



the sustainable  
trade initiative

# From Smallholder to Small Business

Private sector insights on service delivery  
models that boost profitability and  
improve farmer livelihoods

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## Glossary

### *Farm dynamics*

Changes in farm production systems and farm investments as well as the reasons for, and patterns of, such changes.

### *Farm-gate price*

The price excluding costs for shipping, storage, marketing, and profit margins of the involved companies.

### *Off-taker*

The party that is buying the produce of the smallholder farmers.

### *Outgrower model*

A contractual relationship between smallholder farmers and a company, in which smallholder farmers receive inputs and technical assistance. The purchase of their crop is guaranteed subject to meeting pre-defined standards, and smallholder farmers typically receive a pre-agreed percentage of the final sales price of the product.

### *Service delivery model (SDM)*

The mechanisms or structures in which support services are channeled through the supply chain to improve performance and value creation. Types of services include training, inputs, financial services, markets and value added services.

### *Side-selling*

When a producer has committed to selling to a particular off-taker, but breaks that commitment to sell to someone else.

### *Smallholder farmer*

A smallholder farmer is generally defined as farming seven hectares or less, although this may differ per crop and country. Other indicators that determine whether a farmer is a smallholder are market orientation, labor input, level of income and type of farming system.

## Preface

The smallholder farmer is at the heart of the economic transformation of African agriculture. As demand for agricultural products rises, partnering with smallholder farmers offers agribusiness companies significant opportunities. For this to succeed, we need to improve the profitability of smallholders and their integration into value chains, and to build economically viable service models.

How to reduce side-selling? How to viably ensure smallholders have access to quality seeds, fertilizer, information and financial services? How to aggregate small land parcels to create better scale for production? These kinds of practical, commercially-driven questions are now being asked by pioneering companies and farmer organizations, but they tend to be addressed in isolation. This we need to change. To make large-scale changes, we need to help farmers innovate and adopt best practices.

To answer these questions and create lasting change, IDH has launched a number of activities to fill the knowledge gaps. In partnership with NewForesight and KPMG we have developed a tool that analyzes the economic sustainability of a service delivery model across sectors and geographic locations. The insights collected are used to populate a database that allows value chain players to gauge their cost-effectiveness and better understand how their performance could be improved. Grow Africa and IDH have partnered to support companies and farmers in harvesting opportunities and addressing challenges, through convening the Smallholder Working Group. This network of remarkable people at the heart of businesses and farmer organizations works directly with smallholders. The group examines concrete challenges faced by its members, and then taps into their collective knowledge and experience to highlight and share emerging best practices. And together with Dalberg, RootCapital, Rabobank and IFC, IDH is facilitating a working group and research on financial structures that give farmers access to funds for much-needed rehabilitation and renovation of their farms.

This paper offers a first set of insights distilled from the knowledge of leading practitioners and partners

on how to work effectively with smallholders in service delivery models. We still have plenty more questions to unpack – harnessing ICT, accessing affordable finance, delivering training, gender differentiation, aggregation models – so please join us if you too are ready to get your boots muddy. We believe that through collaboration and knowledge sharing, smallholders can thrive, and companies can profit.



Joost Oorthuizen  
*Executive Director, IDH*

A stylized, handwritten signature in black ink, consisting of several fluid, overlapping strokes that form a recognizable name.

## Introduction

In Africa, 90% of agricultural production is carried out by around 33 million smallholder farmers. The majority of smallholder production is driven by subsistence farming, with multiple constraints to commercializing smallholder production. However, the globally increasing demand for food production creates large opportunities, and urgency, for the private sector to work directly with the smallholder supply base to secure supply of agricultural commodities, especially to serve growing domestic and regional African markets.

Socially inclusive business models, in which the private sector works with their smallholder supply base, have tremendous development potential. They can create shared value for companies, producers and consumers alike, with economies of scale lowering risks and costs. They can also provide opportunities for farmers to become more productive and profitable by capturing and adding value to their products.

However, as new trends emerge in the development of socially inclusive business models, in some cases smallholders are seen as “suppliers”, working solely to fulfil the obligations of a contract. In these instances, off-takers often find their supply chain is unsustainable or unreliable. Farmers on the other end struggle to continue to supply cash crops, and are unable to transition into commercial farming. They often have a range of unmet household needs; such as food security, payment for school fees and healthcare, and are exposed to uninsured lifecycle risks that often lead to increasing indebtedness.

Achieving a holistic farming system in which smallholder farmers are well embedded, able to uphold their contractual obligations and engaged in a mutually profitable relationship with off-takers and investors, therefore requires a deeper understanding of smallholder farm dynamics and the services available. Increasing the productivity of smallholders through technical assistance, inputs and finance is starting to be understood as an integral piece of the overall profitability of the off-taker. If a smallholder farm is more viable, farmers are better able to make use of services delivered by an off-taker effectively, as well as to repay them without default. They also potentially have

more resources (time, effort and funds) to invest in the contract crop, because their other needs are adequately met.

Although access to inputs and support services is seen as the way forward for successful smallholder inclusive business models, many businesses are struggling to set up service delivery models for farmers as clients. Therefore, this publication was developed to create a common understanding, and share some lessons from front-running agribusiness companies working with smallholder farmers across sub-Saharan Africa, as they “learn by doing”. These cases and strategies have emerged from the Grow Africa – IDH Smallholder Working Group (SWG), which organizes private sector learning and engagement on topics relevant to the day-to-day operations of businesses working with smallholders and IDH’s wider network.

The publication begins by setting a common understanding of service delivery, with case studies from companies actively working in the field. This is followed, in chapter three, by how to create insight into the economic sustainability of such service delivery models. The chapter also outlines an efficiency tool, developed by IDH, which helps farmers and the private and public sectors to evaluate their return on investment (when part of an SDM or investing in an SDM). Chapter four shares examples of some of the key challenges that must be overcome on the ground when operating an SDM, such as side-selling, ensuring there is access to finance for smallholders, and aggregating land to enable larger-scale commercial production. In our conclusions, we summarize how different types of interventions can drive innovation in service delivery models, eventually leading to better farmer livelihoods. We also raise some additional questions that are still to be addressed.











# Chapter 1

## Service Delivery Models

Many public and private investors are investing in so-called “service delivery models” with the aim to improve productivity and profitability. What do we know about those models? When do they work and for whom?

**In this section, we look at these service delivery models in depth, and discuss:**

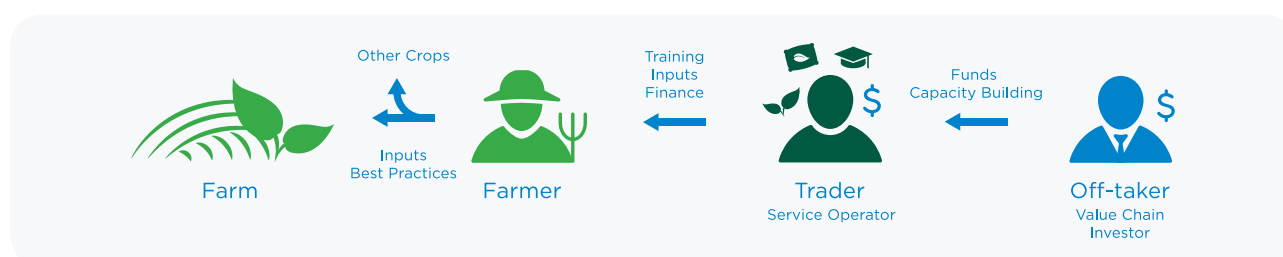
- What precisely is a service delivery model?
- What types of services are provided?
- What are the different models and when are they used?
- What are the risks and benefits of different models for off-takers and smallholders?
- What are key challenges when operating a service delivery model?
- Several examples of innovative service delivery models, which give concrete insights into front-runners.



## 1.1 Making service delivery models work from farmer to off-taker

### 1. What are Service Delivery Models?

Service delivery models are the mechanisms or structures in which support services are channeled through a supply chain to improve performance and value creation. Off-takers sometimes invest in weak value chains, offering services to farmers as a means to secure the required volume and quality of supply. Value chains are typically weak if they include many smallholder farmers, who often face challenges in meeting the increasing demands of off-takers and in making the transition from subsistence farming to market-oriented production.



### 2. What are the types of services supplied?

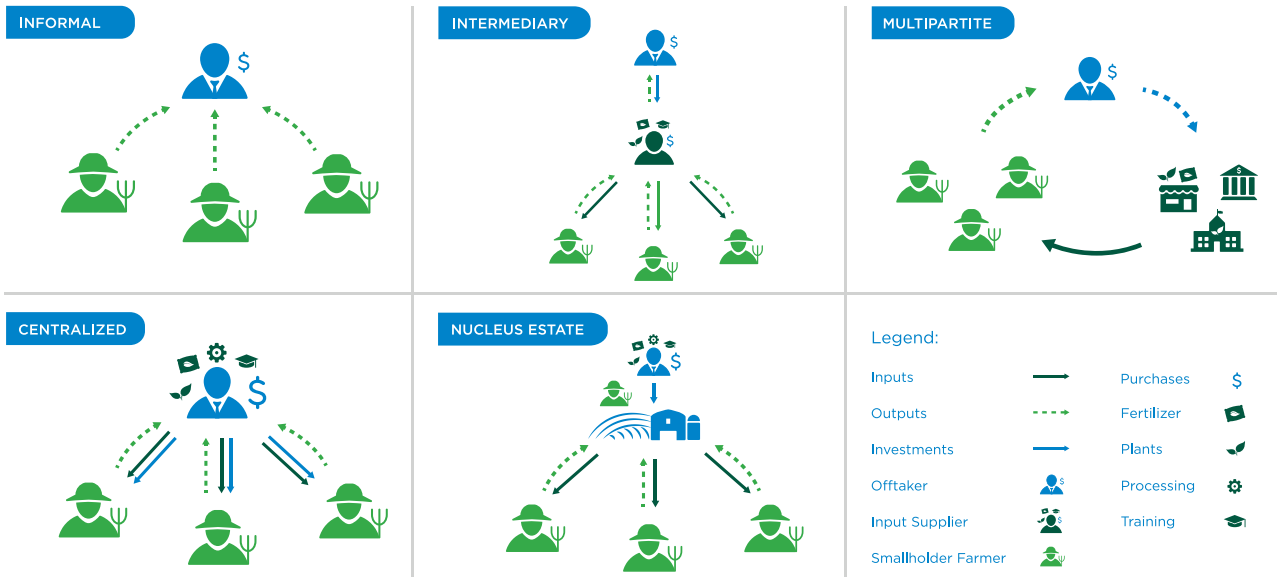
The types of services that can make up a service delivery model include:

- **Training** – quality and productivity training, as well as training on farm management practices, such as record keeping and business planning.
- **Inputs** – planting seed, fertilizer, crop protection products, pesticides, insecticides.
- **Financial services** – inputs on credit, cash advances, pre-harvest finance.
- **Marketing** – bulking of produce and creating access to markets.
- **Value adding services** – services that add value to the product of smallholder farmers, such as mechanization (use of tractors), processing, post-harvest handling and storage services.

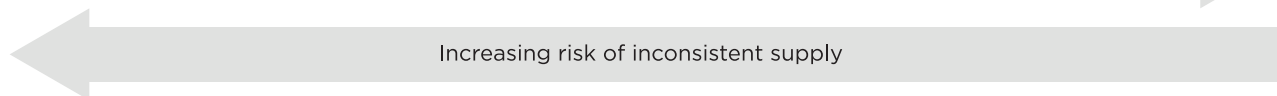
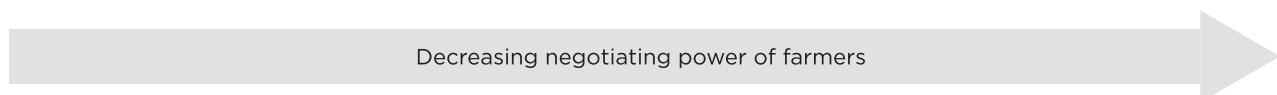
Training, inputs and farmer credit are interdependent, as extension and training informs and affects which inputs are used, which is in turn shaped by access to credit. Hence, ideally, only smallholder farmers who have adequate knowledge of input usage would also get access to inputs on credit. These services are often delivered together (bundled) to optimize their effectiveness. There have been some successes, which will be discussed in this paper. However, despite significant investment in service delivery, there is scant evidence on proven models or mechanisms, and few established benchmarks and best practices.

### 3. What are the different models of service delivery and when are they used?

The different models of service delivery are grouped into broad categories according to the relationship between off-taker and farmer, the type of service delivery model, and the negotiating power of farmers.



Informal	Intermediary	Multipartite	Centralized	Nucleus-estate
No relationship between farmer and off-taker	Off-taker has contract with intermediaries, who sign contracts with large number of farmers	Farmer signs contract with joint venture between off-taker and a local entity	High off-taker-farmer coordination with direct purchase of supply by off-taker from farmer	Combination of direct contracting of outgrowers with centralized production and processing (estate)
No services provided	Off-takers subcontract intermediaries to provide services	Service delivery via third parties	Off-taker provides services directly	Off-taker provides services directly



Source: modified from Technoserve, 2011



The model that has been adopted in the value chain takes into account the trade-off between increasing investment by the off-taker and increasing risk of inconsistent supply. Typically, there is higher off-taker investment in service delivery when end-market requirements are complex and the quality of local input markets is poor. For example, specialized export commodities, such as fine beans, mangoes and malting barley, require specific seed varieties, high-quality fertilizer and other agrochemicals to achieve off-taker requirements. These inputs are often not available on the open market; it is therefore in the interest of the off-taker, if he is interested in specialized commodities, to invest in providing access to these inputs. Alternatively, in captive markets, where there are limited outlets for the farmer's goods, it is in the interest of both off-takers and farmers for inputs to be supplied on credit, with the cost recouped through the farm-gate price. Or, in open markets, where side-selling is high, off-takers mitigate their risk by transferring it to financial institutions, which facilitate input credit for farmers.

The degree of influence that a smallholder farmer has on the business decisions of the off-taker, particularly around farm-gate price, generally decreases as the relationship tightens. For instance, nucleus estate models often require a purchase monopoly, which undermines local negotiating power. However, there is a trend towards investments with both high financial and social returns, which actively cultivate fairer relationships – for example, in the land aggregation cases of Value Farms and Phata Cooperative (see pages 60 and 62 respectively). In some cases, price negotiation with buyers is being done on behalf of farmers, together with building-in an upside for farmers, where they have an equity stake and can benefit from the profits of a processor or farmer association<sup>1</sup>. These practices support the transition from subsistence to commercial agriculture.

#### 4. What are the risks and benefits of service delivery models for off-takers and farmers?

The risks and benefits for both off-takers and smallholders within each type of service delivery model are listed according to type of model:

	Informal	Intermediary	Multipartite	Central/Nucleus
Off-taker	<p><b>Risks:</b> No control over supply</p> <p><b>Benefits:</b> No costs involved, fully flexible to make changes around who to source from</p>	<p><b>Risks:</b> Dependent on quality of intermediary, risk of misunderstandings with smallholders due to indirect relationship</p> <p><b>Benefits:</b> Service supply is outsourced, not core activity of the off-taker</p>	<p><b>Risks:</b> Can be difficult to coordinate, different agendas for different stakeholders</p> <p><b>Benefits:</b> Specialized service supply</p>	<p><b>Risks:</b> High costs involved, low return on investment due to side-selling</p> <p><b>Benefits:</b> Direct control over supply chain</p>
Farmer	<p><b>Risks:</b> No agreement or guarantee for off-take of their produce, no access to services</p> <p><b>Benefits:</b> Free to sell to anyone</p>	<p><b>Risks:</b> Dependent on quality of services of the intermediary – quality of services can be low, no direct contact with off-taker, which can result in lack of understanding of requirements of off-taker</p> <p><b>Benefits:</b> Access to services</p>	<p><b>Risks:</b> No clear division of roles on service provision between multiple parties, risk of difference in agendas between multiple parties</p> <p><b>Benefits:</b> Specialized service supply (each party can act on its strengths)</p>	<p><b>Risks:</b> Locked into supply chain of off-taker</p> <p><b>Benefits:</b> : Centrally focused service supply, direct off-take of the produce, Off-taker has on-the-ground experience, vested interest in the business since off-taker also runs a nucleus farm</p>

## 5. What are the challenges faced in service delivery models?

Significant investment in delivery of services to smallholder farmers does not always result in better crop supply. Challenges include:

- **Side-selling by farmers** – off-takers are providing services to smallholders to support them in improving their production. In many such service delivery models, the smallholders are delivering their produce to pay for services that they received on credit. When the smallholders decide to sell to someone else and do not pay for the services received, this creates major challenges for the off-takers, since they are not able to fulfill their contracts with their buyers and are making a loss on the services they provided.
- **Access to finance** – smallholders have very limited access to formal finance, which results in fewer possibilities to invest in their land, and also affects the business of off-takers. Some off-takers therefore take over the role of “financer” in the absence of financial institutions, since it is such a crucial element for both their business and the smallholder business.
- **Smallholder land aggregation** – plots of land for agriculture are getting smaller and smaller due to inheritance of land. This is creating challenges for those operating service delivery models, as service operators need to serve many small scale producers, which increases costs. Since such small plots (in many cases) do not bring the farmers a decent income, they are not able to invest in their land. Therefore, smallholder land aggregation can be beneficial for both off-takers and the smallholder land holdings.
- **Ineffectiveness of service delivery** – for instance, due to diversion of inputs to subsistence crops
- **Poverty** – service delivery models tend to focus on the contract crop, but smallholder farmers manage a whole farming system that includes subsistence crops for own consumption and sale. When farmers cannot afford to feed their families adequately, production of contract crops is also affected.
- **Inequality** – outgrower schemes can lock smallholder producers into relationships where they bear an unequal burden of cost and risk with limited returns. Unequal bargaining power, in particular, results in farm-gate prices being forced down and ultimately leads to under-investment in their farms. Where they fail to meet commitments, farmers are frequently locked out of future engagement with specific off-takers.

Some off-takers are working on models to address these challenges by better understanding and meeting the demand for services by smallholders and creating more equal relationships. This is expected to increase the consistency of volume and quality of supply available to off-takers, and ultimately to secure the value chain.

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<sup>1</sup> For example, AgDevCo’s investment in Empresa de Comercialização Agrícola Ltd Mozambique, and africaJUICE, a joint venture company in Ethiopia exporting Fairtrade-branded juice.



## 1.2 Case studies of different models



### 1. THE ECOM CASE (GHANA)

*Setting up an innovative model for access to financial services for smallholders to become more commercially viable, and creating a profitable business for Ecom*

#### About the business

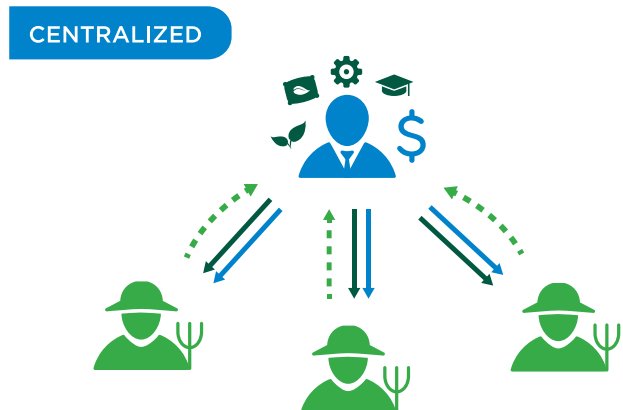
Ecom Agro-industrial Corp. Ltd, a global commodity trading and processing company specializing in coffee, cotton, and cocoa, is developing a pioneering model of financial services delivery. Ecom is an origin-integrated company, purchasing directly from farmers and processing products for export, with operations in more than 30 countries worldwide.

## About the Service Delivery Model

Ecom has developed a business model to smooth out cycles of trading company profits, as well as to reduce the risk of working with smallholders who are often highly indebted and have a low resource base. They aim to unlock farmers from traditional outgrower contracts, and enable farmers to access financial services to reduce indebtedness and become more commercially viable. Off-takers do provide financial services to a selection of their farmer base, but such finance is focused on the contract crop, not other financial needs.

As part of its core business strategy, Ecom is developing a pioneering model of service delivery, to improve the long-term profitability of farmers. Certification hasn't changed poverty levels, and production will only be maintained if farming is more sustainable and adds more value to the farmers. The new service delivery model changes the way Ecom views the farmer - from being purely a supplier of cocoa, to being a creditworthy entity beyond their primary product.

From 2010-2014, Ecom provided marketing, advisory, input supply and community development services to farmers, but found that yields did not increase substantially because of poor access to finance. The new model will establish an independent company to provide financial services to farmers, thereby delinking financial service delivery from sourcing. Farmers will continue to receive the original services but will have access to a wider range (including insurance, savings and longer-term loan products). This inclusive all-round package is aimed at supporting farmers to diversify production and increase their commercial viability. Ecom expects to have a comparative advantage over other financial institutions because they are able to reach a significant number of farmers; they already have structures in place in rural areas; and they have long-standing relationships with the farmers.





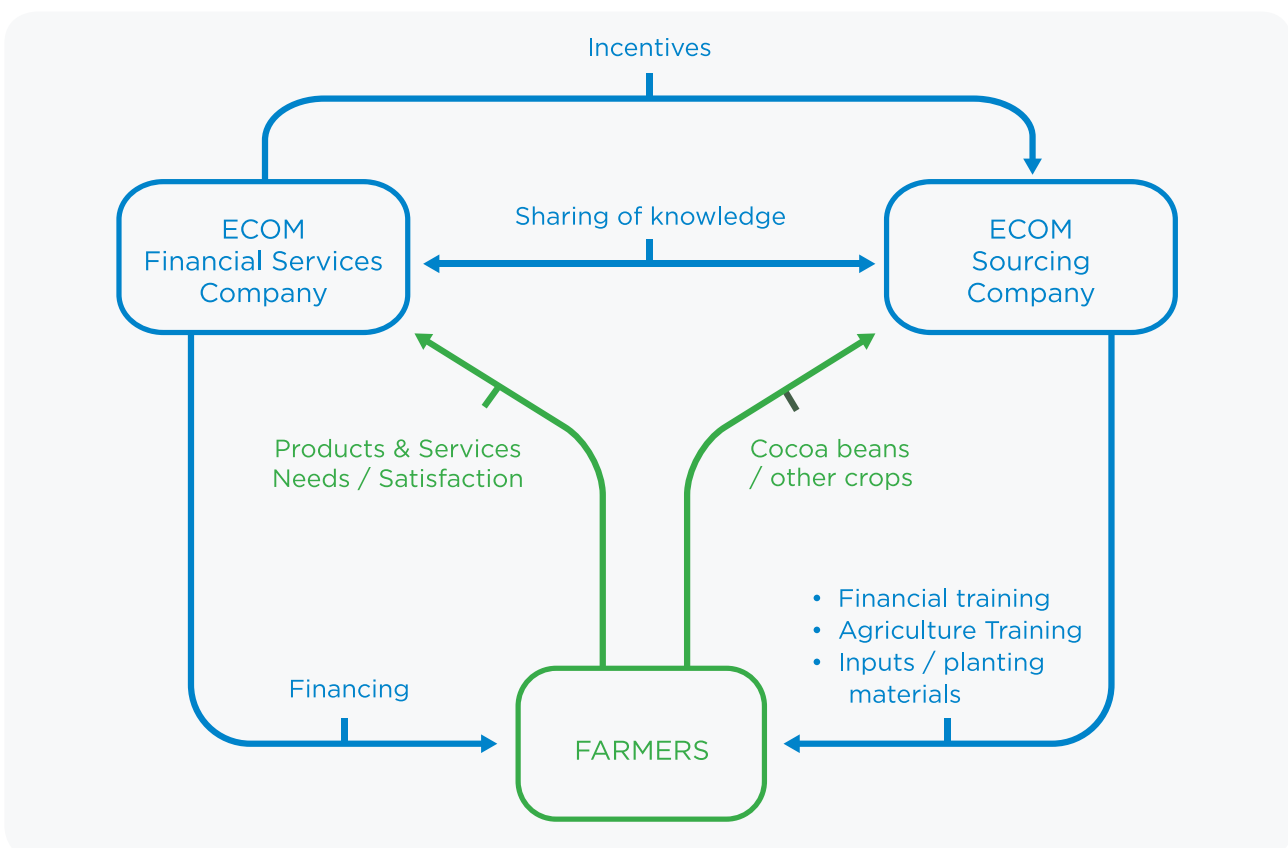
## Main sustainability issues

Ecom is currently focusing on product development that will address the main threats to sustainability. Insurance products for life events (death, accident, work disability, terminal illness) will be introduced first, followed by savings for smaller life risks. A loan portfolio will support farmer cash-flow management to facilitate input finance for cocoa and other crop production. Financial literacy training will be provided to reduce likelihood of adding to indebtedness.

Ecom predicts that increased access to financial services by farmers will increase productivity, which means more cocoa will be available for purchase. Farmers will not be contracted by Ecom and will be free to sell to any off-taker, but are likely to continue to supply to Ecom because of the range of benefits provided (premium prices for crops, links to chocolate makers, etc).

Farmers will make repayments in cash rather than through commodities, which reduces the credit risk for Ecom. Farmers who repay will have access to further benefits, to create a positive experience rather than a negative one of over-indebtedness. The sourcing company will recommend creditworthy farmers to the financial services company for a fee, which creates a clear financial incentive between the two companies.

There will be a significant sharing of knowledge between the farmer and Ecom's sourcing company:



Source: Investing in Financial Inclusion. Bringing finance solutions to the farmer. Presentation by Ecom at Smallholder Working Group meeting, February 2015

## Risks and Benefits

For smallholder farmers	
Benefits	Risks
Partner with good knowledge base of farmers/context	Overdependence on Ecom
Timeliness of delivery and good product fit	Possibility of high expected return/over indebtedness
Credible long-term partner	Lack of financial literacy
For Ecom	
Benefits	Risks
Financing de-linked from procurement	Changing policy and regulatory environment
Farmers able to access financial services and invest in their farms	Clients with the same exposure profile - risky portfolio
Profitable business with social impact	"First mover" risks

## Challenges

- How to set the threshold for profitable gain in a way that is fair to farmers. For instance, in some countries there is a cap on interest rates, but this is not yet in place in Africa, which can lead to unethical practices.
- How to manage the risk of farmers becoming locked into the system for multiple crops.

The model is still under development. It will be piloted with smallholder cocoa farmers in two districts in Ghana in early 2015 and scaled up quickly to around 100,000 farmers.





## 2. THE OLAM CASE (COTE D'IVOIRE & MOZAMBIQUE)

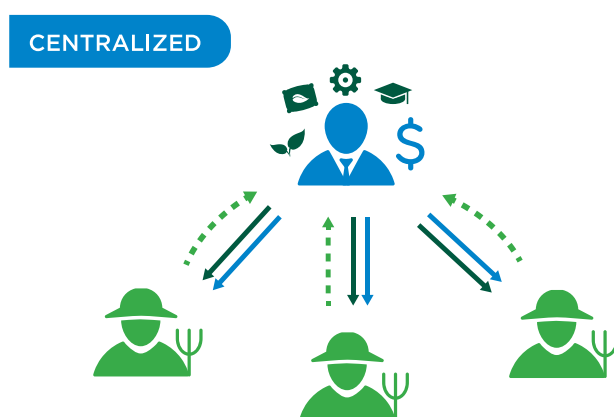
*Increasing supply chain efficiency by direct linking with smallholders, resulting in better incomes for smallholders and more secure and better quality business for Olam*

### About the business

Olam International is an agribusiness operating from seed to shelf in 65 countries, supplying food and industrial raw materials to customers worldwide. Olam works with cocoa, coffee, cashew, rice and cotton, among other commodities.

## About the Service Delivery Model

The cashew nut industry is highly scattered, and is characterized by multiple middlemen who purchase from farmers and sell to buyers. The IDH Sustainable Cashew Initiative is a multi-stakeholder partnership that aims to create long-term business links between all actors in the supply chain to stimulate the quality, quantity and sustainability of the cashew production system. Traditional trade relations are replaced by sustainable supply chain relations between processors and farmers and other actors. The initiative aims to improve efficiency in the chain, by purchasing directly from smallholder farmers.



The project area was mapped to quantify the number of farmers and their geographical location. The area was divided up in terms of operations; warehouses were set up to provide high-quality storage facilities close to production sites to reduce post-harvest losses. Farmers have been aggregated into groups to create a network of farmers, each with a clear contact point and linked to a warehouse. Producers will be represented at local, regional and national levels.

The project delivers services to farmers, including in-kind credit, training on post-harvest techniques (particularly storage), supply of transport to warehouses, supply of storage facilities and jute storage bags to reduce losses. During the first phase, saplings were provided through the Cashew Nut Board.

The initiative has developed and implemented a management information system called 3S – Sustainable Supply System. The 3S traces the quality and quantity of cashews from farmer to retailer. With these new levels of traceability, Olam is able to benchmark the production of different farmer groups, identify their specific needs, and offer targeted trainings and inputs so that farmers can improve the quality of the cashew<sup>2</sup>. The quality requirements are very strict and highly dependent on humidity. Farmers are registered and individual performance is tracked. If farmers deliver cashew below the quality threshold, this will show up in the database.

Training on traceability, commercial issues, child labor and organization was provided in the pilot year (2012-2013 in Cote d'Ivoire, 2014-2015 in Mozambique). The 3S provides insight into where production needs to be improved, so that further training/support can be given.

The 3S has been installed in Cote d'Ivoire, where 25,263 farmers are linked to the system and work is being done to bring about a sustained improvement in production and product quality. In Mozambique, registration of farmers began in 2014, with the majority being registered in 2015.

## Risks and benefits

The perceived benefits of improving supply chain efficiency are:

- **For smallholder farmers** – increased income through higher grade cashew production; increased quality through a range of inputs; and increased farmer liquidity through direct payment on day of purchase.



- **For Olam** – in terms of commercial benefits, Olam is diversifying and reducing risk through use of different models of buying (the proportion of direct purchase is still low, so middlemen are still used in many areas), visibility and reduction of transportation costs to the factory, visibility of quality (through the 3S management information system – see above) and securing volumes. There are also sustainability benefits through the development of long-term, stable trading relations, and improving the quality and the yield of cashew harvests through improved visibility and transparency.

Middlemen purchase a range of crops directly from farmers and provide credit facilities. As there is no contract between Olam and farmers, Olam encourages farmers to sell direct to them through providing services, as well as delivering payment to farmers on the day of sale.

The project is executed in Cote d'Ivoire and Mozambique under increased supply chain efficiency. The reaction from middlemen is yet to be seen in Mozambique, where 266 metric tons of cashew have been purchased directly out of 45,000 metric tons of total national production.

Since the project was established in Cote d'Ivoire in 2012, it has organized 25,263 farmers in farmer groups, and provided training to these farmers in good agricultural practices, with an emphasis on harvest and post-harvest handling and the cultivation and maintenance of cashew trees. At the same time, all farmers were registered in the 3S management information system to ensure traceability and create a feedback loop with Olam. In Cote d'Ivoire, the middlemen have been lobbying against the change in supply chain relationships, but there is protection by a government policy allowing direct purchase to take place.

Since the project started in Mozambique in 2014, more than 1,300 Fairtrade farmers have been organized, trained and linked up with export markets. Processors are guaranteed a more stable supply of better quality produce. Organized farmers negotiate as a group with the local processor, bypassing the intermediaries. Farmers receive a commission for gathering the nuts, plus a bonus for Fairtrade and quality, which provide incentives for further investment by smallholder farmers in the cashew nut chain.

## Challenges

- Farmers are spread over a vast geographic area in Mozambique, which means there are relatively few collection points but multiple points for quality checking.
- There is an overall low quality of cashew nuts, which means that farmers have not been used to receiving a premium for their crop.
- Contract management and collateralization management are not being widely practiced, and changes in buying prices and exchange rates makes it challenging to provide (long-term) credit to farmers.
- The scaling up of direct links between farmer groups will involve setting collection and evacuation points, financing and cash disbursement facilities, and quality checks at each and every farmer location. A minimum number of farmers per group is necessary to ensure that the system will be cost-efficient.

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2. For more information on how 3S supports sustainable links throughout the entire supply chain, visit [www.supply3s.com](http://www.supply3s.com)



### 3. THE UNILEVER TEA TANZANIA (UTT) CASE

*Creating a new impact model for greenfield investment by smallholders leading to new income sources for smallholders and increased tea supply for UTT*

#### About the business

Unilever is a British-Dutch multinational consumer goods company and is the largest tea buyer in the world, purchasing 12% of global production. In 2007, Unilever became the first large-scale company to commit to sourcing all its tea in a sustainable manner, and certified its tea estates in East Africa, as well as third-party suppliers in Africa and other parts of the world. Unilever Tea Tanzania (UTT) is a fully owned subsidiary of Unilever PLC, focusing on tea growing, primary processing and export of black tea.

In 2013, UTT signed a Memorandum of Understanding with the government of Tanzania, through the Ministry of Agriculture, Food Security and Cooperatives, to further develop tea production and manufacturing in Tanzania. This was in line with the ten-year strategy of the national Tea Board and the five-year strategic plan for the transformation of the tea sub-sector developed by the Tanzania Smallholder Tea Development Agency. UTT partners with IDH on the Mufindi Outgrowers (MOG) project to develop the outreach program, and is part of Grow Africa.

UTT owns a 20,000-hectare estate with three factories in the Southern Highlands of Tanzania, of which over 7,000 hectares are being actively preserved as forest, 3,200 hectares are being farmed, and there is potential to expand production by 2,800 hectares. In order to further increase production, the MOG project is looking to expand the supply sources outside the existing estate and has identified around 20,000 hectares<sup>3</sup> of available arable land in surrounding villages, which is not currently being used for tea production and is sufficiently close to the UTT estate.

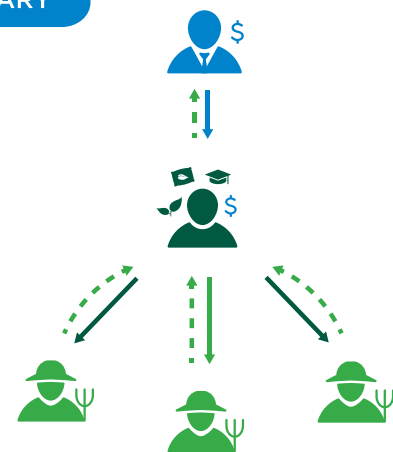
## About the Service Delivery Model

There are several existing farmers' associations in the area. The MOG project will encourage farmers to join associations, which will act as points of contact for service delivery. Services to brownfield farmers are delivered through Farmer Field Schools to provide expertise and extension officers to disseminate knowledge – an approach that draws on successful experiences with 560,000 farmers in Kenya through a project between Unilever, KTDA and IDH.

A company will be established using patient capital finance<sup>4</sup>, to provide extension services to the greenfield farmers, supply transport, and provide inputs on credit. The longer term objective is to give farmers ownership, as well as to secure the economic sustainability of service delivery over time.

The company will initially have farmer representation and will eventually be farmer-owned. The business model for the service company is still under development, but will draw from the already established services company model in Njombe, led by The Wood Foundation and Gatsby Charitable Foundation, with support from the UK Government.

### INTERMEDIARY



## Main sustainability issues

A development project has been established with IDH to work with:

- *Brownfield farmers* – who are already producing tea, to increase yields (from 600kg/ha to 2,000 kg/ha) through access to inputs on credit, better agronomic farming techniques and use of sustainable practices, and through training on complementary skills, such as financial literacy and health, and farming techniques for other crops and enterprises.
- *Greenfield farmers in the surrounding villages* – who are not currently producing tea due to a range of barriers to entry, including a three- to four-year gap from planting to the first economic return (“the valley of death”), lack of expertise and knowledge around tea planting, and lack of access to supply of quality seedlings and inputs.

A significant part of the MOG project is to support greenfield farmers in entering the supply chain. These farmers have expressed an interest in tea production but lack the means to overcome these barriers to entry. Work has started with community leaders to help explain to potential farmers the commitment required for tea farming. A pilot program will start in 2015 in the target villages, to demonstrate the potential of tea production and to build farmers' knowledge of best practices. The plan is to roll the program out into 2,200 hectares of greenfield land in a second phase (2016-2020).

The Tea Board of Tanzania dictates a minimum level of return for smallholder farmers. The MOG project will provide a competitive price to farmers. It will also provide an attractive package that potentially supports farmers to increase yields and quality significantly, which will deliver increasingly higher returns and increase household income over time.



## Challenges

- Overcoming the barriers to entry for new tea farmers, whereby the MOG project provides inputs and services that will not be repaid until after the first economic harvest in three to four years.
- The need for clarification of land ownership to ensure farmers engaging in the scheme have legitimate rights to use the land, as well as compliance with future Rainforest Alliance certification requirements. Some farmers already have land titles; some areas are village land that will be allocated to farmers; some is ancestral land whose title will need to be clarified.
- Economic viability of the farmer-owner service company, which depends on sustained quality and quantity of production by smallholder farmers.
- Securing patient capital to fund the second phase of the development project, which is based on the terms required to ensure maximum profit is transferred to the smallholders. This will help motivate farmers to continue to supply tea, which will in turn ensure the viability of the service company.

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3. This excludes land required for community food requirements, both current and future.

4. With patient capital, the investor is willing to make a financial investment in a business with no expectation of turning a quick profit.





# Chapter 2

## Economic sustainability of Service Delivery Models

Understanding what a service delivery model looks like, which services are being provided, and by whom - these are the first steps to gain more insight into the effectiveness of service delivery models. To be able to make more informed investment decisions, it's helpful to understand the economic viability of a service delivery model, as well as the costs and benefits for farmers, service providers and those in the value chain investing in the model.

### In this chapter we discuss:

- IDH's initiative to develop a simulation tool to assess the economic sustainability of a service delivery model
- The methodology used with the simulation tool
- Lessons learned from using the simulation tool
- Two interesting case studies in which the simulation tool has been used



## 2.1 Why develop a simulation tool?

As the case studies illustrate, public and private partners invest significant levels of funding in service delivery models annually, and each service operator and value chain investor is facing the same questions around effective design. However, until now, companies have been working in isolation to pilot and evaluate performance and impact. As a result, there are no benchmarks for measuring and reporting on success, and there are no proven models or mechanisms available for scaling up. Therefore, IDH has developed a Return on Investment (ROI) simulation tool to support organizations to increase the performance of SDMs through evaluating their cost-effectiveness, scalability and financial self-sustainability. Focusing on assessing the economic sustainability of a SDM is seen as a starting point to bring more transparency into the performance of SDMs.

The simulation tool uses empirical data to predict profitability outcomes from specified investments, and simulates which participants in the supply chain will benefit most, to what degree changes are necessary, and any possible outcomes from modifications. This creates transparency in the effectiveness and efficiency of solutions, to both beneficiaries and investors. The simulation tool can be used to help with forward planning, improvements to an SDM, and effective design of a Monitoring & Evaluation system. It can also be used to summarize lessons learned in relation to the economic sustainability of the model, and in comparison to other SDM case assessments.

At the time of publication, SDM analyses have been carried out on Hanns R. Neumann Stiftung's coffee program in Uganda and the Mars CDC-CVC cocoa program in Indonesia. Details of these cases are outlined in section 3.4 below. IDH is planning to conduct another eight-ten SDM analyses in 2015 to further refine the simulation tool.

## 2.2 How can a simulation tool be used to assess SDMs?

The methodology used in the simulation tool is divided into three main steps:

### 1. Defining the input indicators:

- a. Characteristics of the SDM – the different services delivered through the SDM, who they are delivered by, how they are delivered, and the costs and revenues of the SDM.
- b. Characteristics of the farmer – the type of farm(er) reached through the SDM.

### 2. Assessing the economic sustainability of the SDM at the level of value chain investor, service provider and farmer. A value chain investor is defined as a player that invests financial resources into the SDM operator and guides the initial rollout of the model. The service operator is an entity that delivers one or more services directly to the farmer.

Economic sustainability is defined as an SDM that is:

- i) financially sound, because it has a positive impact on farmer income and the service provider is able to cover costs;

- ii) scalable, enabling it to reach a large number of farmers.

The economic assessment focuses on:

- a. Calculation and comparison of earnings before interest and taxes (EBIT)
  - b. Study of the cash flows by actor (farmer, service provider, value chain investor)
  - c. Study of the reporting impact of the SDM on the average farm
3. **Looking at a dashboard of success factors** – the dashboard provides an overview of Key Performance Indicators, such as the maximum cumulative investment requirement, and the profit generated at farmer level with US \$1 of investment in the SDM. It gives insights into the key drivers of the SDM, as well as highlighting opportunities and risks. The dashboard is designed to give a quick overview of the performance of an SDM, which can be shared by partners for both internal and external discussions.

## 2.3 What lessons can be learned from the use of simulation tools?

Lessons learned by IDH from the initial assessments include:

- The methodology can increase efficiency at sector level within SDMs, particularly when used at scale.
- It is possible to calculate the return on investment at the three different levels of an SDM (farmer, service provider and value chain investor) – although collection of reliable data can be a challenge.
- Although the focus of the approach is on economic sustainability, it is acknowledged that SDMs should also contribute to social and environmental sustainability of a farm, as well as farmer families and communities. In the future development of the simulation tool, more attention will be paid to both social and environmental indicators.



## 2.4 Case studies of SDM assessments

### 4. THE MARS CASE (INDONESIA)

*Increasing farmer productivity through training entrepreneurial farmers to service their neighboring farmers with high end agronomic practices, plant material and inputs to source cocoa*

#### About the business

Mars is one of the world's leading chocolate manufacturers, and employs more than 75.000 associates across 73 countries. Adhering to Mars' Mutuality principle the company aim to create sustainable, lasting benefits for all, and given the increasing global demand for cocoa while yields are declining is driving Mars to build sustainability into their supply chain.



## About the Service Delivery Model

Mars' SDM focuses on four main areas: investment in research around modern farming practices and knowledge, increasing performance at individual farm level, developing an effective and (economically) sustainable business driven outreach mechanism, and transformation of the cocoa industry worldwide through effective partnerships that draw on collective expertise and resources.

The simulation tool was applied to the work Mars is doing to increase performance (yield and quality) at individual farm level. Their aim is to increase farmer incomes, through providing farmers with skills and tools that can be applied on their own farms.

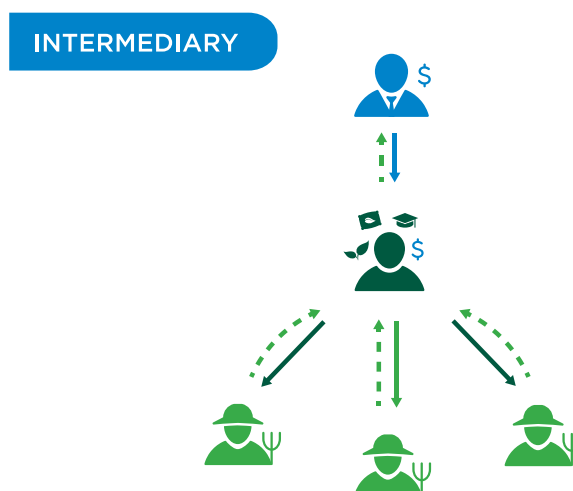
The Mars Academy has been established to manage and monitor the SDM structure. One decentralized support system of CDS's that act as a hub for its' surrounding CVC's has been established in cocoa-producing regions to provide services to thousands of farmers:

**a) Cocoa Development Centers (CDCs)** are demonstration and training/coaching sites, permanently staffed and funded by Mars or one of its trade partners. At the CDC, new interventions, improved plant material and other inputs are scientifically evaluated for their regional suitability and to learn about the effect of local conditions on new farming practices.

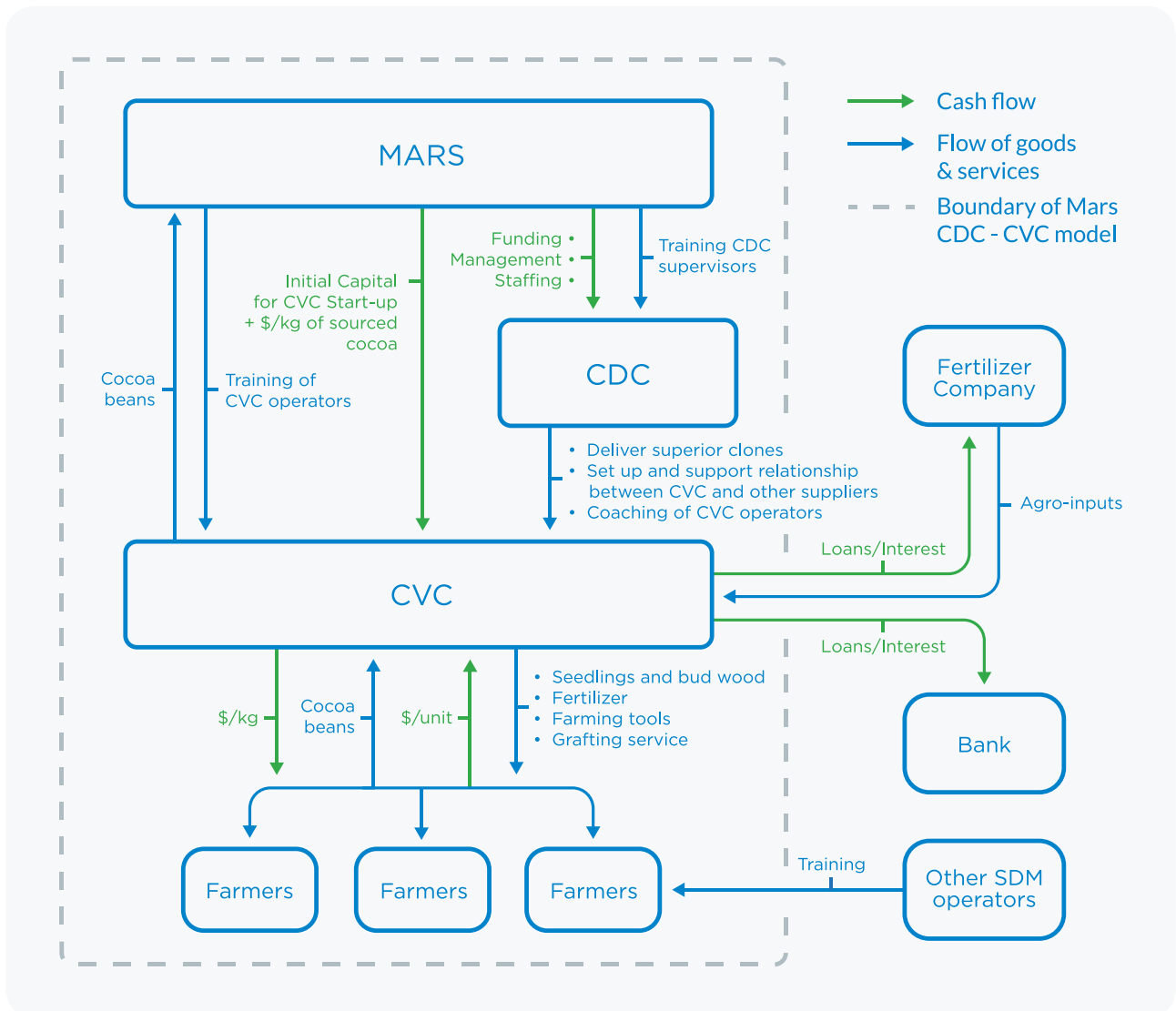
- It is the CVC that demonstrates how an "average" farm can be transformed into a high-yield farm
- It is at the Academy that government agencies, local organizations and companies are then trained to train farmers in good agricultural practices.

**b) Cocoa Village Centers (CVCs)** are businesses located within village communities where local farmers can see best practices in operation, buy superior plant varieties, and get advice. The CVC operators are "Cocoa Doctors" trained by the Mars Academy to provide paid extension services to farmers. The CDCs coach the CVC operators, and monitor the quality of the services provided, as well as supplying the CVCs with plant material and expertise.

One CDC serves around 30 CVCs. Each CVC has a client base of 100 farmers, which means that each CDC has a client base of around 3,000 farmers. Mars targets farmers who have already been trained by third parties, and have high-productivity potential, for participation in their program. Farmers need the capacity to invest in their own farms, which results in a "self-selection" mechanism and is seen as key to increasing productivity. Mars pioneered CDCs and CVCs in Indonesia, and the model is being adopted in other areas, including Côte d'Ivoire, the world's largest cocoa-producing region.



## Overview of services and revenue flow in the CDC-CVC system

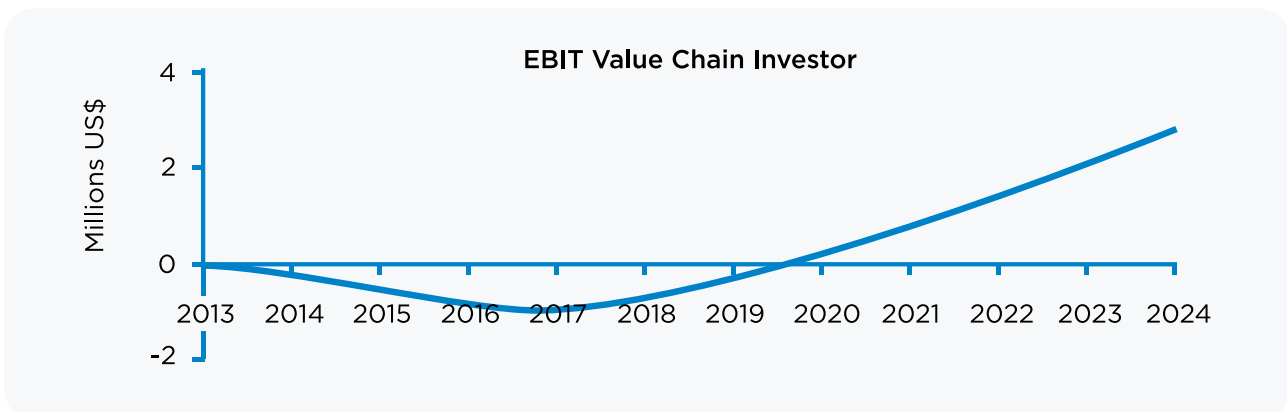


**i) Assessment of economic sustainability**

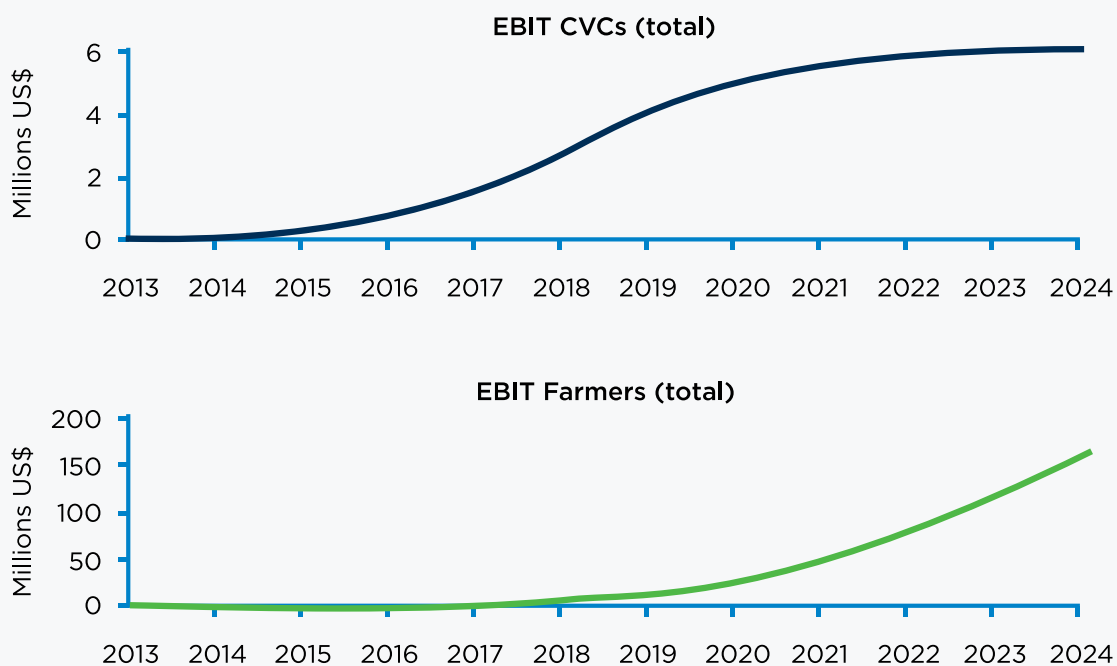
The main revenue and costs drivers for the various actors are identified below:

	Value chain investor	Operator		Farmer
		CDC	CVC	
<b>Investment and operating costs</b>	<ul style="list-style-type: none"> <li>Mars Academy operating costs US \$350,000</li> <li>Variable costs of training Cocoa Doctors US \$1,500 each</li> </ul>	<ul style="list-style-type: none"> <li>Initial investment for CDC establishment US \$52,000</li> <li>Annual operating costs per CDC (staff and land lease) US \$30,200</li> </ul>	<ul style="list-style-type: none"> <li>VCI covers investment costs for CVC infrastructure US \$3,400</li> <li>Operating costs</li> </ul>	<ul style="list-style-type: none"> <li>Farm labor US \$4.80/person/day</li> <li>Fertilizer US \$320 per annum</li> <li>Phyto-sanitary products US \$60 per annum/ha</li> <li>Seedlings or grafting services incl. budwood US \$0.40 per tree</li> <li>Tools</li> </ul>
<b>Revenue</b>	<ul style="list-style-type: none"> <li>Margin of 2% vs buying cocoa from the market</li> </ul>		<ul style="list-style-type: none"> <li>Agro-input sales US \$40/MT</li> <li>Grafting services US \$0.40/tree</li> <li>Cocoa trading US \$20/ton</li> <li>Revenue from own farm</li> </ul>	<ul style="list-style-type: none"> <li>Cocoa sales – farm-gate price <b>based on World Market price</b> (at time of writing: US \$2,400/ton of dry beans)</li> </ul>

These drivers were used to produce an overview of net revenue and EBIT for each actor (see following graphs). The results indicate that Mars would reach a positive EBIT after eight years. However, it would take 12 years for Mars to earn back their initial investments in the SDM. The EBIT of an individual CVC is always positive at the start, as investment cost are mostly borne by the VCI. The EBIT of an individual farmer is positive as well and the farmer earns back his investment in year 4.







## ii) Dashboard

The key performance indicators measured in this project are summarized in the dashboard below:

Key Performance Indicators	Explanation	Result
Maximum cumulative investment requirement	For the total program period (12 years)	US \$4 million
Payback period for initial investment	Initial investment by VCI	12 years
Investment level per kilogram uptake	Total US\$ invested as a percentage of total volume of cocoa traded at farm-gate price	0.8%
Farmer profit per US\$ investment		US \$30
Payback period of farmer's initial investment	Payback of individual farmers may be shorter	8 years
Productivity gain by year 10	Increase in productivity by average farmer at year 10	400%
Percentage of uptake by year 10		60%
Payback period full program	Time required by different actors to recover their initial investment	11 years

## Risks and benefits

A sensitivity analysis indicates areas of opportunity and risk within the SDM, based on key levers and how these could affect performance. There are five key levers in the Mars SDM: farmer productivity, input costs, effective yield of final product, uptake and finance costs. The results indicate that the most important levers are farmer productivity and input costs:

- The key risk for Mars' SDM is that farmer productivity gains do not reach the company's ambitious targets. If these targets could be exceeded, this would be a key opportunity for improving model profitability.
- If input costs rise, the model as a whole remains profitable but the payback period for farmers increases.

## Lessons learned

For Mars, the analysis was very helpful in shaping their thoughts on future performance and viability of the SDM. Based on the insights from the analysis, Mars have since changed their revenue model by starting to source directly from their "cocoa doctors". Without this analysis, such a change in sourcing might not have been made.

### a) Key drivers of success

- The SDM is highly demand-driven and is reliant on self-selection by farmers and CVC operators cherry-picking the farmers with high adoption rates who are likely to establish viable businesses.
- CVC operators target "middle adopter" farmers who need more support and more time to rehabilitate their farms as well as "early adopters" whom may not need support but would still need to purchase plant material and inputs. At the other end of the spectrum, farmers who are unlikely to adopt the new techniques are very difficult to reach.
- Tying the SDM to Mars' commercial structure provides Mars with a potential source of revenue from the model and makes it highly profitable. However, the business case is still under development and has not yet been fully tested.
- The driver for the development of the SDM is to increase competitiveness and attractiveness of cocoa at a time when prices are low. Higher prices will stimulate farmers' interest and could increase the uptake of productivity interventions promoted by the CDC-CVC structure.

### b) Key risks

- The SDM assumes there are a high number of local farmers willing and able to invest in inputs.
- The model relies heavily on the capacity of CVCs to "push" inputs to the farmers, alongside the required knowledge in Good Agricultural Practices.
- Safeguarding the high quality of materials and interventions delivered by the CVC is a risk as the CVC is an independent entity.
- If other organizations adopt the CVC model, quality needs to be ensured to avoid any reputational risk for the SDM methodology as a whole.

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5. Information in the report is based on assumptions, and the values in the calculations are estimated by Mars and the consultants.





## 5. THE HANNS R. NEUMANN STIFTUNG CASE (UGANDA)

*Empowering farmers at the bottom of the pyramid to improve their coffee production and living conditions*

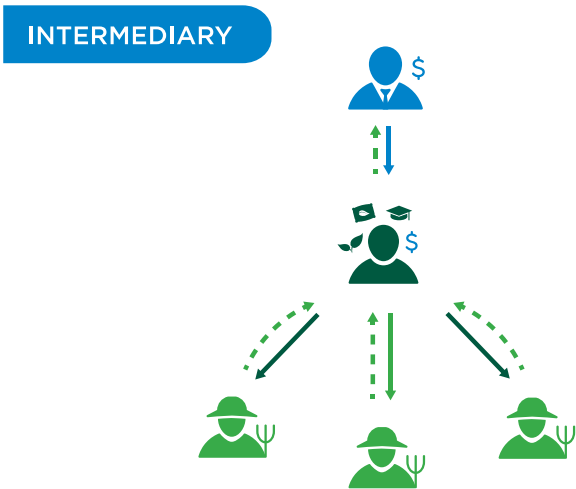
### About the business

Hanns R. Neumann Stiftung (HRNS) is a private foundation that supports environmental programs and runs grassroots projects with smallholder coffee farmers all over the world. It aims to establish a more level playing field, improve working and living conditions, and address the challenges associated with protecting natural resources, climate change and biodiversity. HRNS started a program with coffee farmers in Uganda in 2005 with funding from the EU and other donors.

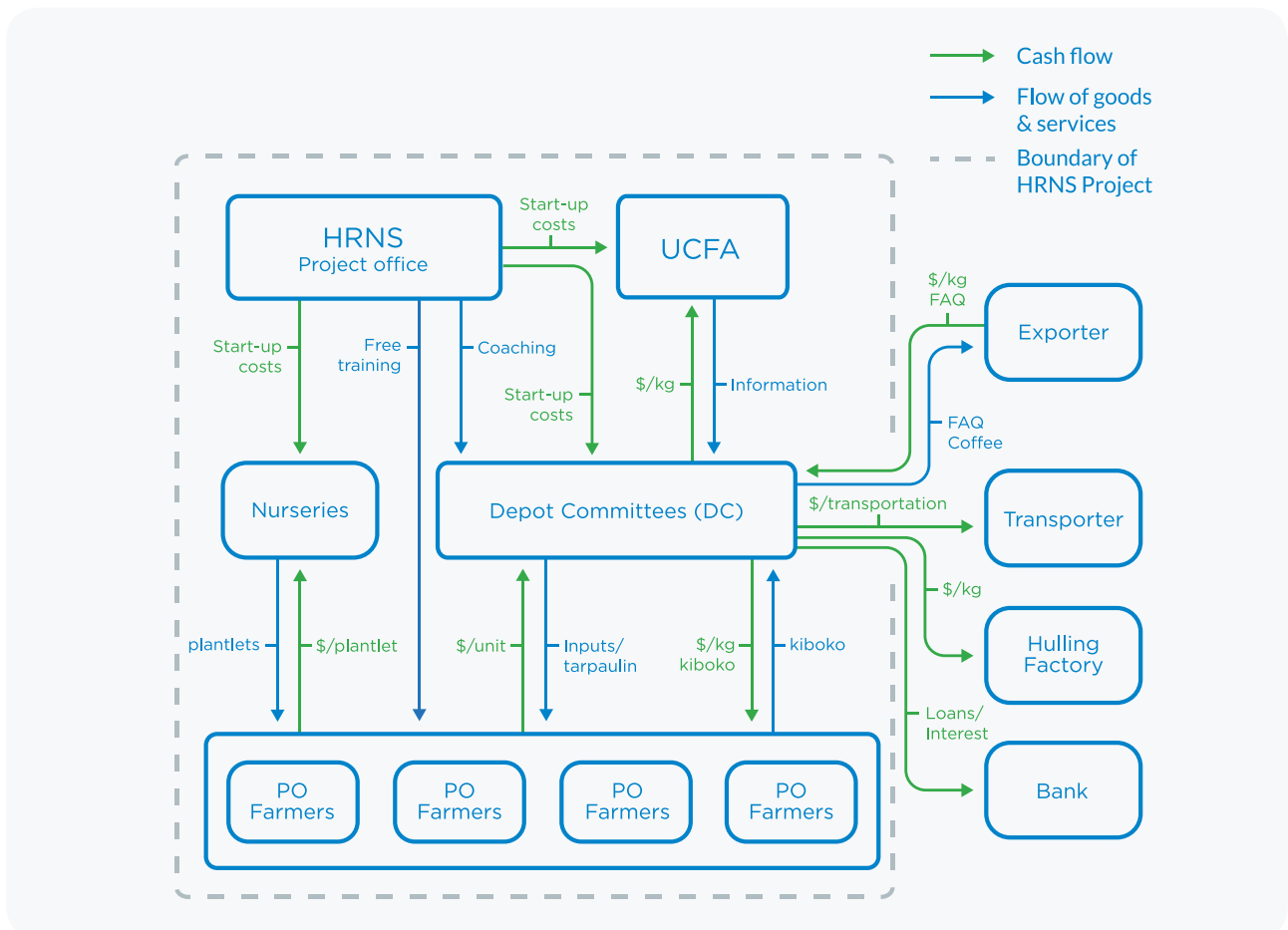


## About the Service Delivery Model

HRNS Uganda began to operate shortly after the outbreak of coffee wilt disease that halved the number of Robusta trees in Uganda, and in an environment where the majority of farmers were unorganized and untrained. To address these challenges, HRNS established a project management office to support the establishment of service providers to “bottom of the pyramid” farmers over the long term. The office provides training services to operators and farmers through farmer field schools. It has also established nurseries, as farmer-owned individual businesses, to provide good quality planting material.



Farmers are self-organized into Producer Organizations (PO) at village level, with 20-25 POs forming a Depot Committee (DC). The DCs deliver bulking and hulling services, and sell products and extension services to farmers. DCs are able to provide pre-financing to a small number of farmers, with the majority accessing funds from middlemen. All DCs are members of an apex national organization, the Uganda Coffee Farmer Alliance (UCFA), which provides information to DCs and provides linkages to external service providers such as financial institutions.



HRNS Uganda does not gain from improved production and the benefits of improved quality due to the fact that it is established as a foundation and does not source the coffee. The foundation does receive a different type of “Return on Investment”, however, which is related to the benefit that the SDM creates at farmer level. HRNS is considered to be the value chain investor because it established the SDM structure and supports and coordinates the service delivery operators, but it is not a value chain investor in the sense that there is a revenue model for HRNS.

### i) Assessment of economic sustainability

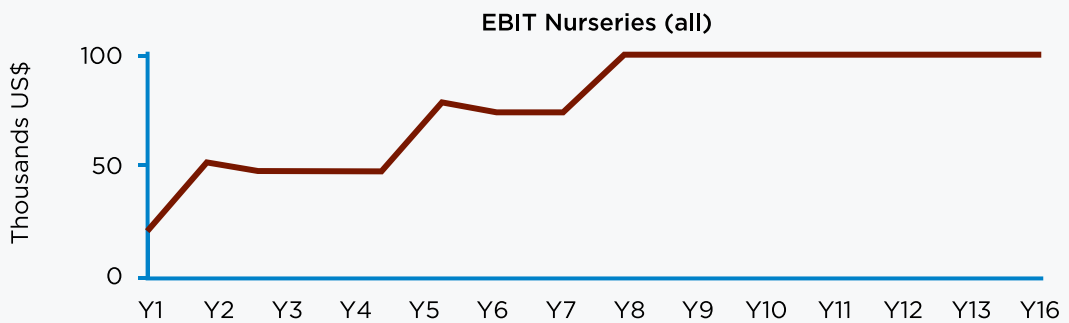
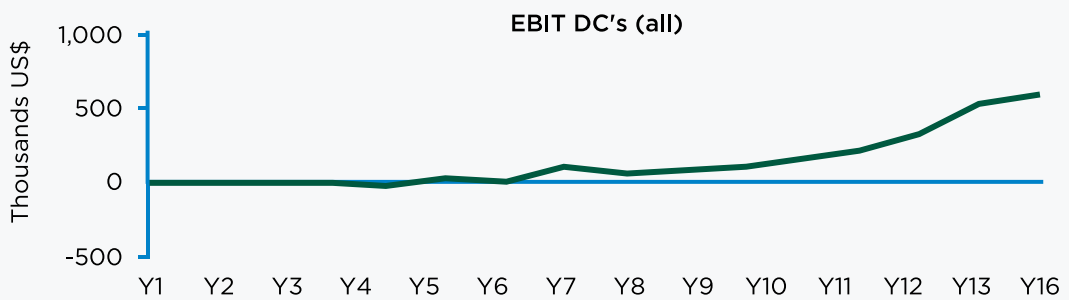
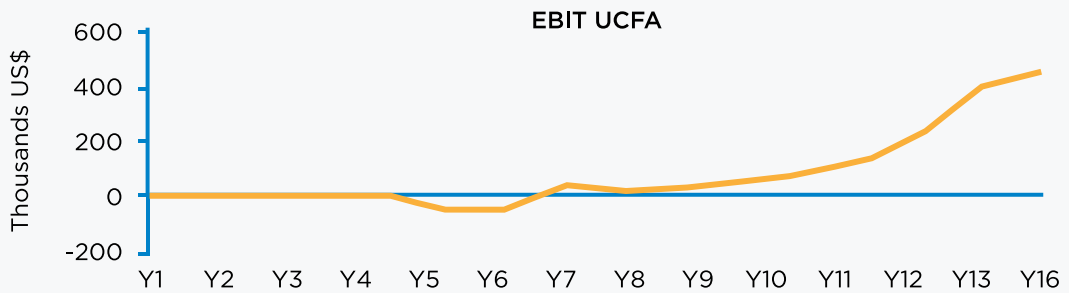
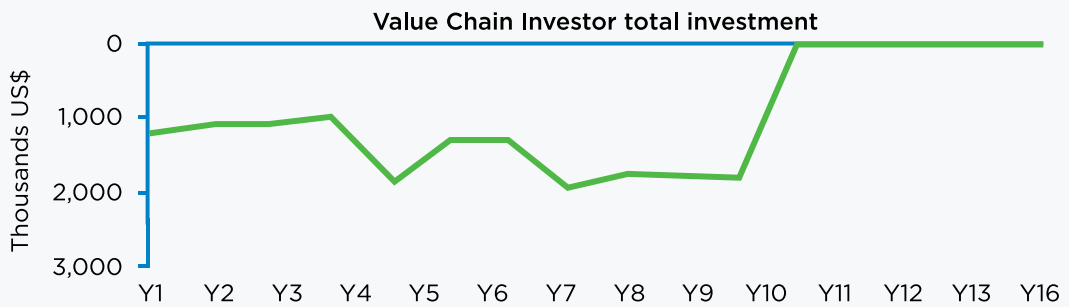
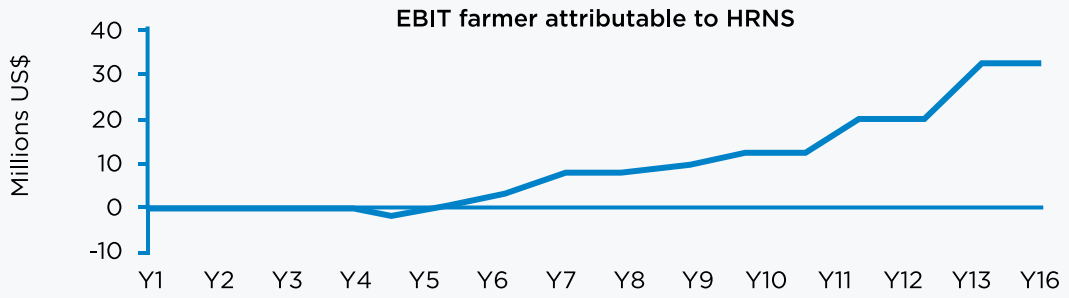
The main costs drivers, subsidies and revenues were identified for the various actors. These are summarized below:

	Value Chain investor	Operator	Farmer
		DC	
<b>Cost drivers</b>	<ul style="list-style-type: none"> <li>Main costs are programme management, hardware, transportation and training, including for Farmer Field School facilitators and field staff</li> <li>Variable costs of training Cocoa Doctors US \$1,500 each</li> <li>Subsidies for establishment of DCs, nurseries &amp; the UCFA</li> </ul>	<ul style="list-style-type: none"> <li>Paying a marketing manager</li> <li>Purchasing hulling &amp; transportation services from 3rd party</li> </ul>	<ul style="list-style-type: none"> <li>Labour costs</li> <li>Expenses on inputs – fertilizer, seedlings, pesticides &amp; tools</li> <li>Hulling costs</li> </ul>
<b>Subsidies</b>	<ul style="list-style-type: none"> <li>Subsidization estimated to be U\$ 15 mil over last 11 years</li> </ul>	<ul style="list-style-type: none"> <li>Start up subsidy</li> </ul>	N/A
<b>Revenues</b>	<ul style="list-style-type: none"> <li>The VCI does not generate revenue</li> </ul>	<ul style="list-style-type: none"> <li>Main revenue driver is throughput of coffee beans, moderated by farmer loyalty and availability of financing</li> </ul>	<ul style="list-style-type: none"> <li>HRNS supports farmers to increase revenues</li> <li>Additional revenue from value addition and better market access through volume delivered to DCs, which improves output in the hulling process and price.</li> </ul>

These metrics were used to produce an overview of net revenue for each actor. The EBIT was calculated for each SDM actor and is presented below in summary form on page 35.

Ten years of real data (from 2004) were used in the model and forecasts grounded on actual experience.

The results indicate that the programme overall is economically viable, with a positive EBIT of U\$0.57/kg over the programme period of 16 years (11 years of real programme data and 5 years projected data). The farmers are the main benefactors and the VCI does not have a viable funding strategy. The payment for services by farmers will be a consideration in the future.



This is the total change in earnings compared to the baseline (no program) of all farmers in the program.



## ii) Dashboard

Key performance indicators are presented in the dashboard, which is summarized below:

Key Performance Indicators	Explanation	Result
Maximum cumulative funding requirement for the total programme period (16 years, including 11 years of real data and 5 years of projected funding requirements)	HRNS does not work with a revenue model in order to recoup its investment, therefore there is a funding requirement rather than an investment requirement	US \$17.5 million
Payback period for initial investment		No payback expected
Investment level per kg produced over the 16 years of the programme	Funding equivalent to 3.5% of the market price is required for every kg produced by HRNS farmers	3.5%
Investment level per kg of uptake that flows through HRNS DCs. Uptake is low due to the challenges around DC access to finance	Funding of 13% of market price is required to secure extra volume	13%
Farmer profit per U\$ investment		U\$8.03
Payback period of farmer initial investment	Payback of individual farmers may be shorter	8 years
Productivity gain by year 10	Increase in productivity by average farmer at year 10	420%
Loyalty Yr 10 (uptake %)	Percentage of coffee traded through DCs by year 10. The remainder is sold by farmers to middlemen	15%
Payback period full programme	Time required by different actors to recover their initial investment	9 years

## Sensitivities: risks and benefits

The sensitivity analysis indicates areas of opportunity and risk within the SDM. The analysis provides insight into key levers and how these could affect the performance of the SDM.

There are six key levers in the HRNS SDM: farmer productivity, finance costs, effective yield of final product, uptake, price to final link in programme and farmer training costs. The results indicate that most important levers are farmer productivity and finance costs.

## Lessons learned

For HRNS, the assessment of their service delivery model through an economic sustainability lens was a valuable exercise. Transparency and insight into the effectiveness of different interventions on the return on investment for farmers will help them, as more case studies get available, to differentiate between the wide variety of approaches used to support coffee producers.

# Chapter 3

## Key challenges in Service Delivery Models

As identified in the previous chapters, there are great opportunities for service delivery models to be improved through optimization and efficiency improvements. This chapter dives into some of the main challenges to effective SDMs. These challenges have been selected by the Smallholder Working Group (SWG).

**The key challenges in this section include:**

- **Side-selling** – the reasons it occurs, the consequences for both smallholders and off-takers, and how to assess and mitigate the risks.
- **Access to smallholder finance** – why it is so challenging, the consequences of a lack of finance, and what options companies have to support smallholders in accessing finance.
- **Small land holdings** – how to organize larger plots of land for inclusive smallholder production (by smallholders and companies) and the possible risks involved in smallholder land aggregation.

## 3.1 Side-selling

### 1. What is side-selling?

There are a significant number of outgrower schemes in which off-takers of crops offer services to farmers, investing in both a secure supply of produce and improving the productivity and quality of that supply. These schemes come with benefits and risks for both farmers and off-takers. A risk in these investments for both off-takers and processors is the practice of “side-selling” by farmers, whereby farmers sign a contract, then sell to a different buyer. The off-taker then fails to source the expected supply and does not recuperate the cost of their investment.

### 2. What are the reasons for farmers to side-sell?

Some reasons that farmers side-sell include:

- **Poverty** – where poverty is high, farmers have an urgent need for cash and cannot afford to consider the long-term benefits of building a relationship with a firm. Instead, they adopt strategies to sell to the bidder that meets their immediate need for cash (this can also be before the produce has been harvested). Poverty levels also influence the re-payment capacity of the farmer. Many rural households do not have bank accounts, savings or insurance, and are reliant on informal lending.
- **Price** – controlled markets with fixed prices are not conducive for side-selling, as there is little incentive for farmers. Floating prices, where variation is high, offer significant gains to farmers to sell outside existing agreements. Farmers may be unclear about contractual terms and feel prices are not fair or that he/she is being cheated.
- **Influence of government policies** – government can interfere with contractual relationships, for instance, by offering free inputs around election time.
- **Farmer loyalty** – farmer loyalty is low when relationships and trust between firm and farmers are weak, often caused by lack of transparency, and results in farmers not feeling obliged to repay.
- **Late payment** – firms that pay late encourage farmers to seek other firms that are able to pay.

### 3. What are the consequences of side-selling along the value chain?

For off-takers, side-selling can:

- Result in a failure to meet sourcing strategy targets. This makes it challenging to meet their contractual arrangements with their buyers, and forces them to procure from other districts/countries in order to deliver on their promised supply.
- Increase costs due to the need to source supply elsewhere, and non-recovery of the payment for their services. The scale of the costs incurred is likely to vary according to the size of the off-taker.



For farmers, side-selling can:

- Provide a short-term gain, as they may have an urgent need for cash. This can result in the farmer receiving a lower price than if they were able to wait. In some cases, the farmer may receive a higher price, while not paying for the services they received from the off-taker.
- Result in exclusion from service provision by an off-taker, although the off-taker may continue to source from farmers who are side-selling.
- Result in exclusion from the supply chain of an off-taker; in many cases, it is difficult for the off-taker to take legal action against farmers who breach contract. Exclusion can partly be used as a strategy to set an example to others, but is also used to maintain efficiency of production in the outgrower scheme.

#### 4. How can off-takers assess the risk of side-selling?

Off-takers should assess:

- **Expected production volume** – when there is a scarcity of crop availability, for instance due to bad weather, the risk of side-selling increases.
- **Structure of the supply chain** – risk is reduced in a “tight” supply chain where there are relatively few buyers. If there are many buyers, it is highly likely that some will not have provided support to farmers and will be able to pay higher prices and incentivize farmers who received support from other buyers to default on their input loans. The number of buyers needed to create this side-selling dynamic is low (10 to 20).
- **Number of potential buyers** – crops with a low number of buyers require processing prior to use (which means costly processing equipment), have small and unreliable local markets coupled with high quality standards, and pay a high quality premium (export markets). As such, crops which are prone to higher levels of side-selling include basic food staples, local horticultural crops (tomato, cabbage, green leafy vegetables) and export crops such as cashews (which can be exported prior to processing).
- **Reported yields compared to the quantities sold to other off-takers** – these can be used to measure the potential for side-selling to competitors over a multi-year period.
- **What compels/attracts farmers to side-sell** – what kind of tangible benefits will encourage them to contribute to the supply chain? Direct payment, for example, can be a reason for farmers not to side-sell.
- **Threshold of side-selling that the off-taker can accept** – in terms of the double impact on revenue and at the field level. A margin can be built in based on the perceived risk of side-selling.
- **Risk of existing and proposed government policies** – the current political context, such as planned national or local elections, may also influence farmers’ decisions whether to side-sell. In some cases, politicians may encourage farmers not to fulfil their contracts and promise better prices to farmers just before an election.

## 5. What can off-takers do to mitigate this risk?

Despite having contractual arrangements in place, off-takers cannot usually rely on statutory and legal redress to influence farmer behavior. Instead, the following best practices are being adopted:

### Trust-building between farmer and off-taker

- **Service supply** – including access to inputs, information, finance, markets etc., which are attractive to farmers and provide tangible short-term benefits. These demonstrate the added value of the service supply of the off-taker, and give the smallholder a feeling of being privileged to be part of the service supply, leading to long-term relationship building. For example, farmers are supported with better quality seeds, training, and access to markets, which lead to better productivity and a higher income for farmers; this decreases the skepticism of farmers towards off-takers and increases the trust between both parties.
- **Incentive schemes to reward farmers who are loyal** – creating arrangements that motivate or encourage smallholders to produce more quantity and/or better quality crops; for example, creating savings accounts for farmers, providing inputs as a bonus, or paying an after-payment. Savings accounts work well in tight supply chains and can support farmers to purchase a range of services themselves and therefore become more independent.
- **Creating effective partnerships** – such as mutually responsible groups, Farmer Associations, NGOs, government, financial services providers, etc. For example, using a financial institution to handle payments and repayments to and from farmers can reduce mistrust between buyers and farmers and increase repayment rates. Contact strategy – regular contact between farmers and consistent off-taker representatives builds trust. For example, procedures can be simplified for farmers, such as using the same location for training and delivery of crops.

### Smart contracting

- **Flexible contracts** – where farmers have the flexibility to sell outside of an agreement with an off-taker. For example, Hindustan Unilever’s tomato supply chain in India made contracts with farmers with 100% buy guarantees, but farmers were allowed to sell 25% on spot markets.
- **Transparent contracts** – to make it clear to farmers what their obligations and commitments are. For example, if structured and communicated effectively, contracts can facilitate transactional transparency and help build the trust between off-takers and outgrowers that is critical to long-term success.
- **Selecting farmers who have the capacity and willingness to deliver on contracts** – through length of service and production tonnage, referrals by purchasing clerks, etc. This can mean only operating in 50% or less of a district. Side-selling can be reduced by using co-responsibility within groups of farmers to make repayments, rather than relying on individual farmers. For example, Bayer CropScience in Ghana issues contracts signed by a group of farmers. Farmers within the groups are often self-selecting.
- **Separating financing from sourcing of commodities** – farmers repay loans in cash rather than in commodities, and are free to choose from which organization they receive finance (does not need to be the off-taker). For example, Ecom is developing an innovative new model to set up a financial services company (see Case study 1 in chapter 1.2)

- **Use of a barter system** – farmers agree to pay for services with a pre-agreed volume. The price risk is covered by the off-taker.
- **Monitoring and traceability** – Apps are available which improve the effectiveness of outgrower schemes. For example, Farmforce<sup>6</sup> was developed by Syngenta Foundation to collate information on farmers and their production, which helps with monitoring of traceability and compliance to food safety standards.

## Farmer economics

- **Pricing mechanisms** –
  - a. Setting a fair price is important to support farmers to make a fair profit, and helps with repayments for services received. Fair price-setting requires understanding of the costs of production of smallholder farming, especially the labor costs. For example, Technoserve has successfully increased yields by >50% through effective understanding of production costs and knowledge transfer that motivates farmers to increase productivity.
  - b. In some circumstances, prices at the time of contracting can be low and therefore agreed after contracting. In this case, prices are monitored and farmers kept informed of market movements on an on-going basis, which provides transparency for buyers and sellers. In other circumstances, buyers need clarity on the price in advance.
  - c. The use of a competitive price (sometimes a premium) to reduce the risk of side-selling. For example, Jain Irrigation Systems in India guarantees a minimum price to 2,300 onion farmers in India. If market prices go up, the company covers the difference.
- **Cash flow management** – ensuring that timing of payments meets the needs of farmers, such as committing to 100% payment of farmers on the day of delivery. Many companies are also providing pre-harvest finance to both farmer organizations and groups of farmers to ensure that they can cover their cash needs. In doing so, they avoid the risk of the smallholders selling to other middlemen as they have an urgent need for cash. For example, ITC Limited India announces purchase prices on the eve of market day via media outlets to offer maximum flexibility.

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6. [www.farmforce.com](http://www.farmforce.com)





## 6. THE YAANOVEL CASE (COTE D'IVOIRE)

*Various mechanisms being used to reduce the risk of side-selling*

### About the business

Yaanovel SA is a joint venture focusing on rice production established by Intervalle Geneva SA and the local government of Cote d'Ivoire in 2012. Intervalle holds 70% of the shares while the District of Yamoussoukro holds the remaining 30% of the shares. The goal is to create a business unit of agro-industrial production and outgrower schemes, processing and marketing rice over a targeted area of 25,000 hectares. The model is planned to be extended to cocoa and coffee value chains as well.



## About the Service Delivery Model

One of the components is a pilot project with Syngenta Foundation, whereby Yaanovel SA supports farmers by supplying good agricultural practices, seeds and inputs, and purchasing the crop. The pilot works on 300 hectares of land with 100 farmers, including individuals, cooperatives and one large-scale farm. This will be expanded to 500 hectares and 300-400 farmers in 2015.

### MULTIPARTITE



## Challenges

Side-selling is one of the main risk factors of the model with reasons including:

- Farmers do not have a proper understanding of how side-selling undercuts their business model. They need to understand how to make their business profitable, as currently many farmers produce poor quality rice that they struggle to sell.
- Cote d'Ivoire's government supplied free seeds, which could potentially undercut Yaanovel SA's sale of seeds to farmers if this subsidized operation should be renewed.
- Strengthening the protection of local markets from cheaper, subsidized rice imports would significantly contribute to making local production more viable. Five out of eight companies leading production in the government-allocated zones have withdrawn, mainly due to side-selling and a current lack of competitiveness in local rice production.

## Risks and benefits

Yaanovel SA is working with partners to develop a range of support to farmers, including semi-government bodies and private companies (collateral management) who are building capacity of smallholder farmers and working to ensure transparency around contracts. This includes various strategies to mitigate the risk of side-selling through providing benefits to farmers:

- Explaining the terms to farmers and negotiating a fair price.
- A holistic package of pre- and post-harvest support including direct inputs (i.e. seed, fertilizer, crop protection), indirect inputs (i.e. agricultural machinery for land preparation and harvesting), extension services, and a purchasing contract at a guaranteed price.
- Supervision and monitoring activities of farmers ("Know Your Customer") to provide better understanding around how the inputs are being used, tracking the harvest, etc.
- Coordination between the various actors along the value chain, which is particularly important for transparency.

- Yaanovel SA is working with various organizations including HEC-Wharton and Syngenta Foundation to develop mechanisms to provide a cross-guarantee between members of farmer groups to support repayment by members.

The main results of this approach have been an increase in the quality and quantity of the smallholders' yields, and an increase in farmers' incomes through fair prices and a guaranteed market.

## 3.2 Access to finance

### 1. What are the characteristics of smallholders and why do they need finance?

Smallholder farmers in Africa face a number of challenges, including low productivity, limited access to markets for their products, lack of adequate risk management products and services, and limited access to finance. While agriculture remains a key economic activity in Africa, employing about 55% of the population, only approximately 1% of bank lending goes to the agricultural sector.

Access to financial services is critical to provide funds for farm investments in productivity, improve post-harvest practices, ensure smooth household cash flow, enable better access to markets, and promote better management of risks. Access to a comprehensive range of financial services is a significant challenge for smallholders, who constitute the vast majority of farmers in developing countries.

Financial services are defined as savings, credit and insurance products. Some institutions focus on delivering a broad package of financial services to farmers.

For instance, Ecom Trading takes a lifecycle approach built on understanding around the past and key life events and farmers' strategies to respond to them. It is developing insurance products for life-long events to be introduced to farmers first to reduce indebtedness, followed by savings for smaller life risks. A loan portfolio will follow to support cash flow management.

NMB Tanzania (part of the Rabobank network) takes a different approach and offers rural households access to their first financial product in the form of savings, to build up a savings culture, reduce the possibility of becoming further indebted, and provide formal savings facilities often not available in rural areas.

### 2. What are the credit needs of individual farmers?

Loans can provide access to inputs and increase use of better quality inputs provided by trusted suppliers, rather than resorting to low quality or counterfeit products.

Credit is required for the following agricultural activities:

- **Working capital/seasonal credit:**
  - Planting/replanting materials
  - Farm inputs (chemicals and fertilizers)
  - Labour

- **Long-term finance:**
  - Renovation of farmland
  - Small infrastructure/processing projects

Smallholders also have other credit requirements – emergency needs, such as funerals and hospitalization, and well as longer term needs, such as housing and education – which must also be met, otherwise they can out-compete credit needs for production.

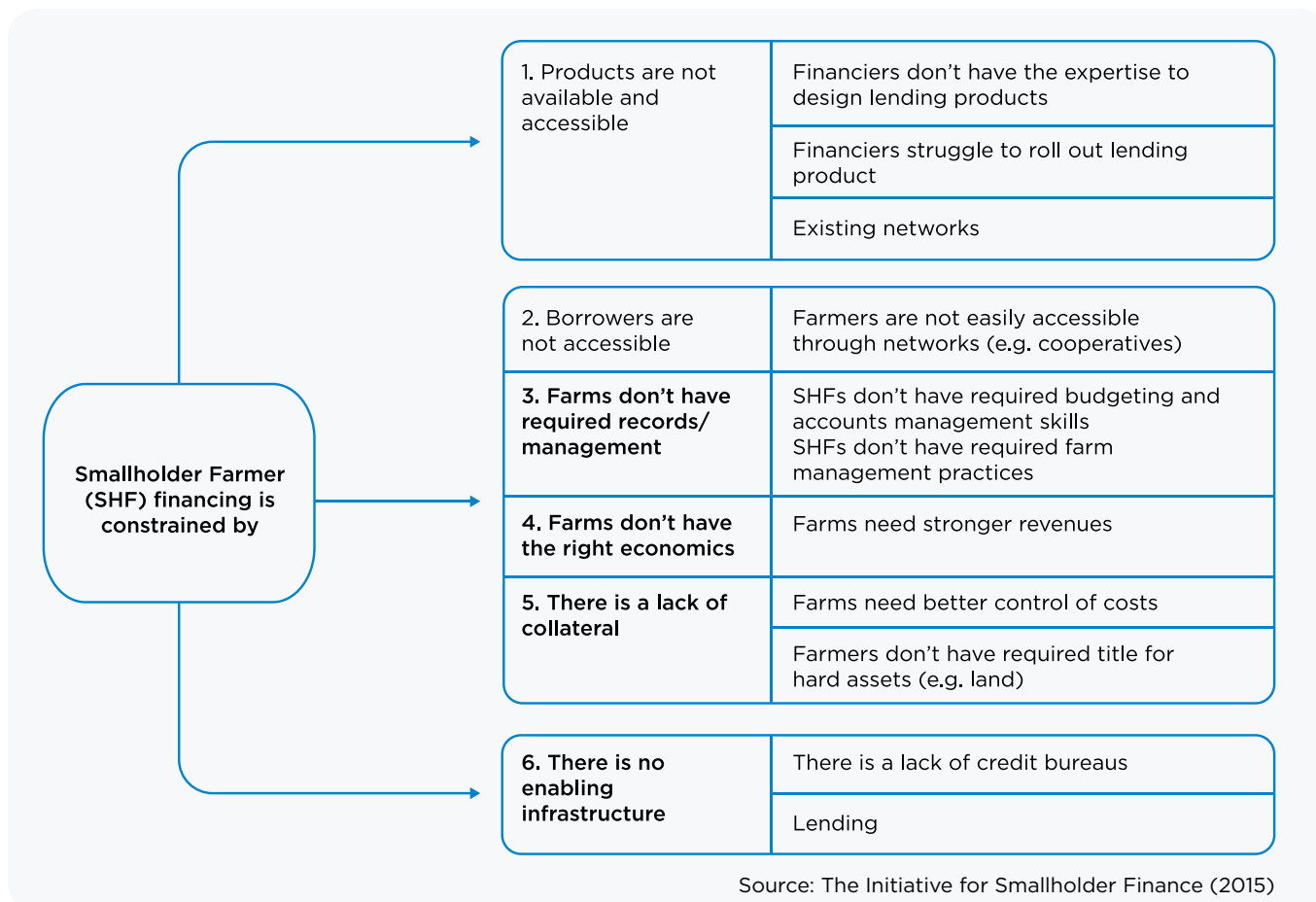
### 3. What are the key issues and barriers to smallholder finance?

Financing agricultural activities is challenging:

- Agriculture is by nature seasonal, with a time lag between cash outflows and inflows.
- Farming is exposed to the volatility of weather and prices, and vulnerable to pests and spoilage.
- The challenges of irregular cash flows are compounded by a weak repayment discipline, cash diversion and crop theft.
- This in turn creates risk and liquidity management challenges for financial service providers, in that farmers in the same area generally want to borrow at the same time, and are often undertaking the same activities, and are therefore exposed to the same risks.
- Further risks include lack of collateral and political risk, as agriculture is prone to government interventions, and rights are often not legally enforceable.
- Most farmers in Africa are women, but they are often harder to reach because they tend to have less education and less access to inputs and capital necessary to grow a business compared with men. In a number of countries, land titles are held in the husband's name, which further restricts access by women to financial services.



#### 4. What are the main obstacles to smallholder access to formal credit at different levels?



#### 5. What are the consequences of lack of access to finance?

##### For smallholder farmers:

- As the vast majority of smallholder farmers are too poor and under-capitalized to be considered bankable by formal financial institutions, they often gain access to informal sector finance. This comprises family members, relatives and profit-oriented local money lenders. For instance, only 5% of coffee-producing households operating in the Coffee Partnership for Tanzania<sup>7</sup> took any loan product. Only 18% of these loans were provided by banks and 40% originated from informal credit sources (including SACCOs).
- Informal finance can impact negatively on business growth due to high interest rates. Middlemen or traders often act as intermediaries between producers and consumers. They can enter into agreements with farmers to purchase all output over an agreed period, with interest rates set as high as 50%. Middlemen can further inhibit profitability by setting purchase prices at low rates during the harvest season, which traps farmers into a cycle of debt.

7. A development project funded by the Bill & Melinda Gate Foundation, managed by DEG and implemented and co-funded by private sector partners, which aims to increase the net income of 90,000 smallholder farmers.

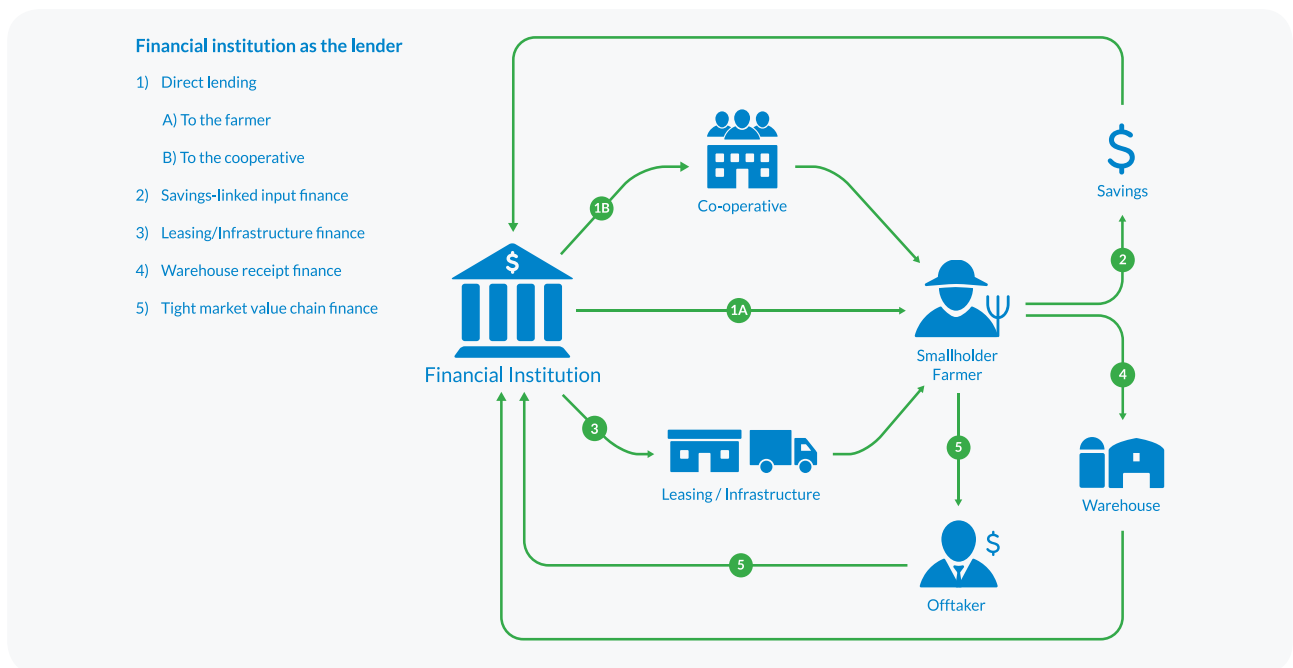
**For off-takers:**

- When off-takers work with smallholders who are dependent on middlemen, there are relatively few incentives for smallholders to improve quality, since middlemen do not offer price differentials for better quality produce.
- When smallholders do not have access to finance, they cannot invest in their land and are not able to improve productivity, which limits the possibilities for off-takers to buy more products in the future.

## 6. What options do companies have to support access to finance by smallholder farmers?

Innovative financing models and approaches that find ways to reduce impediments and risks in lending to smallholder farmers are outlined below. They are characterized in terms of three types of lender: financial institutions, off-takers and input providers.

### 1. Financial institutions providing credit to farmers



**1.1. Repayment source: financing farmers** – whereby collateral involves cash flow analysis by banks to underwrite anticipated earnings, overall savings and/or group guarantees. Financial institutions work with smallholders through the following means:

#### 1.1.1 Direct lending

**Main features** – lending to individuals or through farmers’ associations or cooperatives. The source of repayment is the conversion of working capital into cash flow throughout the production season.

**Success/risk factors of model** – bank needs to understand farmer needs and cash flow strengths and weaknesses in order to adequately underwrite cash flow and reduce reliance on collateral.

#### Main advantages:

- Allows distribution of a full range of financial services
- Allows for a segmented approach to agricultural SMEs'

#### Ways to mitigate risks:

- Deep knowledge of farming
- Cap on exposure to a single farmer
- Group lending
- Integration into a supply chain
- Providing cash during lean season to lower risk of side-selling

#### Main areas of innovation:

- **Alternative credit assessment tools** – Collecting information to assess smallholder credit worthiness is difficult and expensive. Alternative credit assessment tools have been developed, some of which incorporate agriculture-related data. There are also trials with supply chain data collection systems where the off-taker collects data on smallholders to gain better insight into their performance and thus creditworthiness.
- **Product customization** – flexible repayment terms linked to crop cycles improve farmers' ability to pay on time, when designed in collaboration with local agricultural experts.
- **Distribution customization** – roaming agents, ideally enabled by handheld technology, service rural customers and enable information collection. Mobile payments can reduce transaction costs.

#### Examples in use:

**Equity Bank, Kenya** – smallholder lending integrated into a larger supply chain partnership and supported by a first loss guarantee provided by donors. Lending uses co-guarantors, lower interest rates than standard, and caps loan exposure per farmer.

#### 1.1.2 Savings-linked input finance

**Main features** – savings are an important part of the package banks want to offer farmers; they are a stepping-stone to commercializing farms. Savings can be an effective part of the loan security package; they can become the principal collateral to secure a loan.

**Success/risk factors of model** – strong checks and balances that prevent farmers from gaming the system. Checks include “Know Your Customer” signals – for example, requiring references or membership of farmer associations. Balances include strong savings incentives and bonuses for high savings balances over longer periods.

### Examples in use:

**NMB, Tanzania** – farmers open a savings account and a loan account. After harvest, part of the proceeds are used as cash collateral for input financing in the following season. NMB targets farmers participating in warehouse receipt schemes.

**1.2 Repayment source: financing movable assets** – collateral involves lead equipment or harvested commodities in warehouses. Financial institutions work with smallholders through the following means:

#### 1.2.1 Leasing/infrastructure finance

**Main features** – a lease is a contractual arrangement between two parties. The lessor allows the lessee to use the asset for an agreed period of time in exchange for periodic payments. Leasing focuses on the lessee's ability to generate cash flow from business operations, rather than credit history or balance sheet. Jump-starting rural leasing may require government and donor support.

**Success/risk factors of model** – leasing is a highly specialized financial activity. Economies of scale, cost and risk factors may require leasing companies to have large urban operations.

### Examples in use:

**DFCU, Uganda** – specializes in providing finance leases to SMEs for agricultural machinery, providing 60% of the asset purchase. They have a longer payment period (3-5 years), and the asset is owned by DFCU during the lease, and transferred to the client or sold after the lease terminates.

#### 1.2.2 Warehouse receipt finance

**Main features** – form of secured lending to owners of non-perishable commodities, which are stored in a warehouse and have been assigned to a bank through warehouse receipts. The receipts give the bank the security of the goods until they have been sold and the proceeds collected. They represent a liquid form of collateral against which banks can lend. This enables aggregators and processors to secure their sourcing throughout the year and to purchase their raw materials.

#### Success/risk factors of model:

- **Warehouses** – good warehouses, good roads, reliable communication, warehouse receipt financing act, and operational guidelines are required.
- **Markets** – properly organized marketing systems, preferably commodity exchange, are needed.
- **Banks** – banks with easily accessible delivery channels, well-performing core banking systems, and Management Information System are needed.
- **Corruption** – fraud or collusion, credit and counterparty risk, storage risk and misappropriation by warehouse operators, price risks, marketing or buyer risks and legal risks are all critical risk factors to the model.



#### Examples in use:

**NMB, Tanzania** – secured loans are given to registered farmer groups, individual farmers and commodity traders dealing with commodities such as coffee, maize, cashew and nuts. The scheme has a 50% guarantee provided by the government.

**1.3 Repayment source: financing farmers in value chains** – where a financial institution is the source of credit, they rely on off-takers to act as the repayment source. Strong relationships between farmers and off-takers and formal or informal contracts provide security to lenders. Financial institutions and off-takers work with smallholders through the following means:

#### 1.3.1 Tight market value chain finance

**Main features** – tight value chains have multiple “constriction points” to prevent side-selling, including incentives (technical assistance, loans, price premiums, etc.) and penalties. Providing finance plays an important role in increasing production, yields and quality for the benefits of off-takers and farmers. Finance may be provided through the off-taker or from a bank directly to the farmer, with the security of a tri-partite agreement (bank, off-taker and farmer). Input finance is a crucial added service off-takers extend to farmers to increase loyalty and make supply more stable. There are widely varying types of arrangement under this model.

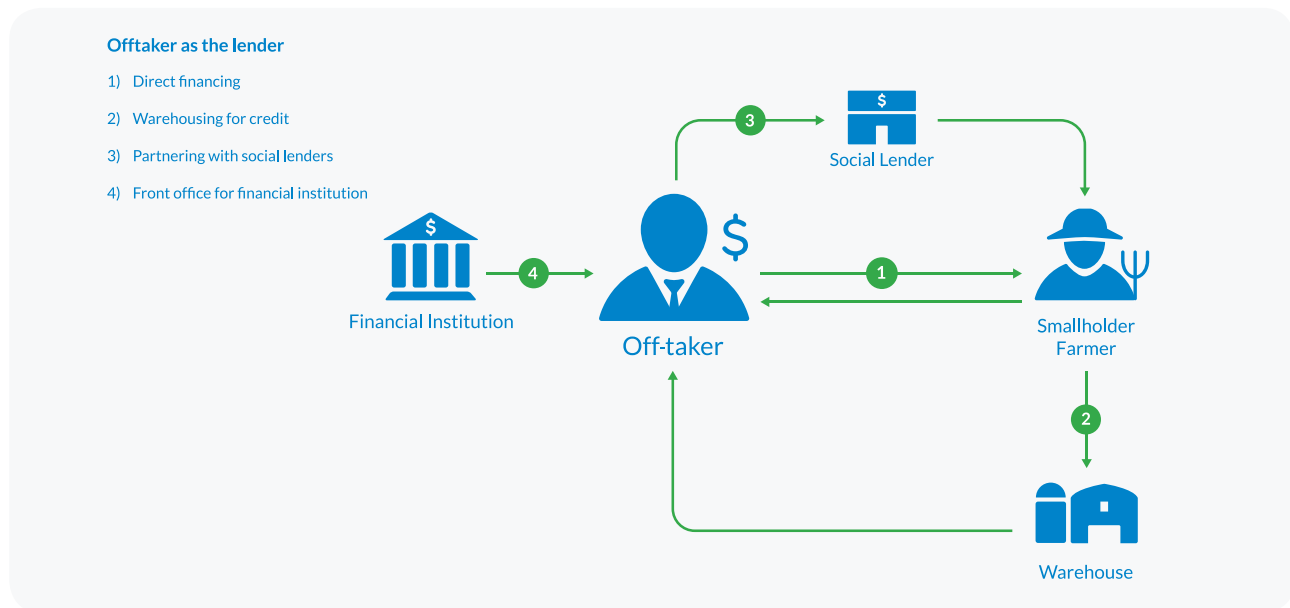
#### Main advantages:

- Knowledge of value chains and assessments of buyer relationships help bankers assess future cash flows and improve credit assessments, which reduces risk.
- Bundling of finance with other services, such as improved inputs, extension services and training, can lead to increased cash flow for farmers and better quality for buyers.
- Tying credit with existing touch points and commodity flows can reduce transaction costs of lending.
- Off-takers have a core interest in obtaining the crop and therefore have an incentive to monitor farmers closely and ensure delivery of produce, which also ensures loan repayment.

#### Examples in use:

**Dunavant Zambia Ltd and Cargill Zambia Ltd** – The two companies process 90% of Zambia’s cotton through contract farming. A structured loan package provides inputs on credit. Land is communal and held in trust by a chief, so farmers lack collateral. Farmers deliver crop to buying point and receive cash on delivery, net of the costs of the input package received. Training is provided to increase quality and promote grower loyalty.

## 2. Off-takers providing credit direct to farmers



**Main features** – off-takers have a long-term incentive to secure supply and relationships throughout the value chain, and the capacity to experiment with new financing models. To address productivity constraints by smallholders, some global off-takers have provided finance to farmers engaging in their outgrower schemes. There are a variety of possibilities for financing through outgrower schemes. Emerging models include:

- **Direct financing** – off-taker provides direct financing to smallholders. In the absence of collateral, direct financing requires trust and contact between the farmer and the off-taker.
- **Warehousing for credit** – off-takers allow farmers to use their warehouse for storage in return for credit.
- **Partnering with social lenders** – social lenders rely on off-taker support to lend to smallholder organizations. Social lenders use purchase orders or contracts issued by off-takers as collateral to finance producer group loans.
- **Serving as the front office for financial institutions** – this is similar to direct financing, where an off-taker acts as the front-office agent for a financial institution. Off-takers originate, manage and collect loans from farmers in their outgrower schemes on behalf of a bank. It leverages partnerships with banks or other financial institutions, which provide the capital for loans.

Off-takers also support financing for smallholders by:

- Helping smallholders obtain certification, increasing their traceability and bankability.
- Investing in smallholder-focused funds (e.g. the Fairtrade Access Fund, which is a joint venture focusing on long-term finance needs of smallholders. Its first investor is Starbucks, which contributed US \$1.3 million in seed capital).
- Developing additional models by supporting their Corporate Social Responsibility divisions and NGO partners.

### Success/risk factors of model:

- Outgrower schemes present a potential point of entry for commercial and/or social lenders to address smallholder demand.
- Partnerships between off-takers and lenders could dramatically expand smallholder access to finance and provide an opportunity for commercial lenders to tap into smallholder demand. Lenders could capitalize on off-taker strengths, including relationships with farmers, value chain knowledge and loan management infrastructure.
- Where off-takers are already providing financing and technical assistance to producers, lenders can assist off-takers to expand existing programs or take on the off-taker loan portfolio. This would allow off-takers to free up capital and focus on their core competencies.
- Market knowledge and existing relationships enable off-takers to assess risk in the loan origination process.
- Off-taker agents regularly visit farmers onsite and can monitor risk at a lower incremental cost than banks.
- Farmers' desire to maintain good relationship with large off-takers makes them less likely to default on loans.
- Off-takers can engage many parties along the value chain, so there is potential to spread risk among farmers, buyers, banks and donors.
- Partnerships between off-takers and financial institutions can allow off-takers to take loans off their balance sheets and enables risk-sharing between off-takers and lenders.

### Examples in use:

- **Nestle** – Nestle finances around 32,000 farmers, mostly dairy producers, through outgrower schemes. Loan size ranges from US \$500 to US \$50,000 and most are for 18-24 month terms, but they can be shorter. The basis for these loans is trust and direct, personal contact. They are delivered by Nestle staff and managed directly during site visits.
- **Root Capital** – Root Capital is a social lender that provides loans, ranging from US \$50,000 to US \$2 million, and financial management training to small and growing agricultural businesses that aggregate the products of smallholder farmers. Over US \$500 million in lending to more than 425 businesses has provided support to over 750,000 smallholder farmer families in Africa and Latin America.





## 7. THE WEFI CASE (KENYA)

*Supporting smallholder access to finance*

### About the business

Western Fresh Industries (WEFI) Ltd is an agribusiness development company incorporated in Kenya since 2013. WEFI aggregates farmers for specific crop value chains, with a current focus on sunflower farmers to promote production and processing of virgin sunflower oil. WEFI works with around 600 smallholder farmers on 10,000 acres of land in Western Kenya. WEFI carries out processing of sunflowers (with 1 metric ton of capacity). As the harvest can be up to 20 metric tons per day, WEFI partners with Bidco Africa, a multinational company that manufactures and markets consumer products, to provide additional processing capacity. Bidco has a high processing capacity of 60 metric tons per day, which enables WEFI to guarantee purchase to smallholder farmers of the whole crop, irrespective of where it is processed.



## About the Service Delivery Model

WEFI provides four different kinds of financial services to smallholder farmers, to support the adequate supply and quality of sunflower oil production:

- Certified seed loans in kind, to encourage use of high-quality seeds to significantly increase yields (from 400kg/acre to 1,000kg/acre) and increase oil content of crop.
- Tractor service loans in kind, to assist farmers to increase the size of land under production.
- School-fee loans in cash, to support farmers to pay for school fees during January and August (coinciding with harvest season), which frees up farmers to focus on producing high-quality harvest.
- Weeding and harvesting loans, in cash, which enable farmers to employ labor for weeding (which increases yields) and harvesting. Farmers are organized into groups, which facilitates verification that loans are used for the intended purpose. These loans comprise around 50% of the loan portfolio.



## Main sustainability issues

WEFI has experienced challenges with linking farmers to banks. WEFI worked with a commercial bank to supply credit to farmers, but the long distance between the bank and the farmers coupled with the poor road network that is hard to navigate during the rainy season resulted in weak loan management and high default rates. As a result, farmers lost confidence in working with banks, which has increased reliance on WEFI to provide financial services. WEFI would like to establish an in-house micro-finance department to build technical capacity around finance to smallholder farmers.

It is more commercially profitable for WEFI to process the whole sunflower crop and capitalize on adding value, as transporting raw sunflower to other companies results in additional costs. WEFI would like to increase processing capacity but is currently unable to secure a commercial loan for this purpose.

WEFI is diversifying its crops into chili and chamomile flower, and recently established a yellow passion fruit seed nursery; the harvesting of these crops is spread throughout the year and goes beyond sunflower harvesting season. This reduces the risk of side-selling, as farmers have increased capacity to repay loans due to increased incomes.

## Challenges

- Capital to finance smallholder farmers, as demand for credit is much higher than WEFI has the capacity to supply.
- In-house technical knowledge around credit financing.
- Side-selling is a major issue, as there are multiple buyers for sunflower, and results in default on loans.
- Crop failure, often either due to pests at the seed germination stage or birds when the crop matures, leading to default on loans.

## 3.3 (Smallholder) land aggregation

### 1. What is the impact of declining and insecure land holdings in Africa on effectiveness of service delivery models?

Africa is typically characterized as having an abundance of land, and at the continental level this may well be true, with 52% of the world's remaining arable land being in Africa<sup>8</sup>. However, most of this land is concentrated in just nine countries<sup>9</sup>, meaning that access to land for smallholder production is a key constraint in many rural areas.

Land pressure in densely populated areas is often caused by families who have subdivided small plots into even smaller parcels to pass land onto their descendants. As populations have risen, the average land holding size per household has fallen by one-third to a half since the 1960s. For instance, in Uganda, there are 1.7 million smallholder coffee farmers and 98% of production is grown on small family farms averaging 0.18 hectares.

In Asia, small land holdings have not been a constraint to increased productivity; success in increased yields has been attributed to better access to intensifying farm inputs, particularly fertilizer, among a range of other inputs. However, evidence shows that African soils have become increasingly depleted and are less responsive to high quality inputs than in Asia. Therefore, intensification of production through the traditional use of increased inputs in Africa may be limited<sup>10</sup> and it is likely that farm size plays a significant role in constraining production below a certain threshold.

Land size is important in the effectiveness of service delivery models in two main ways:

- Smallholders that own very small parcels struggle to utilize services optimally in order to increase productivity to a level viable for profitable, commercial production. Hence, smallholders need to look for ways to increase contiguous land area under production, either in terms of larger individual holdings or through aggregation of multiple land holdings.
- Agribusiness is a significant business opportunity in Africa, which requires large amounts of land and is increasingly engaging smallholder farmers to secure their supply chains. Agribusiness investments that need access to larger land areas, include:
- Certain industries – such as tea, sugar, palm oil, and some export horticulture. In these cases, harvested

produce spoils quickly, requiring close coordination of harvesting with processing or shipping; this favors large contiguous land areas centered on a processor.

- Seed companies may have specialized needs for contiguous land areas to maintain seed purity and protect intellectual property.
- Products which require high initial capital to improve land (e.g. irrigation) or other infrastructure (e.g. greenhouses) and are beyond the resource capacity of smallholders.

The ability of smallholders to increase their plot size under production is further restricted by uncertainty about land ownership and occupancy rights in Africa. Smallholder farmers often do not have land title, which means they cannot sell or lease land easily. It also acts as a disincentive for investment, as land titles are often only passed on to children after the parents are deceased, which makes it difficult for the children to make investments in their small plots of land since they do not have the land title as collateral for bank loans.

For agribusinesses, insecurity around land tenure greatly increases transaction costs and risks, and can also raise issues around poor and marginalized groups who may be utilizing land. Tenure security is an important precondition for increased investment because it:

- Provides access to land through sales and rental markets or through public transfers.
- Reduces the incidence of land disputes through clearer definition and protection of rights.
- Reduces the possibility that land is taken away arbitrarily and without compensation.

## 2. How do small land holdings affect business?

For off-takers, the main consequences of small land holdings are:

- Small land holdings combined with low investments undermine the future growth potential of production – low volumes do not constitute a solid foundation for future growth.
- Off-takers need to contract increasing numbers of smallholder farmers to secure adequate volumes, which in turn increases costs.
- The supply of certified produce may be more limited since it is not cost-effective for small landholders with low productivity to certify their produce.

For farmers, the main consequences of small land holdings are:

- The trade-off between cash and food crops increases, as farmers are no longer able to balance production between the two on small land holdings.
- It is challenging for farmers to make a decent living from their land, which leads to rural households diversifying their income sources by engaging in non-farming activities.
- Since insufficient income is generated from farmers' land, it results in limited possibilities for them to invest in their land in order to increase productivity.
- Participation in markets that require certification is no longer cost effective, due to the costs of the application process for certification outweighing the potential benefits.

### 3. How to organize larger plots of land for smallholder-inclusive commercial production?

Smallholder farmers may go down the land aggregation route, whereby smallholders secure land titles and pool their land. Larger land sizes enable farmers to enter new markets and hire service operators to grow the volumes required for commercial production. This model is led and owned by smallholders with professional management support. For example, see the case study below about the Phata Sugarcane Outgrowers Cooperative in Malawi.

Options for investors include:

**i. Land leasing** – land rental markets are developing rapidly in the more densely populated areas. They improve both efficiency and equity by transferring land from less productive users to more efficient and land-constrained companies.

- **Leasing of smallholder owned land for commercial agricultural production** – where an agribusiness leases land from a group of smallholder farmers. This is applicable in areas where people do not traditionally sell land and it is inherited from previous generations. However, the land is not being used commercially because of limited capacity to invest in farming (lack of skills, income and/or markets). A lease arrangement enables poor people to keep their land title while earning income from the land through a lease agreement and possibly employment from the company leasing the land. For example, see the case study below about Value Farms in Kenya.
- **Large-scale leasing agreements to private companies** – significant blocks of land are leased to private companies, which use a range of models for crop production, including a nucleus farm to guarantee minimum production levels, an outgrower program to deliver economic opportunities to smallholder farmers, and processing plants.

**ii. Land purchasing** – purchases are much less common than land leases in Africa. Land sales markets are prohibited in some countries, as a fear exists that such markets can lead to landlessness and concentration of land in fewer hands. Informal land sales are more common than large-scale land acquisition, but tend to be confined to peri-urban areas where there is greater potential for high value crops. Formal purchases have been saddled by difficulties over the classification of land ownership, with particular concerns over the use of individual land titles where communal land interests are not legally recognized.

Land purchases can be beneficial, as land is transferred from less efficient to more efficient producers. For example, Unilever Tea Kenya Limited is the largest producer of tea in Kenya and the single largest private sector employer in Kenya, employing 20,000 people. Its foreign exchange contribution is estimated at Ksh. 5.5 billion (approx. US \$58 million at current exchange rates), and the company owns twenty tea estates and eight factories. Other successful large-scale farming projects include Del Monte Kenya Ltd for the production of pineapples, and Triangle and Hippo Valley Sugarcane plantations in Zimbabwe.

**iii. Concessions** – a “concession agreement” is a type of negotiated contract that gives a company the right to do business, with some specific requirements. It often refers to a contract between a foreign company and a government, in which the company signs a concession agreement allowing it to do business in that government’s country. The agreement can also grant the concessionaire the exclusive right to do business in a particular area in exchange for some negotiated terms. The government may



want to incentivize the company by lowering taxes, relaxing restrictions, or providing other incentives. The company may also offer concessions such as ceding some of the profits to the government or paying a special tax rate which may be higher than that of domestic businesses.

For example, Amatheon, a German-Zambian enterprise, has leased 30,000 hectares in Big Concession, a 260,000-hectare block of land in Zambia. Amatheon began growing wheat and soy beans in 2012. The company is improving the quality of the soil through significant investments in irrigation and power generation.

### Advantages and disadvantages of different options for organizing larger plots of land for smallholder-inclusive commercial production

Options for land organization		Pros	Cons
<b>For smallholder farmers</b>			
<b>Aggregation of smallholder-owned land</b>		<ul style="list-style-type: none"> <li>• Pooling of resources allows access to markets and efficiency gains</li> <li>• Smallholders can in theory (and increasingly in practice) receive dividends</li> </ul>	<ul style="list-style-type: none"> <li>• Formal structures can exclude those who do not meet entry requirements</li> <li>• Exposes smallholders to new risks associated with unfamiliar and complex governance and legal frameworks</li> </ul>
<b>For investors</b>			
<b>Land leasing</b>	Leasing of smallholder owned land	<ul style="list-style-type: none"> <li>• Smallholders receive a guaranteed income from lease fees</li> <li>• Smallholders gain access to employment in commercial agribusiness</li> </ul>	<ul style="list-style-type: none"> <li>• Formal structures can exclude those who do not meet entry requirements</li> <li>• Exposes smallholders to new risks associated with unfamiliar and complex governance and legal frameworks</li> <li>• Can result in loss of access to land for food production</li> </ul>
	Large-scale leasing agreements to private companies	<ul style="list-style-type: none"> <li>• Opportunities for smallholders to obtain employment or outgrower contract</li> </ul>	<ul style="list-style-type: none"> <li>• Land can already be used or claimed</li> <li>• Formal structures can exclude those who do not meet entry requirements</li> </ul>
<b>Land purchasing</b>		<ul style="list-style-type: none"> <li>• Facilitates long-term investment in African agriculture</li> </ul>	<ul style="list-style-type: none"> <li>• Negotiations can be complex and lengthy</li> <li>• High risk for investors in countries with political instability</li> </ul>
<b>Concessions</b>		<ul style="list-style-type: none"> <li>• Facilitates long-term investment in African agriculture</li> </ul>	<ul style="list-style-type: none"> <li>• Agreements do not always take environmental and local community needs into account</li> <li>• Confusion around what rights are included or excluded in concession</li> <li>• Weak transparency around land allocation and resettlement</li> </ul>

## 4. Managing the risks of land aggregation

Any land aggregation implies changes to land use, and in most cases to land tenure arrangements. In contexts where existing land rights are ambiguous and weakly governed, such changes present both commercial and social risks. Responsible investors must respect the rights of local women and men, as well as communities, to land and other resources, and avoid actions that lead to the loss of these rights and related harms. Failure to do so risks negative social impacts, reputational damage, and delays to investment – especially against a backdrop of increased scrutiny due to fears of unscrupulous “land-grabbing” following a recent global surge in large-scale land acquisitions.

Over the last few years, investors have begun to pay closer attention to how to invest responsibly in land, in particular through the application of international land tenure instruments such as the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests (VGGT), the Principles for Responsible Agricultural Investment that Respects Rights, Livelihoods and Resources, and the African Union’s Land Policy Initiative.

Despite good intentions, however, companies do not always have the technical capacity to operationalize such international instruments. The New Alliance has developed an analytical framework to assist agricultural companies and investors to align their policies and actions with the provisions of the VGGT. The framework helps them distil some of its most important principles and organize them in such a way that company compliance managers and risk assessment professionals can assess whether a project is adhering to best practices, and if not, how to address deficiencies. The framework will be made available in mid-2015, including on the New Alliance and Grow Africa websites.

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8. The actual magnitude of land available for cropland expansion is not yet well established, as estimates are very sensitive to assumptions around what constitutes “potentially available” (how much arable land is utilizable and by whom is not clear).

9. Sudan (old definition), Madagascar, DRC, Mozambique, Angola, Congo Republic, CAR, Ethiopia and Zambia – which together account for around 65% of all the land available for cropland expansion in Sub-Saharan Africa

10. T.S. Jayne, J. Chamberlin, D.D. Headey (2014) Land pressures, the evolution of farming systems, and development strategies in Africa: A synthesis. Food Policy 48: 1-17



## 8. THE VALUE FARMS CASE (KENYA)

*Smallholder land leasing for commercial agriculture production creating value for land owners and Value Farms*

### About the business

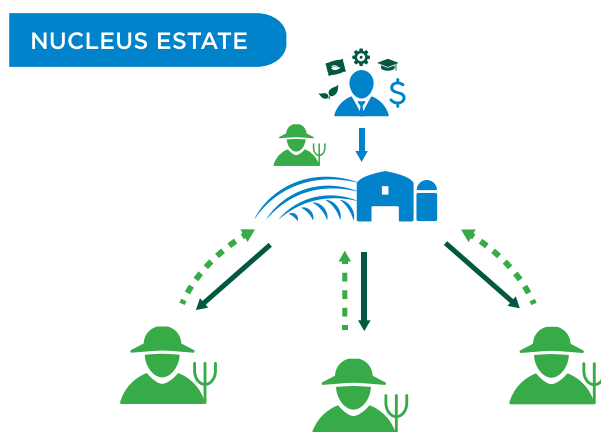
Value Farms is an agribusiness company that drives commercial agriculture through land consolidation in Western Kenya, near Lake Victoria.



## About the Service Delivery Model

In 2014, Value Farms aggregated around 200 smallholder farms (amounting to 260 acres from 111 individual plots) into a nucleus for commercial production. The landowners are predominantly fisher folk, who carried out subsistence agriculture (maize and beans) to supplement fishing. The land was under-utilized, as the owners did not have the capacity and skills for commercial production. The land owners have leased the land to Value Farms under an initial 10-year lease and receive a lease fee. They are also employed to work on the commercial nucleus. There are 180 employees, 90% of whom are women from the local area. Value Farms is already meeting its recurrent expenses for daily operational costs.

The landowners formed a Community Based Organization (CBO), which is registered with the Ministry of Social Services. The lease agreement is between Value Farms and the CBO and is recognized by the Ministry of Land. This is underpinned by an agreement signed by community leaders and the landowners for the land to be surrendered for purposes of consolidation to engage in commercial agriculture. As some landowners do not have land titles, the land was surveyed by the Department of Land to identify each individual plot and acreage. The CBO formed a representative committee that engages directly with Value Farms.



The commercial nucleus operates large-scale, mechanized horticulture production under irrigation, including yellow passion (for Aga Khan and Coca Cola Group), kale, capsicum, beetroot, watermelon, chillies and cucumber. The products are currently sold at the farm gate.

In 2015, Value Farms aims to develop a cold chain to deliver washed and packaged vegetables to the market. It is investigating the provision of agricultural land development services and guaranteed markets to smallholder farmers operating their own land around the commercial nucleus through an outgrower scheme. An additional 400 acres have been secured for expansion, with support from a US \$500,000 grant from USAID.

The commercial hub has generated additional non-agricultural economic activities in the area, including bars, restaurants and hotels, due to the increased income.

## Challenges

- Persuading the landowners to lease their land for use in commercial agriculture by Value Farms. Land leasing was a new concept and it took eight months of negotiation to complete the deal. Farmers eventually understood the additional income that could be generated through the lease agreement, as well as the opportunity to receive regular employment (including health insurance and social security benefits).
- Attracting finance, which has slowed down acquisition of additional land and reduced progress in instalment of infrastructure.





## 9. THE PHATA SUGARCANE OUTGROWERS COOPERATIVE CASE (MALAWI)

*Smallholder land aggregation model led and owned by smallholders with professional management and technical support*

### About the business

AgDevCo is a social impact investor and agribusiness project developer, incorporated as a not-for-profit distribution, limited company in the UK. In 2013, AgDevCo Malawi made an investment into the Phata Sugarcane Outgrowers Cooperative in the Lower Shire Valley, in Southern Malawi. The coop is focused on commercial sugarcane production under center pivot irrigation systems.

In mid-2013, Phata Cooperative was awarded a €2.4 million grant from the European Union to develop a commercial sugarcane production scheme. AgDevCo provided a loan of US \$504,000 to Phata Cooperative as part of the project's funding needs as mandated by the grant terms. The joint funding covered the development costs to install a modern irrigation system to support the scheme's production objectives. The first year of harvest was successful, with sugarcane yields of 106 tons per hectare, earning each farmer an average dividend of over US \$500.

## About the Service Delivery Model

Phata is a fully registered cooperative of 378 subsistence farmers (with a total of approximately 370 hectares of land) who requested assistance to grow sugarcane from a farm management company, Agricane, which was already operating in the area. Agricane helped the farmers to pool their land and form a cooperative in order to provide the necessary production volumes to meet the supply contract through an off-taker agreement. The coop has a long-term supply contract with Illovo Malawi, a subsidiary of Associated British Foods (ABF). Agricane has been contracted by the coop to provide management and technical services based on commercial farming operations (300 hectares under center pivot irrigation) and capacity building to the members.

Phata has a Board of Directors made up by the members, Agricane and AgDevCo. They also have an Executive Committee and various sub-committees, all of which are elected and appointed by the smallholder farmer members. The coop employs over 150 people from the local communities, as well as encouraging the landowners to take on full-time positions of employment.

The coop, with Agricane supervision, has set aside 25 hectares for pooled food production for the farmer members, which is set between the pivot circles under dragline irrigation. This works more effectively than individual strips of land, and allows farmers to produce two cycles of food crops (maize) and one cycle of commercial seed production, which is also under contract to a commercial seed company.

Smallholder farmers had informal land title access from the local chief and authorities, which were used to form the cooperative. Each farmer had their land measured and mapped and the local authorities and Agricane verified that: i) the land belonged to the farmers; ii) farmers were not being coerced to join the coop; and iii) the land was not earmarked for other use.

The landowners each gave their land, which was consolidated into one unit, governed by an agreed legal constitution through the coop. The land consolidation process took around 12 months to complete and was relatively straightforward because the initiative had come from the community, rather than Agricane attempting to persuade farmers to lease their land. The coop is in the process of formalizing the commercial title deed through the Department of Lands. Once the title deed has been formalized, the coop will pay an annual land lease to the Department of Lands (most land leases are for a period of 99 years).

The farmers together own 100% of the cooperative. The size of each parcel of land determines the pro-rata share in the coop, and the share determines the size of each farmer's annual dividend. Dividends are paid in cash from profits. The 2015 dividend, at around US \$750, is expected to be 50% higher than in 2014.

Total revenue in the first year of production was US \$1.27 million, which returned a net profit to the coop of about US \$500,000. Profits were partly reinvested in the coop's activities and partly distributed to members. The coop uses the profits of the commercial seed production cultivated on the 25 hectares of pooled land to pay for both cycles of maize production, with the rest of the profits put into a revolving fund. Capacity building around banking, savings, entrepreneurship, technical skills and other areas is provided by Agricane, AgDevCo, Concern Universal and Scottish Aid.



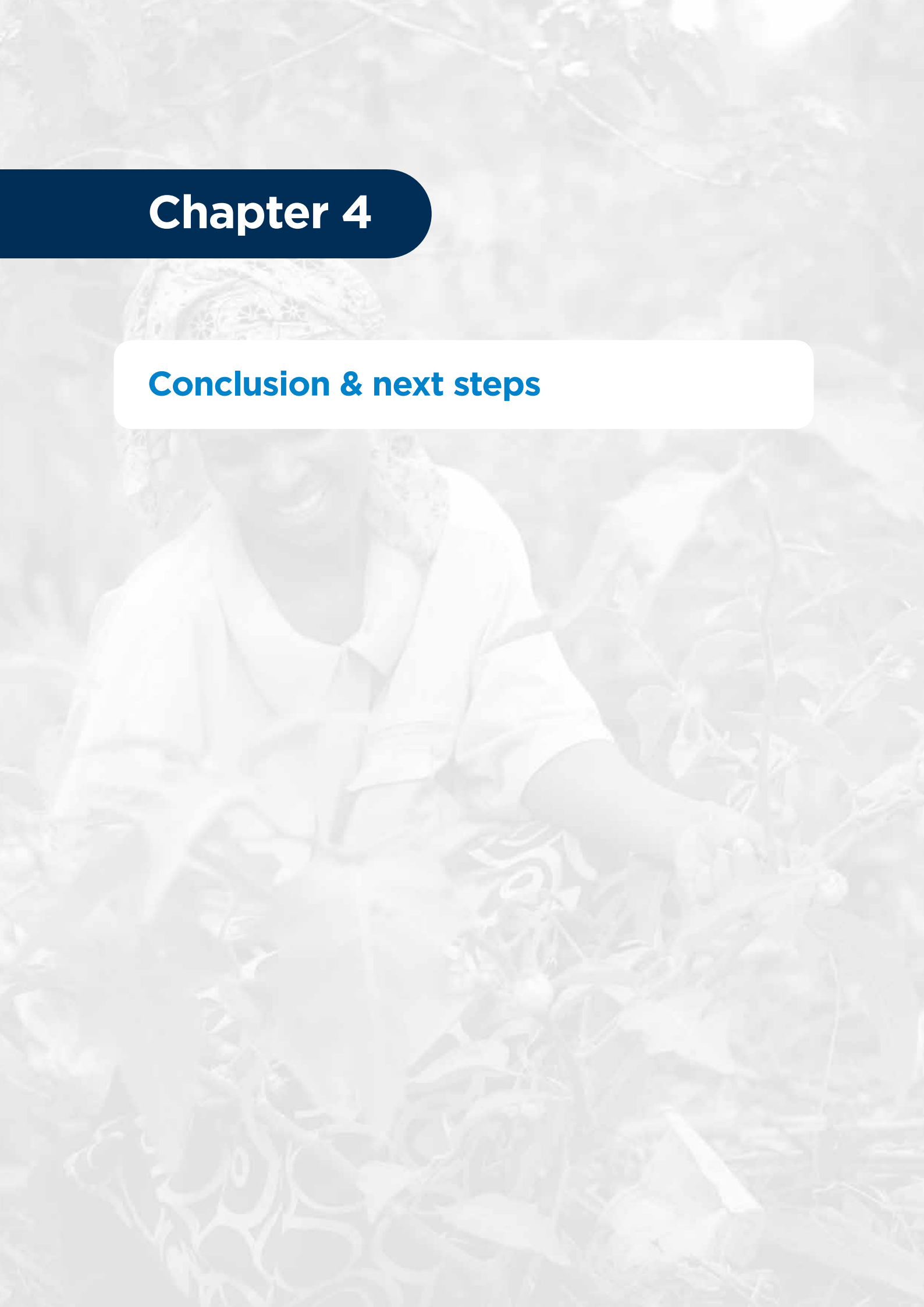
## Challenges

- Securing a formalized market link through a guaranteed off-taker.
- Farmers initiating and seeing the need for the process, rather than it being externally imposed.
- Securing a land access title for each of the individual members wanting to form the coop.
- Coop members actively taking part in the operation of the company and its day-to-day activities.
- A well-structured capacity-building program for coop members to allow them to gradually lead key components of the scheme.
- A commercial management and technical partner with knowledge of the sector.
- Affordable long-term funding to meet the development and implementation requirements.



# Chapter 4

## Conclusion & next steps





## Conclusion & next steps

Private sector investment is key to agricultural growth in Africa. Agribusiness companies need to realize that for their operations to be profitable and sustainable over the longer term, they must take a leadership role in addressing weaknesses up and down the value chain.

This requires new ways of thinking and new ways of operating. Some of the costs are beyond the capacity of an agribusiness company to finance on their own, and they need to look at ways to share the risks through partnerships – either with other companies operating along the value chain, or with development partners, financial institutions or governments.

### Making smallholders profitable through innovation

One space where partnerships are developing, is around effective service delivery models with a view to making smallholders profitable, as well as making the models themselves profitable. Companies are realizing that if smallholders are more profitable, they are able to invest in their farms to improve their productivity, increase volumes, and create greater and more sustainable supply.

Innovation is key to reaching more cost-effective and scalable service delivery models, and IDH believes that creating a learning environment to drive innovation is crucial. Through the Smallholder Working Group in partnership with Grow Africa, we're innovating through our work on analyzing service delivery models with a number of our key partners, and through our work on "Innovative Finance".

### Next steps for IDH and Grow Africa

IDH will continue to convene learning and data sharing amongst business partners on smallholder business models, and will make it freely available to its partners and other organizations that are interested in using it.

Since smallholder access to finance, for both inputs and longer-term needs such as replanting, is key in effective service delivery. IDH convenes interested partner organizations to develop a knowledge and investment agenda into specific challenges, such as renovation of perennials. To this end we work with partners like Dalberg, IFC and Rabobank.

The Smallholder Working Group has expanded its membership base and, will continue to have concrete practical discussions about how to aggregate smallholders most effectively, how to make use of public-private partnerships, what role gender plays in aggregation and service delivery models, and how IT solutions can contribute to effective aggregation and service delivery. Companies with experiences to share and that are interested in learning from each other, are welcome to get in touch.

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