it becomes increasingly profitable.
  - Certification has minimal impact on profitability and without certification the SDM is more profitable.
- **To implement this model, significant investment needs to be done in Bulamu's staffing structure as well as farmer training**
  - Until now, Bulamu has had a very lean structure, but this new model requires a lot of additional staff to serve the number of farmers. If loyalty rates fall or larger farmers drop out, it could be a risk to the investment. Bulamu may want to explore the option of outsourcing some of the work to reduce its overall risk of a resource heavy structure.
- **Ensuring uptake and farmer retention are important factors in the success of the model**
  - Bulamu needs to ensure that the services it is providing are meeting the needs of the farmers. Understanding farmers through a data management system and segmenting services based on needs may help to retain them.
- **There is a strong potential to link the Bulamu animal farm and coffee business through pig diversification**
  - This would provide farmers with significant additional income and provide multiple revenue streams for Bulamu through feed, vet services, sales of piglets and pork.
- **As the model grows, Bulamu may want to consider investing in more trucks, as the purchase of its own trucks would improve profitability in later years.**

# Learning questions

 <p><b>SDM Structure</b></p>	<ol style="list-style-type: none"> <li>1) What services will be offered to farmers?</li> <li>2) How will these services be delivered to farmers?</li> </ol>	<ol style="list-style-type: none"> <li>1) Services being offered include group creation/set up, training on GAP, certification and diversification, connection to input providers, creation of a youth extension network, support with diversification/certification, and advance payment financing.</li> <li>2) The majority will be through the groups structure, and rarely direct to farmers</li> </ol>
 <p><b>Services</b></p>	<ol style="list-style-type: none"> <li>1) What initial investments are needed to provide the services?</li> <li>2) How can this service delivery become commercially viable?</li> <li>3) How can services be tailored to specific farmer needs?</li> </ol>	<ol style="list-style-type: none"> <li>1) Most group investments take place in year 1 and then decrease in subsequent years. Bulamu's large upfront costs include vehicles, equipment (laptops/phones), installation of the hulling machine and information management system</li> <li>2) It never becomes commercially viable on its own, but generates enough value for Bulamu through increase supply, better quality and more efficient sourcing to justify the net cost of service provision.</li> <li>3) Small and large farms will be expected to get services through the groups, but training modules are adjusted based on their needs. Very large farms do not receive services other than direct purchase and hiring youth extension network. By collecting information from farmers and ideally using a data management system, this can be further improved</li> </ol>
 <p><b>Farmers</b></p>	<ol style="list-style-type: none"> <li>1) What challenges that farmers face can be overcome by the provided services?</li> <li>2) How will diversification affect the farmer business model?</li> </ol>	<ol style="list-style-type: none"> <li>1) Farmers can increase coffee yields, diversify income to allow them to hold coffee longer, lower input costs by not using pesticides/herbicides and increased coffee premiums through certification.</li> <li>2) Diversification provides multiple revenue streams, diversifying risk as well as cash flow. In addition a large portion of the diversified crops/livestock provide food security and minimizes amount that needs to be spent on food.</li> </ol>
 <p><b>Application &amp; Impact</b></p>	<ol style="list-style-type: none"> <li>1) To what extent will this SDM lead to increased quality, productivity, and loyalty?</li> <li>2) How will this SDM contribute to the farmer's household's food security?</li> <li>3) How will this SDM contribute to the inclusion of women and youth in the coffee value chain?</li> </ol>	<ol style="list-style-type: none"> <li>1) GAP will increase yields and quality of the coffee through adoption of best practices. Diversification will increase quality by allowing farmers to wait to harvest ripe cherries.. Though marginal, farmers will increase price/kg by selling FAQ (as opposed to kiboko) and receive certification premium. Though both are minimal, they are important in low price years. Also Bulamu will provide kiboko transport from village groups to the hulling station to the factory, ensuring the coffee is sold to Bulamu and limiting side selling. Even with all of this, Bulamu never expects loyalty to surpass 70% and understands coffee farmers will never sell them all their coffee.</li> <li>2) The diversified crops are all staples and eaten at home. All beans and poultry products will be eaten at home. Bananas, maize and milk will be consumed at home and the excess will be sold. This provides diverse nutrients for the family throughout the year.</li> <li>3) The SDM adapts services to include women and youth, by inviting them to trainings and creating a youth extension network. This creates opportunities for them to gain expertise and be more active players in the value chain.</li> </ol>

# IDH introduction

## 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 catalyze innovations in service delivery that positively impact people, planet, and profit.

## Thanks

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



# Reading guide

In this document we present the findings of our study. You can navigate through the document by clicking on the index.

In this document you will:

- ✓ Understand what SDMs are
- ✓ Get a complete overview of the flows of goods, money and services in your SDM
- ✓ Analyze in depth all the implications of the different services
- ✓ Have a clear understanding of the financial performance of the SDM
- ✓ Get insights on the farmer business case

## Contents

Overview of SDM stakeholders & objectives

Services, scale and organization of the SDM

Farm-level impact

Financial analysis overall SDM

Conclusions

Annex



# Overview of SDM stakeholders and objectives

This chapter provides a general introduction to the SDM partner and other relevant actors, as well as the SDM objectives and context.

In this section you will:

- ✓ Key learning questions for this SDM analysis
- ✓ Learn the basics about the SDM operator
- ✓ Understand the value chain in scope
- ✓ Get an overview of the stakeholders involved in the SDM
- ✓ Understand the objectives of this SDM

## Overview of SDM stakeholders & objectives

Scale and organization of the SDM

Farm-level impact

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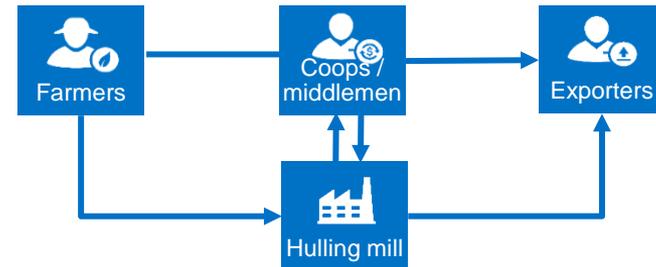
# Context – Bulamu and Uganda

## SDM Operator



- The Bulamu Group started operations in 1994 as a small scale retail business and has grown into a group of companies.<sup>1</sup>
- It is registered as a limited liability company and currently has around 40 staff members (permanent and temporary).<sup>1</sup>
- Companies in the group include Bulamu Coffee, Bulamu Animal Farms, Hotels and other companies.
- Bulamu coffee operates a modern coffee factory in Kampala, with cleaning/grading machinery, specializing in purchase, processing, grading and exporting of coffee to both the local and international markets.<sup>1</sup>
- Bulamu Coffee's main focus is Robusta coffee, but they also source small volumes of Arabica coffee
- Bulamu currently exports to over 5 international destinations including Spain, Italy, Switzerland, Singapore and Sudan.<sup>1</sup>
- Bulamu is interested in moving from agent sourcing to direct farmer sourcing to reduce costs as well as move into the certified market.

## Overview of the country value chain



- Uganda is the 2<sup>nd</sup> largest coffee producer in Africa (after Ethiopia) and the 8<sup>th</sup> in the world.<sup>2</sup> In terms of Robusta coffee only, Uganda is the 4<sup>th</sup> largest producer in the world.
- 1.7 million households grow coffee on farms with relatively small areas.<sup>2&3</sup>
- On average, coffee is intercropped with other crops and thus only covers a portion of the total land, but provides over 50% of cash income in an average year.<sup>2</sup>
- Uniquely, Robusta coffee grows natively in Uganda, in the Lake Victoria Crescent area.
- In total there are 112 coffee growing districts, of which 88 grow Robusta only, 15 Arabica only and 9 districts grow both Robusta and Arabica.<sup>2</sup>
- Coffee in Uganda has two major harvesting seasons, from November to February and June to September.<sup>2</sup>
- About 81% of Uganda's coffee is destined for the European Union and 14% is exported to Sudan.<sup>2</sup>

Sources: 1) Bulamu Sustainability Program (2019). 2) Uganda Coffee Development Authority (2019). 3) Global Coffee Platform (2018). Uganda: A quick scan on improving the economic viability of coffee farming.

# SDM Stakeholders and Entities Overview 1/2

	Legal Status	Function (within this SDM)	Revenue model (within this SDM)	Incentive for participation (within this SDM)
<b>SDM Operator</b>				
 Bulamu Group	Limited liability company	<ul style="list-style-type: none"> <li>Management and coordination between various Bulamu companies</li> </ul>	<ul style="list-style-type: none"> <li>Through sub companies, not direct</li> </ul>	<ul style="list-style-type: none"> <li>Increased coffee sourced</li> <li>Increased animal products sourced</li> </ul>
 Bulamu Coffee	Limited liability company	<ul style="list-style-type: none"> <li>Overall oversight and structure</li> <li>Implementation of all services</li> </ul>	<ul style="list-style-type: none"> <li>Increased yield and higher price through improved quality</li> </ul>	<ul style="list-style-type: none"> <li>Increased loyalty</li> <li>Traceability for certification</li> <li>Increased revenues</li> </ul>
 Bulamu Animal Farms	Limited liability company	<ul style="list-style-type: none"> <li>Train farmers on animal product diversification</li> <li>Purchase and sale maize/animal products</li> </ul>	<ul style="list-style-type: none"> <li>Sale of animal products, feed, vet services and piglets</li> </ul>	<ul style="list-style-type: none"> <li>Revenue from services</li> <li>Farmer diversification and improved income</li> </ul>
<b>Donors</b>				
 the sustainable trade initiative	Foundation	<ul style="list-style-type: none"> <li>Aid in designing / setting up the SDM</li> <li>Prototype SDM models through technical assistance</li> <li>Explore the impact of diversification</li> </ul>	<ul style="list-style-type: none"> <li>None</li> </ul>	<ul style="list-style-type: none"> <li>Catalyse investment into smallholder business models</li> <li>Improve farmer livelihoods and food security</li> <li>Promote gender equality</li> </ul>

# SDM Stakeholders and Entities Overview 2/2

	Legal Status	Function (within this SDM)	Revenue model (within this SDM)	Incentive for participation (within this SDM)
<b>Value Chain Partners</b>				
Youth extension network	Community based organization	<ul style="list-style-type: none"> <li>• Provide labor to farmers</li> </ul>	<ul style="list-style-type: none"> <li>• Payment for services</li> </ul>	<ul style="list-style-type: none"> <li>• Youth employment</li> <li>• Incomes</li> </ul>
Farmer village groups	Groups registered with local authorities	<ul style="list-style-type: none"> <li>• Organize farmers</li> <li>• Facilitate trainings/ inputs/ bulking</li> </ul>	<ul style="list-style-type: none"> <li>• Membership fees</li> <li>• Commission on aggregated coffee sales</li> </ul>	<ul style="list-style-type: none"> <li>• Higher price for coffee</li> <li>• Access to lower cost inputs</li> </ul>
Farmer Depot committees	Groups made up of village groups	<ul style="list-style-type: none"> <li>• Coffee bulking</li> </ul>	<ul style="list-style-type: none"> <li>• Membership fees</li> <li>• Commission on coffee sales</li> </ul>	<ul style="list-style-type: none"> <li>• Higher price for coffee</li> <li>• Bargaining power</li> </ul>
<b>Input Provider</b>				
Reputable input supplier	Private company	<ul style="list-style-type: none"> <li>• Provide inputs</li> </ul>	<ul style="list-style-type: none"> <li>• Sales of inputs</li> </ul>	<ul style="list-style-type: none"> <li>• Increased sales of inputs</li> </ul>
<b>Service Provider</b>				
Accredited certification body	Private company	<ul style="list-style-type: none"> <li>• Provides the certification audit of the farmers</li> </ul>	<ul style="list-style-type: none"> <li>• Payment for services</li> </ul>	<ul style="list-style-type: none"> <li>• Increased customer base</li> </ul>



# SDM Objectives

## Outcomes per Stakeholder

### Farmer



### Bulamu Group



CORE OBJECTIVES

<b>1</b>	<b>Increase coffee supply in terms of volume and quality at competitive prices</b>	<ul style="list-style-type: none"> <li>• Guaranteed markets for coffee</li> <li>• Higher coffee yields</li> <li>• Increased coffee revenue</li> </ul>	<ul style="list-style-type: none"> <li>• Increased coffee volumes at acceptable prices</li> <li>• Higher quality and certified coffee, for which Bulamu can receive premiums</li> </ul>
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SECONDARY OBJECTIVES

<b>2</b>	<b>Create diversified livelihoods for smallholder farmers</b>	<ul style="list-style-type: none"> <li>• Smooth out cash flow</li> <li>• Additional revenue</li> </ul>	<ul style="list-style-type: none"> <li>• Improve farmer loyalty</li> <li>• Higher quality as farmers can wait to harvest</li> <li>• Diversified revenue streams (animal products)</li> </ul>
<b>3</b>	<b>Decrease bulking costs</b>	<ul style="list-style-type: none"> <li>• Increased margin paid to farmer</li> </ul>	<ul style="list-style-type: none"> <li>• Increased profits</li> </ul>
<b>4</b>	<b>Ensure farmers produce certified coffee</b>	<ul style="list-style-type: none"> <li>• Higher farm gate price</li> </ul>	<ul style="list-style-type: none"> <li>• Better quality coffee</li> <li>• Increased profits from certification premiums</li> </ul>
<b>5</b>	<b>Support farmers through a commercially viable business model</b>	<ul style="list-style-type: none"> <li>• Access to stable supply of services</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to sustain model without outside funding</li> </ul>



# SDM Structure: Services, scale and organization of the SDM

This section provides information about the services delivered to the farmers, the number of farmers in the SDM and the way they are organized.

In this section you will:

- ✓ Get an overview of the services provided
- ✓ Get a breakdown of the dynamics and flows per service, as well as the delivery method, costs and impact
- ✓ Understand how they are sequenced and how they are related
- ✓ Get an overview of the SDM scale in terms of number of farmers
- ✓ Understand the farmer segmentation used for targeting

Overview of SDM stakeholders & objectives

## Services, scale and organization of the SDM

Farm-level impact

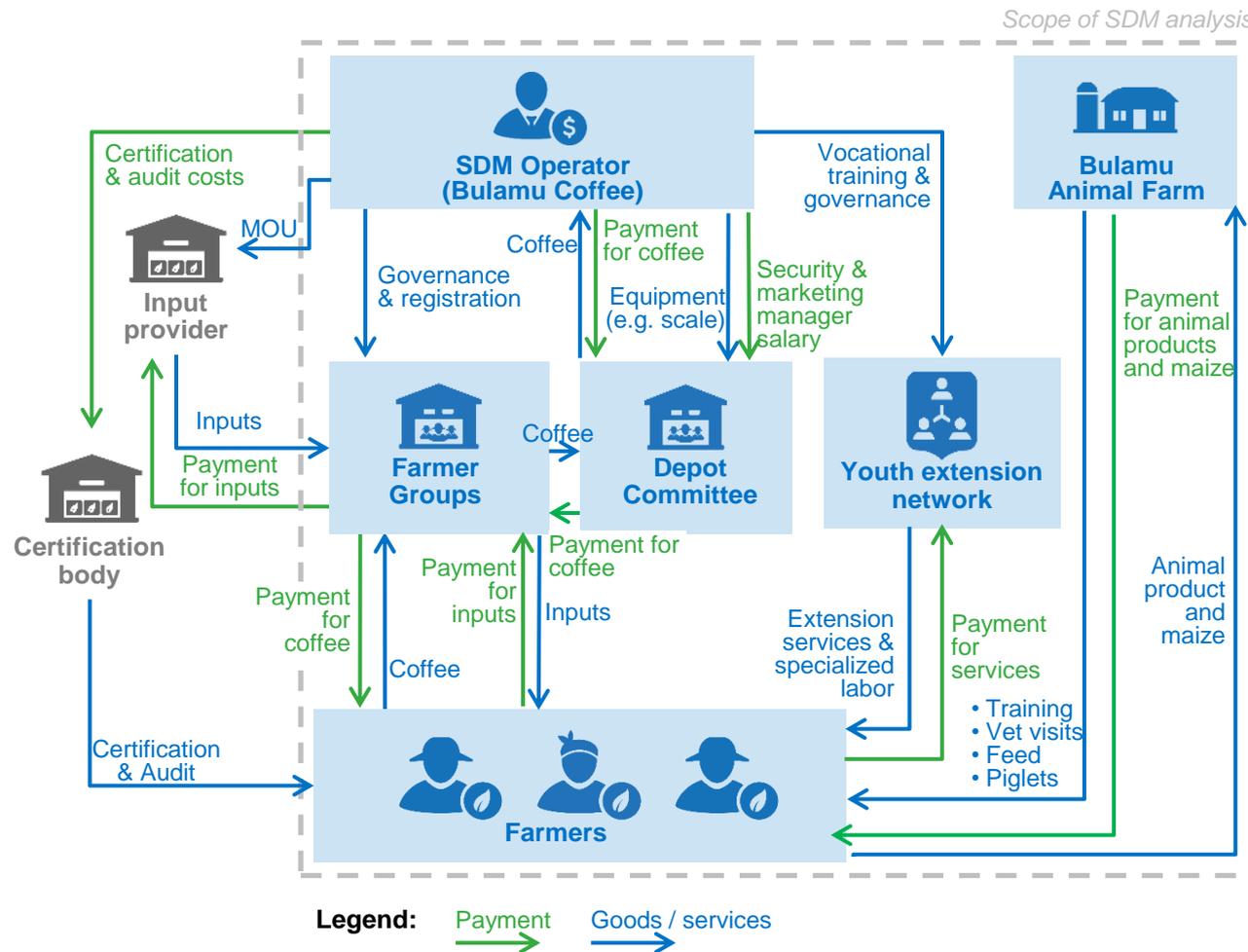
Financial analysis overall SDM

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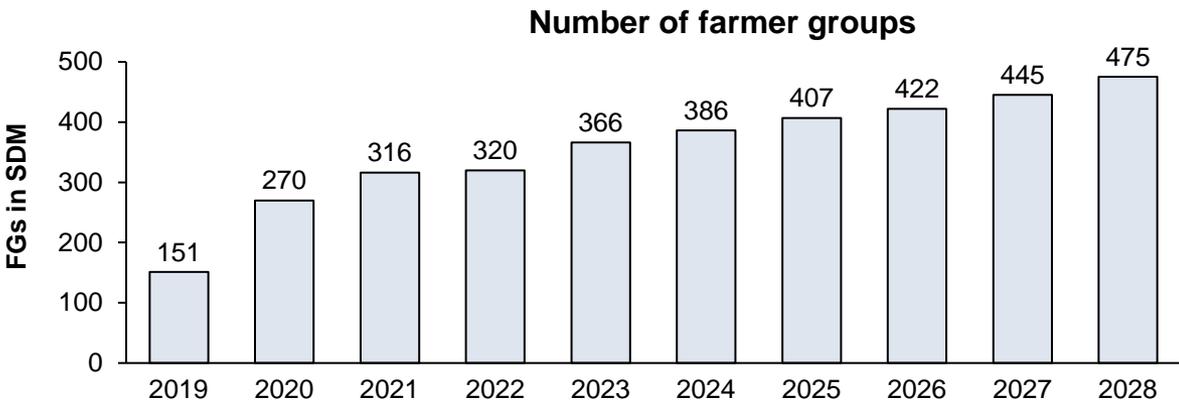
# SDM Services and Revenue Flow Overview



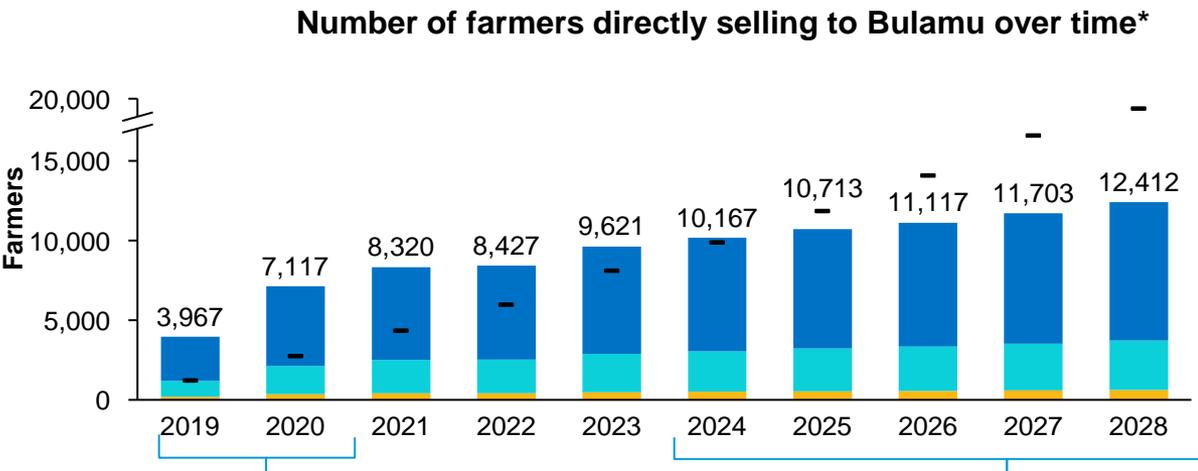
## SDM Services and Revenue Flows

- Farmers will be organized in groups of 20-25 farmers. Bulamu will support the set up of these organizations.
- Bulamu Coffee will provide training of trainers to the lead farmers from farmer groups for GAP/Certification//Diversification. Trainings will address gender by including women.
- Bulamu Coffee will set up a youth extension network by training local rural youth who will assist farmers with specialized labor.
- Bulamu Farm will provide training for diversified crops and will purchase maize/animal products.
- Bulamu Coffee will support farmers in getting certifications and will receive a premium for certified coffee, which is shared with farmers.

# Scale of the SDM and duration in scope of this case study



**Implications:**  
Such rapid up-front growth, 50% of farmers in the first 2 years, would require Bulamu to have all structures in place early and does not provide an opportunity to pilot services and learn from them. This may pose a risk, if not executed well from the start.



**Legend : Farm size**

- Small (Blue)
- Large (Cyan)
- Very large (Yellow)
- MT sourced/year

**2019-2020: Start of operations**  
Bulamu started identifying farmers in 2019 and will grow to 50% of the total farmers that will be recruited for the program in the first two years. The focus is on recruiting sufficient farmers to reach desired sourcing targets.

**2021 - 2028: Scale-up phase**  
With production per farmer increasing with adoption of GAP as well as farmer loyalty increasing, the increase in the number of farmers needed to make up the difference in Bulamu's sourcing are less dramatic



# Overview of Services



## Farmer organization

- Farmers will be organized in farmer groups of 20-25 farmers, based on geographical proximity.
- Each group will have a lead farmer working with Bulamu
- The provision of the other services will run through these farmer organizations to increase efficiency and reduce costs.



## Youth extension network

- Rural youth will be trained by Bulamu and will provide farmers specialized labor.
- This network will be registered as a separate entity in the group and farmers will pay for the services.



## GAP training

- Lead farmers will be trained on GAP (training of trainers).
- Training will be adjusted based on the farmer group needs.
- Farmers will attend trainings with their spouse to promote women's inclusion in all farming activities.



## Diversification

- Farmers will be encouraged to diversify their revenue through husbandry and by growing additional crops. Bulamu will facilitate market access for these products.
- Farmers will receive training on animal husbandry and crops other than coffee.



## Input provision

- Bulamu will identify input providers and connect them with the farmer groups.
- Bulamu will promote organic fertilizer in the form of manure through the training, rather than fertilizer purchases.



## Certification

- Farmers will receive training and support concerning Rainforest Alliance/UTZ as well as organic certification.
- Bulamu will cover the costs for inspections and audits.



## Access to finance

- Advance payment will be provided to farmer groups for coffee

# Farmer segmentation

This SDM model target different segments of farmers based on size because they have different needs and levels of understanding



## Minimum criteria

Beneficiaries should meet the following minimum criteria in order to be eligible for service provision

Minimum criteria	Farmer organization	All farmers must be part of a registered farmer group
	Location	All farmers must be in the intervention location, starting in Luwero

## Segments

Segments are distinct groups of SDM beneficiaries that differ on **farm characteristics**<sup>1)</sup> and/or **services received**

For each segment:

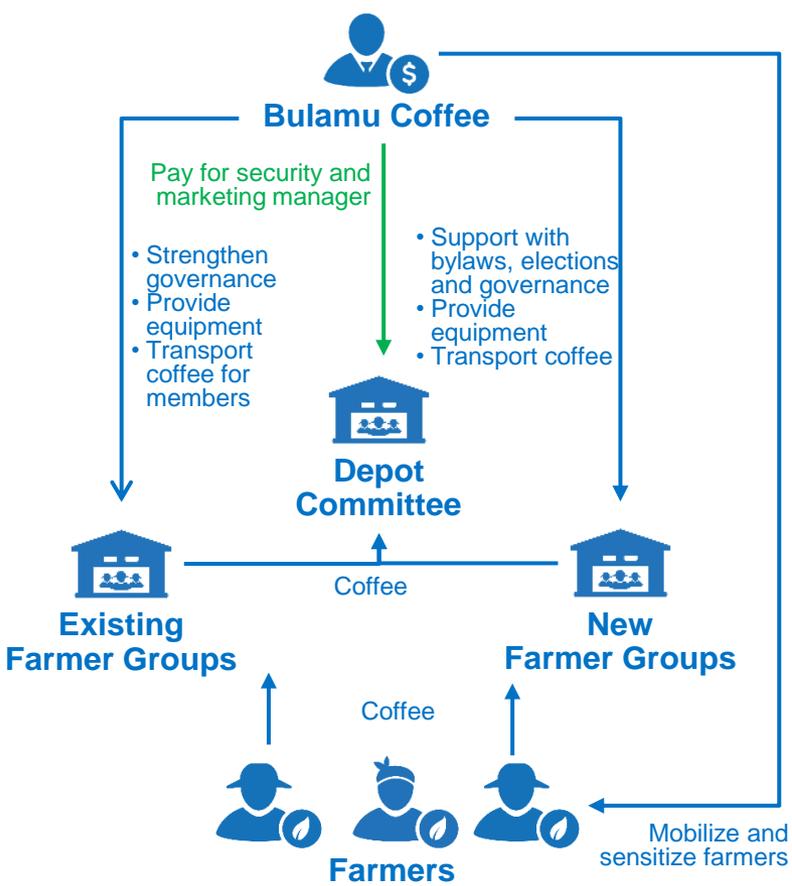
- the estimated **SDM impact at farm level** is shown on slide 27
- detailed farm agro-economic **assumptions** to come to those calculations are shown on slide 72

Characteristics	Farm size	1.5 acres	5 acres
	Coffee size	1.1 acres (73% of total size)	2.8 acres (56% of total size)
	Loyalty rates yr 1	25%	50%
	Diversified crops	Bananas, maize, beans	
	Livestock	Pigs	Pigs, cows
Services	Training	Access to the same trainings through the groups	
	Diversification	Access to the same trainings and inputs	
	Certification	Eligible	
	Youth extension network	Will use for weeding and digging trenches only	Will use for all activities
	Access to finance	Will not receive	Will receive

Source: Primary data collection

Note: There is a 3<sup>rd</sup> segment of very large farms that produce over 3MT/year, but they will receive no direct services and are not included in the farmer analysis

# Detailed overview of farmer organization



**Legend:** → Payment → Goods / services

## Description / Methodology

**Description:** Bulamu will work with two types of farmer groups, those that already exist and those that are to be formed. Farmers will be organized in farmer groups of 20-25 farmers, based on geographical proximity. All groups will be registered with local authorities. The provision of the other services will run through these farmer groups to increase efficiency and reduce costs, particularly bulking costs. Groups will be organized into Depot committees.

**Methodology:** For those groups already in existence, Bulamu will work on strengthening their governance through trainings. For new groups, Bulamu will mobilize farmers in one area, sensitize them on the importance of the group and, after they decide to form a group, help them with the initial set up in terms of by-law, elections and governance. These groups will then be organized into Depot Committees. For the DCs, Bulamu will pay for security and the marketing manager for the first few years as well as provide equipment such as moisture meters and scales. Bulamu will also pick up coffee at farmer groups.

## Service costs (from perspective of SDM Operator)

**Description**

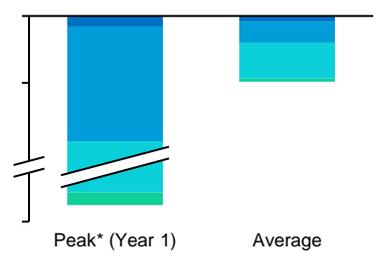
- Bulamu supports the set up of farmer groups by investing staff time for set up and trainings.
- Additionally Bulamu provides the DC's with equipment and financial support for security and marketing manager in the first years.

**Drivers**

- Trainings and DC equipment.

\*The peak is in year 1 due to large initial investments.

Farmer organization expenses per farmer per year

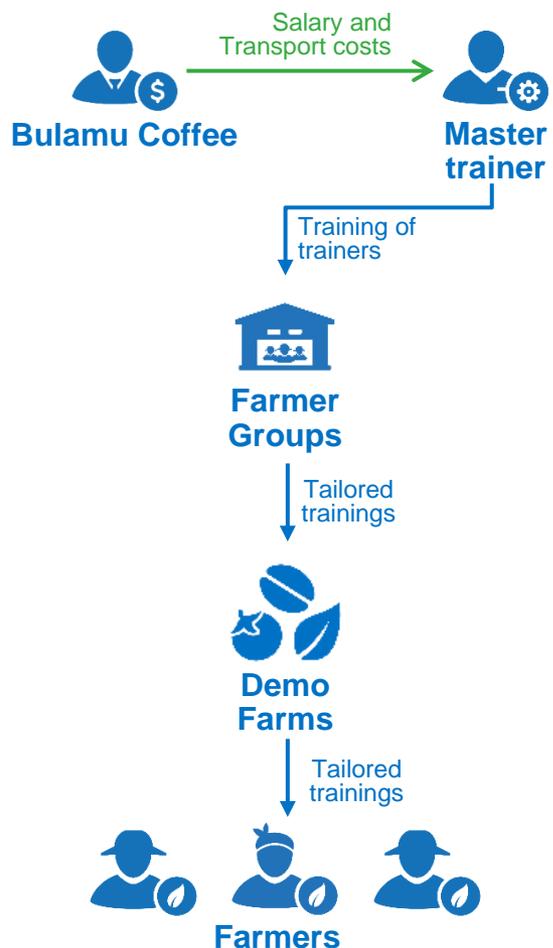


■ Salaries & HR ■ Transport & Logistics  
■ Materials & Equipment ■ Other

## Key considerations

- If farms grow in size, they are likely to leave the group and Bulamu needs to find a way to continue to engage with these farmers even when not in a group.
- As these groups are being set up from scratch, they will require a significant amount of operational capacity building in order to function effectively. Bulamu must ensure they receive the required capacity.

# Detailed overview of GAP training



**Legend:** → Payment → Goods / services

## Description / Methodology

**Description:** To increase the quality and yield of the coffee farms, farmers need to receive trainings tailored to their specific needs. Bulamu will gather data on the farmers and base their training curriculum on this. Bulamu will promote the use of manure as fertilizer for all. Trainings serve as a tool for gender inclusion and also include certification standards as well as diversification.

**Methodology:** Bulamu will base trainings on the Uganda Coffee Development Authority's standardized curriculum. Lead farmers will be trained on all modules in a two-week training and refresher trainings over 4 years. Data collected from farmers allows Bulamu to understand needs/challenges by group, supporting lead farmers to set a tailored curriculum for their farmer group. Lead farmers will train their farmer group. All trainings are organized in group settings and utilize demo farms managed by individual farmers. Both head of household and spouses are invited to trainings to promote gender inclusion in all farming activities.

## Service costs (from perspective of SDM Operator)

### Description

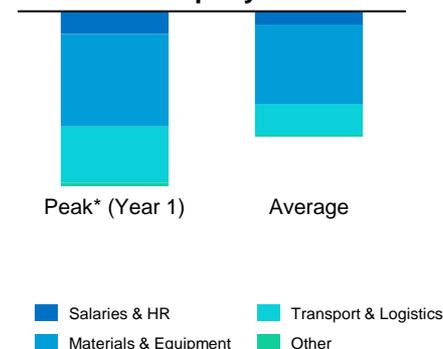
- GAP training consists of Training of Trainers, village group trainings, and seminars.
- Trainings are free of charge and take place on demo farms at managed by farmers.

### Drivers

- The biggest costs arise from the material and equipment for the trainings and demo farm set up, as well as the hotel costs for the lead farmers during trainings.

\*The peak is in year 1. Total costs increase over the years, but costs per farmer decrease as the total number of farmers grows.

### GAP training expenses per farmer per year

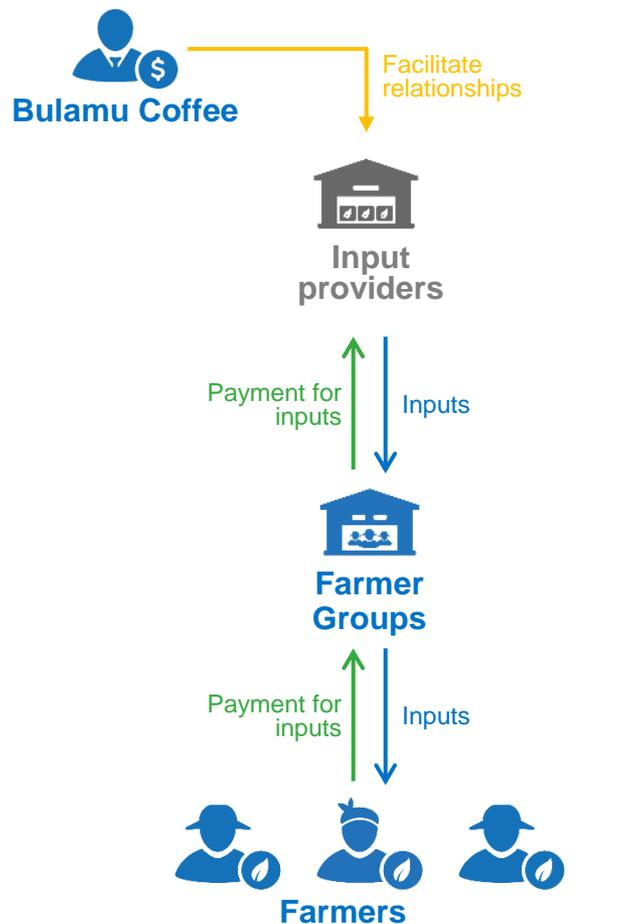


## Key considerations

- Women tend to be heavily involved in all aspects except agrichemical application and marketing. As women participate in farm activities, male farmers' spouses will need to be present at group trainings. Trainings should be organized at a time when all family members can attend.
- Very large farms will not be part of a group and not receive trainings, lowering potential productivity increase. Youth extension network could potentially play a role in mitigating this as they will work with these farmers not in groups.



# Detailed overview of input provision



**Legend:** → Payment → Goods / services → Facilitation

## Description / Methodology

**Description:** To increase yields, farmers need inputs. Bulamu wants to link input providers to farmer groups. These inputs will initially focus on coffee but will expand to other crops as farmers diversify their farm activities. Currently, farmers use minimal inputs, but with increased access, lower costs and training, Bulamu expects this to increase. Inputs will focus on herbicides/pesticides as organic fertilizer will be used.

**Methodology:** Bulamu will facilitate a relationship between reputable input providers and the farmer groups, based on the farmer needs. There will be a signed MOU between Bulamu and the input provider. Inputs will be delivered at wholesale prices to the farmer groups, with transport often covered by the input provider. Farmer members will pay the farmer group and the group will pay the input provider. Payments will initially be made in cash, but as relationships develop input providers may provide them on credit. Pick-up will be done at the farmer groups.

## Service costs (from perspective of SDM Operator)

### Description

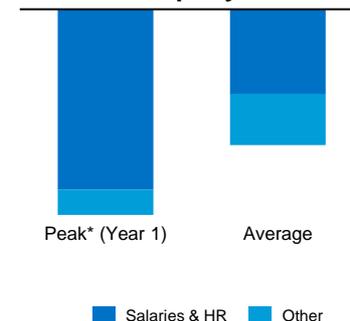
- Various Bulamu staff spend part of their time on the facilitation of the relationship with the suppliers.
- MOU's are signed with identified input providers to provide participating farmers with lower cost inputs, due to economies of scale.

### Drivers

- The biggest cost comes from the salaries of the people dedicating their time to this service.

\*The peak is in year 1 because the total number of farmers is the lowest in that year.

### Input provision expenses per farmer per year

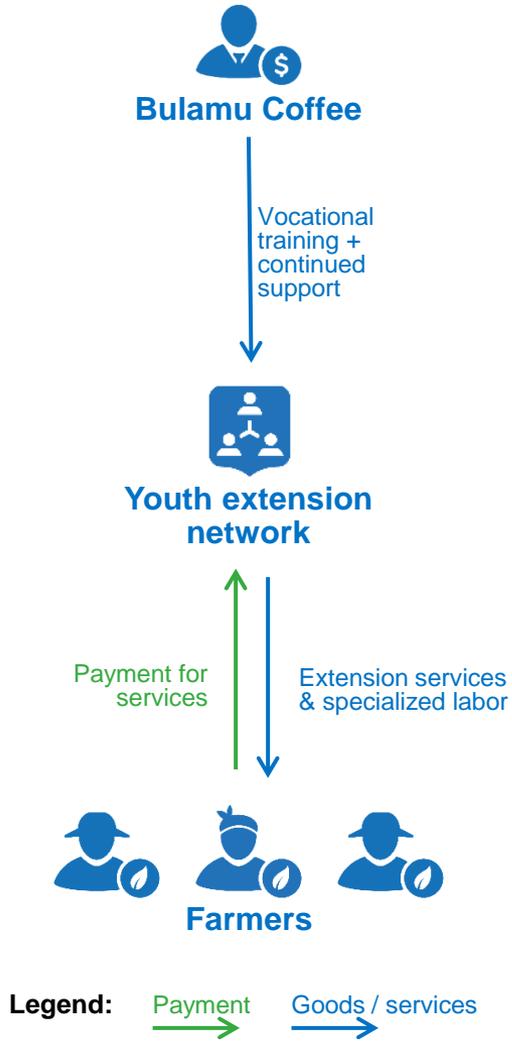


## Key considerations

- Farmer group members may not have the same diversification crops and thus, buying inputs for crops outside of coffee, there may not be the economies of scale to get lower priced inputs.
- As farmers will need to pay providers in cash initially, the timing is important to ensure inputs are provided at harvest, when they have enough money. Additionally, Bulamu can explore partnering with an MFI to provide input loans.



# Detailed overview of youth extension network



## Description / Methodology

**Description:** Rural youth are trained by Bulamu and will provide farmers, especially larger farmers, with specialized labor. After the initial set up phase, there is on-going support from Bulamu beyond training in the form of overall oversight, advertising and assisting in price setting. Bulamu sees this as a commercially viable way to promote GAP adoption.

**Methodology:** Initially 20 youths are selected that constitute the network, which will be registered as a separate entity under the Bulamu Group. The selected youth will be trained and Bulamu will connect the network to their coffee farmers as well as advertise their services. Farmers will pay the youths directly for their services. This will be used primarily by the larger farmers and number of youth trained will grow with demand.

## Service costs (from perspective of SDM Operator)

### Description

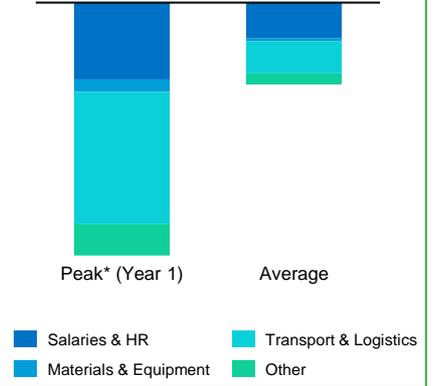
- A group of youth is trained during a two-week training. These costs are fully incurred by Bulamu.
- Bulamu also pays half of the tools that the youth need to offer their services.

### Drivers

- Initially the trainings are the biggest expense, but from the third year onwards it is the salaries of the staff that are involved.

\* The peak is in year 1 due to initial investments needed.

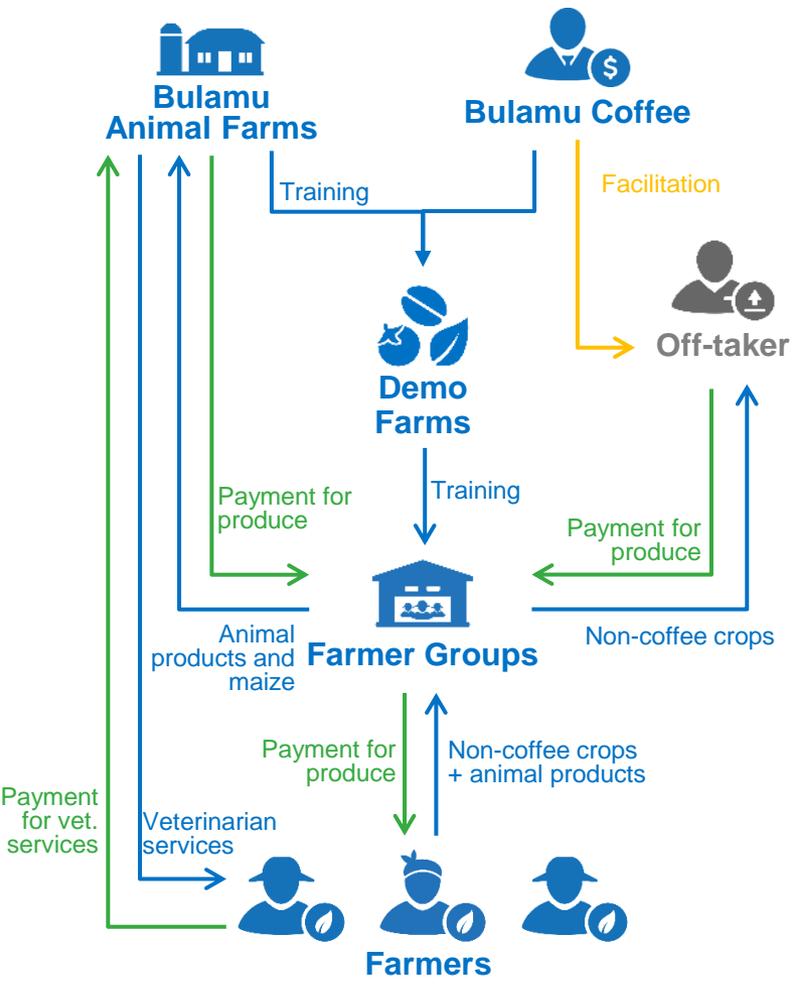
Youth extension network expenses per farmer per year



## Key considerations

- Farmers currently hire very little of the labour for their farms and these services would be targeting primarily by large farms, limiting potential client numbers. Bulamu needs to ensure the demand is enough to keep the youth employed.
- Coffee seasons only require labour at certain times of the year. Training youth in supporting other crops/animals would allow them to have a more sustainable livelihood throughout the year.
- Youth also need business training in addition to technical training to ensure long-term sustainability.

# Detailed overview of diversification



**Legend:** → Payment → Goods / services → Facilitation

## Description / Methodology

**Description:** Bulamu Farm provides training for diversified crops and purchases maize/animal products. Farmers are encouraged to intercrop their coffee with other crops. Depending on location this can be maize, banana, or beans as well as pigs and cows.

**Methodology:** Bulamu Coffee will train farmers on the importance of diversification as well as some basic business concepts while Bulamu Animal Farms will train on the specific GAP for the various crops. The trainings will be done through the farmer groups and using the demo farms managed by the individual farmers. Groups will identify the crops/animals most relevant to them and will be trained accordingly by lead farmers. Households will consume the majority of the other crops produced. Excess pigs and maize will be sold to Bulamu Animal Farm, while other crops will be sold to other off-takers that are introduced to farmer groups by Bulamu Coffee.

## Service costs (from perspective of SDM Operator)

### Description

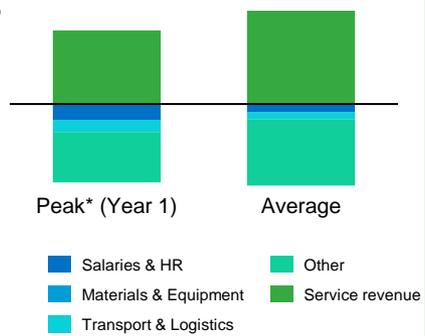
- Farmers receive GAP training for crops other than coffee.
- Bulamu also sells the farmers piglets and feed, and buys maize and pigs from them.
- Additionally Bulamu provides vet services.
- This is the only service with revenues and that makes a profit.

### Drivers

- The biggest cost drivers are the purchase of feed and pigs, and the vet salaries, but these aspects yield the highest revenues as well.

\*The peak is in year 1. In that year it is not profitable due to a lack of scale.

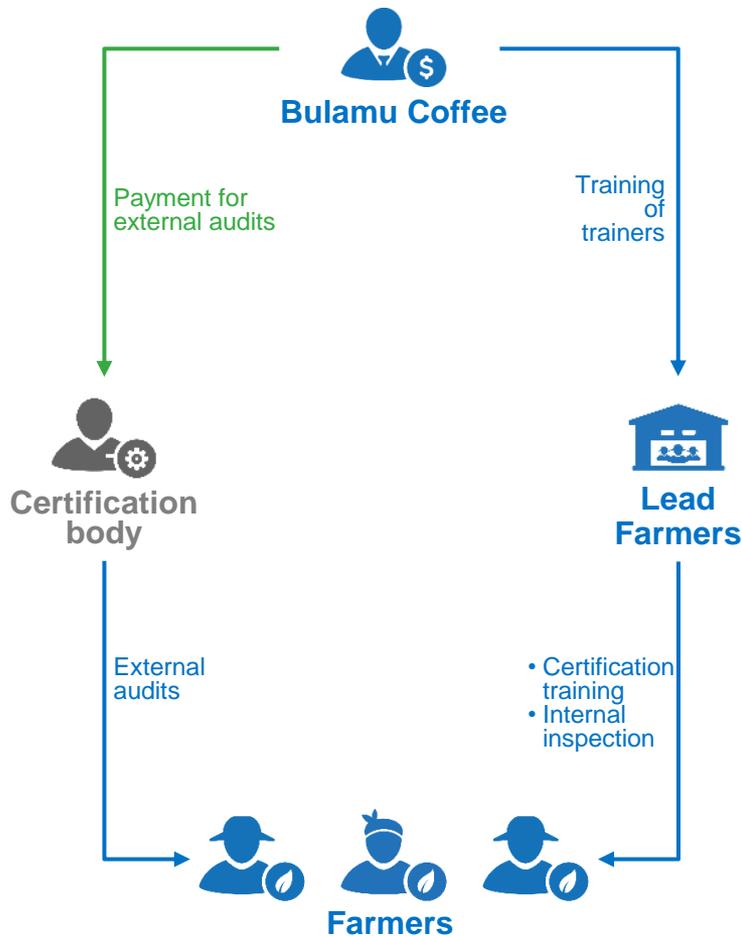
### Diversification expenses per farmer per year



## Key considerations

- Women-headed farms tend to have smaller, less diversified farms, thus there should be a particular focus on female headed households, as they stand to benefit most. About 33% of farms are female led, so this is significant.
- Diversification should have a strong focus on pigs, as it provides multiple revenue sources for Bulamu: piglets, feed, vet services, etc

# Detailed overview of certification



**Legend:** → Payment → Goods / services

## Description / Methodology

**Description:** Around 35% of all Bulamu farmers will be certified. Certified coffee yields a premium, of which a certain percentage is passed on to the farmers. The percentage depends on negotiations with the farmer groups. The aim is for this Certification will be Rainforest Alliance/UTZ as well as Organic.

**Methodology:** As part of the initial training of trainers, lead farmers are trained on required certification modules. Should their farmer group decide to move forward with certification, the lead farmer will train the farmer members. Annually, an internal and external audit must happen on each farm in order to certify them. Bulamu trains lead farmers to do the internal audits and hires a third party for external audits. Farmers will receive a portion of the premium for being certified, but do not bear the costs of the audits/certification.

## Service costs (from perspective of SDM Operator)

### Description

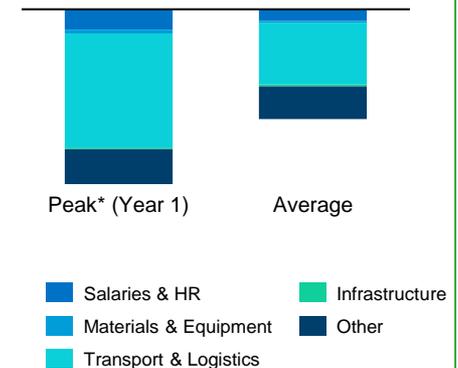
- For Bulamu there are costs involved concerning the ToT as well as for the certification trainings, which are free of charge for the farmers.
- Additionally, Bulamu incurs the costs for the internal inspection as well as the external audit.

### Drivers

- 64% of the costs comes from the hotel and transport costs for the trainings.

\*The peak is in year 1 because the total number of farmers is the lowest in that year.

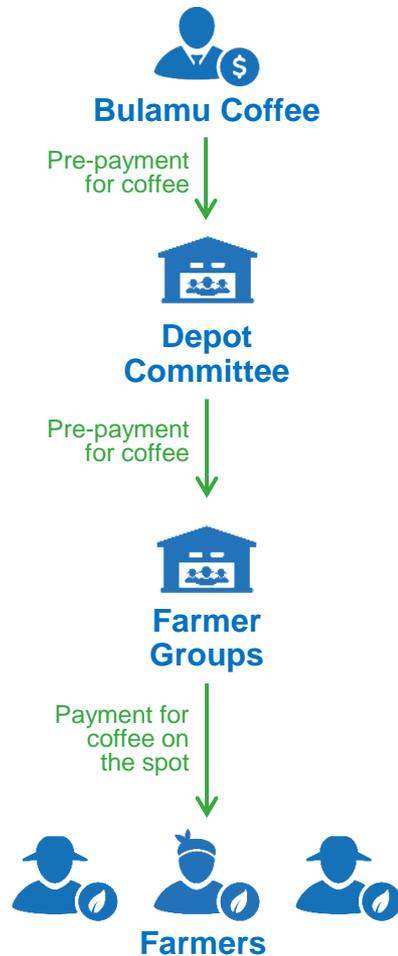
### Certification expenses per farmer per year



## Key considerations

- The expectation is that Bulamu will be able to sell all certified coffee grown and receive a premium for this. However, Bulamu should be aware of the global mismatch between supply and demand of certified coffee.
- Certified markets are direct export sales, so Bulamu must have the market in order to pass along premiums to farmers.

# Detailed overview of access to finance



**Legend:** → Payment

## Description / Methodology

**Description:** In order to compete with the agents, Bulamu often needs to provide pre-payment for coffee, typically about 30% of the expected value of the total coffee that will be sold to Bulamu at the end of the season. This is built on Bulamu's current experience pre-paying through agents to farmers.

**Methodology:** After Bulamu has developed a strong relationship with certain groups, it will provide advance payments to Depot Committees on a case by case basis. This advance is typically up to 90 days before coffee is delivered. It can be used to pre-pay farmers or as working capital to ensure payments on the spot when farmers deliver coffee. There is no interest paid by farmers on this financing. Bulamu partly borrows the money used for pre-payment, and the interest they pay is a cost for Bulamu.

## Service costs (from perspective of SDM Operator)

### Description

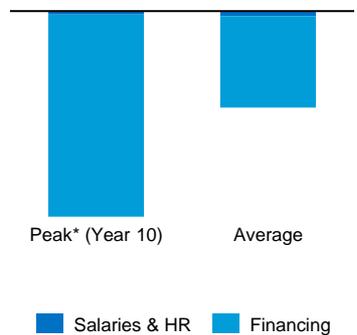
- Costs from access to finance arise from the fact that Bulamu borrows part of the money that is used for pre-payment.
- Bulamu pays interest over this borrowed money, but the DC's or the farmers are not charged for this.

### Drivers

- The main cost driver is the interest that Bulamu pays over the borrowed money.

\*The peak is in year 10, since the amount lent per DC as well as the number of DC's receiving pre-payment, increases over the years.

Access to finance expenses per farmer per year



## Key considerations

- As pre-payments are delivered at the DC level, it may not reach the farmers. Bulamu needs to consider this, as it may affect loyalty levels.
- As Bulamu pays interest on this capital, but farmers do not, it does come as an additional expense to Bulamu. Bulamu must evaluate return on investment and consider charging interest to recover capital costs.
- Bulamu needs clear criteria for selecting groups to be financed as well as data management system to track this financing

# Farm-level impact

This chapter presents the analysis at farmer level.

In this section you will:

- ✓ Understand the P&L of the farmers in the SDM according to their segment
- ✓ Understand how relevant factors (e.g. market price, quality, input adoption, yield) impact the farmer business case

Overview of SDM stakeholders & objectives

Services, scale and organization of the SDM

**Farm-level impact**

Financial analysis overall SDM

Conclusions

Annex

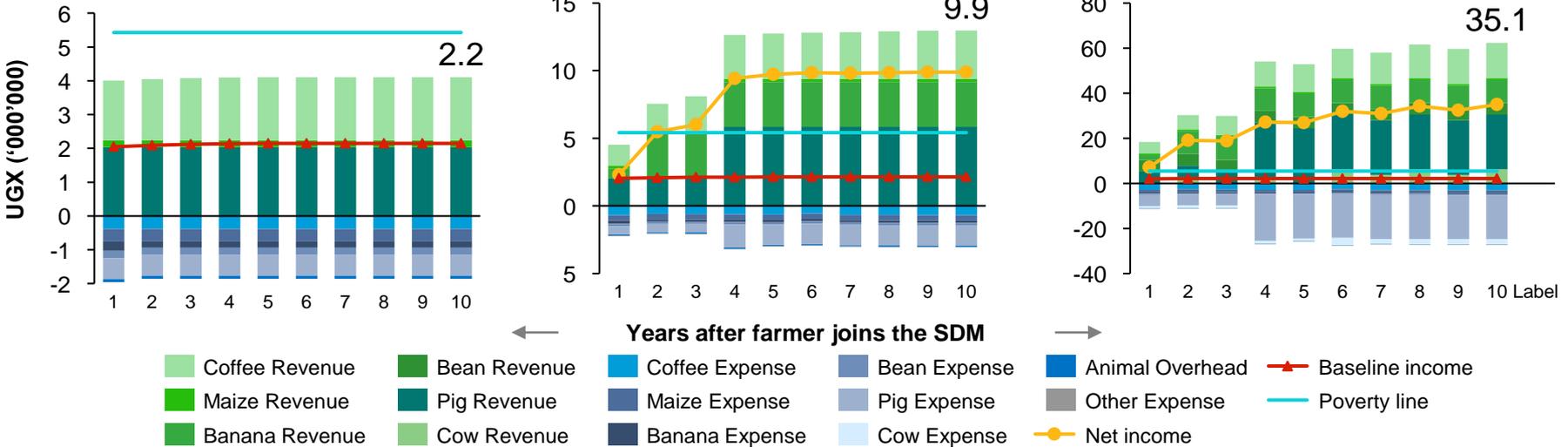


# Farm P&Ls: overall impact without certification

Baseline (2 acres) net income\*

Small Bulamu (1.5 acres) net income

Large Bulamu (5 acres) net income



## Economic sustainability at farm level

Baseline farmers are below the poverty line (905,000 UGX PPP<sup>1</sup> or 5.4M per household). This is for an average household of 6 people, which is slightly higher than the national average of 4.7<sup>2</sup>. Small farms are out of poverty in year 4 and large in year 2. Net income tends to even out by year 5, with small farms making 9.9M, and large farms making 35.1M. This is in part driven by the increases in coffee production and price per kg, but mostly through the diversification into other crops and animals. This does not account for the portion of maize, beans and bananas consumed at home and not sold, making the outcome even more sustainable economically given the lower cost of food for the household. Assuming that family labor can manage the diversified crop activities, the additional costs are manageable compared to added revenue. Year 4 sees the biggest jumps in revenue due to the purchase of new animals in that year as well as increased productivity coming into effect, both of which increase revenues.

Sources: 1 World Bank 2. UN \* Baseline is the average farmer, between small and large

## Main cost drivers

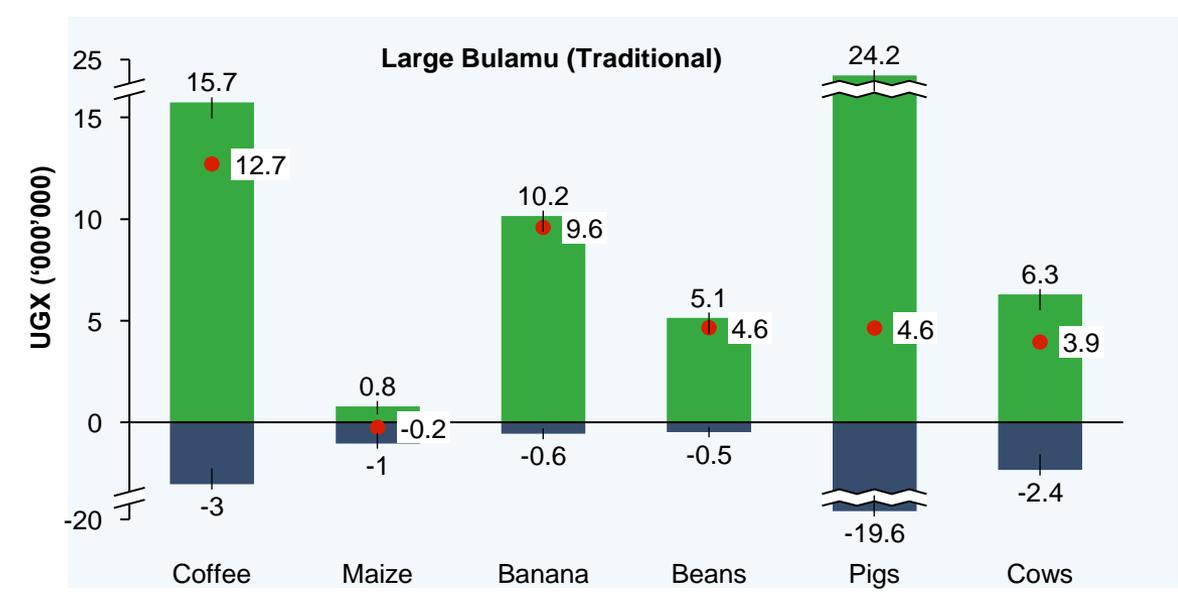
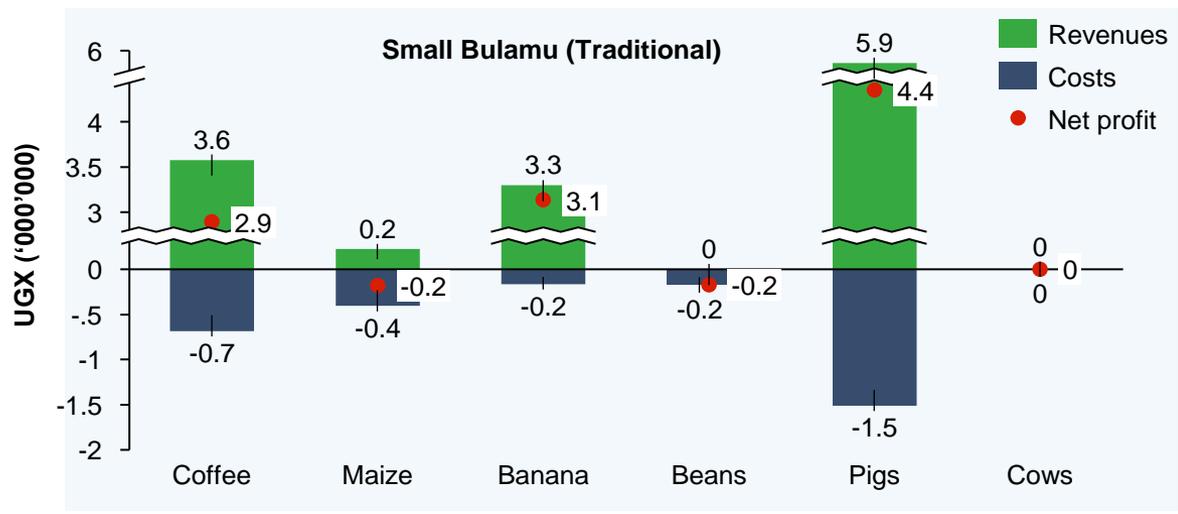
- **Pigs:** Pigs are the biggest cost driver for Bulamu farmers, especially for large farms, where pigs makes up 48% of total costs. This is due to animal purchases as well as animal feed for large famers.
- **Coffee:** Represents about 20% of costs for baseline and small farms, and 11% of costs for large. Driven by equipment and inputs, with tarpaulins and fertilizers being the respective drivers in each.
- **Other crops:** A portion of bananas, beans, and maize are all consumed primarily at home, thus costs are not always offset.

## Main revenue drivers

- **Coffee production:** Coffee drops from 48% total revenue for baseline to 25% Bulamu farmers, absolute revenue increases.
- **Pig production:** For all groups, pig sales represent 38-50% of total revenue, though smaller farmers see higher margins (no feed).
- **Diversified crops:** Bulamu farmers receive significant additional banana revenue. large farms also have bean and milk revenue.

# Overview of diversification profitability

Year 10 for farmers



## Discussion

Coffee, pigs and bananas are clearly profitable for both small and large Bulamu farmers.

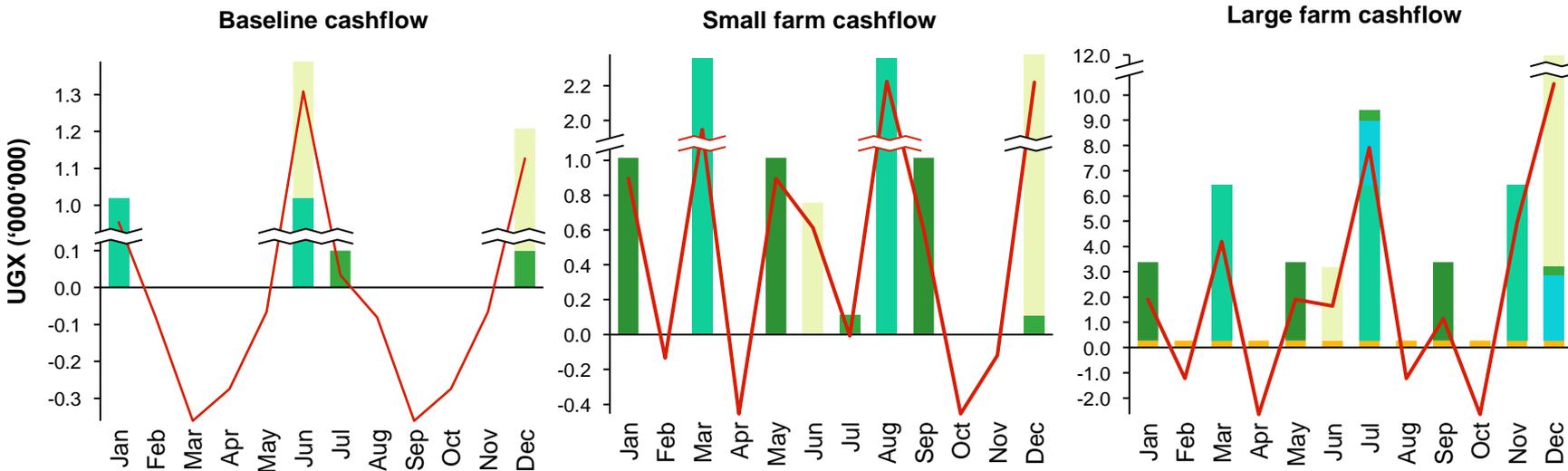
Maize and beans are loss making, but that because farmers are consuming a large portion of these at home. If home consumption was valued at the market, all crops would actually make a profit. Maize is 50% consumed at home, beans 100% for small and 30% for large.

While pigs are profitable, Large Bulamu farmers, who have Bulamu pigs and buy them feed, have significantly more revenues and costs, but similar net incomes. This brings into question if buying Bulamu pigs make a difference for farmers versus local pigs. It is assumed Bulamu pigs have 30 piglets/year because of feed and local only 8. only 60% survive and 1/2 of them are sold as piglets and half as meat, all on the local market.

Cows are only owned by large farms, given the large cost. They see daily revenue from milk and occasionally for meat.

Based on primary data collection, farmers on average have only 700k UGX revenue per year from other crops and 350k UGX livestock, so the diversification revenues shown here are a significant increase for farmers.

# Farm cash flow cycles based on 10-year averages



## Discussion

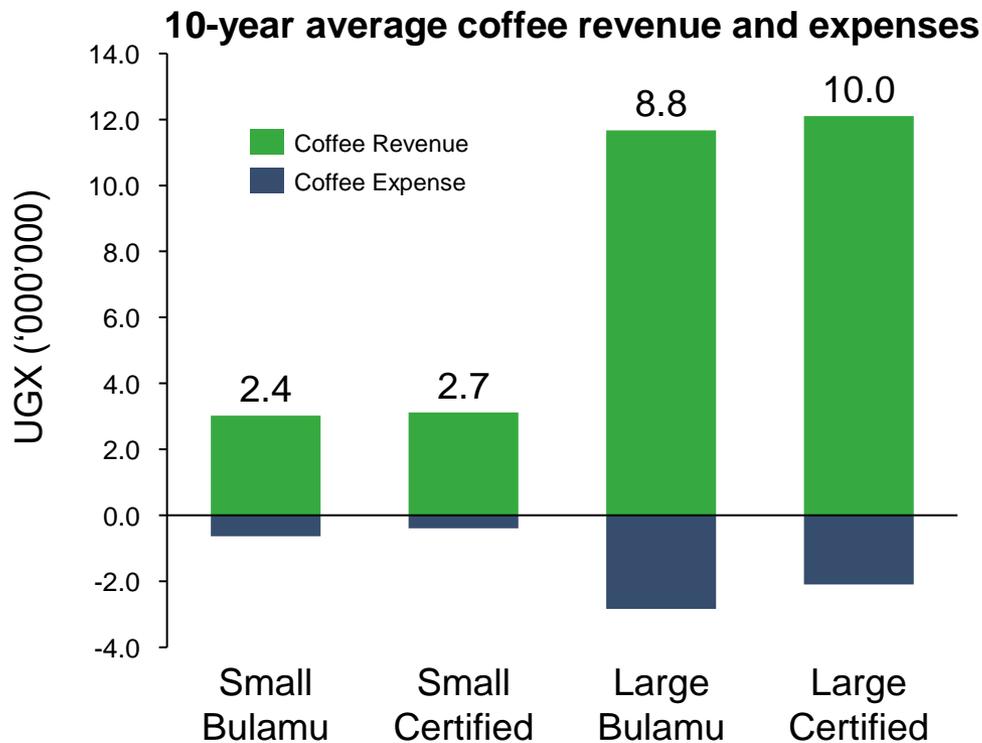
- Bulamu farmers have more months with revenue streams, 8 for small and 12 for large, than baseline farmers that only have 4. This helps to even out cash flow throughout the year.
- Bulamu farmers also have additional expense burdens for their diversified farms, which these income streams help to support, though may not always be able to fully cover when needed.
- Despite this, Bulamu farmers do face cash-strapped months about 5 months out of the year.
- Bananas, pigs and cow meat can be planted according to the cash needs at a specific time of the year. This timing should be part of the training that Bulamu gives, to help even out the cashflows even more.
- Given that the spikes in incomes often come before the cash-strapped months, savings is a key component for farmers. Bulamu should ensure this is part of training and may even want to consider working with financial institutions to support with savings.
- Interestingly, this data is not fully in align with the findings from the primary data collection (see slide 14). This means there are additional non-farm costs that are not captured in this graph.

## Go to assumptions

Sources: Farmer interviews and data from primary data collection (2019)



# Farm P&Ls: certification gains are minimal for farmers



## Premium impact on large farm 10-year average net coffee income

% premium paid to farmers	% increase in coffee net income
10%	10%
30%	13%
50%	17%
70%	20%
90%	23%

### Certification impact

Certification, particularly organic, has 2 effects – (1) decreased cost for coffee inputs, (2) increased revenue from coffee sale. The graphs, however, shows the effect is overall minimal. Coffee costs go down about 24% for small farms and 36% for large farms, from not using herbicides and pesticides. Currently Bulamu farmers are assumed to apply herbicide twice a year and pesticide once a year, which makes up the bulk of the costs. Revenues go up about 5% for the certification. Additional revenue is only 4% for each. With these two effects, net income goes up only about 14% for small farms and 13% for large farms, assuming that organic growers have the same production levels as traditional. If coffee productivity per tree dropped by more than 15% from going organic, potentially from increased risk of pests and weeds, certification would result in a loss for farmers. This assumes farmers receive only 30% of the premium paid. As premium % they receive increases, so does their net income



# Sensitivity- coffee price and loyalty

Type sold	Volume equivalent (kg)	Price/kg (UGX)	Total revenue (UGX)
Kiboko	100	2,000	200,000
FAQ	54	4,500	243,000
Graded FAQ (12, 14, 16)	50.8 (7.6, 25.4, 17.8)	12- 4,500 14- 4,650 16- 4,800	237,557

**Farmer coffee net income (small farm year 10)  
for varying coffee prices and loyalties**

Loyalty (% sold to Bulamu)	Farm-gate price kiboko (UGX/kg)					
	1,400	1,600	1,800	2,000	2,200	2,400
10%	1,669,956	1,990,310	2,310,665	2,631,019	2,951,374	3,271,728
25%	1,707,017	2,036,732	2,366,448	2,696,163	3,025,878	3,355,594
40%	1,744,078	2,083,155	2,422,231	2,761,307	3,100,383	3,439,459
55%	1,781,140	2,129,577	2,478,014	2,826,450	3,174,887	3,523,324
70%	1,818,201	2,175,999	2,533,797	2,891,594	3,249,392	3,607,189
85%	1,855,263	2,222,421	2,589,579	2,956,738	3,323,896	3,691,055
90%	1,867,617	2,237,895	2,608,174	2,978,452	3,348,731	3,719,010

## Analysis

The top chart compares kiboko, FAQ and graded FAQ amounts sold, based on conversion rates. It shows that while farmers earn more revenue selling FAQ. When the FAQ is graded, however, they lose money due to the conversion losses. As Bulamu plans to move to fully graded FAQ, it may need to adjust the price to make up for these losses.

The farm gate price in the bottom chart is for kiboko, which is linked directly to FAQ and Graded FAQ by a consistent ratio, so when kiboko prices increase, FAQ prices change in accordance. Loyalty is the % of total production sold to Bulamu i.e. as FAQ.

We can see that price has a much bigger impact than loyalty/selling as FAQ, even though they receive slightly more from selling FAQ. A 10% increase in loyalty leads to 2% additional net income, while a 10% change in price leads to 12% increase in net income. This means that unless Bulamu's prices are competitive, farmers will still prefer to sell elsewhere than selling "value added" FAQ to Bulamu.

# Sensitivity- Pig feed price and use

**Farmer pig net income (large farm year 10)  
for varying feed prices and usage**

Months providing feed to pigs ↓	Price of pig feed (UGX/kg)	→			
	0	225	450	675	900
0	18,195,000	18,195,000	18,195,000	18,195,000	18,195,000
2.5	18,195,000	14,803,125	11,411,250	8,019,375	4,627,500
5	18,195,000	11,411,250	4,627,500	(2,156,250)	(8,940,000)
7.5	18,195,000	8,019,375	(2,156,250)	(12,331,875)	(22,507,500)
9	18,195,000	5,984,250	(6,226,500)	(18,437,250)	(30,648,000)
12	18,195,000	1,914,000	(14,367,000)	(30,648,000)	(46,929,000)

Current projection

## Sensitivity

Pigs are generally a profitable endeavor for farmers. Large Bulamu farmers are buying feed for their pigs on the local market (450 UGX/kg) for the 5 months of the year that they have enough money to purchase feed. This is based on farmer interviews in the field who confirmed it was only about 5 months of the year that they could purchase additional feed. For the remainder of the year, pigs feed on left over and non-specific animal feed like dried maize, which is also used for household consumption.

Bulamu, however, is looking to sell feed at higher prices. However, at these prices, farmers can only afford to feed pigs for a maximum of 2.5 months of the year, if they still want to make a profit. This means that Bulamu may need to reconsider its pricing model for feed, in order to sell to farmers and, for the time being, farmer will likely stay with local feed for the months that they can afford it.

# Financial analysis overall SDM

This chapter presents the findings of the financial analysis of the whole SDM.

In this section you will:

- ✓ Understand the financial performance of the SDM
- ✓ Get an insight of the different sources and founders of the SDM
- ✓ Find an overview of the financing KPIs

Overview of SDM stakeholders & objectives

Services, scale and organization of the SDM

Farm-level impact

**Financial analysis overall SDM**

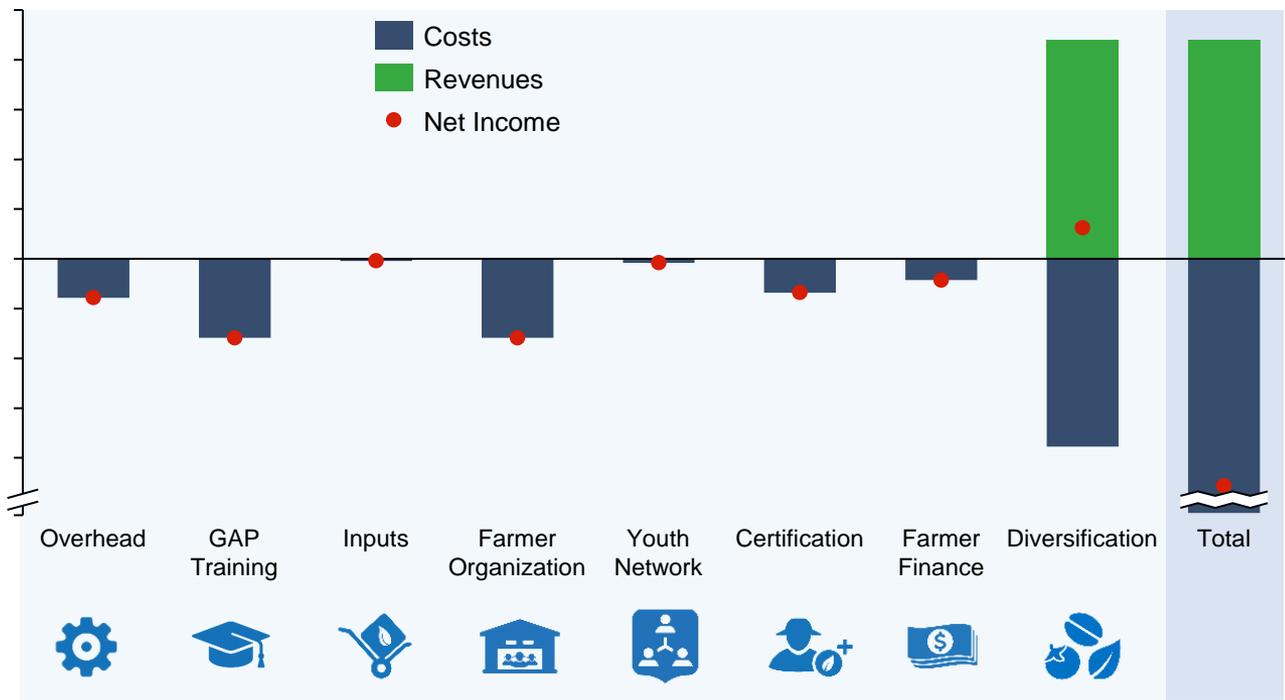
Conclusions

Annex



# Overview of service profitability (excl. sourcing)

Annual averages in '000,000 UGX during 2019-2029



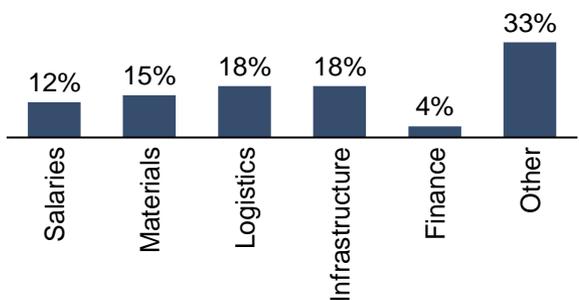
## Discussion

The only service that generates revenue is Diversification. Due to this, it is profitable as a service. Due to limited revenue generation from other services, the SDM as a whole operates at a loss. The biggest contributor to total costs is Diversification, which is 42% of total costs. Gap training and farmer organization each make up 18% of costs, as the next largest drivers

Within the expense categories, Other is the category with the biggest effect. Other mainly consists of costs related to commercial diversification activities. However, these costs are offset by its revenues.

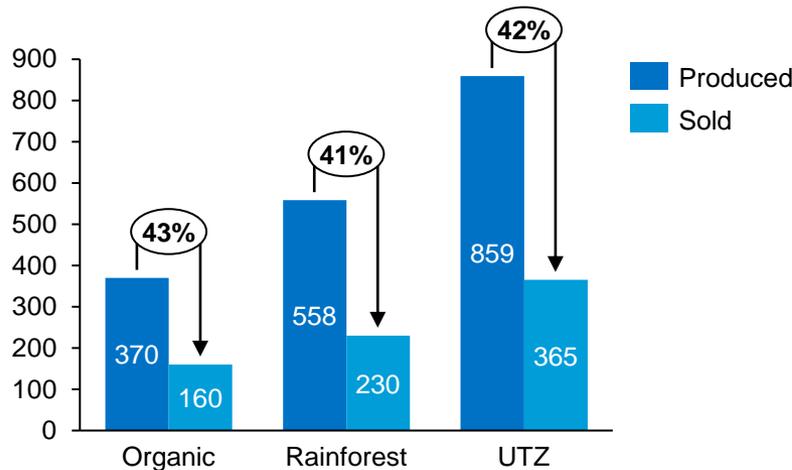
Following this, logistics and infrastructure are the biggest drivers. Infrastructure is again primarily related to diversification through running the animal farms. Logistics, however, includes transport to and from trainings.

## Expense categories

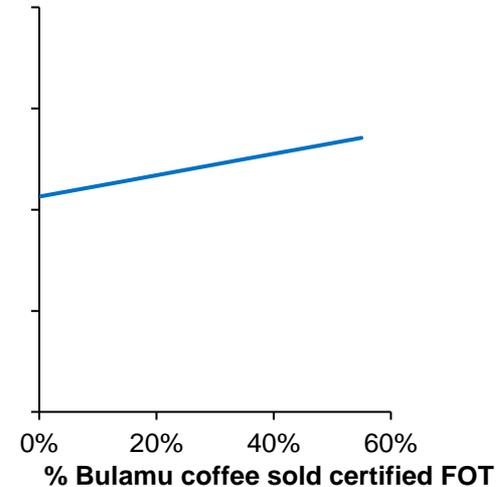


# Certification: Market is not guaranteed, and only contributes 17% more revenue if 35% of their coffee is sold certified

Less than 50% of all certified coffee produced is sold as certified (MT, 2017)\*



Net income of Bulamu SDM from certified coffee



## Implications

- Bulamu is considering initially UGZ/Rainforest certification, while moving to organic certification for export coffee. The goal was for the certification premiums to cover the cost for the SDM and make additional revenue. However, they must consider:
  - Certified market is not guaranteed: Less than 45% of all certified coffee globally is actually sold as certified. Currently the model assumes that all 35% of the farmers growing certified will be able to sell to Bulamu and Bulamu will in turn find a market. If it is less, then sourcing net income will be less.
  - Certification is not needed to make this profitable: Even with none of the coffee sold as certified, the direct farmer sourcing model is profitable. As farmers currently have minimal incentive to do certified, Bulamu may want to reconsider selling certified coffee or pass along more of the premium to incentivize farmers, as it will still be net positive and will open new export markets, allowing Bulamu to capture the Free on Truck (FOT) value add. The value add is that Bulamu receives an export premium for selling coffee FOT and all certified coffee would be sold FOT.

\* Coffee Barometer 2018 Report

# Youth Network- To be economically sustainable, youth would need a certain number of clients

**Youth Network revenue from large and small farms**

Number of small farms served	Number of large farmers served →				
	0	1	2	3	4
0	-	1,700,000	3,400,000	5,100,000	6,800,000
10	1,000,000	2,700,000	4,400,000	6,100,000	7,800,000
20	2,000,000	3,700,000	5,400,000	7,100,000	8,800,000
30	3,000,000	4,700,000	6,400,000	8,100,000	9,800,000
40	4,000,000	5,700,000	7,400,000	9,100,000	10,800,000
50	5,000,000	6,700,000	8,400,000	10,100,000	11,800,000
55	5,500,000	7,200,000	8,900,000	10,600,000	12,300,000

Poverty line

## Implications

small farms spend an average of 100,000 UGX on labor/year, all on weeding. Youth would need 54 small clients to reach the poverty line. The issue is that weeding would take place at the same time of year and it may not be feasible to meet the demands of 54 clients during that time.

large farms spend on average of 1.7M UGX on labor/year, weeding, pesticides, harvesting and drying. Youth would need 4 large clients to reach the poverty line, assuming these clients hired the same person for all of their needs throughout the year.

It is important to note that this does not take into account costs that the youth would incur, and the amount of labor assumed hired by small and large farms is larger than what the current average is. Thus, it is likely that they would need even more clients.

# Conclusions

This chapter presents the findings and conclusions of the overall analysis, reflecting on the objectives described at the beginning of the analysis.

In this section you will:

- ✓ Get insights of the overall SDM performance in relation to the initial objectives
- ✓ Find the key drivers for success identified and the lessons learned

Overview of SDM stakeholders & objectives

Services, scale and organization of the SDM

Farm-level impact

Financial analysis overall SDM

**Conclusions**

Annex



# Conclusions: key drivers for success and key risks



## Key drivers of success

- **Integration between business lines:** By creating value for both the coffee business and animal farm by working with the same farmers. This allows for cross-subsidization to make the model work for both sides.
- **Value added coffee purchases-** SDM creates mutual benefit for farmers and Bulamu by focusing on value improvements. Farmers are paid for a higher value coffee (FAQ), while Bulamu reduces its risks in buying coffee and ensures higher quality.
- **Diversification smoothing cash flow-** Diversification makes farmers more resilient from a cash flow as well as food security perspective. This will allow them to keep coffee until optimal harvest, which results in a higher revenue. As Bulamu is supporting with the various crops, it also creates multiple touch points throughout the year that will keep them loyal to Bulamu.
- **Coffee transportation-** Bulamu plans to provide transport from the DC level, to the hulling stations and then to the factory. This is meant to keep the coffee with Bulamu from group to factory, limiting the possibility of side-selling. By picking up at the group level, this helps to minimize bulking costs.



## Key risks

- **Lack of data management systems-** Bulamu does not fully understand its farmers, the services they need or have a way to track success of services going forward. This limits the ability to adapt responses to drive efficiency and retain farmers. Also could reduce risk of farmer pre-payments.
- **Large farm drop-out-** Larger farmers are unlikely to join groups and Bulamu will need to engage them individually. While these farmers form an important part of the model, there is currently not a clear service bundle graduation plan to retain smaller farmers as they grow into larger farmers. Thus, Bulamu could see drop-out of farmers as they grow.
- **Operationalizing of direct farmer sourcing-** this is a completely new structure for Bulamu, requiring much more overhead/salaries than the previous model. Bulamu needs to ensure it is not only hiring the right skills, but also that it scales the number of staff accordingly to support farmer groups numbers.
- **Diversification off-takers/market-** Bulamu is planning to train farmers on various crops and animals without assuring that there is a market/off-taker.
- **Unclear communication strategy-** There is not a detailed communication strategy on how, what and when to communicate to farmers. It is ad hoc and not always delivering on what is being communicated currently.



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Overview of SDM stakeholders & objectives

Services, scale and organization of the SDM

Farm-level impact

Financial analysis overall SDM

Conclusions

This chapter presents additional information that were used to carry out the analysis.

In this section you will:

- ✓ Get a general introduction to Service Delivery Models
- ✓ Get insights on other analysis (e.g. environmental lens, gender lens)
- ✓ List of KPIs used
- ✓ Glossary

**Annex**



# Annex I: SDM General Introduction & context

This section of the annex is standard for all cases and provides an introduction to the topic and the approach of this study.

In this section you will:

- ✓ Understand what SDM means
- ✓ Get a snapshot of the stakeholders and forces that shape an SDM
- ✓ Get an overview of our approach



# Service Delivery Models (SDMs)

SDMs are supply chain structures, which provide services such as training, access to inputs and finance to **farmers**, to improve their performance, and ultimately their profitability and livelihoods.

**Service providers** offer the services; they can be a trader, processor, farmer organization, NGO, public extension scheme, etc.

**Investors** tend to be (final) buyers of the product, looking to secure their supply and / or for reputational reasons are interested to invest in the farmer.



Processors, traders and other value chain players in agri-commodities are beginning to see service delivery as part of their business, rather than something the buyer requested or only as a way to create farmer loyalty.

This results in value chain players establishing a relationship with the farmer as a client, being interested to gain a better understanding of the structure of their existing SDMs, what services are being delivered, to which farmers, and the impact on their business.

Companies are also gaining a clearer understanding of how to fund such services and are exploring ways to make their model less dependent on external funding, i.e. commercially viable.

## Service delivery models and the stakeholders that shape them are evolving



**Processors, traders and other value chain partners** - see service delivery as part of their core business



**Financial institutions, development banks and social investors** – show an increased risk-taking appetite



**Donors** - focus on how to create the largest leverage and return on investment



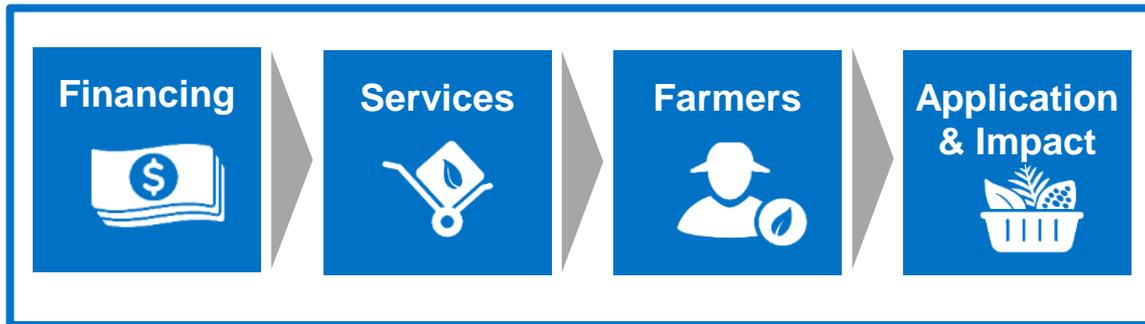
**Innovative businesses** emerge that develop solutions for optimizing service supply

# Levels of SDM Analysis



## SDM Structure

The analysis looks at the SDM from a holistic perspective, identifying the way the model is structured



Within this structure (financial) resources are invested

Those resources allow for a set of services to be delivered

These services are targeted at a (type of) farmer

The aim of these services is an impact at farm level

This impact translates into financial benefits so the structure (over time) becomes financially sustainable

This analysis in this case study is organized in the following way:

1. What is the **structure** of the SDM
2. What are the **services** provided
3. What is the impact of those services at **farm** level
4. What is the business case for the individual **entities** delivering the services
5. What is the **financial** impact of the SDM as a whole
6. What **conclusions** can we draw from our analysis

# Purpose of the SDM Analysis

An outcome of SDM analyses to date was the identification of those issues which the SDM operators found of critical importance, and where they encountered limited knowledge to be available. Examples are:

## Focus learning questions

- How to improve adoption and loyalty rates
- How to use farmer profiles to tailor make service packages
- How to drive down costs (for farmers and service operators)
- How to finance a SDM (types of finance, types of farmers) and timelines
- How to create a positive enabling environment for a service delivery model

IDH will stimulate dialogue with key partners on these topics, by targeting these questions in a broader range of SDMs and by facilitating webinars and knowledge sharing events.

## IDH aims to create:

### Action driven analysis

- Analyzing a broader range of SDMs with partners that are keen to improve their SDM
- Establishment of an Innovation Program & Fund to co-design and co-fund innovative solutions within SDMs
- Develop insights packaged for financial institutions, which facilitate partnerships with service providers

### A learning community

- Deeper analyses on key levers for optimizing performance of SDMs; e.g. farmer segmentation and adoption
- Convening key partners on pre-competitive topics in SDMs through learning events, webinars and knowledge sharing
- Forming strategic partnerships with knowledge partners that share the interest in driving performance of SDMs

# With the SDM analysis, IDH envisions to identify and create actionable improvement opportunities

## Individual SDM analysis:



Analyze SDM



Identify key success drivers



Identify enabling environment challenges



Identify opportunities for innovation



Evaluate funding needs

## To facilitate further learning and improvement, IDH aims to establish:

### Global knowledge hub

- Deeper analyses on key levers for optimizing performance of SDMs; farmer segmentation and adoption
- Benchmarking data and best practice for designing and implementing smallholder business models
- Organize learning community

### Enabling environment

- Convening key partners (at sector and national level) on pre-competitive topics in SDMs
- Forming strategic partnerships with knowledge partners that share the interest in driving performance of SDMs

### Blended finance

- Establishment of an Innovation Program & Fund to co-design and co-fund innovative solutions within SDMs
- Develop insights packaged for financial institutions, which facilitate partnerships with service providers

### Technical assistance

- Innovating and improving smallholder business models of private sector players
- Using private sector lessons to inspire public sector players and vice versa

# Annex II: Context

This section of the annex is standard provides a description of the context of the SDM

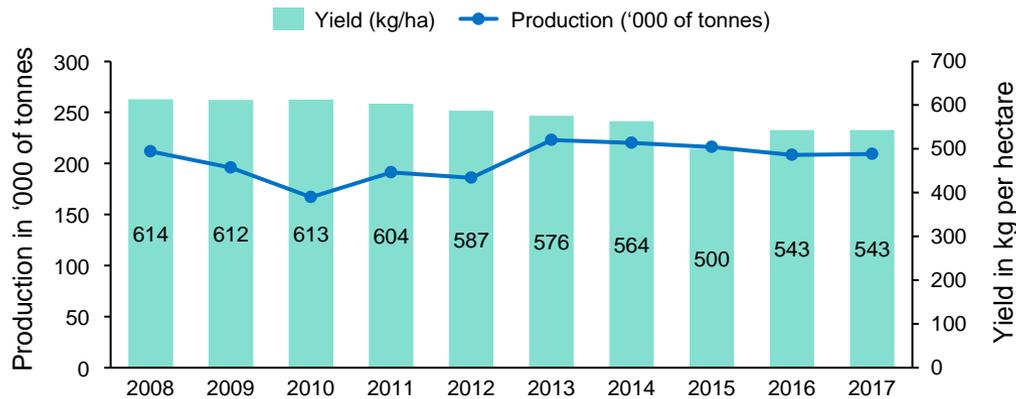
In this section you will:

- ✓ Get insights on the development of the commodity sector and characteristics of the farmers in the region under study
- ✓ Get insights on the farmer specific context
- ✓ Get insights on the role of farmer organizations
- ✓ Understand the enabling environment in the region
- ✓ Get insights on the status of gender equity
- ✓ Get insights on the status of environmental resilience of farmers

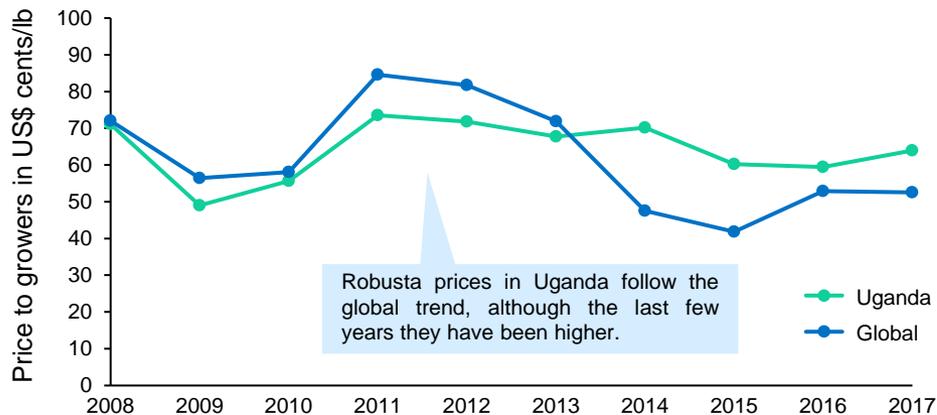


# Context – developments in the coffee sector

## Production in Uganda<sup>1</sup>



## Robusta prices in Uganda vs. weighted global average<sup>1,2</sup>



In 2018, global coffee production exceeded 10 million Mt, with Uganda producing approximately 280 thousand Mt, making it currently the 8<sup>th</sup> largest producer in the world.<sup>2</sup> Currently, around 80% of the world's coffee is produced by 25 million smallholder farmers<sup>1</sup>, with Uganda having the highest number of smallholder coffee farmers (1.7 million)<sup>3</sup>.

Due to a global oversupply, coffee prices are currently very low.<sup>4</sup> On top of that, transport costs for Ugandan coffee are high, due to poor infrastructure and the fact that the country is landlocked.<sup>5</sup>

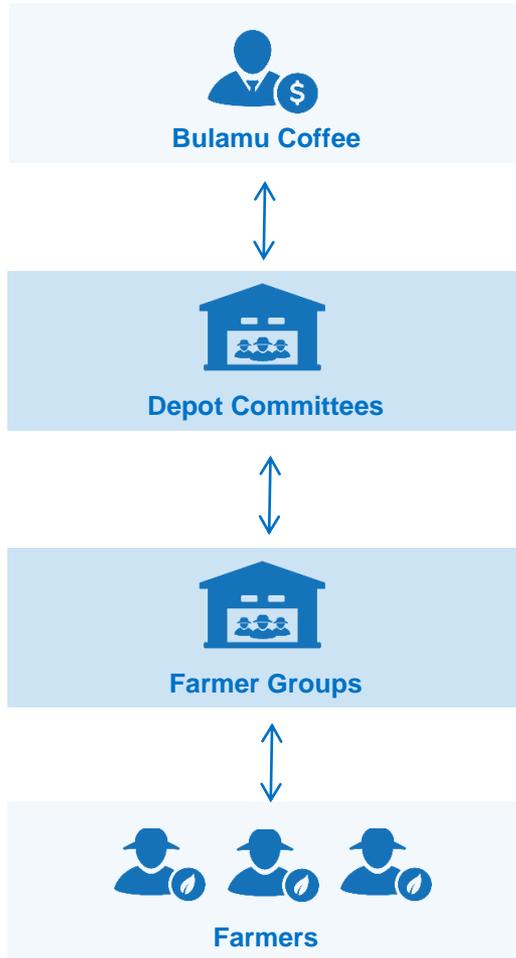
Worldwide, certified coffee production has seen a tremendous growth with approximately 15% of the traded coffee originating from certified farmers in 2013. Uganda is lagging behind with only 2-3% of its production being sold as certified. Since coffee production in Uganda is severely fragmented, costs are high and certification projects are usually highly dependent on donor money.<sup>6</sup>

However, currently there is a clear mismatch between supply and demand for certified coffee. Globally, the amount of certified coffee produced is more than double the amount of coffee actually sold as certified.<sup>6</sup>

Coffee, on a global scale, is at a significant risk from climate change, due to rising temperatures and unpredictable rainfall.<sup>7</sup> Countries like Brazil, India and Uganda are predicted to lose more than 60% of their suitable coffee areas by 2050.<sup>6</sup>

Sources: 1) FAO (2019): FAOSTAT database. 2) ICO (2019). Historical Data on the Global Coffee Trade. 3) Industry Study by TechnoServe (2013). 4) M.P. Light (2019). The price of coffee is in crisis. Here's why you should care. 5) Uganda National Coffee Strategy 2040 (2015). 6) S. Panhuysen and J. Pierrot (2018). Coffee Barometer 2018. 7) Christian Bun (2015). A bitter cup: climate change profile of global production of Arabica and Robusta coffee.

# Role of farmer organizations envisioned in this SDM



## Relationship between Bulamu and FGs/DCs:

### Establishment:

- **FG:** Bulamu supports by mobilizing farmers in the same area and sensitizing them on the necessity of forming a group. Farmers then form their own groups
- **DC:** Once groups are created, Bulamu groups group farmer groups into one DC

### Commercial relationship:

- **FG/DC:** Bulamu will only purchase coffee through the DCs, but not individual farmers, meaning payments will go through the groups and groups do bulking

### Funding:

- **FG:** Bulamu only provides support to lead farmer of each group with a bicycle as well as material needed for training
- **DC:** Bulamu will pay for a portion of security and marketing manager costs, as well as pay for certain equipment for the first few years.

## Relationship between farmers and FGs:

**Ownership:** The FGs are owned by their (farmer) members and DCs by the FGs

**Financial relation:** Farmers sell their product via the FG, with the FG handling the payments for produce. Farmer will also pay a flat membership fee as well as commissions based on produce sold. FGs in turn pay fees to DCs, who sell to Bulamu

**Service provision:** all services will be coordinated and provided to farmers via FGs

- **Input access:** Purchases of inputs will be coordinated by FGs who then distribute the inputs supplied by input providers to farmers.
- **Training:** FGs will be trained by Bulamu's Master Trainer to lead trainings for farmers
- **Diversification:** FGs will also over see inputs, training and market linkages for other crops

Each farmer group has around 20-25 farmers. Farmer groups will be registered with the local authority, but will not be a cooperatives, which are currently limited. DCs will also be registered locally and made up of 10-14 FGs.

# Opportunities and challenges in the enabling environment

## Impact of environment on SDM

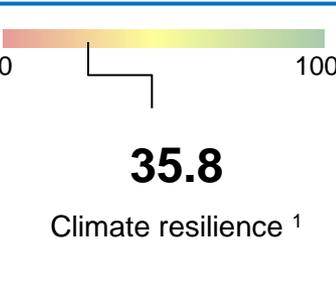
**L** (Limiting) = The environment hinders the implementation of the SDM

**N** (Neutral) = The environment does not influence the implementation of the SDM

**E** (Enabling) = The environment facilitates the implementation of the SDM

	Definition	Opportunities and challenges	Impact	Measures taken by SDM operator
Governance	<b>LAND OWNERSHIP</b> Existence of land ownership rights / regulations and their enforcement. Ease of purchasing/ transferring land	Most farms are less than 24 acres. The targeted farmers own their land. Women often do not inherit land and thus there are less likely to be the head of household	<b>N</b>	<ul style="list-style-type: none"> <li>Farmers are trained to intercrop, so they can make the most of their limited land</li> <li>Women are included in GAP trainings, even if they are not the landowners</li> </ul>
	<b>INFRASTRUCTURE</b> Existence and state of roads, water and electricity networks as well as proximity to main trading / processing hubs (e.g. access to market)	Infrastructure and logistics limits access to market for farmers as roads are often not paved. There are few farmers with access to watering for farms.	<b>L</b>	<ul style="list-style-type: none"> <li>Bulamu supports farmer groups and DCs to move hulling facilities closer to the farmer and facilitate market access.</li> <li>Bulamu trains on low-cost water systems</li> </ul>
Farm Inputs	<b>LABOR</b> Cultural norms that restrict /promote people of certain ages, genders or social groups from farm labor. Availability and cost of labor	Women are involved in most of the household and farm activities besides agrochemical use and marketing of produce. Most work is done by the family and hired labor for larger farms	<b>N</b>	<ul style="list-style-type: none"> <li>Women and youth will be invited to attend GAP trainings</li> <li>Youth extension network will be created to support large farms</li> </ul>
	<b>INPUTS &amp; FINANCING</b> Availability of affordable, quality inputs and the necessary marketing and distribution mechanisms. Availability of credit. Enabling regulatory environment	Majority of farmers do not have the financial means to invest in high quality inputs or other services e.g. security. If they do borrow, they borrow from people in the village and do not have formal means. Se	<b>L</b>	<ul style="list-style-type: none"> <li>Bulamu will connect farmers with input providers to allow access.</li> <li>Bulamu provides advances to certain groups.</li> </ul>
Crop	<b>TRADING SYSTEM</b> Organization of the system through which crops are traded from farmer to market, including the number and type of actors involved	Most coffee in the intervention area is sold as dried cherries/Kiboko via middlemen to exporters with little additional value creation at farm level.	<b>L</b>	<ul style="list-style-type: none"> <li>Bulamu support farmer groups to establish hulling and grading facilities close to the farmers, so farmer can sell hulled coffee/FAQ and receive better prices.</li> </ul>
	<b>PRICING &amp; COMPETITIVENESS</b> Market dynamics of the main crop of the SDM, including competition between buyers and possible price-setting by the government or other parties	There is a high level of competition for coffee in Uganda. Middleman also play a big role in purchases, providing advances to farmers and locking them in to side-selling.	<b>L</b>	<ul style="list-style-type: none"> <li>Bulamu will provide transport directly from the farmer group to hulling to factory</li> <li>Bulamu will provide services and diversification to increase farmer loyalty</li> </ul>
Sustainability	<b>ENVIRONMENTAL RISKS</b> Climate change, possibility of extreme weather, soil type, water supply and quality, pests and diseases. Potential environmental damages such as deforestation	Drought is the biggest issue for farmers, and it is faced multiple times a year. However, farmers use GAP (e.g. mulching, shade trees, digging trenches) to mitigate effects but not irrigation.	<b>L</b>	<ul style="list-style-type: none"> <li>Bulamu trains farmers on Climate Smart Agriculture and water management options</li> </ul>
	<b>SOCIAL CONTEXT</b> Availability and quality of schooling / healthcare. Cultural factors. Potential social externalities like child labor, gender disparity	School fees are among the largest household expenses for farmers in the area. Additionally, most farmers rely on family labor.	<b>L</b>	<ul style="list-style-type: none"> <li>Bulamu will address the training to several members of the household.</li> <li>Bulamu intends to develop a gender intentional training program.</li> </ul>

# Environmental resilience of farmers in the SDM

	Indicator	Discussion	SDM Risks & opportunities
<p><b>Climate resilience</b></p>  <p>35.8 Climate resilience <sup>1</sup></p>	<p>Uganda is assessed to be low in climate resilience. While they have a medium to high vulnerability to climate change (58%), there is low ability to leverage investments and convert them to adaptation actions (30%)</p>	<p>To become more resilient to extreme weather, farmers increasingly need to apply farming practices like mulching and shade tree planting. Farmers reported using these practices to increase resilience. Climate smart agriculture is one of the modules in Bulamu's training.</p>	
 <p><b>Soil</b></p>	<p><b>Moderate to strong water deterioration</b> <sup>2</sup></p>	<p>In general, the whole of Uganda is subject to water-related soil degradation, varying in severity per region. Heavy rainfall causes the loss of (nutrients in) the topsoil, negatively affecting farms</p>	<p>Soil analysis is part of the Bulamu training module. Bulamu strongly promotes the use of organic manure that is both low cost and improves soil nutrients. Additionally intercropping with beans and others crops is promoted, which increases soil nutrients.</p>
 <p><b>Water</b></p>	<p><b>Low to medium risk</b> <sup>3</sup></p>	<p>Uganda has a low to medium overall water risk. In general, water quantity and quality is good, but with a relatively large amount of media coverage around the subject of water in (East) Africa, there is a high reputational risk for companies using water in an inequitable way.</p>	<p>Farmers reported decreased rain is one of the main issues that they are facing. Bulamu's training modules explain various methods to address this, from irrigation to less intensive watering systems.</p>

1: ND-GAIN Country Index; summarizes a country's vulnerability and readiness to adapt to the negative impact of climate change

2: GLASOD; shows the severity of soil degradation in 4 categories: water, wind, physical and chemical deterioration

3: Aqueduct Water Risk; identifies areas with water-related risks, based on 12 subcategories such as drought severity, seasonal variability and ground water stress

# Annex III: KPIs and data

This section of the annex provides a description of KPIs used and data sources

In this section you will:

- ✓ Get an overview of the service-specific KPIs used in the analysis for both farmer and SDM operator
- ✓ Get an overview of data sources used to carry out the analysis
- ✓ Get an overview of key assumptions for farmer analytics
- ✓ Get insights on how data is managed (optional)



# Service KPIs

## Training

Lead farmers trained	#
Trainings held by lead farmers	#
Farmers attending group trainings	#
Women attending group trainings	#
Demo farms created	#

## Diversification

Diversification trainings	#
Other crops farmers are growing	#
Income from other crops	#
Animals farmers have (total)	#
Income from farmers	#

## Inputs

Input provider MOU's signed	#
Groups buying from input providers	#
Farmers buying from input providers*	#
Price paid by farmer for inputs	#
Savings seen by farmers for inputs	#

\*Can be indirect through the group

## Farmer Organization

Number of farmers registered	#
Female farmers registered	%
Farmer groups registered	#
Registered farmers in groups	%
DC's created	#
Farmer drop out rate from group	%
DC's selling coffee to Bulamu	#

## Youth Network

Youth trained	#
Days youth hired	#
Income received per youth	#
Farmers hiring youth	#

## Certification

Farmers trained	#
Farmers certified	#
Additional income received (farmer)	#



# SDM KPIs

## Access to Finance



DC's receiving advance payment	#
Share of total production paid in advance	%
DC's repaying advance payment	%
Period of prepayment	#
Farmers receiving advance payment from groups	#
Farmers repaying advance payment	%

## Farmer economics

Productivity year-on-year growth rate	#
Productivity increase from baseline	#
Profitability year-on-year growth rate	#
Profitability increase from baseline	#
Ratio of baseline farmer net income to poverty line	#
Ratio of SDM farmer net income to poverty line	#
Ratio of baseline farmer net income to median country income	#
Ratio of SDM farmer net income to median country income	#

## Sustainability

Average annual net income (loss) incl. only service revenue	#
Average annual net income (loss) incl. service and donor revenue	#
Average annual net income (loss) incl. service, donor and commercial revenue	#
Average annual SDM profit margin	#
Percentage of costs recovered (from donor funding; from service revenues)	#; #
Change in percentage of costs recovered (from donor funding; from service revenues)	#; #
Breakeven commercial margin (baseline; SDM sourcing;)	# ; #
Value creation at farm level per dollar invested (over SDM duration): average annual farm value created divided by average annual SDM costs	#



# SDM KPIs

## Efficiency

Annual SDM expenses per farmer (annual average)	#
Annual SDM income per farmer (annual average)	#
Annual SDM expenses per MT sourced	#
Annual SDM income per MT sourced	#
Annual SDM expenses per acre (annual average)	#
Annual SDM income per acre (annual average)	#
Farmers selling to Bulamu	#
MT sourced from farmers	#
Ratio of total MT sourced from farmers	%
Loyalty rate (share of total farm production sold to SDM operator)	#
Relative change in loyalty rate (first to last year)	#
Adoption rate (share of farmers that implement services provided)	#
Relative change in adoption rate (first to last year)	#
Farmers selling certified coffee to Bulamu	#
MT of certified coffee sourced from farmers	#
Amount of certified coffee sold with premium	%



# Primary Data Collection Methodology

**Description:** IDH uses the primary data collection to get an understanding of the farmers involved in the SDM and support with the farmer modeling. It is also meant to capture data related to gender, climate resilience and food security. It can also serve as baseline to measure the future impact of an SDM.

**Sample size:** 230 coffee farmers

**Sample location:** Luwero area, Central Uganda

**Sample period:** 27-30 August 2019

**Sampling methodology:** Bulamu provided a list of 466 farmers from their database, from which 230 were randomly selected, covering a representative sample of 212 respondents who agreed to participate.

**Data cleaning:** The data cleaning was done in three steps: 1. text cleaning, 2. detection of missing values and 3. outlier control.

To identify outliers, we set a limit of three standard deviations (sd) from the mean for every numerical value. If a value differs more than 3 sd from the mean, we assume something went wrong when collecting this point and excluded the data point from the dataset.

# Data

Indicator	Male	Female	National
Household data			
Number of respondents	155	75	N/A
Age	49	48	N/A
Over 35	80%	84%	N/A
35 or under	20%	16%	N/A
Household size	6.5	6.3	N/A
Primary school, attendance	98%	99%	1.03 (ratio female/male) * 1
Secondary school, attendance	65%	65%	N/A
Head of household	79%	21%	N/A
Land ownership	97%	91%	N/A
Income data			
Other crop income (UGX/ % reported)	841,681 / 61%	583,034 / 69%	N/A
Livestock income (UGX/ % reported)	551,487 / 52%	321,724 / 55%	N/A
Non-agriculture income (UGX/ % reported)	1,208,468 / 30%	1,190,588 / 21%	N/A
Resilience			
Climate issues faced	71% Drought 43% Change in rain patterns 12% Heat waves	63% Drought 53% Change in rain patterns 12% Heat waves	N/A
Climate adaptation strategy	31% Cash or savings 30% Trenches 21% GAP practices 23% None	32% None 23% Cash or savings 21% GAP practices 19% Trenches	N/A

\*Divide female indicator by male indicator to get ratio. A ratio of 1 indicates parity between the sexes; a ratio between 0 and 1 typically means a disparity in favor of males; whereas a ratio greater than 1 indicates a disparity in favor of females. \*\*Own health care, major household purchases, and visits to family or relatives  
Sources: 1) World Economic Forum (2016): Global Gender Gap report;



## Data

Indicator	Male	Female	Joint	National
Participation (Activities - % of women involved)				
Cook, clean, fetch water, wash clothes or buy food		96%		N/A
Care for school age children		74%		N/A
Care for ill household member		61%		N/A
Land preparation		64%		N/A
Planting		63%		N/A
Crop maintenance		75%		N/A
Harvesting		72%		N/A
Drying/post harvest		49%		N/A
Decision-making				
Decision maker for household activities	27%	55%	18%	51% of married women who participate in decision-making ** 3
Decision maker for farm activities	5%	67%	28%	
Food Security & Nutrition				
Food insecure in the last 12 months	30%	46%		95% Average dietary energy supply adequacy <sup>4</sup>
Food insecure months	30%Jan; 40%Feb; 50% Mar; 40% Apr;40%May; 20% Jun;20% Jul;30% Aug; 10% Sep;20% Oct; 20% Nov;10 Dec	43%Jan; 29% Feb; 22% Mar; 34% Apr; 43% May; 43% Jun;59% Jul; 68% Aug; 40% Sep;9% Oct; 9% Nov; 6% Dec		N/A

Sources: 3) USAID (2016): Demographic and Health Survey, 4) FAO Food security indicators



# Data

Indicator	Male	Female	National
Farm data			
Total farm size (acres)	5.5	3.7	N/A
Coffee farm size (acres)	3.0	2.8	N/A
Other main crops	69% Bananas 49% Beans 34% Maize 30% Cassava 10% Avocado 5% Mango 5% Sweet potato	68% Bananas 48% Beans 41% Maize 27% Cassava 7% Avocado 4% Mango 4% Sweet potato	N/A
Livestock	46% Pigs 45% Chickens 32% Cows 28% Goats 17% None	56% Pigs 37% Chickens 33% Goats 16% Cows 15% None	N/A
Finance & Technology			
Phone ownership	84%	89%	N/A
Function phone ownership	8%	20%	N/A
Bank account	35%	36%	0.69 (Owner of a bank account or used a mobile money service in the past year) * 2
Loans	39%	31%	N/A
Loan source (% of those that borrowed)	24% Informal lender 16% Bank 16% MFI 13% Friend 11% Savings group	33% MFI 23% Cooperative 17% Bank 10% Informal lender	N/A
Loan purpose (% of those that borrowed)	39% Investment in farm 32% School fees 13% Household expenses	36% School fees 23% Household expenses 23% Investment in farm	N/A

Sources: 2) World Bank (2017): Global Findex;



## Data

Indicator	Male	Female	National
Farm data			
Coffee tree density per acre	417	391	N/A
Coffee sold	85% Kiboko 8% Fresh cherries 7% FAQ	79% Kiboko 17% Fresh cherries 2% FAQ	N/A
Equipment	73% Weeding tools 50% Pruning tools 39% Tarpaulin 34% sprayers	72% Weeding tools 39% Pruning tools 37% Tarpaulin 9% Sprayers	N/A
Inputs	32% Agrichemicals 27% Seeds 26% Medicine for livestock 18% Fertilizer 14% Seedlings 13% Maintenance for equipment 3% Animal fodder 31% None	19% Medicine for livestock 17% Agrichemicals 12% Seeds 11% Fertilizer 8% Maintenance for equipment 4% Animal fodder 1% Seedlings 52% None	N/A
Coffee activities done on farm	72% Weed/prune 68% harvest 61% plant 57% prepare land 48% dry 30% dig trenches 24% Market 20% apply agrichemicals 16% apply fertilizer	71% Weed/prune 51% prepare land 56% harvest 48% plant 41% dry 31% dig trenches 23% Market 16% apply fertilizer 11% apply agrichemicals	N/A
Coffee labor hired	53% Harvesting 45% Land preparation 39% Planting 30% Post harvest 17% digging trenches 30% no labor	43% Land preparation 37% Harvesting 31% Planting 23% Post harvest 17% digging trenches 39% no labor	N/A



# Data sources

	Data categories	Data collection method	Primary data source(s)	Historic (frequency)	Forward-looking	Key issues	Sensitivity analysis
Agronomic assumptions	Productivity	Primary data collection, interviews with Bulamu Master Trainer	Master Trainer Bulamu	Annual	2019-2028	Self-reported data; Based on assumptions; PDC data large range	
	Quality	interviews with Bulamu Master Trainer	Master Trainer Bulamu	Annual	2019-2028	Self-reported data; Based on assumptions; PDC large range	
	Price	Primary data collection, interviews with Bulamu Master Trainer	Master Trainer Bulamu	Annual	2019-2028	Self-reported data; Based on assumptions; PDC data large range	YES (coffee)
	Labor costs	Primary data collection, interviews with Bulamu Master Trainer	Master Trainer Bulamu	Annual	2019-2028	Self-reported data; Based on assumptions; PDC data large range	
	Input costs	Interviews with Bulamu Master Trainer	Master Trainer Bulamu	Annual	2019-2028	Self-reported data; Based on assumptions; PDC large range	YES (Pigs)
	Other costs	Interviews with Bulamu Master Trainer	Master Trainer Bulamu	Annual	2019-2028	Self-reported data; Based on assumptions; PDC large range	
SDM assumptions	Scale	The data request sheet was filled in during interviews with Bulamu management.	Bulamu management	Annual	2019-2028	Single data source; Self-reported data; Mainly based on assumptions	
	Overhead costs	Interviews with Bulamu management and information from their accounting books.	Bulamu management and accounting books	Annual	2019-2028	Single data source; Self-reported data; Mainly based on assumptions	
	Service specific costs	Interviews with Bulamu management and information from their accounting books.	Bulamu management and accounting books	Annual	2019-2028	Single data source; Self-reported data; Mainly based on assumptions	
	Service specific revenues	The data request sheet was filled in during interviews with Bulamu management.	Bulamu management	Annual	2019-2028	Single data source; Self-reported data; Mainly based on assumptions	
	Adoption & loyalty rates	The data request sheet was filled in during interviews with Bulamu management.	Bulamu management	Annual	2019-2028	Single data source; Self-reported data; Mainly based on assumptions	
	Commercial margins	Interviews with Bulamu management and information from their accounting books.	Bulamu management and accounting books	Annual	2019-2028	Single data source; Self-reported data; Mainly based on assumptions	



# Key assumptions for farmer analytics

	Baseline	Segment 1	Segment 2	Segment 1 Cert	Segment 2 Cert
Total farm size	2	1.5	5	1.5	5
Coffee farm size	1.6	1.25	3.5	1.25	3.5
Tree density	400	400	440	400	440
Max coffee productivity	4	8	8	8	8
% sold to Bulamu certified	0%	0%	0%	100%	100%
Maize farm size	0.4	0.25	1	0.25	1
Maize productivity	10	15	13	15	13
Banana density	50	100	110	100	110
Banana bunch weight	20	33	33	33	33
Pigs at start	2	2	5	2	5
Cows at start	0	0	1	0	1
Labor	No	No	Yes	No	Yes
Crop protection	No	Yes	Yes	Yes	Yes
Animal feed	No	No	Yes	No	Yes



# Key assumptions for SDM operator analytics

	Year 1	Year 10
Exchange rate	3,661 UGX / 1 USD	3,661 UGX / 1 USD
Scale (# farmers)	3,039	11,918
Scale (# of famer organizations)	115	453
Scale (# of DC's)	6	23
Loyalty rate (segment 1)	25%	70%
Loyalty rate (segment 2 + large farms)	50%	70%



# Annex IV: Glossary

This section of the annex includes an overview of the standard glossary terms used in the SDM analysis



# Standard glossary (1/2)

Acronym	Meaning
<b>Assets (farmer segmentation)</b>	Minimum requirements for assets include possessions that a farmer needs prior to joining an SDM, e.g. land, financial resources.
<b>Attitude (farmer segmentation)</b>	Minimum requirement for attitude describes the way a farmer should feel towards joining the SDM, e.g. eager to learn, adopt new practices
<b>Baseline</b>	Group of farmers used as primary reference in analysis for comparison with segments of farmers in the model
<b>Behavior (farmer segmentation)</b>	Minimum requirements for behavior describes how the farmer acts, often attested for by government officials or elderly, e.g. trustworthiness
<b>SDM operator/partner</b>	The person(s) responsible for the facilitation of the SDM case study on behalf of the investor and / or service provider
<b>Case report</b>	A report on one of the SDM case studies
<b>Case study</b>	An in-depth analysis of an SDM
<b>Donor</b>	Organization that provides (co-) funding but is not part of the SDM
<b>Drivers</b>	Variables (revenue, cost, success) impacting the viability of the model
<b>Economic sustainability</b>	The viability of the SDM in economic terms: the extent to which it benefits farmer, investor and service provider
<b>Enabling Environment</b>	Combination of institutions, infrastructure an regulatory environment that surrounds the SDM
<b>Entities</b>	Those organizations/businesses that are set up to provide services to farmers
<b>Farmers Groups (FG)</b>	Form in which farmers are organized (e.g. cooperatives, farmers aggregation, farmers organizations or other terms)
<b>GAP</b>	Good Agricultural Practices - codes, standards and regulations developed to codify agricultural practices at farm level
<b>IDH</b>	Sustainable Trade Initiative
<b>Investor</b>	Organization that invests (financial) resources into the SDM
<b>Key Economic Indicators</b>	The most important outcome variables to the SDM (e.g. change in farmer loyalty, change in farmer productivity)
<b>KPI</b>	Key Performance Indicators



# Standard glossary (2/2)

Acronym	Meaning
<b>Learning Questions</b>	Those questions that drive the analysis of the SDM; the key things IDH or the case partner wants to know out of this specific case
<b>Loyalty</b>	The percentage of total farm production volume sold by the farmer to the buyer in the SDM
<b>NGO</b>	Non-governmental organization
<b>P&amp;L Analysis</b>	A profit and loss statement summarizing the main revenues, costs and expenses incurred during a specific period of time during SDM operations
<b>Remote data collection</b>	The iterative process of collecting readily available SDM data from the SDM Operators, both before and after the field trip
<b>ROI</b>	Return on Investment
<b>SDM Database</b>	Collection of aggregated data from all case studies, with the aim to identify broader lessons long-term trends
<b>SDM Snapshot</b>	Overview of SDM objectives, Theory of Change, entities and services
<b>Segment (Farmer-)</b>	A group of farmers that is a sub-set of the total population within an SDM, sharing certain characteristics
<b>Sensitivity Analysis</b>	Analysis to determine how different values of an independent variable impact a particular dependent variable under a given set of assumptions
<b>Service Delivery Model (SDM)</b>	Supply chain structure which provides services such as training, access to inputs and information to farmers in order to increase their performance and sustainability
<b>Service Provider (SP)</b>	Organization that delivers one or more services (e.g. training, inputs, access to finance) to the farmer
<b>Services</b>	List of services to be delivered to farmers in order to attain SDM objectives (e.g. Certification, crop diversification, training)
<b>Theory of Change</b>	Overview of the process of change of the SDM towards achieving the desired outcomes
<b>Tool</b>	An Excel-based tool used to model an SDM's economic sustainability (P&Ls) for the farmer, service provider, and investor.



# Case specific glossary

Acronym	Type	Meaning
<b>DC</b>	Depot Committee	Collection of farmer groups that is the interface with the with buyer
<b>FAQ</b>	Fair to average quality	Coffee after it has been hulled but before it has been graded
<b>FMS</b>	Farmer Management System	An IT system that creates a database of collected farmer information
<b>HH</b>	Household	People living together under one roof
<b>PPI</b>	Poverty Probability Index	Poverty measurement tool that consists of 10 questions on household that can measure probability a household is in poverty
<b>ToT</b>	Training of Trainers	Model of training in which a group of trainers are trained to train others
<b>Kiboko</b>		Coffee in dried cherry form

