
December 2017

The background of the entire page is a photograph of an elderly man with a weathered face and a grey mustache. He is wearing a traditional woven straw hat and is shirtless, carrying a thick wooden pole across his right shoulder. The background is a soft-focus green, suggesting a rural or agricultural setting.

DRIVING INNOVATIONS IN SMALLHOLDER ENGAGEMENT

Insights in Service Delivery
and Finance

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FOREWORD - BILL AND MELINDA GATES FOUNDATION



Enock Chikava

Deputy Director Ag. Development,
Bill and Melinda Gates Foundation

The Bill and Melinda Gates Foundation believes that poverty is solvable. The solution lies in addressing the root causes of why people remain poor, and a core driver of this is that the agricultural sector remains underinvested. A transformation is needed that uses agriculture as the engine for economic growth, wealth creation and poverty reduction.

We share a vision with IDH, that through the right channels and with the right tools, fragmented and hard-to-reach smallholder farmers can be empowered to improve productivity, and strengthen and grow their family businesses. To make this a reality, the private sector needs to understand the benefit of investing in their relationships with smallholders, of investing in women, investing in household nutrition and the whole farm agronomy.

This requires bringing business logic to the business of smallholders, and is the strength of the work that IDH is doing. Through a stronger analysis of the relationship the private sector has with smallholders, we are able to leverage what drives the private sector to service smallholder farmers. This drives systemic change, moving smallholders from receivers of philanthropy to sustainable and entrepreneurial business men and women.

Together we can take this forward. This report lays the foundations of what is possible when analytical rigor is brought to smallholder engagement. A platform can be constructed to service the needs of the private sector and bring the right tools and knowledge, so that smallholders can receive bundled packages that serve them more holistically. Through this collaboration, we see value chains going from being extractive to mutually value creating. And, building on strong business analytics, we can engage governments with a collective voice that speaks in the clear interest of farmers to unlock the positive enabling environments that support these inclusive business models.

We hope you will be as inspired as we were by the insights in this report. If you are, we invite you to join us in the Smallholder Innovation Platform. Only together can we create a breakthrough in smallholder engagement that addresses a key root cause of poverty.

PREFACE - IDH



Iris van der Velden

Director of Learning and Innovation,
IDH the Sustainable Trade Initiative

The world population is growing rapidly. By 2030, over 8.5 billion people will demand balanced nutrition and quality of life. To meet this challenge, without compromising our already fragile environment, an agricultural transformation is needed. A transformation that enables the world's 500 million small-scale farmers to invest in their farms - yielding more on less land. Farming will need to be seen by the next generation as an opportunity, to create economic growth and rural prosperity.

For this large-scale change to unfold, businesses need to recognize small-scale farmers (smallholders) as an asset that can be capitalized. That through leveraging and better understanding the relationships they've built- sustainable sourcing and engagement models can take root. And that by providing services that match the needs of a farm, like diversified low-cost inputs, or access to credit, farmer profitability will increase and generate sustainable returns. The good news is, this is already happening. The path is being paved by innovators trialing and incubating models of service delivery that benefit both farmers and business. The cost efficiency, economic viability and availability of these models will be pivotal for creating lasting impact.

IDH, and others, recognize this potential. Through our analyzes of over 30 models of smallholder service delivery, in 16 different counties, we have been able to identify best practices and key drivers for farmer resilience and business sustainability. Here, in this report we share with you our findings. Read on to better understand the key leverage points for creating systemic improvements in delivery systems. The data we've gathered, and patterns observed should enable farmers, service providers and investors to make smarter decisions for sustainable growth. Couple this with innovative blended finance, to de-risk investments, and we will be able to unlock billions of dollars in smallholder agriculture to take these models to scale.

IDH is setting this in motion. Join us, in catalyzing this agricultural transformation. In early 2018, we are taking our expertise to scale in the 'Smallholder Innovation Platform'. Making even more accessible the key learnings from the farmer focused business models we see blooming. The Smallholder Innovation Platform will unlock best practice in farmer engagement, technology, data and digital approaches. A funding facility and matchmaking service will reduce the cost and time involved in developing innovative finance deals, making it easier to take promising models to scale. Through this analytical and data-driven approach, we see a beautiful future for smallholder agriculture - to feed our growing world.

1.0

CONTEXT & INTRODUCTION

1.1	THE AGRICULTURAL CHALLENGE AND OPPORTUNITY
1.2	THE IDH APPROACH
1.3	THE SERVICE DELIVERY MODEL METHODOLOGY
1.4	STEPS IN THE METHODOLOGY
1.5	KEY LEARNING QUESTIONS

1.1

THE AGRICULTURAL CHALLENGE AND OPPORTUNITY

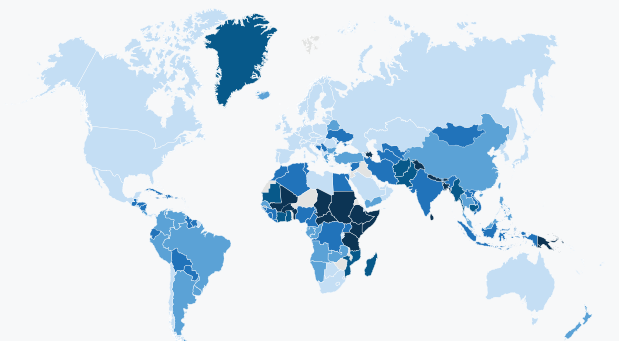
As one of the world's most important sectors, agriculture plays a critical role in the wellbeing of people and planet. It is a key driver for the global economy and is indispensable in providing food security for every human being. For developing countries in particular, the sector's importance cannot be overstated as agricultural exports are a critical source of revenue for these economies. 500 million people, or 70% of the rural poor in developing countries, rely on agriculture as a main source of income. These producers, also known as smallholder farmers, are an important source of cash crops for the world market, including coffee, cocoa, cotton, and cashew. On average, USD 8.4 billion per year, or USD 18 per farmer, is spent to assist smallholder farmers in improving their productivity, profitability, and resilience. Yet, millions of smallholder farmers continue to struggle to live above the poverty line and lack opportunities to invest in better livelihoods.

There is reason to believe that through the application of good agricultural and business practices farmers can prosper. However, the current state of affairs shows that approaches towards farmer engagement are isolated within a particular company or organization, and even commodity sector, and not developed for scale. Organizations that engage with smallholders often support them with incomplete service packages, and as a result, their productivity improvements may not last. Engagement models are not embedded into structures and not leveraged with sustainable financing. Financing for smallholders is available, but information asymmetries prevent it from flowing to them. Long-term financing would enable smallholders to make the investments they need in soil fertility, better seeds, and infrastructure.

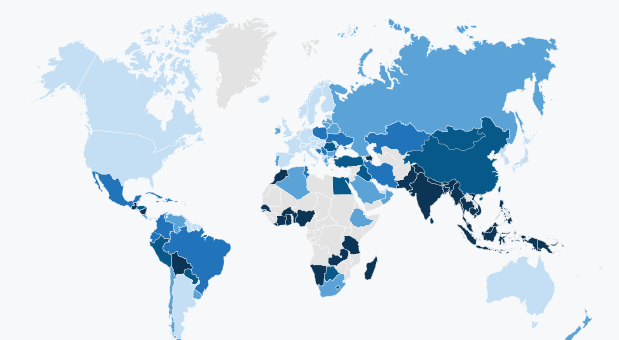
Despite this current reality, agriculture offers significant opportunities for both business growth and real, sustainable smallholder livelihood gains. Companies can offer more diversified services to meet farmers' household needs. Through serving smallholders needs, new commercial business opportunities can be developed. To make full use of these new opportunities and ensure that they are not developed in isolation, a strong coordinating and enabling environment is needed. In this growth-conducive environment, companies and the public sector can be assisted to improve their smallholder engagement strategies and funding models.

IMPORTANCE OF THE AGRICULTURE SECTOR GLOBALLY

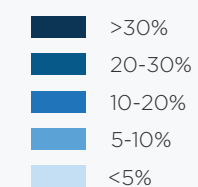
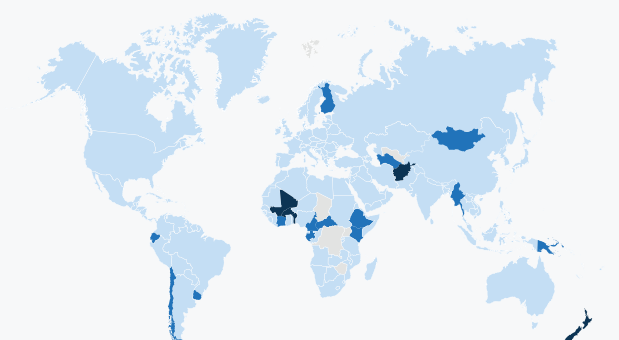
Agriculture as a % of GDP



Agriculture as a % of employment



Agriculture as a % of exports



1.2

THE IDH APPROACH

IDH was established by the public sector in 2009 to leverage and direct the strengths and interests of the private sector toward value chain sustainability, focusing on innovation and the important role of smallholders. Through this convening of public-private partnerships, IDH has built a market-based approach which creates long-lasting value for all stakeholders. Constant learning and reflection is crucial for this work, to ensure that strategies employed are at the forefront of innovations.

By 2015, IDH had invested (with a private sector co-funding ratio of 1:1) around EUR 70 million in smallholder engagement models. When monitoring the impact of these investments, it was concluded that there was much to learn about the long-term viability of the models and there was little proof of lasting positive effect at farm level. Research revealed that this had been a key topic for years, but many of the models had not been analyzed in a systematic way with the use of consistent data. Therefore, it was difficult to build up evidence on effective models.

In this gap, IDH saw potential to leverage the organization’s well-established relationships with both the private and public sectors, to better understand what drives the performance of the models providing services to smallholders. A methodology was developed with two consultancies, NewForesight and KPMG, to analyze the economic sustainability of what we referred to as “service delivery models”, the supply chain structures that provide services to smallholders for farm-level productivity and profitability improvements (see chapter 1.3 on methodology).

Service delivery models are key to realizing long-lasting improvements for smallholder livelihoods. However, they need to be improved and revolutionized to create a service sector that offers complete, tailored-to-needs packages for farmers in a financially sustainable manner.

Through this methodology, IDH works to better understand where to invest grants and loans, to have the most impact on smallholder livelihoods. This knowledge and the increasing impact it will have for the farmers, also translates to learnings that can be disseminated for wider improvements to the performance of service delivery models. IDH envisions significant opportunities for the development of new models and new innovative financing structures to make service delivery and smallholder farming a viable business at scale.

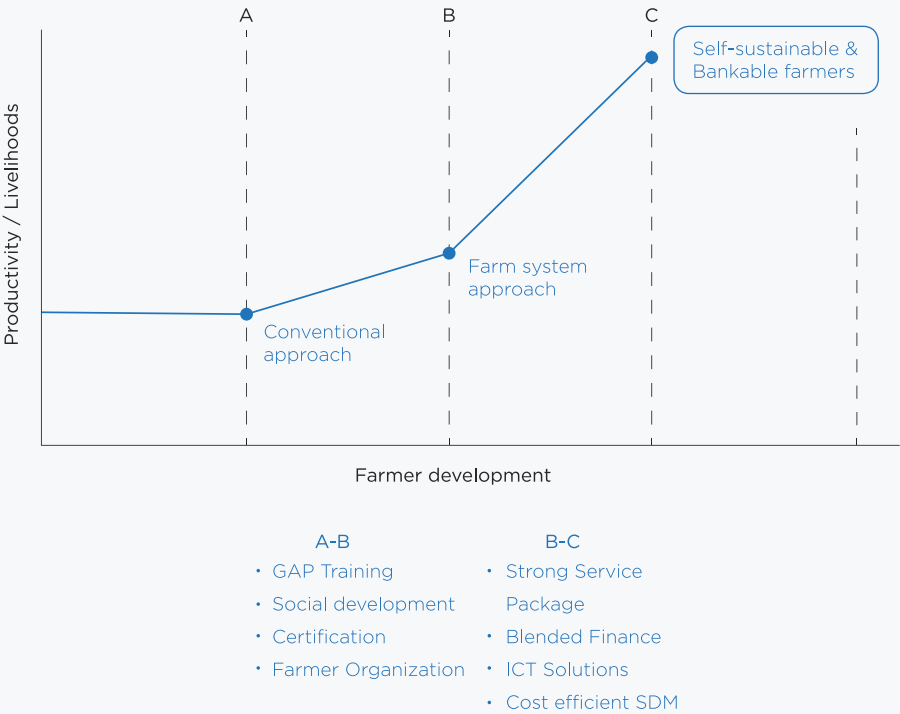
THE NEED FOR BLENDED FINANCE ACTIVITIES

Analyzing a service delivery model and gaining insight into its strengths, weaknesses, and shock resistance levels forms a solid basis to design and develop a risk-sharing structure to support our private sector partners in increasing and expanding their service supply to smallholders.

A concrete example is our work with the International Finance Corporation (IFC) and Barry Callebaut in Cote d'Ivoire. Barry Callebaut decided to expand its service supply to cocoa farmers by offering input packages on credit and longer-term replanting loans. The key driver for Barry Callebaut for this expansion is ensuring sustainable cocoa is sourced from farmers who are out of poverty. Since this is a new activity for the company, there is a need for blended finance to share

risk at the farmer portfolio level. Currently for input packages, IDH provides a first loss guarantee to IFC, leading to the first deal of a development financial institution with a private sector partner where risk is shared at farmer portfolio. This arrangement will lead to resilient farmers and a sustainable service business model for Barry Callebaut.

In our experience, in order to make farmers more bankable and resilient, to move them from “B” to “C” in the graph below, three ingredients are critical: data to understand the current situation; technical assistance to design and develop services; and blended finance to enable partners to actually implement their innovative business models.



1.3

THE SERVICE DELIVERY MODEL METHODOLOGY

In 2015, IDH set up the analytical methodology to analyze the service delivery models of three partners in coffee and cocoa. Since then additional insights were gained and the approach to systematically analyzing these insights has also evolved with the visions and needs of service providers and investors. The methodology has proven to be of significant value because by implementing it, service providers can better understand their models. They better understand their business case for providing services to smallholders, as well as the business case for farmers to use their services. They also see, with fresh insights, their models' strengths, weaknesses, and opportunities for improvement.

At the time of this report, IDH had analyzed 30 different individual service delivery models in several staple and cash crops such as coffee, cocoa, spices, cotton, and cassava. For each analysis, a report has been produced for the service provider, along with a tool to allow service providers to monitor the performance of the model over time and test potential improvements.

A benchmarking database is also available with the ability to compare data collected against 80 key performance indicators (KPIs), such as farmer profitability, costs, and financial sustainability.¹ By filtering this data, key patterns and insights can be identified, from which service providers and investors can derive learnings useful in shaping their models. This report dives into this database and presents some of the key findings.

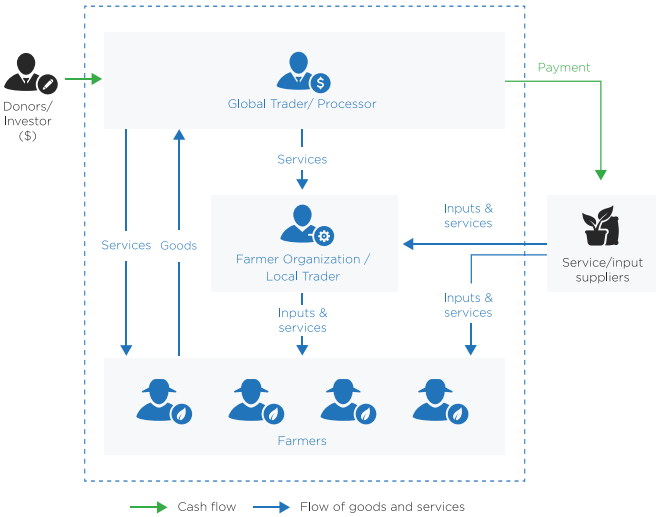
1. In Annex 8.1 the full list of KPIs is available

1.4

STEPS IN THE METHODOLOGY

There are several steps in the process of gaining insights. First, a clear picture is made of a model's structure, including key actors, flows of goods, services, and financing.

EXAMPLE OF A SIMPLIFIED OVERVIEW OF A SERVICE DELIVERY MODEL



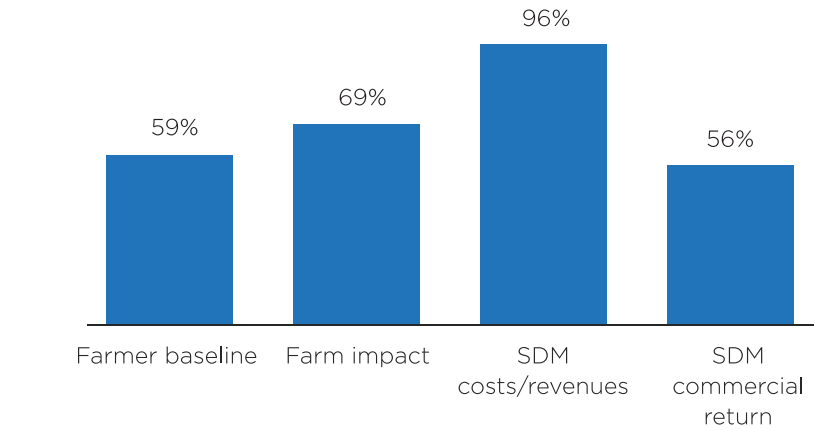
Then the methodology is used to examine costs and benefits for all those involved: farmers, service providers, and investors. Next, the returns on investment for farmers in the model is compared to farmers outside the model; this shows the effect of the model for the farmer, and how much the farmer is benefiting from the services that are provided. Additionally, several sensitivity analyses are performed, to understand how vulnerable the model is to changes in external factors like crop price and labor and input costs. Together, this information allows for a better understanding of the conditions that create either a positive or negative business case for all stakeholders in the model. The results of this process are delivered to the service provider as a case study.

As the methodology is data-driven, the availability of data is key to ensure quality findings and recommendations. In each case study analyzed, data collection has been dependent on what could be provided by the case partner (usually the main service provider), and where possible supplemented by a literature review and assumptions made by staff of the case partner.

Data collection occurs at both farm and service delivery model levels. Service provider data tends to be more easily available, since service providers tend to have good cost and revenue accounting of their own businesses. Due to the high regard service providers place on the service delivery model analysis, there is openness to providing increased access into financial information, which further improves the quality of the analysis.

Assembling quality data at farm level, however, is far more challenging. Assumptions were partially used to estimate the effectiveness of services at farm level as many operators were lacking farm level data. In some cases, the positive effect at farm level appears considerably higher, possibly due to over-optimism of assumptions compared to models in which the actual effect at farm level is backed by measured data.

PERCENTAGE OF MEASURED DATA PER DATA CATEGORY



Increasingly, service providers recognize the value of collecting data at the farm-level and are investing accordingly. Evolving technological opportunities are simultaneously driving down the costs of data collection at farm-level.

OVERVIEW OF CASES ANALYZED



 Aggregated per country - # of farmers engaged in service delivery model at time of report

TWO EXAMPLES OF BEST-IN-CLASS DATA COLLECTION

Olam Cameroon has an exceptional focus on collecting and using data to understand the efficacy and efficiency of their service delivery model. They then use those insights to continuously improve their service provision. The broader framework of an existing project allowed for robust gathering and analysis of data. Olam collects Farmer Field Book information from a significant portion of farmers on a continuous basis. This information includes indicators on a broad range of topics, from detailed agronomic information to business and social factors. This case study was one of the few for which it was possible to conduct detailed analysis isolating the cost and impact of individual services and practices; this is an example to be emulated by other service delivery model operators.

One Acre Fund uses an evidence- and data-driven model to continuously improve its service offering to farmers. It offers several packages of services, each of which is tailored to farmers’ needs and designed to work in a complementary fashion. Insights from this data collection and analysis allow One Acre Fund to continuously refine its offering and improve the value of its service delivery to farmers.



1.5

OUR KEY LEARNING QUESTIONS

In the first insight report released on our methodology, entitled: *Service Delivery Models – Insights for continuous improvement & farm impact*, aggregated key insights were shared on the performance and success of the first 10 models analyzed. These insights provided the foundation for a structured approach to think and ask critical questions about service delivery. However, despite knowledge gains, it was not clear why certain models had larger impacts at farm level, or lower levels of risk, lower costs, or higher values generated for investors. It was later discovered that the enabling environment as well as the innovative use of technology has a big role in the success of service supply.

By seeking the best and most innovative practices in service supply, breakthroughs can be made in addressing our overarching question about smallholder engagement: What innovations in service delivery have the potential to lead to scalable, sustainable, and impactful models? Answering this question can enable the service sector to develop in a way that truly meets the needs of farmers, service providers, and investors. To answer this question, we further identified four key sub questions or areas of focus:

What drives farmer resilience?

How can the costs of servicing farmers be minimized?

How can service delivery models be optimally financed?

What does an enabling environment for service delivery models look like, and how can we make it more supportive?

In this second publication, IDH shares key insights based on this expanded case portfolio. Chapter two outlines the overarching patterns that have been identified, and a language is introduced which explains archetypes for models of service delivery. An overview of types of services is also provided, with information about the models that make services accessible. Chapters three, four and five provide insights related to farmer resilience, the cost of the service delivery model, and financial sustainability outcomes respectively. Then, different service delivery model archetypes are compared on performance to find key drivers for improving farmer resilience, minimizing service delivery costs, and improving the financial sustainability of service supply.

Chapter six explains the role of the enabling environment, provides first insights from our analyses, and explains how we plan to improve and broaden this part of the methodology. In chapter seven, key conclusions are summarized and linked to broader agriculture sector observations. Based on the observations derived from the analysis, IDH’s next steps are then described.

The contents of this report should inspire service providers to work together on innovative sustainable service provision that supports the development of smallholder farmers and builds enabling environments that facilitate best practices in service delivery.

2.0

OVERARCHING PATTERNS

2.1	INTRODUCING SERVICE DELIVERY MODEL ARCHETYPES
2.1.1	THE FOUR SERVICE DELIVERY MODEL ARCHETYPES
2.2	OVERVIEW OF SERVICES
2.2.1	TYPES OF SERVICES OFFERED
2.2.2	METHODS OF SERVICE PROVISION
2.2.3	CLIENTS, DELIVERY MODE & FARMER SELECTION
2.3	REFLECTION ON OVERARCHING PATTERNS

2.1

INTRODUCING THE SERVICE DELIVERY MODEL ARCHETYPES

Using a methodology to analyze service delivery models created transparency on the performance and potential for innovation within each model. It also enabled us to build a common language and framework of understanding for service delivery models operated by different types of actors, private sector, finance, governments, and civil society.

The lens of thinking through archetypes can help to identify common characteristics and guide greater sector understanding for which models are effective in reaching farmers, what lessons can be learned, and how to best finance models. Such guidance is crucial to assisting service providers reach their objectives cost-efficiently.

THE BELOW CHARACTERISTICS WERE CONSIDERED WHEN CREATING ARCHETYPES:

The purpose of the model

This can be purely commercial, for example, securing supply. It can also be developmental, as in improving agricultural value chains and farmer livelihoods, or a combination of developmental and commercial.

Scale

Ranging from small-scale to large-scale with regard to the number of farmers - and in some cases farmer organizations (FOs) - within the scope of the SDM case analysis. In some cases, the analysis focused on only a part of a larger SDM, while often the SDMs studied continue beyond the time-scope of analysis.

Service package

Ranging from basic services, for example, training only, to extensive service packages, such as looking at farmer's household needs.

Typical service provider

There are many types of actors typically providing services to farmers. Service providers can be traders, lead farmers, etc.

Benefits of different models

Each service model has benefits both to those providing the service and those receiving the service. Benefits range from ability to scale to the cost of the model per farmer.

Risks of different models

There risks inherent in service delivery models vary, and often have to do with the scale and cost structure.

Funding needs

All SDMs need funds, the money can however be better spent at different times in a models development

2.1.1

THE FOUR SERVICE DELIVERY MODEL ARCHETYPES

GLOBAL SOURCING MODELS



Main purpose of the model is to secure product supply. Commercial in focus, these models offer a range of services (from training only to complete packages for renovation), are run by large global traders and processors, and can reach large scale.

Benefits of these models derive from their large scale. The models can have large-scale impact and in many cases, there is budget for dedicated sustainability staff who have in-depth knowledge, especially agronomic, to support farmers in realizing productivity gains.

Risks faced by these service delivery models center around service supply integration. Service supply is often either entirely separate, or only partially integrated into the commercial activities of the service provider. This fragments business and creates ambiguity regarding the internal sources of funding available to cover the costs of the service supply. There can be a significant focus on productivity increases only (although this is changing) with the risk that farmers do increase productivity, but are not successful in substantially increasing their net incomes.

Funding Global sourcing service delivery models have a need for funding in the form of grants to support development and design. These models are also in need of long-term and innovative financing, i.e. risk-sharing, to be able to implement their improved service packages.

LOCAL TRADER / PROCESSOR MODELS



Main purpose of the model is increasing efficient sourcing. Service packages are generally limited than those of global sourcing models. The local traders / processors are typically small-to-medium-scale enterprises that often do not have dedicated (sustainability) teams to operate their SDMs.

Benefits of these models are that the service supply is typically fully integrated into the commercial activities. This makes these models highly cost-efficient since every USD invested in service supply needs to generate a direct commercial return.

Risks pertaining to these models lie in their often heavy reliance on external funding for expanding and innovating their service supply. This means they do not have buffers for such investments. These models tend to have less farmer data since data collection is an investment most of these models cannot afford. Owing to this relative data paucity, these models are limited in the extent to which they can adjust their services packages.

Funding Local trader / processor models need grant funding support to be able to experiment with new services and design more complex service packages. Furthermore, they also need blended finance and, to a certain extent, commercial finance to expand their outreach and increase their scale.

SPECIALIZED MODELS



Main purpose of the model is improving and innovating agricultural value chains. They offer complete service packages tailored to farmers' needs, and are led by specialized, data and technology-driven service providers. Scale varies per model, but the largest models in our analysis are specialized SDMs.

Benefits of these models are that they focus on covering costs through farmer payments, which creates financial sustainability and creates a high motivation for ensuring that benefits at farm level exceed the cost of the service package. Moreover, they tend to have high quality data, and can mainstream innovations.

Risks surrounding these models are high initial investments to get them up and running, and the need for highly capable and motivated staff to implement them. External funding is therefore key to developing, replicating, and scaling these models; however, this dependency can limit the potential of these models. Additionally, as these SDMs cannot recover part of the costs through commercial operations, achieving financial sustainability depends entirely on value created at the farm level.

Funding Specialized models need large amounts of grant funding to develop and establish their models. In later stages, they also need concessional funding during the roll-out phase.

FARMER-LED MODELS



Main purpose of the model is to improve the productivity and livelihood of farmers and to make a successful business out of service supply. This includes the sourcing of farmers' produce, and service packages tailored to meet farmers' needs. These models are run by farmers (these models are run by farmers such as cooperatives, farmer associations, etc.) and are mostly small-scale.

Benefits of these models are that they empower farmers and, when managed professionally, can significantly improve farmers' livelihoods.

Risks involve capacity building. Specifically, farmer organizations require sufficient and quality capacity building and as leadership changes occur, there is a recurring need for capacity building. The investments in capacity building are substantial, which limits the opportunities to implement and replicate this model at scale.

Funding Farmer-led models need small, high-impact funding for their capacity building and expanding their service supply to farmers.

OVERVIEW OF FOUR SERVICE DELIVERY MODEL ARCHETYPES IDENTIFIED:

				
Archetype	GLOBAL SOURCING	LOCAL TRADERS / PROCESSORS	SERVICE-FOCUSSED	FARMER LED
Main Purpose	Secure supply	Efficient sourcing	Improve and innovate agricultural value chains	Improve the situation of farmers both through business opportunities in services and market access for farmers
Typical SDM Operator	Large global trader or processor	Local traders / processors (SMEs)	Specialized service providers	Farmers / Farmer Organizations
Scale	Large (and intention to scale fast)	Small to medium	Small to large	
Benefits	Impact on large farmer population and capacity to scale fast	Low cost/farmer with strong focus on efficiency	Driven by data and technology with high degree of innovation	Empowers farmers and/or farmer organizations
	Dedicated, knowledgeable sustainability staff	High level of financial viability	Cost-covering at early stage by recouping revenue directly through services	Greatest impact on farm profitability
Risks	Limited integration of commercial activities	Low cost/farmer with strong focus on efficiency	Driven by data and technology with high degree of innovation	Empowers farmers and/or farmer organizations
	Narrower focus on productivity	High level of financial viability	Cost-covering at early stage by recouping revenue directly through services	Greatest impact on farm profitability
Funding Needs	Long-term and innovative finance (e.g., funding of rejuvenation)	Low cost/farmer with strong focus on efficiency	Driven by data and technology with high degree of innovation	Empowers farmers and/or farmer organizations
	Initial set-up costs	High level of financial viability	Cost-covering at early stage by recouping revenue directly through services	Greatest impact on farm profitability
SDM Cost High value = Higher cost per farmer				
Farmer Resilience High value = Higher impact at farmer level				
Financial Sustainability High value = Better financial sustainability				
Number of SDMs	8	9	4	9

2.2

OVERVIEW OF SERVICES

The services provided in the service packages are key to whether service delivery is effective. An overview of all services offered in the models analyzed is presented on the next page. The overview compares for whom and how services are offered and how last mile delivery is organized.

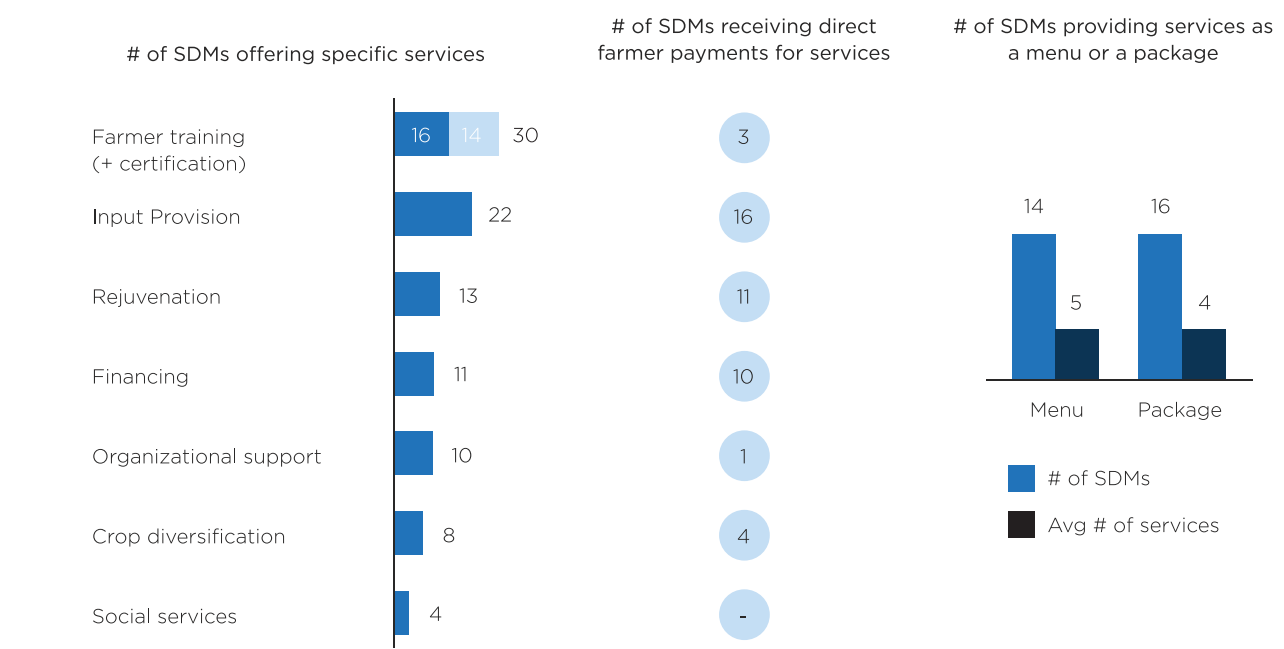
2.2.1

TYPES OF SERVICES OFFERED

Almost all service delivery models offer a form of farmer training, ranging from training via Farmer Field Schools (FFSs) to individual coaching. Most models also provide access to inputs, either on a cash or credit basis. There are clear differences in the services farmers directly pay for and those covered through crop repayment to the service provider.

In almost all cases, farmers do not pay for training, while input services are, for a large part, paid directly by farmers. This could be explained by the benefits of training not being observed directly, whereas the benefits of inputs more visibly lead to higher production and incomes. Due to this difference in perception on the benefits of specific services, models are typically only able to cover training costs with farmer payments when the training is part of an integrated service package. Therefore, the costs of training are often included in the overall price of the package.

OVERVIEW OF TYPES OF SERVICES PROVIDED, DIRECT PAYMENT OF SERVICES BY FARMERS AND HOW THE SERVICES ARE OFFERED (MENU OR PACKAGE)

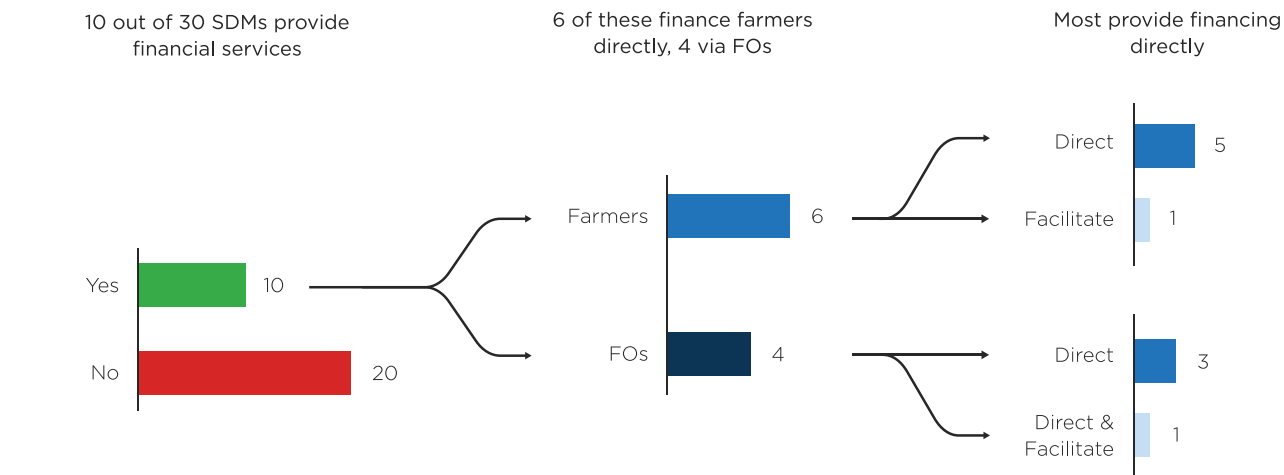


Many service delivery models work with farmer organizations, providing them with organizational support. This includes support for setting up new farmer organizations and capacity building.

Farmers and farmer organizations sorely need access to finance, yet this is accommodated by just one-third of the models. However, most models are offering services on credit, as many models cover the financing costs of their model via sourcing activities. Some service providers are

making their packages more attractive for farmers and positively increase their farmer loyalty² by including financial services. Other models are outsourcing the repayment risk to external financial institutions. In many cases, they enter into a guarantee structure to balance the risk for external financial institutions.

2. Loyalty is indicated by the proportion of total production that a farmer or farmer organization sells to the service provider.



2.2.2 METHODS OF SERVICE PROVISION

Services are offered to farmers in two ways: either in a “menu” where farmers can choose which services they would like to use, or in a “package” where services are pre-bundled for farmers. There are benefit for both options. In a menu, farmers are free to decide which service(s) to use, while a package provides all necessary and complementary services. Service packages are more frequently offered by specialized models since they seek to create maximum value by supporting all of famers’ needs. Two examples are provided to illustrate how the menu and service package function in practice.

THE SERVICE MENU

ITC offers a range of services to farmers mostly as a menu, which aims at ‘producing the buy rather than buying the produce’. The menu encompasses a broad range of technological, knowledge, and input-related services. For the more expensive and higher- impact services, ITC offers financial support in the initial years, mobilizes institutional credit and builds community models allowing farmers to familiarize themselves with the technology and become convinced of the business value. In the analysis, this approach was successful both at increasing adoption rates and generating positive impact at farm level.

THE SERVICE PACKAGE

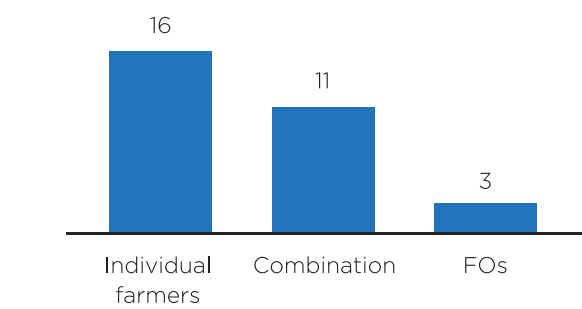
One Acre Fund offers a range of agricultural and non-agricultural products, packaged with critical services to ensure farmers earn a meaningful return on their investment. The portfolio of products and the service delivery model are standardized each season to enable consistent delivery of outcomes at scale within the local agronomic context. Between seasons, the product offering and the service package, which includes training, loans, and delivery within walking distance of farmers’ homes, are continuously refined based on evidence-based insights on what works and what does not.

2.2.3

CLIENTS, DELIVERY MODE & FARMER SELECTION

The key clients in most service delivery models analyzed are farmers, though some models focused on farmer organizations as their key clientele. All service delivery models work with aggregated farmers, either informally or formally (as in registered farmer organizations). There are two trends in the aggregation mode of farmers. Some service providers choose to strengthen and empower farmer organizations as the key service providers to farmers. This generally lead to improved cost efficiency of operations through larger-scale aggregation of farmers and/or shortening of the value chain. Other service providers work directly with farmers or informal farmer groups. This tactic was often implemented to either strengthen direct relationships with farmers or because in some cases there were no formal linkages to farmer organizations.

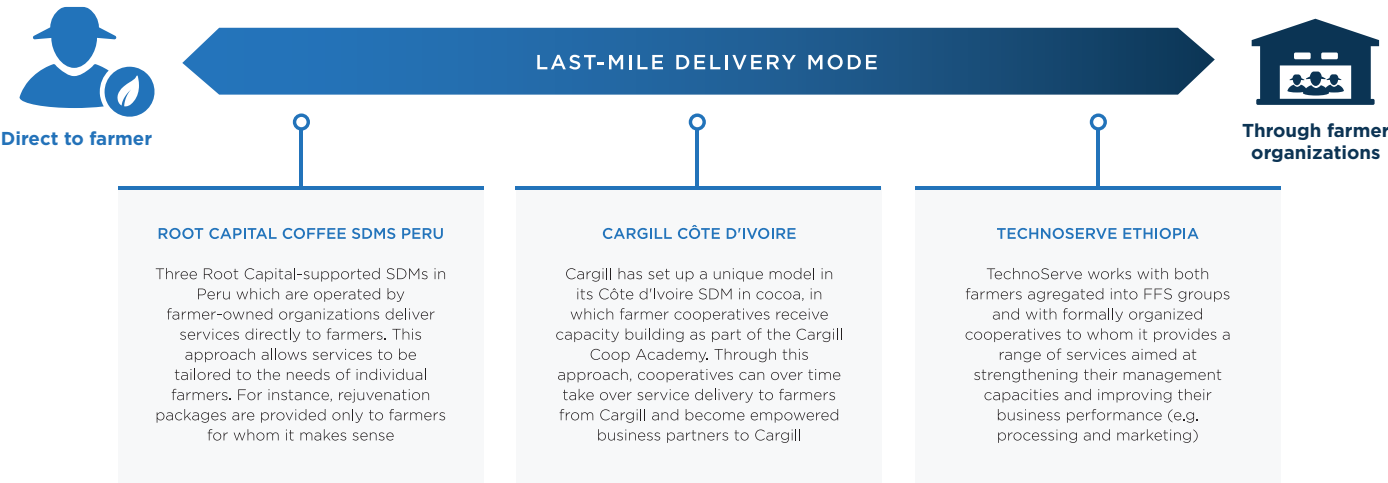
KEY CLIENTELE OF SERVICE PROVIDERS



There are different modes for the last-mile delivery to farmers (bringing services to farmers' doorsteps):

- **Direct to farmers**
- **Via lead farmers**
- **Via farmer groups**
- **Via farmer organizations**

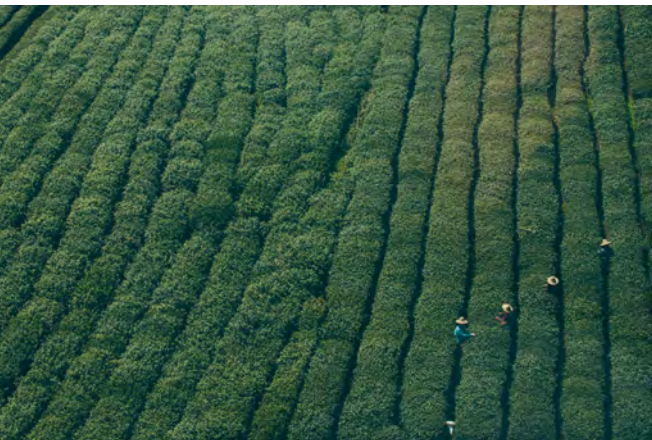
LAST-MILE DELIVERY MODES FOR SERVICE SUPPLY AND SOME KEY EXAMPLES



When farmer organizations are responsible for last-mile delivery they often use their own structures for getting the services to the doorsteps of farmers. For example, through lead farmers or farmer groups.

All last-mile delivery modes have advantages and disadvantages. Delivering services directly to farmers is on average costlier, but can lead to a strong service provider-farmer relationship. Working through lead farmers and informal farmer groups can be cost-efficient, but may be less effective due to a larger distance from farmers. Formal farmer organizations can be very effective in delegating key responsibilities in service supply, and therefore reduce costs, but do require substantial investments in capacity building of the farmer organizations. In chapter four, an in-depth analysis is provided on the effect of the delivery mode and costs per mode.

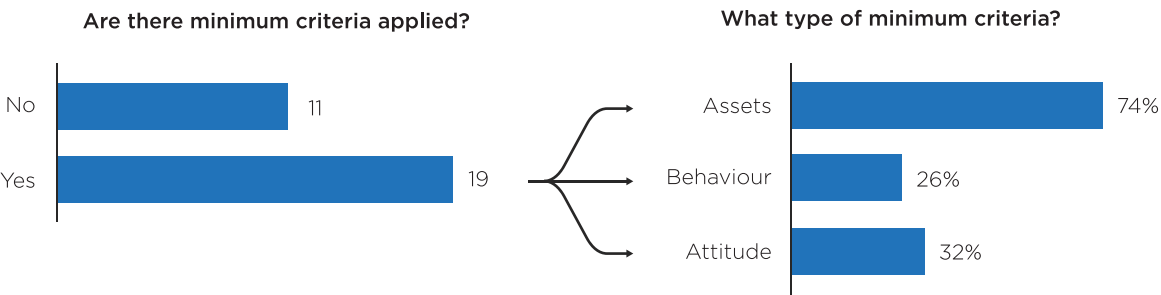
Service delivery models use varied approaches to targeting and selecting farmers. Some models require farmers and farmer organizations to meet minimum entry criteria to be eligible to participate in the SDM or to receive specific services within the SDM. Most of these criteria are linked to the assets of farmers, such as their plot size, farm age, or minimum production/sourcing volumes. Some models also use behavior and attitude-related criteria, such as risk appetite, application of practices, and view on farming as a good business opportunity, to help them in identifying and segmenting farmers, and help target them with relevant services. This use of criteria offers service providers a way to reach those farmers that are expected to have the capacity to make optimal use of the services offered, therefore allowing service providers to mitigate their risks, while aligning the service offering with farmers' needs and capabilities.



The other approach used by service providers to target and select farmers involves segmentation. In most cases, segmentation works as a ranking system, whereby farmers can qualify for progressively complex services once they meet the criteria for each segment. In a few cases segmentation is more rigid and based on characteristics, such as age, gender, or farm size.

The two cases on the next page provide practical examples of how minimum criteria are applied for individual farmers and how a ranking system is implemented for driving the performance of farmer organizations.

USE AND TYPE OF MINIMUM CRITERIA FOR SELECTING FARMERS





USING MINIMUM CRITERIA FOR INDIVIDUAL FARMERS

For farmer-led coffee service delivery models in Mexico and Peru analyzed in partnership with **Root Capital**, members must meet the additional criteria to receive a multiyear loan for farm renovation, which is accompanied by more intensive extension. While details vary from cooperative to cooperative, the criteria generally center on members' relationships to cooperatives and their creditworthiness. Example criteria are as follows:

- Consistent sale of at least 70% of annual coffee production to the cooperative
- Senior tenure as member
- No outstanding debt with the cooperative or local microfinance institutions (MFIs)
- (In some cases) a property title or clear customary right to farmland

USING A RANKING SYSTEM FOR FARMER ORGANIZATIONS

In the **Olam** and **Anatrans** service delivery models, farmer organizations are ranked in a 1*, 2*, 3* system. As farmer organizations graduate to higher ranks, they gain access to progressively more extensive service offerings and take on larger commercial responsibilities, which in turn creates additional sources of income for them. Additionally, as the farmer organizations take a larger role in providing services to farmers, it empowers them, while allowing the SDM operators to focus on their core commercial activities.

2.3

REFLECTION ON OVERARCHING PATTERNS

Classifying service delivery models into archetypes can deliver benefits for all stakeholders in service provision. Service providers are able to evaluate their own successes, challenges and opportunities for innovation by comparing their model with others of the same archetype. The experiences of others helps service providers make better investment choices in which services to delivery and how. The farmer, in turn, benefits from the increased knowledge the service provider has, and receives more relevant services. Archetypes also enable investors to make better informed decisions with regards to the types and timing of financial support needed in order to maximize impact.

To recap, training, inputs, finance, and organizational capacity building are the services most frequently provided to farmers. Farmers are more willing to pay directly for services that involve inputs and finance. They tend to either receive services directly, via farmer organizations, or by a combination of the two. There are advantage to both types of service packages identified. Service menus allow farmers freedom to choose, and package models involve farmers receiving all the services they need in one bundle. Other insights indicate how targeting and selecting farmers and farmer organizations can drive service delivery model performance, and the specific advantages and disadvantages of different modes of last-mile delivery.

In the next chapter, key outcomes of the analyses on farmer resilience are shared. Patterns are presented, including the key drivers to improve farmer resilience.



3.0

FARMER RESILIENCE

3.1	DEFINING FARMER RESILIENCE
3.2	OVERALL PICTURE AND HIGH PERFORMERS
3.3	FARMER RESILIENCE BY ARCHETYPE
3.4	DRIVERS OF FARMER RESILIENCE
3.5	REFLECTION ON FARMER RESILIENCE

3.1

DEFINING FARMER RESILIENCE

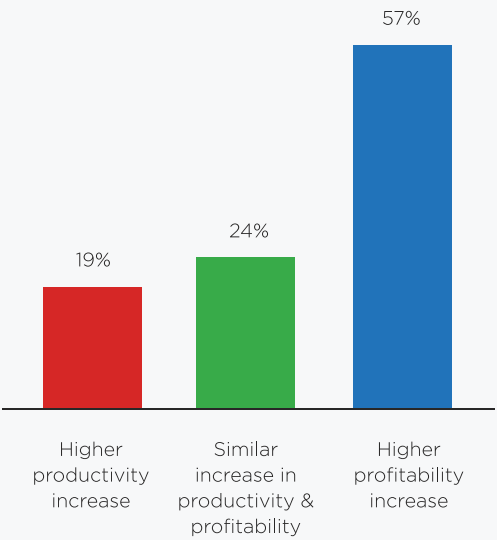
All the service delivery models analyzed aim to improve farmer resilience, either as a primary or secondary objective. Farmer resilience is a broad term that can be interpreted in different ways. This analysis looks at resilience through an economic lens, measuring the change to net income of farmers derived from the production of the crops supported via the service delivery model. Furthermore, farmers' resilience is considered against market volatility, for example price fluctuations for their crops. Food security is a key priority for farmers and can influence their investment decisions and behavior related to particular crops. Therefore, food security and nutrition needs of farmer households is also considered in the analysis of farmer resilience.

Farmer resilience is key for farmers, since it determines their possibilities to fulfill basic household needs and their capacity to invest in new opportunities to improve their livelihoods. It is also important for service providers, because it highly influences the extent to which farmers can make use of service packages offered, pay for services and whether they need the services in the first place. All these factors influence the business case for service providers and the extent to which farmers can realize both increases in productivity and net income.

FROM FOCUSING ON ONLY PRODUCTIVITY TO A FOCUS ON PRODUCTIVITY AND PROFITABILITY

Traditionally, the focus of service providers has been on improving the productivity levels of farmers. However, as indicated in the figure below, there is great importance in understanding the effect that increased productivity has on farmers' net incomes. In some cases, farmers need to make significant investments, and take risks, to realize productivity gains which are not assured, leading to lower increases in profitability compared to the increase in productivity.

TRADEOFF IN PRODUCTIVITY AND PRODUCTIVITY



% of cases that realized a higher productivity increase than profitability increase, % of cases with a similar increase in productivity and profitability and % of cases with a higher profitability increase than productivity increase.

3.2

OVERALL PICTURE AND HIGH PERFORMERS

The analysis includes the impact of service provision on both farmer productivity and farmer profitability. The figures on farmer net income are based on the income from crops serviced through the service delivery models only and farmers may have other sources of income that were not included in the analysis. It should be considered when reviewing the results of individual service delivery models, that prices can either positively or negatively effect net farmer incomes. In some cases services are subsidized, which can positively influence increases in net income since farmers’ costs are lowered.

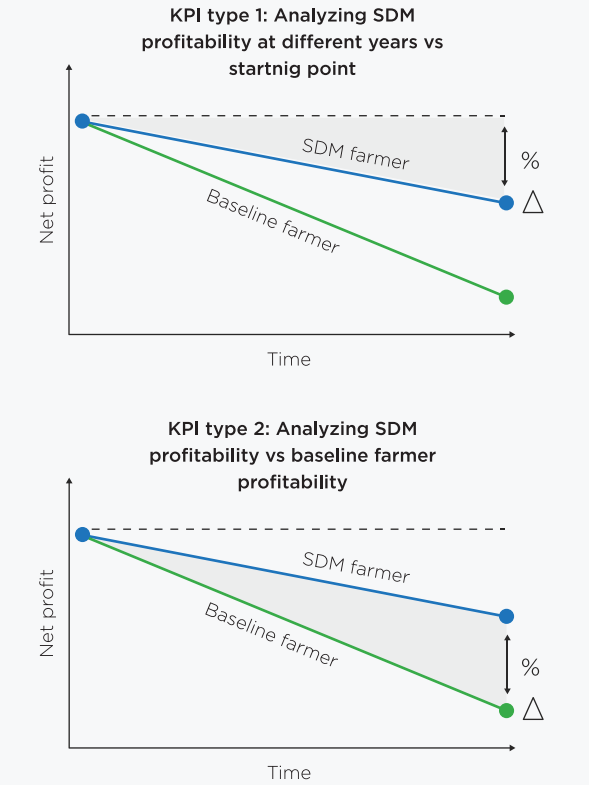
The level of increase in profitability of farmers gives an indication of the success of the services offered, but does not give a complete picture. Farmers starting with extremely low incomes can realize large increases in their incomes in terms of percentages, but they can still remain below the poverty line. Almost all service delivery models work with farmers whose main farm income is below the national median income.³

5. Median income represents the typical income in a determined population. The value is obtained by dividing the population (sample) into two equal groups of respondents: one group above and another group below the value. Therefore, median income divides a certain sample (population) into two equal groups while it avoids skewing income due to abnormalities on the extreme ends. Gallup Institute arrived at 131 countries’ median incomes by asking respondents their total monthly household income in local currencies before taxes. This calculation includes income from wages and salaries, remittances from family members living elsewhere, farming, and all other sources of income.

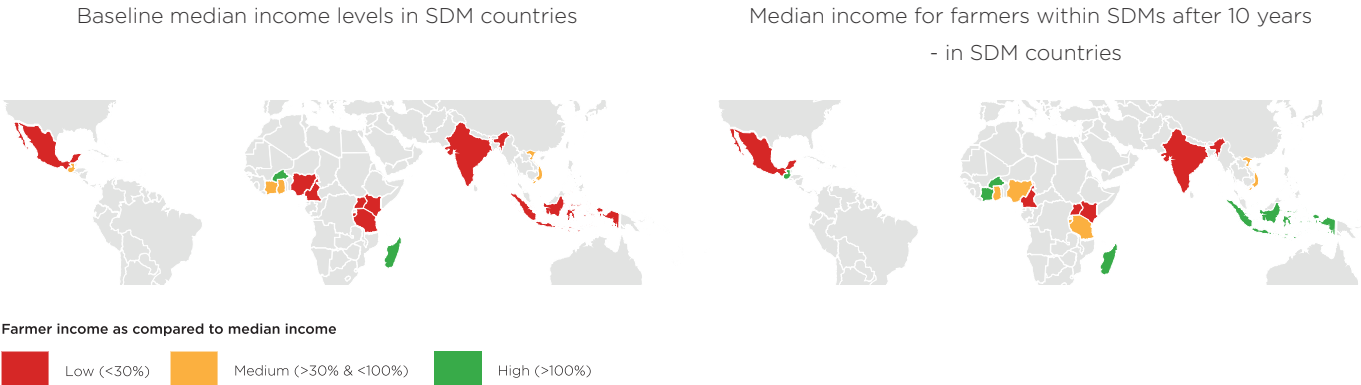
TWO WAYS OF LOOKING AT PROFITABILITY AND PRODUCTIVITY IMPACT

1. Compare a farmer’s starting point with the effect of the service supply after a few years.
2. Compare the impact of the service supply on a farmer who is part of the service delivery model with farmers who are outside the model—a control group.

The first graph shows the first method, in which net income is compared against a starting point (in this case a decrease), and the graph below shows a comparison against a baseline farmer over time (also a decrease, but at a lower rate). This report generally uses the latter method of analysis. It is then complemented with various key performance indicators to give a more complete picture, for instance whether farmers in the model move upwards in terms of various poverty indicators.



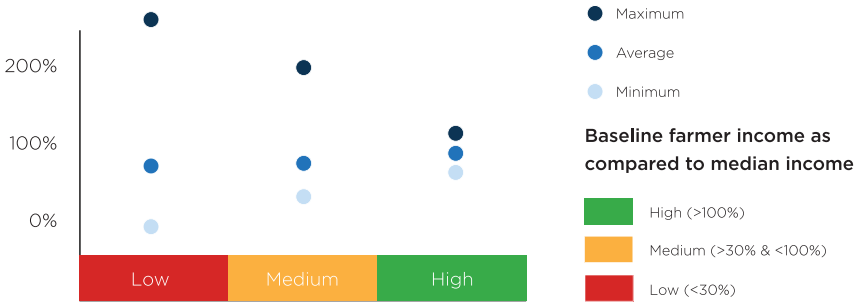
EFFECT OF SDMS ON MEDIAN INCOME LEVELS



The figure above shows that service delivery models have a positive impact at median income levels in countries where they operate. However, in quite a few countries the net income of farmers participating in the SDM remains below the median income. There remains a need (and an opportunity) for service providers to further improve their packages and the effect at farmer level.

The figure below shows the range of increase in profitability at farm level for three segments of farmers based on their net incomes as compared to the national median income. While on average all three segments show a similar profitability, such an increase is relative and therefore does not imply these farmers can reach median income levels.

RANGES OF PROFITABILITY INCREASE FOR THREE SEGMENTS OF FARMERS



The following three cases are examples of high-performers in terms of impact on farmer profitability. These cases have different ways of creating high impact at farmer level: increasing value through higher processing and higher quality; increasing income due to services for rejuvenation and via offering a complete service package. In the section on drivers for farmer resilience, it is further explained how farmer resilience can be positively influenced.

CREATING HIGH IMPACT THROUGH PROCESSING AND IMPROVING QUALITY

In the **Barry Callebaut-Prova** service delivery model, an important component of farmer training involves building capabilities in the curing of vanilla. Farmers that apply this practice see their incomes double compared to the baseline scenario, with most of the revenue increase a result of a greater quantity of cured vanilla rather than increased productivity. This effect occurs because when curing vanilla, farmers can realize a value increase of around two, depending on the relative prices of green and cured vanilla and the curing ratio that farmers can achieve.

CREATING HIGH IMPACT THROUGH SERVICE PACKAGES FOR RENOVATION AND REHABILITATION (R&R)

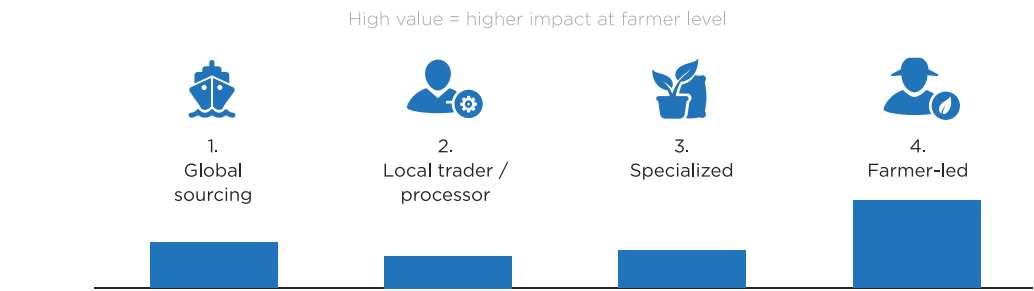
For farmer-led service delivery models in Mexico and Peru analyzed in partnership with **Root Capital**, aging coffee trees result in low and decreasing coffee productivity. Recent rust attacks have worsened the situation, leaving a significant percentage of farmland unproductive (Root Capital cases assume around 33% losses on average, based on field surveying). Farmers who are provided with a combination of training, inputs, and planting materials coupled with long-term concessional loans are able to cover the large upfront expenses that are required to renovate the rust-affected trees, significantly improving long-term coffee production and incomes.

CREATING HIGH IMPACT THROUGH A TAILOR-MADE, WELL-DESIGNED, COMPLETE SERVICE PACKAGE

One Acre Fund carefully constructs their One Acre Package to maximize the combined impact of their services on farmer livelihood. This means they start by analyzing the needs of the farmers in the area they service and then build the package with several types of services. The core of the package serves to maximize the productivity of one acre of the main crop, which is offered “one-size fits all”. Complementing this, they provide diversification inputs for other crops. Finally, One Acre Fund offers a range of services focused on farmers’ other needs, such as solar energy equipment. They also monitor the impact these services have on farmers, and over time adjust their package and offerings based on their findings, optimizing the cost of the package against the impact on the farmer.

3.3 FARMER RESILIENCE BY ARCHETYPE

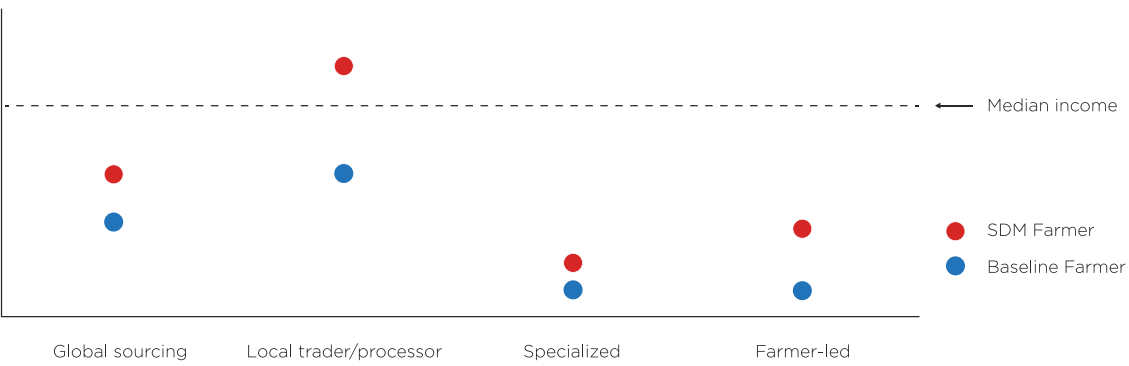
SDM ARCHETYPES AND THEIR IMPACT ON FARMER PROFITABILITY



Farmer-led service delivery models have the highest impact on farmer profitability. This is influenced by rejuvenation service packages being offered to their farmers, significantly boosting farmer incomes in the long run. Specialized models use the most accurate data on farm-level impact, thus showing the most accurate increases in farmer profitability. Local trader / processor models have the least relative impact, largely due to the basic service packages they offer, and the more advanced farmers they work with.

There are clear differences in the farmer segments targeted by the service delivery model archetypes (see figure below). Service-based models have a larger developmental focus, reflected in their engagement with poorer farmers. Farmer-led models seem to work with the poorest farmers, but this finding could be influenced by the specific crop and farmer organizations that were part of this report’s portfolio. The local processor/trader-led models work with farmers who are better off. This can be explained by the fact that these service providers run fully-commercial models and often lack the spare funding it takes to invest in service supply.

SDM ARCHETYPES AND FARMER SEGMENTS THAT ARE TARGETED



An “SDM farmer” is a farmer who receives services through the SDM. A “baseline farmer” is a farmer who does not receive services through the SDM. We compare impact over a 10-year period.

3.4

DRIVERS OF FARMER RESILIENCE

One of the four key learning objectives of this report is how to improve farmer resilience. A preliminary answer is in the key drivers analyzed here.

LOW-COST INPUTS

Providing services that allow farmers to decrease the costs of inputs can boost farmers' net incomes. The costs of inputs can be decreased in different ways, ranging from collectively buying inputs in bulk, to in-house production of key inputs.

In-house production of inputs to lower costs for farmers

While farmers in the **Pratibha Syntex** service delivery model may want to grow organic crops for various reasons, they frequently lack access to affordable quality inputs that meet organic standards. Pratibha Syntex supports farmers to set up their own, financially sustainable organic input production centers, decreasing costs of cotton production and farmer dependence on the market.

A similar example was observed in the **Gulu Agricultural Development Company (GADC)** service delivery model, where farmer groups were supported in producing organic pesticides.

DIVERSIFICATION

Diversification refers to farmers expanding the variety of crops on their farms in order to create greater resilience against externalities. Service providers are increasingly offering services to support farmers diversifying in both cash and staple crops within the farming system. Generally there are three main benefits of crop diversification: improved food security, protection against price volatility, and more active and flexible decision-making.

Services provided for staple crops positively contribute to the food security of farmers' households, which is one of their main priorities, and can decrease food expenses. Examples of organizations carrying out such services follow.

Nutritional gardens to support food security

Pratibha Syntex has initiated with farmers the concept of nutritional gardens which aim to produce chemical-free food for the provision of complete nutrition for the whole farmer family. Farmers are motivated to dedicate a one acre of plot of land to fulfill the food requirements of their individual families by growing 5-15 various crops with cotton as intercrops, ranging from grains, oilseed, pulses, spices, vegetables & fruits. This shall ensure the availability of a complete nutritional and organic diet, and has the potential to substantially enhance economic yield per acre from the same farm. Gradually this can be increased from one acre to the entire land of the farmer. The concept of intercropping supports nutritional security, increases income, and a multi-cropping system positively affects the environment.

Additionally, several of the service packages One Acre Fund offers focus on food crops and are designed to help farmers better meet their household's food security needs.

Providing services for different crops can help protect farmers against price or other market shocks threatening their crops. Examples of organizations carrying out such services are below.

Diversifying cash crops to protect farmers from price shocks

Barry Callebaut and **Prova** support vanilla farmers in Madagascar to diversify into cocoa as well. Currently, cocoa does not compete with vanilla in terms of profitability per hectare, however it does increase farmer resilience in significant ways. For example, cocoa provides farmers with income at different times of the year than vanilla, creating more consistent cash flows, and balances their use of available labor, as harvesting times are different for vanilla and cocoa. Another reason farming cocoa increases farmer resilience is that vanilla prices have been very volatile in recent years, and diversifying into cocoa allows farmers to have a second source of income that is insulated from vanilla market price volatility.

Additionally, when farmers rely on a cash crop as their main source of income, diversification with commercialized annual crops allows them to similarly diversify their income sources. For farmers that mainly work with annual crops, support for decision-making regarding which crops to invest in positively influences their capacity to realize a higher return on investment on their agricultural activities, and also assists farmers with managing their cash flows. Examples of organizations carrying out such services are below.

Diversification for creating more consistent cash flows

The **ECOM** service delivery model operated via Tutunze Kahawa Ltd., offers planting materials in the form of coffee and shade trees for coffee farmers in the Mbinga region of Tanzania. The variety of shade trees offered serve multiple purposes. First, they can be used as end products such as timber, fodder for cattle, and for growing fruits. These products are sold, diversifying and increasing the stability of famers' incomes. Moreover, planting shade trees among coffee also improves soil conditions on the farm through erosion control and the nitrogen fixating qualities of certain tree species. Shade trees also increase the resilience and adaptation of coffee plantations to climate change, provide habitats for on-farm biodiversity, and help farmers comply with certain sustainability standards.

VALUE-ADDING ACTIVITIES

When farmers are supported with activities that allow them to increase the value of their product, this can significantly increase their net incomes. This means that farmers can improve the quality of their production without needing to increase their productivity. The opportunities to add value via quality are crop and context specific. Examples of organizations carrying out such activities follow below.

Increasing value through accessing niche markets

Next to increasing productivity, **Root Capital** seeks to improve coffee farmer profitability. By becoming part of a cooperative, farmers can sell their produce at higher prices to specialty export coffee markets, while at the same time increasing their share of high quality coffee that can be sold to those markets.

Farmer incomes can increase by taking on additional value-capturing activities, such as processing, logistics and marketing, and moving them up the value chain. Examples of organizations supporting these activities are found below.

Increasing value through access to markets

Through their Loop system, **Digital Green** helps farmers obtain better prices for their vegetable crops. A member, called an aggregator, is selected from the community to transport and sell crops on a farmer's behalf. Through the Loop mobile app, aggregators gain insight into which markets provide the best prices for their products. This not only makes transportation more cost effective, but earns farmers better prices at market. Additionally, this aggregation at farm-level has the potential to increase farmer incomes and resilience by reducing post-harvest loss: excess produce that was previously too small in quantity to merit transportation to market for sale by individual farmers is now valuable when aggregated with their neighbors' output.

Increasing value by processing services

Sangany plans to support farmer groups in setting up and operating small-scale wet milling facilities on behalf of their members. Sangany provides the equipment on a free leasing basis, which can be renewed based on certain volumes of produce being sold to Sangany. Our analysis found that this arrangement has the potential to be both beneficial for the farmer groups, who have an additional profit-generating activity further up the value chain, and Sangany, which can source more efficiently from farmer organizations rather than individual farmers, and receive a higher quality product.

Increasing value through processing activities

Support from **TechnoServe** for farmer cooperatives enables them to take on a more profitable role in value adding activities, namely the wet milling of beans on behalf of their farmers, as well as the related marketing activities. This can be done more efficiently at the farmer group level than at individual farm level, and farmers benefit through receiving dividends from these cooperatives' profits.

Increasing value through processing activities and enhanced market access

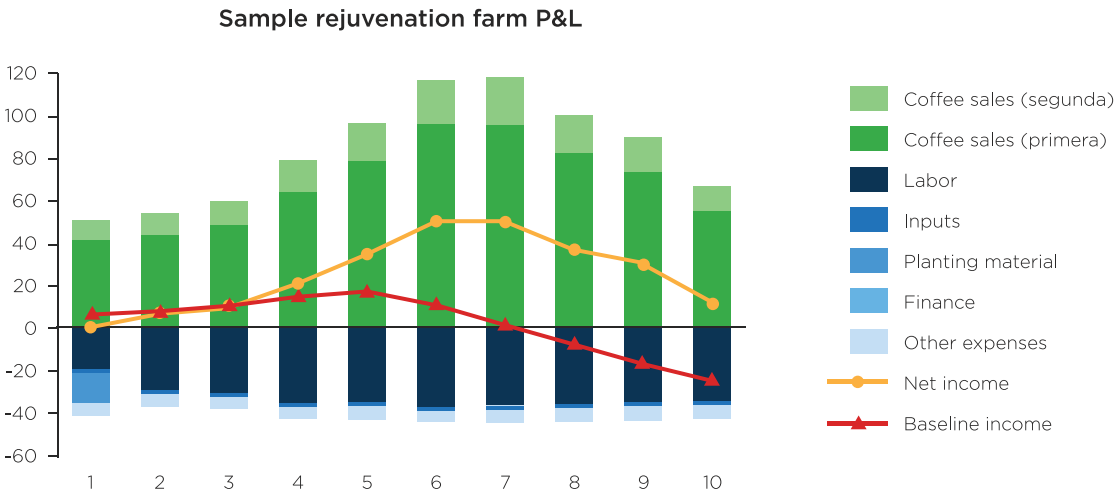
Increasing value through empowering farmers and shortening the value chain, the **Hanns R. Neumann Stiftung (HRNS)** has supported farmers to organize themselves into Depot Committees. Through these Depot Committees farmer-members sell in bulk directly to export companies, thereby shortening the value chain and increasing the value captured.

REJUVENATION

In the previous report on service delivery models published by IDH, the importance of rejuvenation for farmer resilience in perennial crops was identified. Since many farmers who work with tree crops have many old trees that have passed their peak productivity and thus produce low yields, there is a need to invest in either rehabilitation, increasing the productivity of existing trees, or renovation, replacing trees with disease resistant and high yielding varieties.

Renovation and rehabilitation require significant investments from farmers. When trees are being replanted or rehabilitated, farmers are confronted with a decrease in income. If farmers decide to invest in new trees, they must contend with the so-called valley of death effect, where replacing old, unproductive trees with new seedlings can create significantly higher income in the medium and long term, but creates an initial period of several years when the young trees do not produce and thus lead to a significant income drop for farmers. When farmers are supported with the right package to make the required long-term investments, the longer-term affect on the net income of farmers is positive. Examples of organizations carrying out such services are below.

THE EFFECT OF A REJUVENATION PACKAGE ON THE NET INCOME OF A FARMER



Supporting farmers with planting material

The **ACOM/SMS** nursery at the Bao Loc FTC produces both coffee planting material and a variety of shade trees. Supporting farm-level replanting efforts in Vietnam is particularly important because coffee is one of Vietnam's most important sources of income, and the country is the world's second leading coffee-producing nation. Within the next 10 years, more than 70% of the country's coffee plantations will reach their replacement age. Thus, efforts such as those taken by ACOM/SMS, that provide farmers with the materials they need to thrive, are critical to ensuring the livelihoods of farmers and securing Vietnam's economic future.

FINANCIAL SERVICES

Financial services can positively influence farmers' net incomes in two ways. First, when financial services are made available to farmers on more attractive terms and conditions, farmers gain access to the financial services of a local MFI instead of relying on access from local moneylenders, which has a positive effect on farm income. Examples of organizations carrying out such services are below.

Facilitation for access to financial services for farmers

One of the service delivery models that offers financial services to farmers is **Sangany**, which facilitates access to finance for farmers via a local MFI. The costs and benefits of such financing are examined in the following table.

INSIGHTS INTO THE PROS AND CONS FOR FARMERS OF DIFFERENT FINANCIAL SOURCES

	Baseline	SDM Farmers
	Farmers receiving financing from traditional sources	Farmers receiving financing from MFI facilitated by Sangany
Lender	Local level: store owners, local collectors	MFI (facilitated by Sangany)
Rate	-11% / month	2.5% / month
Pros	+ Flexibility (of repayment, timing) + On the ground relationships	+ Significantly lower rates
Cons	- Very high interest rates	- Need for (some) financial literacy - Formal, less flexibility - Guarantees needed - More complex process
Estimated annual financing costs '000 MGA 89 28 533 168 Monthly Annual Local lender MFI		

Secondly, when services are offered on credit to farmers, they are able to access more complete service packages than they would otherwise, without access to finance. Many farmers do not have the means to invest, for example, in inputs and rejuvenation, and offering credit services allows them to make use of a more complete service package. An example of organizations carrying out such services follows.

Access to a complete service package on credit

In the **Babban Gona** model, Lead Farmers pick up inputs (on credit) on behalf of their group and its members. The amount of inputs required per group is calculated based on individual field size and recommended inputs/ha. This credit gets paid back through the collective production of the group at harvest time. Via this arrangement, farmers can get access to attractive financing in addition to high quality inputs; interest rates are approximately 40% lower than those typically charged by local money lenders.

LABOR

The drivers discussed above have a positive impact on farmer incomes. Regarding labor, however, it can either be a key limiting or facilitating factor for farm-level impact. The impact labor has on incomes largely depends upon the type of labor employed—family, hired, or mechanized.

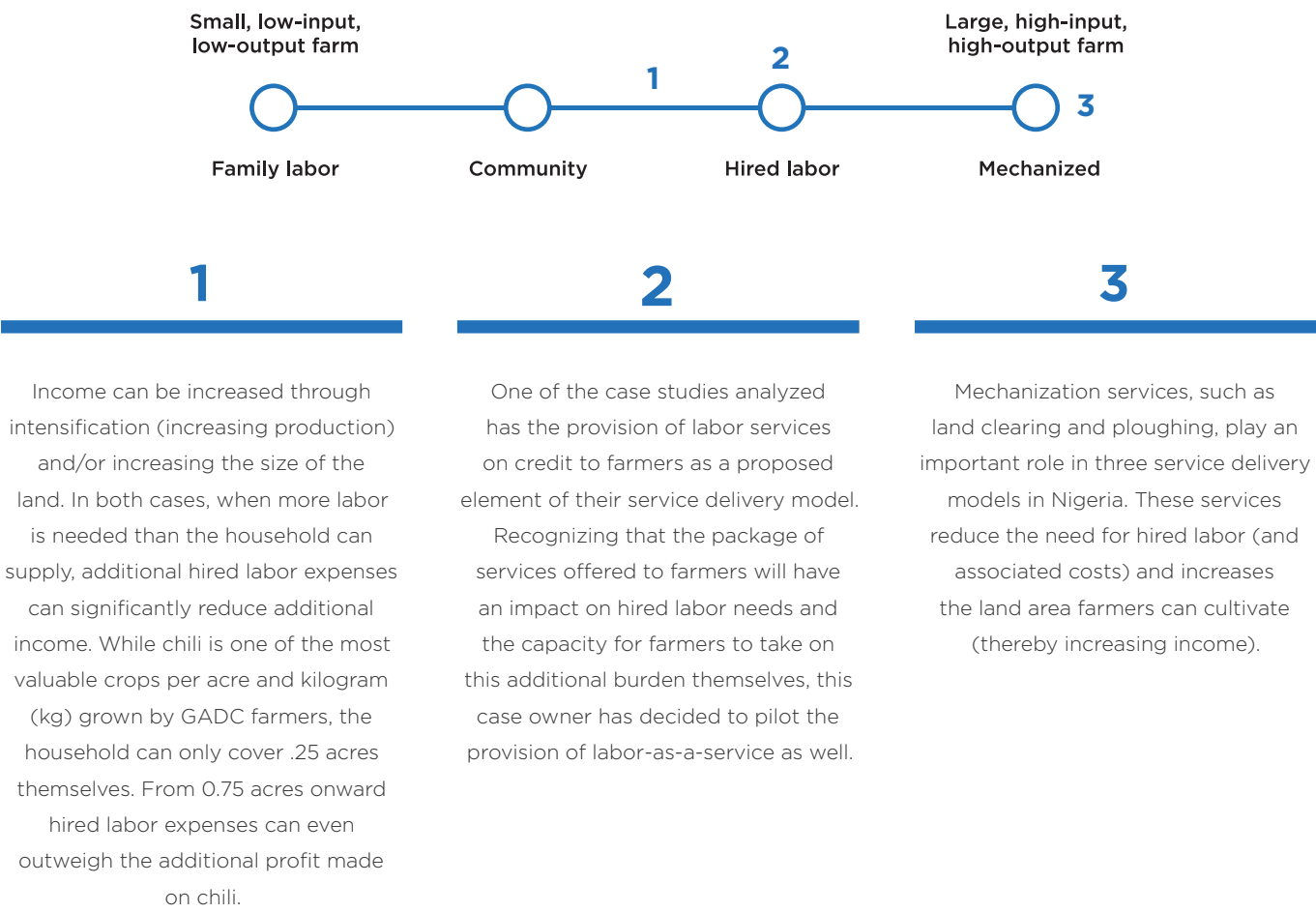
Farmers who primarily rely on family labor and have not utilized it to maximum capacity can realize significant profitability gains: applying additional services and practices derived from the service delivery model will lead to higher needs but limited or no additional hired labor costs. This type of dynamic was recognized in several service delivery models that work with very poor and/or small farms.

The situation is different for farmers who dependent on hired labor. Here, farmers who want to increase their scale of production or apply new best practices will need to conduct a cost-benefit analysis to determine whether such an investment is viable.

Regarding mechanization, at a certain farm size there may be a positive business case to (partially) replace hired labor. However, at the moment, very few service delivery models include mechanization services in their service supply.

The image on the next page shows an illustrative spectrum of farm sizes and farming systems, ranging from small farms relying mostly on family labor, to farms on which mechanized options start to become economically viable. Examples from service delivery model case studies are given for different points on the spectrum.

FARM SIZE AND SYSTEM



INITIATIVES TARGETING WOMEN AND YOUTH

There are service delivery models that have strategies to support specific target groups like women and youth. Social objectives are an integral part of their strategy. Below are a few interesting examples of how such social objectives are realized.

Sangany has several interventions focused specifically on female farmers and workers. It supports the set-up of nurseries operated by women's associations and aims to make these commercially self-sustaining entities. These associations not only provide a valuable service to farmers, but also as an additional source of income for the women who are members.

In northern Uganda, staggeringly high rates of unemployment resulting from more than 25 years of civil war, along with domestic issues prompted by gender inequality, have resulted in a need for youth and women to be prioritized in agricultural production. Through its service delivery model, **GADC** promotes social inclusion by providing trainings on gender equality using model community couples as examples of the benefits of sharing ideas together, making decisions together, and treating the farm as a family business. GADC also prioritizes the promotion of women and youth (under 25 years of age) to fill open positions for lead farmers, area coordinators, and field officers. This effort shows positive impacts. For example, when trainings provided through the service delivery model are led by lead farmers, field officers, or area coordinators who are women, participation rates for women increase.

Coffee growing has traditionally been a male-dominated field. **Olam** in Cameroon has been successful in empowering women. For example, in 2015, 13 out of 34 farmer trainers and 3 out of 90 farmer group leaders were women. This success has the potential of changing not only the coffee sector, but whole communities.

REFLECTION ON FARMER RESILIENCE

The importance of understanding and ensuring farmer resilience cannot be overstated. Local agricultural production is often dominated by the rural poor, and as can be seen in the analyses, service providers often work with some of the poorest populations. The income of farmers participating in service delivery models is consistently below national median income levels. The service models analyzed in this study showed a positive impact on farmer resilience. There are also opportunities to further increase farmer net incomes since median incomes in many cases are not yet reached. Different types of service delivery models target different types of farmers. The poorest farmers who participate in service delivery models can make the most in terms of profitability gains (in relative terms).

Service providers can play a big role in developing farmer resilience, for example in facilitating access to low-cost inputs and supporting farmers with services for different modes of diversification, such as with food and cash crops. Additionally, they can help farmers capture more value in the supply chain; through processing, shortening of the value chain, and providing access to markets. Rejuvenation service

packages offered to farmers allow them to make very needed long-term investments in their farms, which in turn helps them secure the livelihoods of entire communities. Providing access to finance via financial services of local micro-finance institutions (MFIs), which have lower interest rates than local moneylenders, can give farmers access to better service packages and have positive effects on net income. Labor services, however, can either increase or limit farmer resilience depending on the type of labor employed, meaning a critical approach is needed to implement solutions that result in an increasing amount of farm labor.

Enhancing the resilience of farmers can clearly be a win-win scenario for both farmers and service providers alike. Farmers can see a secure and attractive future in farming, in which they can make a decent income while withstanding or absorbing potential externalities with minimal impacts to their livelihoods. Service providers can in turn increase the demand for their services and improve sourcing supply security (for the archetypes that source from the farmers).



4.0

COSTS

4.1	THE IMPORTANCE AND DEFINITION OF COSTS
4.2	OVERALL PICTURE AND HIGH PERFORMERS
4.3	COSTS BY ARCHETYPE
4.4	DRIVERS OF COSTS
4.5	REFLECTION ON COSTS

4.1

THE IMPORTANCE AND DEFINITION OF COSTS

Costs are a critical factor in influencing the performance of service delivery models. The types of costs also play a prominent role in a model's performance. For example, whether they are set-up costs, which diminish or even disappear over time, or whether they are recurring costs.

In the **Cargill** service delivery model in Cote d'Ivoire initial costs per farmer are very high because of one-time expenses related to setting up nurseries and building a Coop Academy. Once these structures are in place, cost per farmer rapidly decreases, making this a cost-efficient model.⁴

In addition to the distinction of type of cost, an important consideration is also who covers costs of the model. If the farmer is responsible for paying some costs within the model, farmer profitability can be positively influenced when cost levels can be decreased. Once farmer profitability increases, so does farmer payment capacity for services as well as service provider profitability. This, in turn, makes a model more financially sustainable. It should be noted, however, that low costs are not necessarily always positive, as they may go hand-in-hand with low investment and impact at farm level.

In the analyses in this chapter, the costs of the service delivery models are compared. In some cases this includes costs for farmers to make use of the services, but in many cases, it does not. The value created at farmer level per USD invested and all costs at farmer level are included in the chapter on financial sustainability.

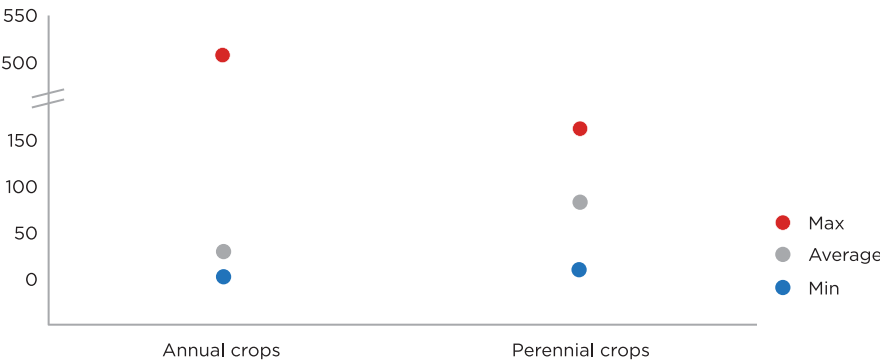
4. This pertains specifically for modern nurseries that use irrigation and shade tents. Traditional nurseries have lower initial costs and therefore the cost reduction over time is less significant.

4.2

OVERALL PICTURE AND HIGH PERFORMERS

The graph below shows that for the operation of service delivery models analyzed the costs range from under USD 5 to over USD 100 per farmer per year. The average cost is around USD 70 per farmer per year. The costs of the services provided for perennial crops are higher compared to services for annual crops. This is mainly due to the fact that the cost of input service provision is higher for perennial crops compared to annual crops. When interpreting this data it is important to keep in mind that the types of services offered to farmers, and to what extent costs for farmers are taken into account, highly influences the average costs per farmer per year.

AVERAGE COSTS PER FARMER PER YEAR FOR ANNUAL CROPS AND PERENNIAL CROPS



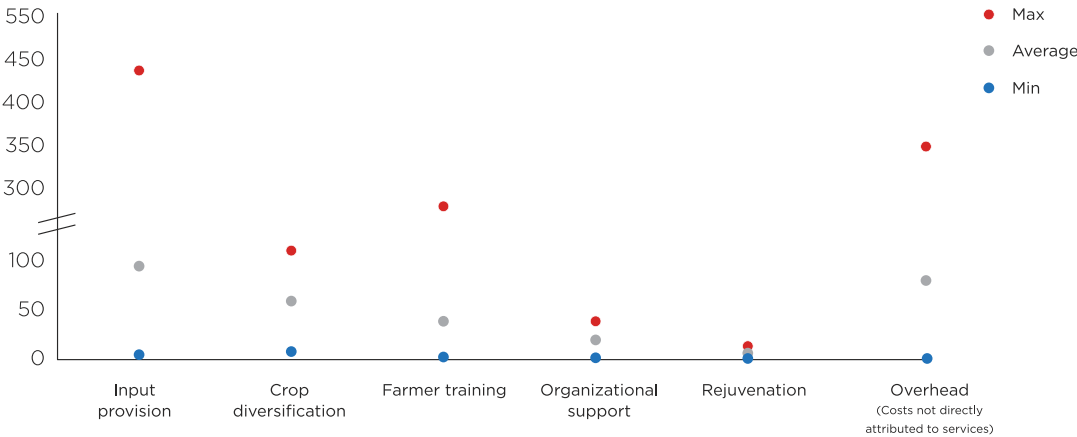
In the above example, there is an outlier whose costs are very high per farmer, but all costs related to production for farmers are included, this which is not the case for other service delivery models analyzed. The outlier is unique in several ways.

1. The costs of the model are almost entirely covered through services payments.
2. The model has a very low amount of grant funding and the grant funding they received is used in an innovative way. The model has large scaling potential. It is currently reaching 16,000 farmers and expected to reach a million by 2025..

Since the cost per farmer in the Babban Gona model shown in the graph above is several times higher than the average service delivery model, in some cases this model has been excluded from an analysis. For example, it is excluded in the cost analysis for the different archetypes, as it is below average for all other specialized models.

Since there is the risk of comparing apples to oranges when looking at costs per farmer per year, the costs per services offered was also considered. Some services, such as input provision, tend to be costlier, especially when these are directly implemented by the service provider, as opposed to the access to inputs being facilitated. When services are bundled, average costs per farmer are higher than when only single services are offered. As previously seen in this report, service packages are mainly offered by specialized service delivery models and tend to be more comprehensive than packages offered by other types of models. In the graph below, overhead costs are also included, since this is a significant portion of the total costs, which cannot be linked to one specific service.

AVERAGE COSTS PER FARMER PER YEAR PER SERVICE



Below are several examples of high-performing cases in terms of cost-efficiency. In these examples, technology and strong farmer organizations play critical roles. Since low costs are less meaningful when the impact at farmer level is also limited, the two case examples presented have high costs per farmer and high value created per farmer.

The role of technology in driving down costs

Digital Green exemplifies that technology can facilitate a breakthrough in cost-efficiency when employed in the right way. Training videos on good agricultural practices are created and screened locally, and a centralized data management framework allows feedback from participant farmers on relevance and applicability to be captured in real-time by extension agents, even without access to reliable internet connectivity. Farmer feedback and usage data is then processed and utilized to make improvements and target trainings. This end-to-end approach to video-enabled extension has proven to reduce the cost per practice adopted by the farmer by approximately ten-fold.

Reducing costs through working with strong farmer organizations

The **Olam** and **Anatrans** service delivery models work with farmer organizations to build their capacities to offer services otherwise delivered by and/or at the expense of the case owners. More advanced famer organizations in both cases organize the training of farmers, with the case owners only covering the cost of training lead farmers who implement the trainings. Consequently, the cost of training per farmer can be reduced by 40% to 50% over the duration of the service delivery model. Besides the delivery mode, the relatively low cost of both models can also be explained by the types of services offered, which for instance do not include relatively more expensive services such as inputs.

High-cost and high-value service delivery

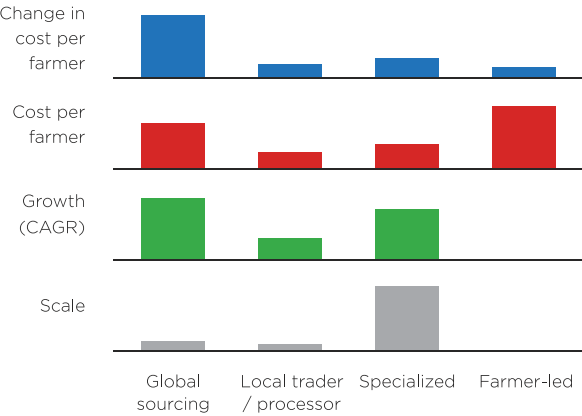
Several models we looked at had very high per farmer costs. These include, for instance, **Barry Callebaut** and **Babban Gona**. In both cases, these high costs can be easily explained. The service offerings of these models are relatively extensive and include high-cost services, especially related to inputs such as fertilizer. The cost of the service package represents a significant portion of the operating costs for farmers. In addition, both these cases recoup a large portion of the costs invested from service payments from farmers. Additionally, both cases have a positive value creation at farm level, indicating that the costs appear in line with the benefits.

4.3

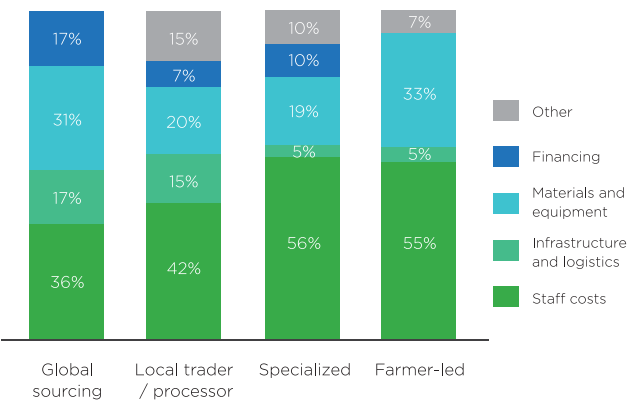
COSTS BY ARCHETYPE

Comparing cost categories per service delivery model archetype and costs per service delivery model archetype produces some interesting results. For all service delivery model archetypes, a large portion of their costs are related to staff.

KEY COST PERFORMANCE INDICATORS PER ARCHETYPE



COST CATEGORIES PER SDM ARCHETYPE

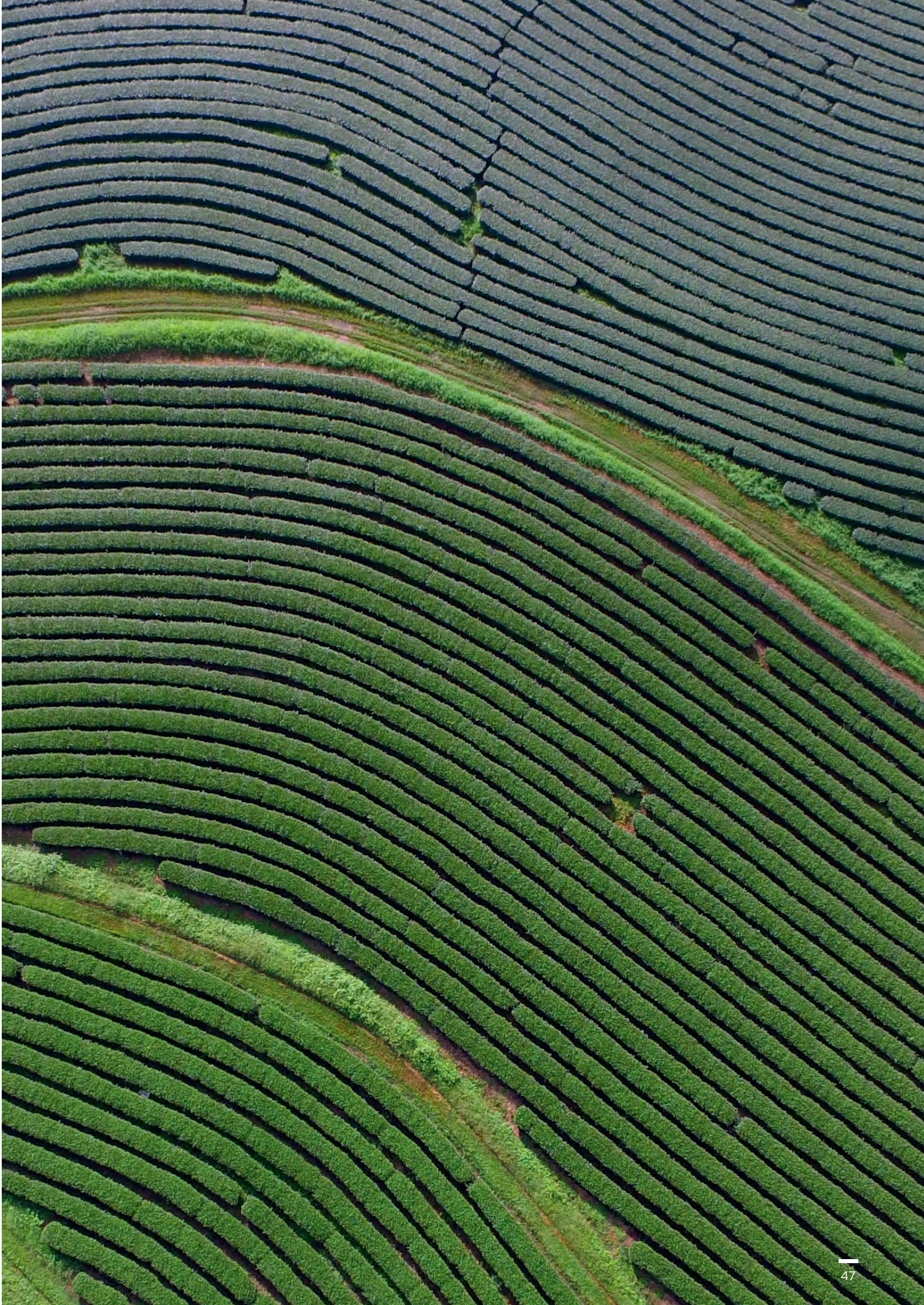


Local trader / processor models are the most cost-efficient models; however, they also offer the most basic services to farmers and have relatively low impact. Moreover, they have the least financial flexibility, since their models are fully commercial and have limited access to external grant funding.

Specialized models are relatively cost-efficient and have, on average, the lowest cost per farmer. In addition, two of the three specialized models analyzed combine this high cost-efficiency with a large scale (several hundred thousand farmers). Most of their costs are staff costs, and they have low logistic and infrastructure costs, as these service delivery models mostly offer training and capacity building.

Global sourcing models have slightly higher costs, but are able to realize significant cost decreases because they generally scale their models rapidly over time. Moreover, these models tend to have larger proportions of infrastructure, material, and equipment costs since they have more flexibility to invest in innovating their services. This is the case because they typically have larger and more dedicated sustainability budgets compared to local trader / processor models.

Farmer-led service delivery models have the highest costs per farmer. This is influenced by the fact that the farmer-led models in the analysis offer rejuvenation services to their farmers, which make them comparatively more expensive than service packages that do not include rejuvenation services. These models are relatively stable over time, both in terms of the cost per farmer and scale, which is limited by their membership.



4.4

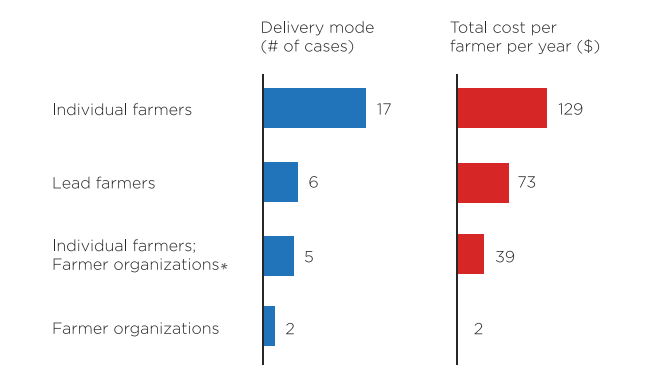
DRIVERS OF COSTS

In this section, five key drivers are shared that can improve service delivery cost-efficiency.

LAST-MILE DELIVERY MODES

The way farmers receive services at their doorstep, the so-called last-mile delivery significantly influences per farmer costs. The graph below shows that certain last-mile delivery modes are more cost-efficient than others.

DIFFERENT LAST MILE DELIVERY MODES AND TOTAL COSTS PER FARMER PER YEAR



* Individual farmers, Farmer Organizations means delivery is to both farmers and FOs, with FOs also providing services to farmers

The most cost-efficient service delivery models work with lead farmers and farmer organizations to deliver services to farmers' doorsteps. In addition to cost, the quality of last-mile delivery mode is an important consideration for determining the best approach for each model.

KNOWING THE CLIENT

Per farmer costs are influenced by how well a service provider knows their client, and whether or not they provide services for farmers that will achieve the highest return on investment.

When service packages are highly tailored to the needs of farmers, the costs of the package are controlled and there is a positive return on investment for farmers. An excellent example of this is **One Acre Fund**.

There are service delivery models that choose not to design a highly-tailored service package for all their clients, but instead choose to select certain types of farmers for more capital-intensive packages. In doing so, they limit the risks that farmers may be unable to fully take advantage of any particular service package. If farmers are able to efficiently use the packages, they can increase their profitability, which also means there is less risk for service providers, because farmers have sufficient means to fulfill their repayment obligations. This in turn lowers the service provider's costs, since they need less contingency for these more expensive service packages. Examples of organizations with these approaches are below.

Using minimum criteria to select farmers to generate a positive return

Barry Callebaut offers farmers several service packages with clear minimum requirements for farmers to qualify for these packages. Packages that are more expensive or involve higher risk, for example those with fertilizer, only become available to farmers after they meet specific criteria. Barry Callebaut operates an effective M&E system, capturing dozens of indicators that allow it to get to know its farmers well. It is interesting to note that this company works directly with farmers for a large part of its service delivery model.

Strong farmer relationships drive down costs through high adoption and loyalty

Through strong "cooperative – farmer relationships" the farmer-led service delivery models profiled in the **Root Capital** cases manage to have high adoption and loyalty rates, resulting in low costs per farmer and MT sourced. At the same time, by having a good understanding of the performance of the different farmers (e.g. productivity, credit history) service providers can mitigate the risk of defaulting on coffee contracts, further reducing service costs.

RISK POOLING

The pooling of risk can allow service delivery models to keep certain costs low. This can be particularly valuable when providing relatively expensive services to farmers, such as inputs, especially when such services are provided on credit.

An example of an organization using a risk pooling approach is below.

Using trust groups to achieve high repayment rates and therefore lowering costs

In the **Babban Gona** SDM, farmers are organized in Farmer Groups' Each Group is collectively responsible for the repayment of the loan given to its members. Loans provided to the Farmer Groups are paid back with the yields attained from the field; therefore, the crop is treated as a collateral (this is similar to many other SDMs). In addition, the SDM offers weather, commodity price, and externalities (such as pests) insurance, allowing farmers to repay their loan also in the case of calamities. Through this arrangement Babban Gona has managed to keep the average default rate below 0,1%, which is significantly lower than in most of the other SDMs analyzed.

INCENTIVES

Financial and non-financial incentives can help service delivery models bring down their costs.

Some models provide financial incentives through ranking systems for farmer organizations. In these models, service packages offered to farmer organizations become more extensive as they progress to different segments or rankings. Examples of these more comprehensive services include collection, transportation support, and providing financial support for working capital for farmer organizations. By offering such services, the loyalty rates of farmer organizations increase. The costs of these financial incentives are generally more than covered through increased revenues from additional sourcing, either in volume and / or quality.

Non-financial incentives can also play a role in cost reduction for service delivery models. These incentives include opportunities for lead farmers to professionally grow within a service delivery model by becoming service provider staff members. Due to their productive participation, farmers earn respect and recognition in the community. This outlook drives the performance of lead farmers and therefore lowers the costs, since lead farmers become more productive and effective. An example of an organization using non-financial incentives follows.

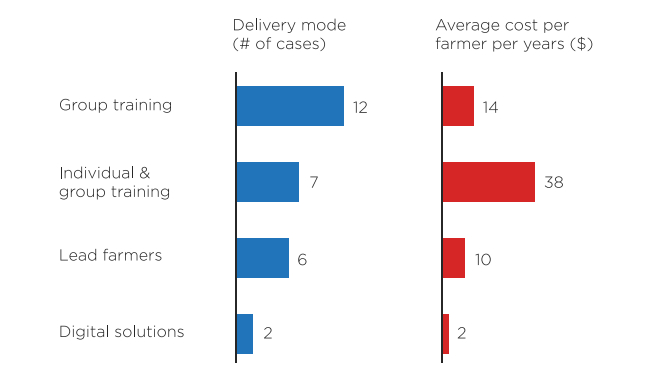
Using financial and non-financial incentives to keep costs low

GADC strongly incentivizes farmers to follow best farming practices by recognizing and promoting star farmers to positions of additional responsibility within the model, including lead farmers, field officers, area coordinators, and buying agents. In the promotion to these positions, farmers are involved in service provision (training), have opportunities to fulfill commercial roles, and gain community recognition. At present, two lead farmers have become buying agents.

TRAINING INTENSITY

Almost all service delivery models offer training or coaching as a service, and training costs are a large part of the cost structure of models. The cost of training is to a large extent determined by how training is organized. Below are some examples that use technology to drive down costs and increase adoption rates.

DIFFERENT DELIVERY MODES FOR TRAINING AND THE AVERAGE COST PER FARMER PER YEAR



Combining technology with traditional extension services to limit costs and increase adoption

Digital Green provides a good example of how the use of technology combined with a participatory class-based training approach can lead to greater adoption among farmers. The production and screening of localized training videos – which have resulted in a seven-fold increase in adoption rates amongst participants – is unique in its combination of three factors. First, the videos utilize local extension agents

from within the community. Second, each community produces and screens videos that feature their own members, which helps to localize the material and make it more relatable to other participants. Third, the videos are created on an iterative basis, allowing for the constant capture of feedback from community members in the dissemination sessions so that content is adapted based on what farmers find more, or less, relevant and useful.

Combining training methods to offer cost-efficient training

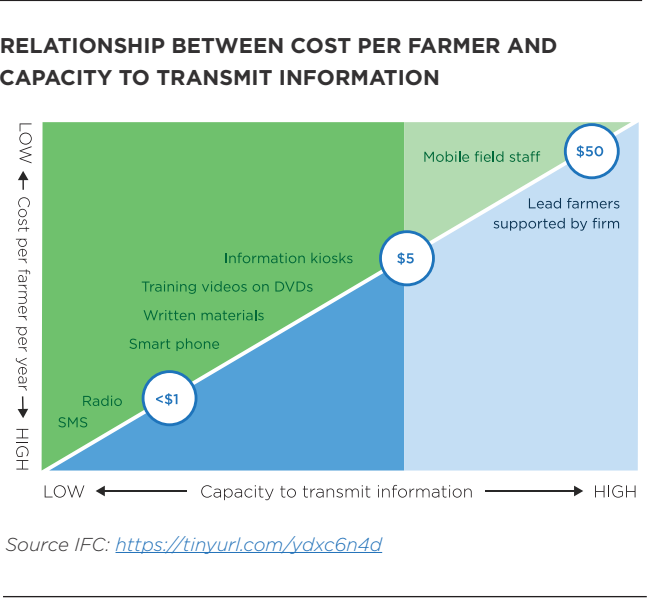
Pratibha Syntex offers a range of complementing training methods and modules, from one-on-one field training, to large-scale untargeted video modules. Methods vary in costs and goals. Where group trainings instruct large numbers of farmers on a set of best practices, pre-recorded audio modules broadcast on mobile phones can be directed to individual farmers that require knowledge or a refresher on a particular topic.

While digital solutions, such as those offered by Digital Green and Pratibha Syntex have the potential to reach many farmers at relatively low costs, such methods should primarily be seen as complementary to more traditional training methods rather than replacing them entirely.

Offering individual coaching in a relatively cost-efficient manner

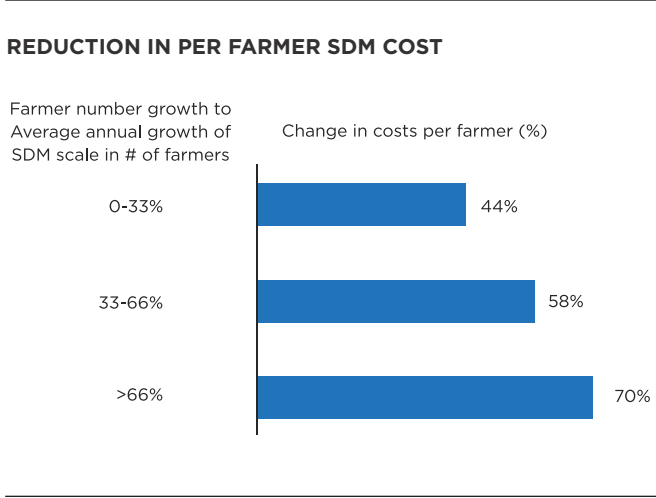
Barry Callebaut offers individual coaching as a way of reaching farmers and following-up on the information offered to farmers as part of its regular training program. The company is able to offer this service in a relatively cost-efficient manner because they work with local coaches, who are in some cases recruited from among the farmers themselves.

The IFC has published an analysis showing a direct and positive relationship between the cost per farmer per year and the capacity to transmit information. This would seem to underline the idea that digital solutions can serve as a valuable factor on top of existing models, rather than a complete replacement thereof.



Scale and organizational structure

In this analysis, there was not a correlation between the scale of a service delivery model and costs per farmer costs. In other words, large-scale models are not per definition more cost-efficient compared to smaller scale models. However, it was observed that models which expand their scale are most successful in significantly bringing down their costs, as shown in the graph below. This is due to several factors: for instance, overhead costs per farmer are lower for large-scale models, and likewise, models that plan to scale up typically already invest in infrastructure allowing for such a scale-up.



For certain services, the cost per farmer tends to be lower at larger scales. This is the case, for instance, for training and overhead costs. Frequently, the cost of services per farmer decreases over time as the service delivery model’s scale grows.

Service delivery models that have chosen smart organizational (field) structures can increase scale without increasing costs at the same pace. An example of such an organization follows below.

Smart organizational structures that allow for low-cost scaling

The SDM of Pratibha Syntex has a hierarchical local field team consisting of relatively few high-cost employees who coordinate a large number of low or unpaid staff members. Two senior managers have the capacity to oversee service delivery up to 40,000 farmers. Scaling up can be done at low incremental cost. Further, Pratibha Syntex is training farmers to develop skills as farmer scientists in order to empower them with the responsibility to find local, low-cost and sustainable solutions to their agricultural challenges.

4.5 REFLECTION ON COSTS

Costs are important since they have a direct affect on both farmer resilience and the financial sustainability of a service delivery model. Analyzing costs is challenging because when comparing average costs per farmer per year, there is a high risk of comparing apples to oranges, since different service delivery models offer quite different service bundles. Input services are relatively expensive and more complete service packages are costlier, but also have more impact at farmer level.

When looking at the different service delivery model archetypes and cost levels, it becomes clear that some models are more cost-efficient than others. For example, the local trader / processor models are more cost-efficient than the specialized models, but have limited impact at farmer level while the specialized models perform well on both costs and impact. Global sourcing models can achieve the highest cost savings since they are able to reach scale most efficiently.

It is also possible to gain insights into the key drivers that bring down costs. The choice for mode of the last-mile delivery influences costs significantly. Service delivery models that use lead farmers have the lowest costs. Service delivery models that know their clients can increase loyalty and adoption, thereby reducing costs. Organizing farmers in trust groups and pooling risks is an effective way to achieve high repayment rates and therefore drive down costs. The benefits of the use of both financial and non-financial incentives easily outweigh the costs. The way training is organized influences the cost level, as training is one of the larger cost items in a service delivery model. Technology can be a major driver to decrease training costs and increase adoption rates; however, technological solutions need to be paired together with training methodologies and cannot fully replace more traditional techniques.

5.0

FINANCIAL SUSTAINABILITY

5.1	DEFINING FINANCIAL SUSTAINABILITY
5.2	FINANCIAL SUSTAINABILITY BY ARCHETYPE
5.3	DRIVERS OF FINANCIAL SUSTAINABILITY
5.4	REFLECTION ON FINANCIAL SUSTAINABILITY

5.1

DEFINING FINANCIAL SUSTAINABILITY

Financial sustainability is an important aspect of the performance and success of service delivery models. It impacts farmers, service providers, and investors. In this report it is defined in the following ways:

- The model runs at least at break-even or realizes a profit. The costs of the model are covered through service revenues (farmers paying for services) and / or through commercial revenues (sourcing of higher volumes / higher quality).
- There is a positive return on investment for the key actors in the model: farmers; service providers; and investors (in case there are external investors involved that invest in the model).
- The model offers sufficient value for farmers to continue to make use of the services offered, for service providers to continue to offer the services and for investors to continue investing (when applicable).

There are several factors that play a role in determining when a service delivery model can reach financial sustainability. Models that reach financial sustainability in the short(est) term are characterized by:

- High impact at farmer level (high value creation leading to payment capacity of farmers);
- Cost-efficient service supply (lowest cost possible for both farmers and service providers);
- Strong internal revenue drivers (through service fees / commercial revenues, in case of sourcing) which lowers the dependency on external funding; and
- Supportive enabling environments in which the model operates (see also Chapter 6 on the role of the enabling environment).



5.2

FINANCIAL SUSTAINABILITY BY ARCHETYPE

This section, shares insights into how different archetypes approach financial sustainability. Therefore, it examines different service delivery model funding strategies, their break-even approaches, and how they manage risks.

FUNDING STRATEGY

To gain insight into the funding strategy of the different archetypes, the current internal and external sources of funding were compared to the types of external funding sources a service delivery model archetype is using, and for which purpose the external funding is being used. It should be noted that the figure below shows estimates based on the current situation for the different archetypes. In practice, the funding sources, types of funding, and funding uses typically evolve over time for all archetypes.



Other sources of funding could include either internal or external sources, such as commercial revenues related to sourcing activities (internal) and concessional and commercial funding (external). For most of the service delivery models analyzed, it was not possible to distinguish between internal and external funding sources for the other category. More in-depth analysis is needed to make this distinction. These are estimates, not based on actual data.

There are several possible takeaways based on these figures:



The global sourcing models cover a smaller part of their costs from payments from services from farmers, and receive some donor funding. Much of their funding comes from internal sources—mainly through CSR budgets and / or commercial revenues—and from external sources—concessional and commercial funding. Donor funding is used for set-up costs, innovation, and risk sharing. Compared to the other archetypes, the global sourcing models have the easiest access to both commercial and concessional funding.



The local trader / processor models show a similar pattern in covering some of their costs from services fees and donor funding, although they have far less access to donor funding than global sourcing led models. Most funding comes from commercial revenues. The limited grant funding that is available is mainly used for capacity building of the service provider and the farmer organizations the service provider is working with. Local trader / processor models have access to local commercial funding and are using that funding to run their operations.

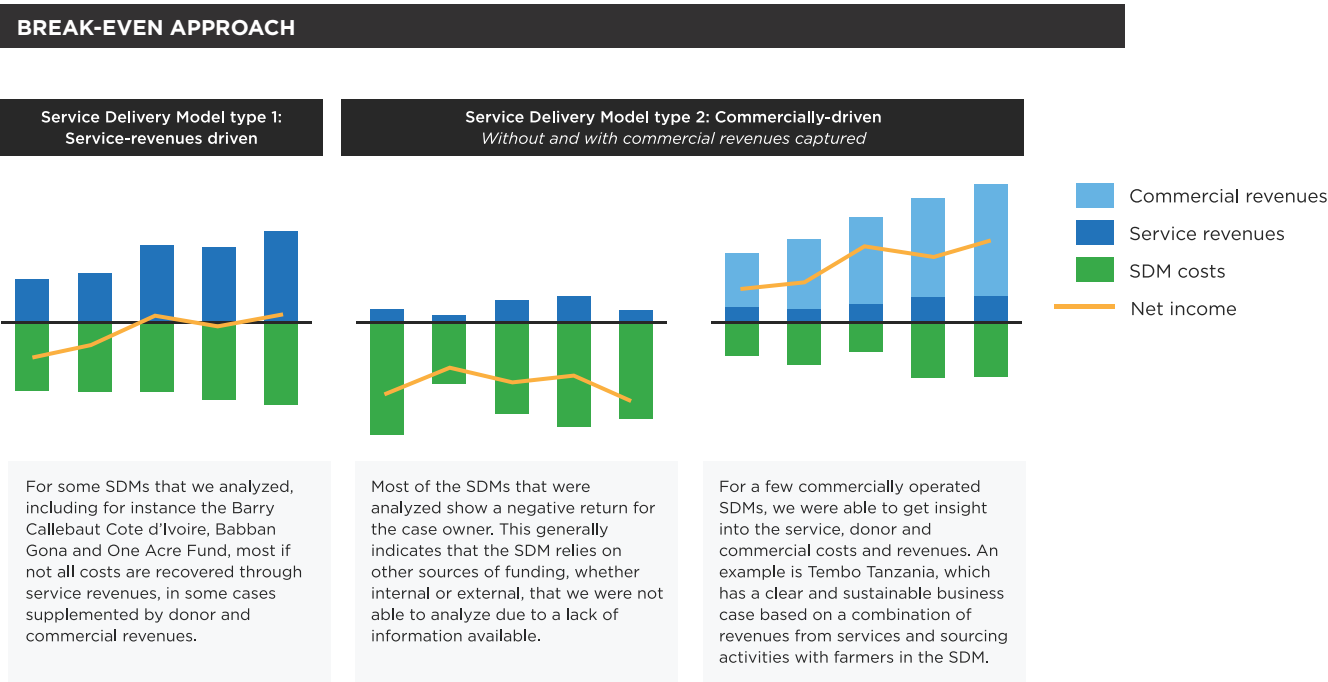


Specialized models recover the largest part of their costs from farmer payments for services, with the remainder covered by donor funding. Since these service delivery models do not have a sourcing relationship with farmers, there is no revenue stream from commercial activities. The grant funding is used for set-up, innovation, and roll-out of the model. Some models attract concessional finance, but commercial finance does not yet play a role.



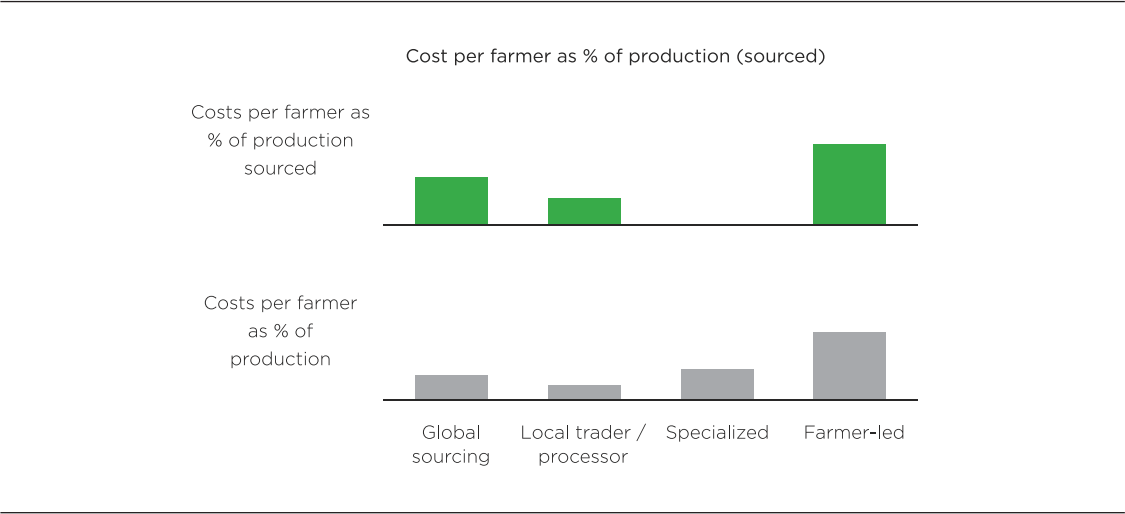
Farmer-led models recover almost 100% of their costs through commercial activities since service delivery costs are typically funded from the commercial activities of the farmer organizations, or service costs are deducted from the payments farmers receive when delivering their produce to the farmer organization. They have limited access to grant funding for covering their service supply and innovation costs, since external funding is mostly focused on capacity building for the farmer organization. These models use significant amounts of concessional funding for their operations.

Many of the service delivery models analyzed do not have well-articulated funding strategies. Funding is sought after based on urgency and ad-hoc opportunities. The availability of ad-hoc funding, especially grant-based funding, can disincentive service operators to develop a strategy to reach financial sustainability. Moreover, this availability can distort financial markets since it may make it more difficult for commercial actors to play their role, and it may also reduce incentives for innovation and efficiency gains within service delivery models. It is therefore expected that it will be beneficial to work with service delivery model partners and key funders on developing and improving funding strategies that allow model partners to design the “staging” of different types of funding, and organize access to such types of funding in an early phase.



RISK MANAGEMENT

To better understand how different archetypes manage their risks, the costs of services per farmer were compared to the value of production and, for service delivery models that also source from farmers, the value of the production that is actually sourced. It seems the higher the costs of the services per farmer compared to production, the higher the risks of non-repayment for the service provider.



Global sourcing and farmer-led service delivery models have relatively high costs per farmer as a percentage of the value of both farm-level production and sourcing. This makes these models vulnerable for side-selling. Therefore, farmer loyalty rates heavily affect the revenue streams from commercial activities for these service delivery model providers, making loyalty a key driver for such models. The risk of side-selling is limited for the farmer-led models, since they are owned and operated by farmers themselves, and our analysis shows high loyalty rates for these cases.

For specialized service delivery models, the cost per farmer as a proportion of production is lower, which makes them less vulnerable to non-recovery of their investments. Farmers pay their part of costs as a payment for services rather than paying indirectly through commercial revenues. This makes the specialized models, in a way, less risky since the level of investment compared to the value of the production at farm level is lower. On the other hand, these service delivery models do not have alternative ways to cover their costs, as the other archetypes can (partially) cover their costs through their sourcing activities.

Local trader / processor service delivery models tend to not offer very extensive service packages to farmers, therefore their costs per farmer as a percentage of production and production-sourced is relatively low. This is because they need to cover all service costs with commercial revenues—they have limited access to grant funding—and this offers them little flexibility in providing more innovative, extensive packages.

5.3

DRIVERS OF FINANCIAL SUSTAINABILITY

One of the key learning questions is how to best finance a service delivery model to become financially sustainable. This section identifies two key drivers for reaching financial sustainability: farm-level impact and the development of a long-term financial sustainability strategy.

The first driver is farm-level impact. When farmers can create value with the services provided, this gives a positive boost to their payment capacity and therefore increases the probability that they can cover the costs of the services. An example involving farmer performance follows below.

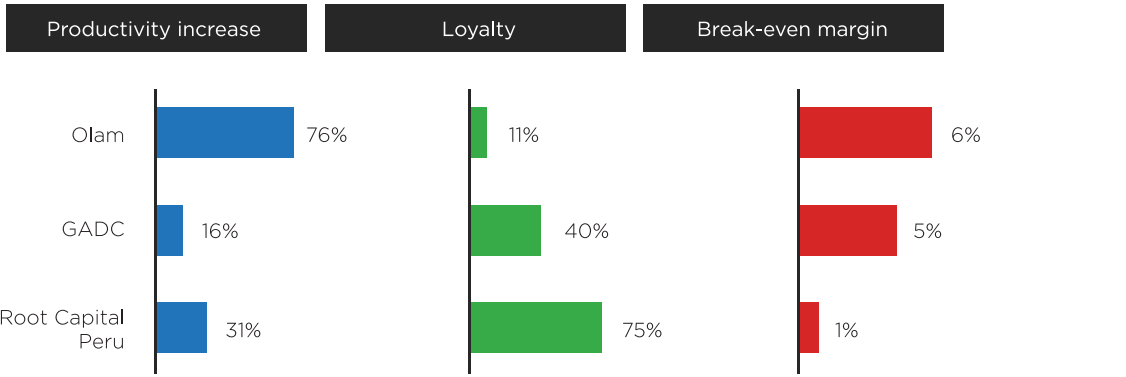
Positive effects at farm level drive the financial sustainability of a model

One Acre Fund recovers approximately 75% of its SDM costs from payments from farmers. One Acre Fund utilizes donor funding to cover the portion of its costs that farmers can't bear, but is deliberate in maintaining a commercial relationship with its customers. Farmers thus take business decisions when it comes to purchasing inputs from One Acre Fund, rather than receiving them for free or heavily subsidized relative to the rest of the market. One Acre Fund's policy is to charge market price on products/services with identifiable markets (seed, fertilizer, finance) to avoid undercutting the private sector, and only subsidizing products/services without defined markets and that require greater customer acceptance (e.g. insurance, training). Farmers are not dependent on One Acre Fund for their agricultural revenues, thus their decision to pay for One Acre Fund products and services year after year provides a credible feedback loop.

In models where the service provider is also sourcing the produce of the farmer, the loyalty rate is an additional factor that influences farmer performance.

This methodology creates insight into the margins needed by the service provider to at least cover its costs through the revenues of the service supply. This type of analysis helps service providers think through their overall strategy on how to design and operate their service delivery model. The graphic below shows the relationship between these variables.

THREE EXAMPLES OF HOW PRODUCTIVITY INCREASE AND LOYALTY INFLUENCE THE BREAK-EVEN MARGIN OF A SDM

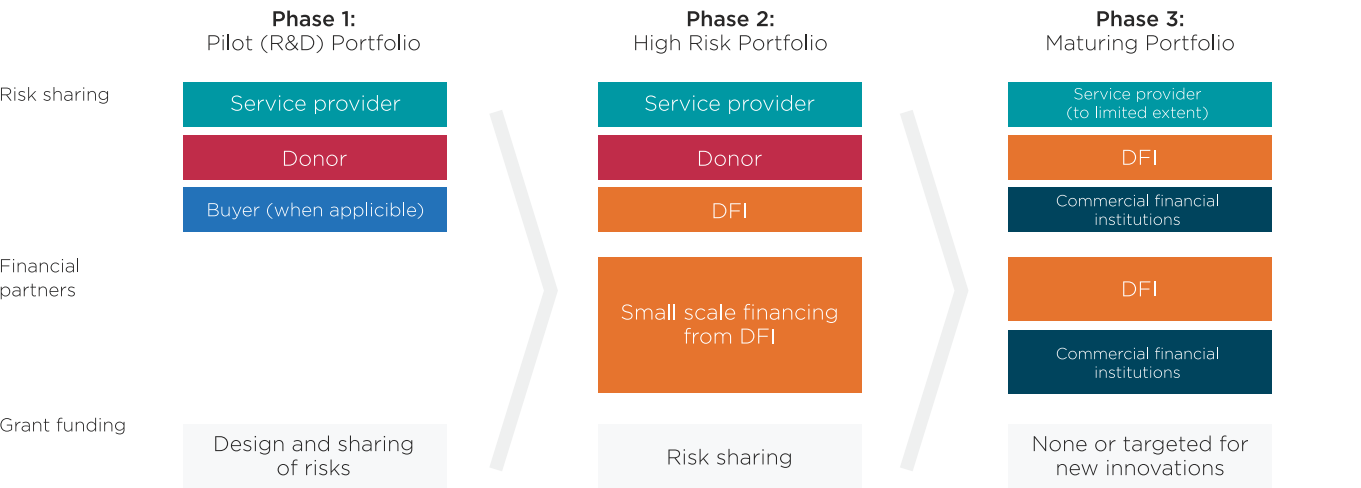


The three previous examples demonstrate how productivity increase and loyalty interact with the break-even margin. In the case of Olam in Cote d'Ivoire, the adoption rates and productivity increases are significant, but due to relatively low loyalty rates, the break-even margin needed is higher, compared to cases where loyalty rates are higher. The calculation of a break-even margin is a helpful tool and therefore, by proxy, a useful indicator of whether a service delivery model will be able to reach financial sustainability. It should be noted that this approach is only relevant in cases where the SDM operator has a commercial relationship with farmers in the SDM.

A FUNDING STRATEGY BASED ON THE PHASES OF FARMER PORTFOLIO MATURITY

A well-thought-out funding strategy is essential for a service delivery model to reach financial sustainability in a controlled manner. One of the frontrunners in this area is Barry Callebaut, which in Cote d'Ivoire has developed an innovative funding strategy that can be tailored to the different stages of farmer portfolio maturity. In this service delivery model, the service package is offered on credit to farmers. The farmers go through each phase building an agronomic, financial and operational track record until no further grant funding is required in Phase 3. The conceptual model is a rolling strategy whereby all new farmers enter at Phase 1.

DIFFERENT PORTFOLIO MATURITY STAGES AND FUNDING STRATEGIES FOR FARMERS



PHASE 1

In the first phase of this model, the service package is developed and tested with farmers. Grant support is needed to design the service structure and make the funding concessional. In this first phase, the main risks of implementing the package are born by the service provider, donors, and potentially buyers (such as brands and retailers).

PHASE 2

In the second phase, the farmer shows first successes with using the service package. It is now possible to share the risks with entities other than the service provider and donors. Development finance institutions (DFIs) step in at this phase at small scale, supported by grant funding to stimulate them to take higher risks.

PHASE 3

New financial partners, such as commercial financial institutions, that provide financing for the farmer, enter at this phase. There is no more concessionality in this phase, and financial returns from the lending package can be used to either recover costs of the concessional phases or as an incentive for stand-alone (M) FIs to take over the lending on a fully commercial basis.

5.4

REFLECTION ON FINANCIAL SUSTAINABILITY

This chapter explained the importance of financial sustainability for the success of a service delivery model. When a model is not financially sustainable, a farmer may decide to discontinue service use since the value created is not sufficient. Moreover, service providers may even stop offering services due to money loss, and investors may stop providing funding since they fail to see a return on their investments.

To be able to reach financial sustainability, there are two drivers that are of crucial importance. The first is farm-level impact, which is dependent on service costs, profitability, loyalty, and increases in productivity for models sourcing from farmers. The second driver is a long-term financial sustainability strategy that is tailor-made to the maturity of a farmer portfolio.

Many of the service delivery models analyzed do not have well-articulated funding strategies. Funding is sought based on urgency and ad-hoc opportunities. The availability of ad-hoc funding (especially grant based funding) can disincentivize service operators to develop a strategy to reach financial sustainability and distort financial markets. Ad-hoc funding may make it more difficult for commercial actors to play their pluralize and it may reduce incentives for innovation and efficiency gains within SDMs.

The different archetypes also use different approaches to breaking-even. Specialized models, local trader / processor models, and farmer-led models all have increased incentives to break even in the short to medium term. These models are under pressure to break even either because a key donor requires it, or because the service supply is so thoroughly interlinked with the commercial business that the whole business would go bankrupt when break-even is not reached.

Besides different ways to break even, the different service delivery model archetypes also have different risk management systems. Global sourcing and local trader / processor models have the highest risk levels since they mainly depend on their sourcing activities to cover the costs of services.



6.0

ENABLING ENVIRONMENT

6.1	DEFINITION AND IMPORTANCE OF THE ENABLING ENVIRONMENT
6.2	APPROACH
6.3	OUR FINDINGS
6.4	THE LIMITATIONS OF OUR CURRENT WORK AND WHAT WILL FOLLOW

6.1

DEFINITION AND IMPORTANCE OF THE ENABLING ENVIRONMENT

Each service delivery model analyzed as part of this study operates in a unique context of interrelated regulatory, organizational, political, cultural and physical conditions that facilitate and/or hinder the stakeholders in reaching their objectives. This web of conditions is defined as an “enabling environment.”

Enabling environments are crucial to the functioning of service delivery models: products cannot reach markets without roads, and farmers may not be able to finance their harvests without access to loans. Most of the cases studied are situated within challenging environments, where infrastructure is often rudimentary and financial services networks are either basic or absent.

Having gained an understanding of how models function by themselves, this study sought to understand how they intersect with their respective enabling environment. It does so by providing insights into which facets of the enabling environment the service delivery model partners perceive as challenging and which as beneficial to their service structure.

Existing studies of enabling environments in agriculture tend to have a specific topical and contextual focus. There was no comprehensive, holistic methodology to rank or score the enabling environment for agricultural business on which the study could build. The World Bank’s “Enabling the Business of Agriculture” ranking (EBA) comes closest. Following the World Bank’s Doing Business project,⁵ it examines the regulatory environment for business related to agriculture.⁶ The findings of this report are compared to the scores of EBA in section 6.3 below.

This assessment of the enabling environment is based on contextual and qualitative information, as described by service providers. While this approach is not as rigorous and verifiable as a quantitative scoring methodology, it reflects the actual experience of those involved in delivering services to farmers.

5. “Equal Opportunity for All: Doing Business 2017.” World Bank Group. Accessed August 4, 2017.

<http://www.doingbusiness.org/-/media/WBG/DoingBusiness/Documents/Annual-Reports/English/DB17-Report.pdf>.

6. “Enabling the Business of Agriculture.” World Bank Group. Accessed August 4, 2017.

<http://eba.worldbank.org/-/media/WBG/AgriBusiness/Documents/Reports/2017/EBA2017-Report17.pdf>.



6.2

APPROACH

Our definition of the enabling environment encompasses eight categories. Case owners were asked to describe how each of these categories effects their service delivery model, indicating direction (positive / negative) and intensity (high / low) of impact. In cases where members of our analytical team visited the service delivery model, these indications were substantiated with insights gained on the ground. In addition, and in cases where data collection was performed remotely, case owners were asked to elaborate on each of the categories, leading to a short text per category included in each individual case report. Based on conversations with case owners, research, and the experience of the analytical team, the case owners' ability to address any issues was then assessed and classified as either “high” or “low.” Lastly, we assessed if the case owner acted to address issues in any area.

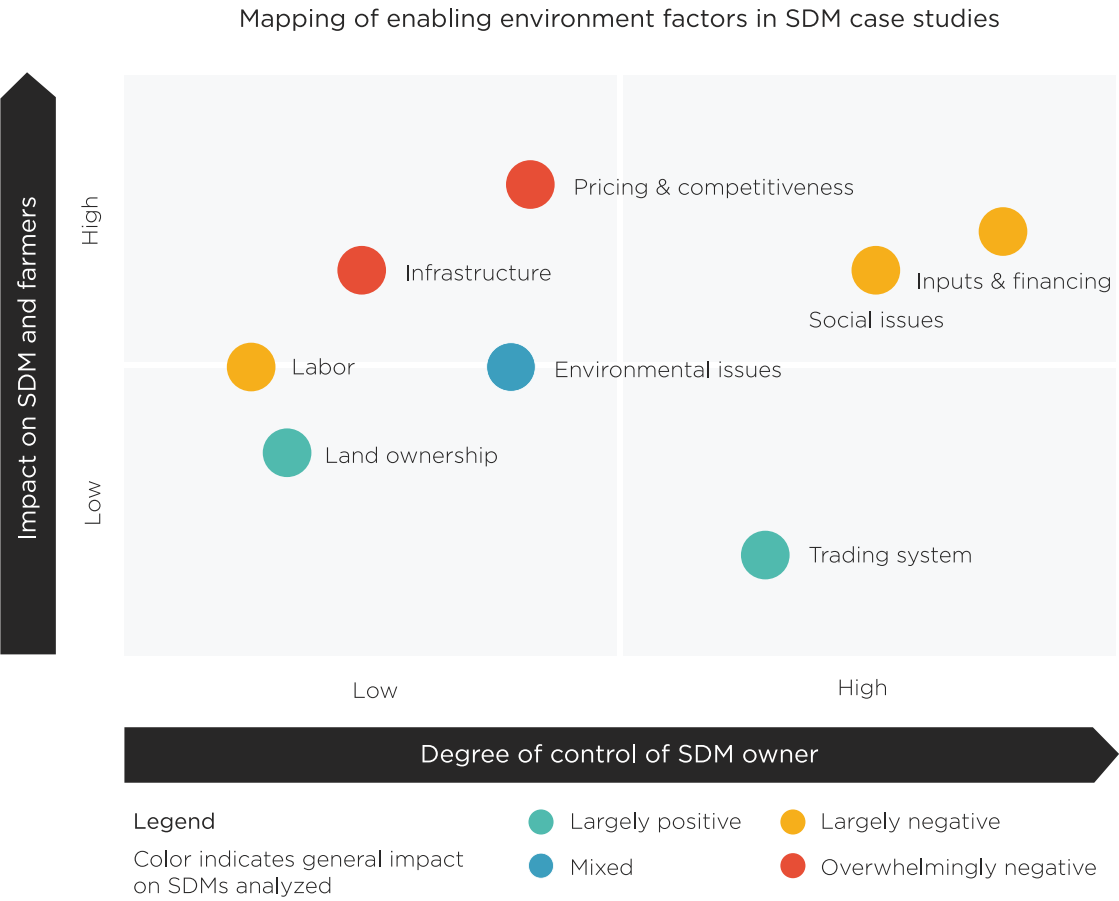
6.3

OUR FINDINGS

The table below lists the eight categories that constitute the enabling environment for this study. For each category, a definition is listed, followed by a list of impacts on service delivery model owners and farmers, further indicating whether impacts are mostly direct or indirect. They are listed in order of the degree of impact perceived.

	Definition	Main impact on SDM owner	Main impact on Farmer
Pricing & competitiveness	Market dynamics of the main crop of the SDM, including competition between buyers and possible price-setting by the government	How much of the market value of the crop the SDM owner captures (direct) How much capacity the SDM owner has to invest in the SDM (indirect)	How much of the market value of the crop the farmer captures (direct) How much capacity the farmer has to invest in services (indirect)
Input & financing	Availability of affordable, quality inputs and the necessary marketing and distribution mechanisms Availability of credit to SDM owners, farmer organizations and farmers Regulatory environment enabling / facilitating desired provision of inputs and finance	Regulatory constraints to service provision and/or revenue (direct) Competition in financial market (indirect)	Price of money, affecting profitability and capacity to invest (direct) Access to and quality of inputs (direct)
Social	Availability and quality of schooling and healthcare Potential social externalities such as child labor and gender disparity	Reputational risk (indirect)	Farm productivity (direct) Farmer business capacity and therefore profitability (direct)
Infrastructure	Existence and state of roads, water and electricity networks as well as proximity to main trading / processing hubs	Cost to get services to farmers and the crop to the market (direct)	Cost of inputs and services (indirect) The degree and cost of market access (direct)
Environmental	Climate and possibility of extreme weather, soil type and state, water supply and quality, possibility of pest and plant disease Potential environmental damages such as deforestation	Harvest (and therefore sourcing) risk (direct) Reputational risk of being associated with negative environmental impact (indirect) Necessity to provide insurance (direct)	Soil depletion (direct) Harvest risk (direct) Need for insurance (direct)
Labor	Cultural norms that restrict or promote people of certain ages, genders or social groups from farm labor / processing. Availability and cost of labor	Absorption capacity of farmers for services, specifically adoption of Good Agricultural Practices (and thus the demand for and success of such services)	Productivity (direct) Cost of labor (direct)
Land	Existence of cadastral system and land ownership rights / regulations and their enforcement. Ease of purchasing/transferring land	Willingness and ability to invest in farm effects absorption of practices and demand for services (indirect)	Cost and availability of land (direct) Willingness and ability to invest in farm (direct)
Trading system	Organization of the system through which crops are traded from farmer to market, including the number and type of actors involved	How much of the market value of the crop the SDM owner captures (direct)	How much of the market value of the crop the farmer captures (direct)

The most important, and problematic, factors in the enabling environment are those that most directly impact the profitability of the farmer and the service delivery model owner: the market environment for the crop and the inputs, as well as their cost of transportation. Social, and cultural, factors also feature as high impact, but in a few service delivery models were actually indicated as low impact. The bubble chart below summarizes our findings differently. It maps the eight enabling environment categories analyzed onto a matrix of impact on the y-axis and degree of service delivery model owners' control on the x-axis. Colors indicate whether the impact was favorable or unfavorable overall.



Tutunze Kahawa: a qualitative deep dive on the role of pricing and competitiveness

An extended qualitative assessment of the enabling environment was conducted in partnership with **Tutunze Kahawa Limited**, a subsidiary of Ecom in Tanzania. In this partnership, we sought to further understand how a variety of factors, such as the regulatory environment, help or hinder the success of the service delivery model in providing services to farmers and enhancing business outcomes at farmer level.

We examined the impact of the National Coffee Act, most recently amended in 2009. This Act prohibits the sale of wet-mill cherries, with the intention to encourage most farmers to sell dried parchment instead. Selling parchment instead of wet-mill cherries can be beneficial to farmers, as it moves them up the value chain by allowing potential capture of additional income from bonuses for high quality only measurable after processing. It also allows farmers additional freedom regarding timing, as the time window for processing picked cherries is small, but parchment can be sold by farmers when the price is favorable for them.

However, interviews with Tutunze Kahawa staff, Coffee Management Services, and the Tanzanian Coffee Board, as well as a focused discussion with 30 farmers from local community groups served by Tutunze Kahawa in surrounding Mbinga, indicated a need for an update of the National Coffee Act to reflect the current realities faced in the operating environment by both Tutunze Kahawa and the farmer. First, prohibiting the sale of wet cherries means that the drying and processing to parchment is done solely by farmers and farmer groups, which can inhibit the quality of coffee that can be sourced and sold by Tutunze Kahawa. Second, prohibiting the sale of wet cherries does not consider the difficulties that smallholder farmers have in ensuring continuity and long-term financial planning. Often, farmers are in immediate need of cash at the time cherries are picked, and pressing finances mean that they cannot afford to wait to process and sell parchment.

Therefore, for Tutunze Kahawa, ensuring high-quality coffee has become more difficult as the processing and drying moves out of their hands, and for farmers within the coffee value chain regulations on price can put them in a difficult position without access to the cash they obtain immediately through the sale of wet-mill cherries. It was observed that these factors limit the ability of the model to operate, and serve its farmers, in the most successful manner.



Pricing and competitiveness limiting service delivery model effectiveness

In Vietnam, **ECOM's** subsidiary **ACOM** encountered different regulatory issues with regards to the market environment in Vietnam's Lam Dong province. ACOM offers a range of services to farmers, including training, planting material, and certification management. The objective is to improve farm productivity and product quality, leading to lower costs and higher income for the farmer. Not only focusing on the environmental protection and economic viability for farmers, ACOM also cares about the social responsibility via cooperating with coffee roasters to build up nursery schools for farmers' children in the coffee community. In the process, ACOM aims to increase trust and loyalty among farmers in the service delivery model program in order to increase its own coffee trade volumes from farmers in the program. Due to Vietnamese regulations prohibiting foreign buyers to directly source from farmers, building the desired loyalty and trust relationships with Vietnamese farmers remains a challenge for ACOM. The difficulty in linking investment at farm level with company trade thus negatively impacts the incentive to further develop the SDM program.

Operational influence of input policy

GADC in Uganda demonstrates how the inputs market can influence the competitive market environment of a service delivery model. Given high input prices and poorly developed distribution networks, many farmers are refrained from access to affordable inputs. This results in sub-optimal productivity levels, negatively affecting the efficiency of the SDM. Additionally, policies are in place that limit organic cultivation to a single region in Uganda, preventing GADC from expanding their organic, low-input farmer base. This situation is underlined by the fact that Uganda scores a two out of seven on the EBA indicator of "Importing & distributing fertilizer."

Global input regulations influencing input services

Pratibha Syntex is constrained by strict global regulation on what inputs they provide to their organic cotton farmers. It seeks to provide its cotton farmers with low-cost, quality inputs—fertilizer, growth promotor and crop protection—and non-GM seeds. Pratibha had to create its own market for these inputs, and produces them through both Pratibha Syntex and farmer-managed production centers. The inputs are Pratibha branded to secure their reputation. After widely demonstrating the impact, farmers are now using these inputs on their farms.

The costs of transportation need not be fully out of the control of the service delivery model either. While none of the models impact the road infrastructure in their environment, they can affect efficiency in transportation. An obvious example is aggregation of farmer demand for inputs, leading to a rise in their availability in distant areas without a natural market. Similarly, service delivery models often have a sophisticated aggregation structure for the crop they source.

Using a digital solution to overcome infrastructural challenges

Digital Green overcame this dynamic in a creative way, without going through the often lengthy and costly process of organizing farmer cooperatives. Through their Loop model, they provide an app-based technology platform that allows farmers to gain insight into market rates in the region. A farmer chosen within the local community for the position of “aggregator,” transports and sells the crops on behalf of the farmers in his or her area. This reduces the cost of transportation and facilitates a better price due to increased bargaining power. Farmers can see the resulting sales and respective proceeds on the same application. As the model scales to more markets and crops and tracks prices over longer periods of time, the aggregators can determine trends in market prices and thus recommend at which markets farmers will be able to realize better prices.

Even remedying environmental impact in the form of harvest risk can be within the scope of an SDM. For a long time SDMs have struggled to provide crop or weather insurance to their farmers. **Babban Gona**, which sells inputs for maize and rice production as well as sourcing these crops from farmers, has succeeded in doing so. While they have successfully piloted the use of satellite technology to reduce monitoring costs, they find that they can insure farmers for the value of their crop at a cost of approximately 50 US cents per month. Other insurance products for rural markets are starting to materialize. **One Acre Fund** provides its farmers with an insurance for funerals, which can have a major (shock) impact on their disposable income.

7. This indicator measures the ability of private entities to import and distribute fertilizer, with high scores indicating an absence of barriers for private entities to do so.

6.4

THE LIMITATIONS OF THE CURRENT WORK AND WHAT WILL FOLLOW

The qualitative and subjective approach of this analysis of the enabling environment reflects the unique experience of a case owner in their respective context. It shows where their ambitions may run into limitations they cannot control, and where they have acted to influence or overcome their challenges in the enabling environment. Such an approach does not allow for any significant ranking and is limited by the fact that it does not consider the perspective of the farmer—only as the service provider perceives it. Labor and land issues, for example, may not be perceived as strongly by service providers as by farmers.

Discussing these issues with case partners has been the start of engaging service delivery model stakeholders on the importance of their enabling environment. The qualitative and subjective approach still has significant limitations. The importance of this topic demands a more sophisticated, structured approach. An important next step in the development of the service delivery model methodology will be the introduction of a more quantitative, and score-based, approach for measuring the effect of the enabling environment. Such an approach should provide insights into the different environments, allowing for their comparison, and generate proven methods for improvement similarly to what was done for the service delivery models themselves.

Through the Smallholder Innovation Platform (to be discussed in detail in Chapter 7) it will be possible to have discussions with key partners within crop-producing countries, notably within the public sector, to examine how limiting factors can be transformed into facilitating factors. The focus will be not only on the quality of policy and regulation, where the EBA has established a methodology, but also on the enforcement of such policies and regulations. Furthermore, the focus will be on the level and quality of investment in the enabling environment and the technologies



7.0

CONCLUSIONS & NEXT STEPS

7.1	KEY OBSERVATIONS
7.2	SCALING OUR LEARNINGS THROUGH THE SMALLHOLDER INNOVATION PLATFORM

7.1

KEY OBSERVATIONS

The introduction highlighted some of the key observations made on how smallholder engagement is changing and how this is affecting the way services are being offered to smallholders. This section unpacks those observations based on the best practices that have been shared throughout the report, and indicates where additional work will be helpful.

OBSERVATION 1:

Farmers are seen as clients instead of as producers / suppliers

When IDH started analyzing service delivery models, it was apparent that the majority had been established mainly to source from farmers and deliver certification services to meet the demand of buyers. However, an increasing number of service providers have shifted their approach to farmers, dealing with them more as clients and using data technology to better “Know the Customer.” These service providers look at the whole farming system and the needs of farmer households to go beyond their more traditional approach of serving farmers only for the main cash crop. There are inspiring examples of service providers that expand their service packages by including services for several crops (cash and staple), financial services, insurance, social services.

Besides innovation on service packages, service providers are also innovating on new “coalitions of service providers”; for example, a tea company exploring a partnership with a potato company for service supply to farmers. New, cost-efficient delivery channels to reach farmers, for example ICT solutions to share information on best practices, are also being created by this consistent push to innovate.

For some, the business of service supply is an attractive new business opportunity for which business entities are being established to service other crops and for non-agricultural services.

With all the great innovation there is an identifiable need for a platform to tie it all learning and ideas together, to build new coalitions, new business structures, and promote the use of ICT solutions. Addressing this need is what IDH plans to take forward in the Smallholder Innovation Platform.

OBSERVATION 2:

Increased strategic focus on the financial sustainability of service delivery models

As service delivery models are increasingly part of the core business of organizations, and in some cases even being set up as new business entities, there is increased attention and appetite to work on funding strategies that lead to financially sustainable models. There is a clear understanding that models with different objectives, different scales, and different maturity stages have different funding needs. Consequently, there are different types of funders and investors that can meet these needs. In some cases, there is not yet a match between funding needs and funding supply, leading to some SDM archetypes that struggle to access to certain types of funding, such as grants. At the same time, in other cases there are potential risks of market distortion when grant funding is used in situations where other types of funding would also suffice.

Due to the increased attention financial sustainability is receiving, new financial models, including new revenue streams, are emerging that also draw in new financial institutions and push investors to invest in service delivery models. Innovation in this area would be beneficial, to work on new best practices and strategies to reach financial sustainability. Through the Smallholder Innovation Platform, IDH will explore new partnerships with financial players that are keen on co-designing such innovative funding strategies.

OBSERVATION 3:

Closing the information asymmetry gap between service providers, development financial institutions (DFIs), and impact investors

The current work of IDH uses a structured data analysis to find service delivery models' strengths, weaknesses, and opportunities for improvement. From this analysis, helpful insights were gained into the performance and return on investment of service delivery models. These insights lower the risk perception of DFIs and impact investors that are interested in investing in service delivery models to meet their smallholder development objectives. They can also help service providers to better understand how to mitigate certain risks.

The lowering of risk perception and creating a “common understanding” between service providers, DFIs, and impact investors has already lead to several concrete deals in which the service provider is enabled by the financial partner to implement its innovative service packages at scale.

Since financing is crucial for the scaling of a service delivery model, and since DFIs and impact investors are keen to further grow their smallholder portfolios, we expect that there are many opportunities to work with DFIs, impact investors, and service providers on new innovative financing structures.

OBSERVATION 4:

The enabling environment influences the potential of service delivery models to become financially sustainable and reach scale

From the first analyses IDH conducted on the role of the enabling environment in the performance of service delivery models, it was concluded that the public sector can influence how much farmers receive in terms of price, and therefore income. It also has a large influence on markets and regulations, especially with regards to input policies. It would be beneficial to stimulate constructive dialogues between the public and private sector on how to create a conducive environment in which models can expand their scale and increase their impact. The underlying analyses of the performance of models and the role of the enabling environment are useful input in fostering such discussions.

In the near future, the role of the enabling environment remove must be further developed and refined to facilitate a shift from a qualitative analysis to a more quantitative type of analysis. That would allow for more insights into the key drivers of a conducive environment.

Furthermore, there is a need to convene public-private dialogues to educate different stakeholders on the purpose and intent of service delivery models and to create clarity on roles and responsibilities of public and private sector actors to work on a healthy enabling environment in which models and farmers can prosper.

OBSERVATION 5:

Technology and innovation play a vital role in decreasing costs, increasing impact at farmer level, and supporting evidence-based insights and behavior

In this report, the use of ICT solutions was shown to lead to more cost-efficient service delivery. It allows service providers to increase the reach of their services and become more familiar with their customers—the farmers. These technological solutions are being embedded in traditional service delivery model structures and cannot replace them fully: they are an add-on that clearly helps drive down costs and increase the impact of services on farmers.

Nearly all the models analyzed have clear opportunities for integrating technological solutions. Besides the fact that many service delivery models can benefit from technological solutions, there is also ample learning potential both across and outside models on how to best work on this topic. This is a key area IDH expects the Smallholder Innovation Platform to take forward.

7.2

SCALING OUR LEARNINGS THROUGH THE SMALLHOLDER INNOVATION PLATFORM

Our work on analyzing, improving, and innovating service delivery models with partners provides a solid basis to further scale our learnings through the Smallholder Innovation Platform (SIP). This platform is a new initiative, building upon and consolidating IDH's existing strengths and capacity. The goal of the platform is to drive agricultural transformation by changing the way organizations, both public and private, engage with smallholders.

Smallholders need access to more complete service packages that are tailored to their needs. Packages need to be offered in such a way that it makes sense for the farmer to make use of the package and for the provider to continue offering the package. This requires smarter strategies for service providers on what to offer farmers, at what scale, and with what type of funding strategy.

There are aspects of the enabling environment that can either limit or facilitate the performance of service delivery models. More conducive enabling environments need to be developed that allow service delivery models to expand, have greater impact, and become more efficient and sustainable.

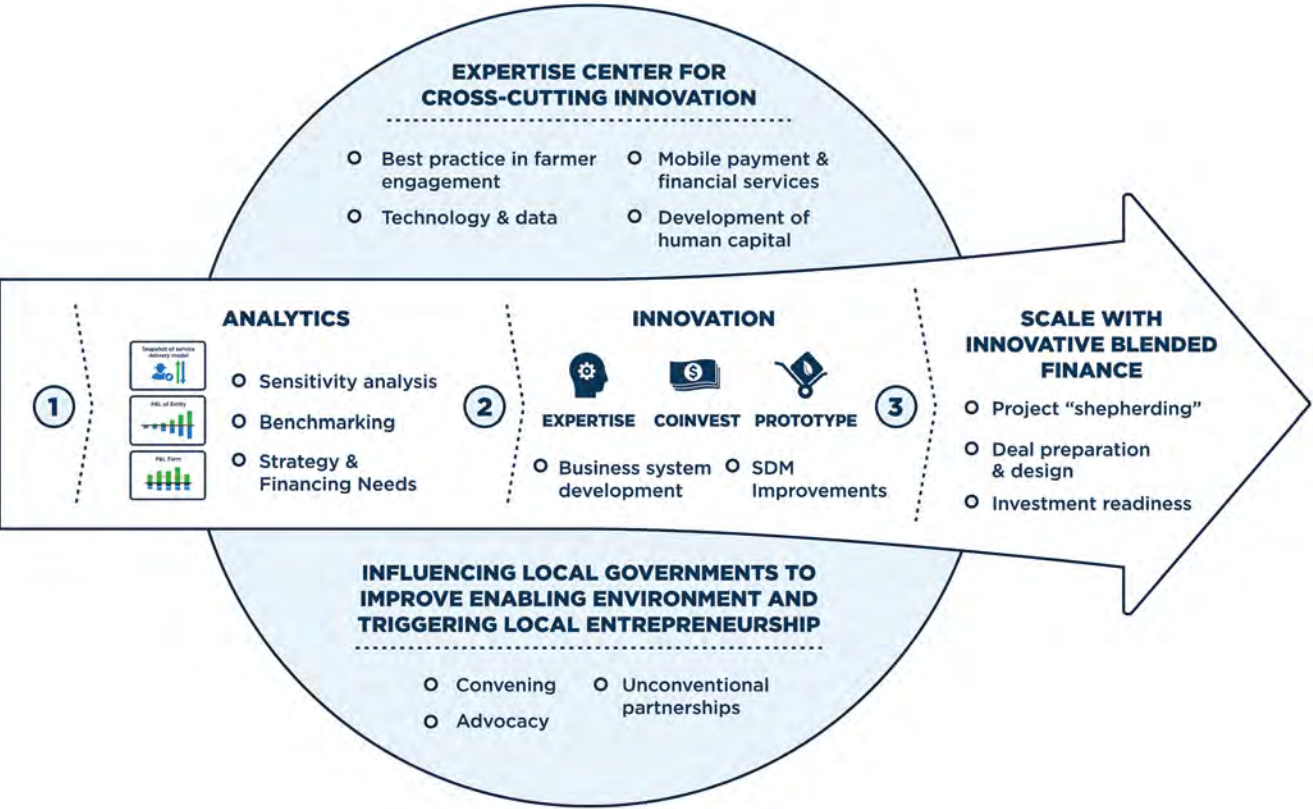
And finally, IDH started this work because service delivery models operated in isolation, with a lot of fragmentation in the sharing of key learnings and insights. By building the benchmarking database with different types of service delivery models in different local contexts and value chains, IDH has created new knowledge capital to better understand how to organize smallholder engagement. As we continue to increase the number of SDM case studies and expand the database, there will be a continuous cycle of learning, sharing, improving and innovating.

The Smallholder Innovation Platform aims to be at once a provider of expertise, a shepherd and co-investor for service delivery model improvement and scaling, and a convener for collectively tackling problems that face all service providers.

It will be the go-to place for companies, NGOs, financial institutions, and donors who want to transform the way they engage with smallholder farmers. The Smallholder Innovation Platform provides:

- A pathway towards more impact and scale for individual Service Providers, based on an evaluation of Service Delivery Models;
- A robust, replicable, comparable and actionable methodology;
- An expertise center for collective learning and innovation on cross-cutting issues that face all Service Providers;
- A convening platform to systemically reduce costs and risks and transform the local enabling environment through convening and advocacy to engage public and private sector in new and unconventional partnerships;
- A pipeline of SDMs in which financial institutions and donors can co-invest.

The figure below shows the interplay between these elements of the Smallholder Innovation Platform.



**FOR MORE INFORMATION ABOUT
HOW TO PARTNER WITH THE
SMALLHOLDER INNOVATION
PLATFORM**

Contact:

Iris van der Velden
Director of Learning and Innovation
+31(0)30 2307 854
vanderVelden@idhtrade.org

André Dellevoet
Senior Strategist and Business
Developer Africa
+31 629 155 461
Dellevoet@idhtrade.org

8.0

APPENDIX

8.1	KPI LIST
8.2	PROFILE OF CASES

8.1

KPI LIST

#	Category	Definition	Methodology
C1.01	Case owner	Case owner	The name of the case owner
C1.02	Case owner	Type of organization	Type of organization of the case owner
C1.03	Case owner	Function in the value chain	The function of the case owner in the value chain
C1.04	Case owner	Scope of operations	The scope of operations of the case owner
C1.05	Case owner	SDM staff: Overhead	Number of employees dedicated to managing the SDM
C1.06	Case owner	SDM staff: Services	Number of employees dedicated to specific service operations within the SDM
C2.01	Scope & context	Continent	The continent of SDM operation
C2.02	Scope & context	Country	The country of SDM operation
C2.03	Scope & context	Household size	Household members
C2.04	Scope & context	SDM development	Whether the SDM had already been in operation before the case study, or was being set up while the study took place
C2.05	Scope & context	Capital investment	Indication of the size of initial capital investment required to set up the SDM
C2.06	Scope & context	Enabling environment: Land ownership	Degree of impact of land ownership on the SDM (low/high, negative/positive)
C2.07	Scope & context	Enabling environment: Infrastructure	Degree of impact of infrastructure on the SDM (low/high, negative/positive)
C2.08	Scope & context	Enabling environment: Labor	Degree of impact of labor on the SDM (low/high, negative/positive)
C2.09	Scope & context	Enabling environment: Inputs & financing	Degree of impact of inputs & financing on the SDM (low/high, negative/positive)
C2.10	Scope & context	Enabling environment: Trading system	Degree of impact of the trading system on the SDM (low/high, negative/positive)
C2.11	Scope & context	Enabling environment: Pricing & competitiveness	Degree of impact of pricing & competitiveness on the SDM (low/high, negative/positive)
C2.12	Scope & context	Enabling environment: Environmental (issues)	Degree of impact of environmental (issues) on the SDM (low/high, negative/positive)
C2.13	Scope & context	Enabling environment: Social (issues)	Degree of impact of social (issues) on the SDM (low/high, negative/positive)
C2.14	Scope & context	Total number of farmers	The total number of farmers in the SDM

#	Category	Definition	Methodology
C2.15	Scope & context	Farmer number growth	Compound Annual Growth Rate in farmer numbers
C2.16	Scope & context	Main crop	The main crop the SDM is organized around
C3.01	Farmer segmentation	Minimum requirements	Are there minimum requirements to farmers joining the program regarding their assets?
C3.02	Farmer segmentation	Minimum requirements	Are there minimum requirements to farmers joining the program regarding their behavior?
C3.03	Farmer segmentation	Minimum requirements	Are there minimum requirements to farmers joining the program regarding their attitude?
C3.04	Farmer segmentation	Segmentation	Are farmers within the program segmented (i.e. receiving different services)
C3.05	Farmer segmentation	Number of segments	The number of different farmer segments
C4.01	Farmer organization segmentation	Minimum requirements	Are there minimum requirements to farmer organizations joining the program regarding their production volumes?
C4.02	Farmer organization segmentation	Minimum requirements	Are there minimum requirements to farmer organizations joining the program regarding their membership numbers?
C4.03	Farmer organization segmentation	Minimum requirements	Are there minimum requirements to farmer organizations joining the program regarding their organizational professionalism?
C4.04	Farmer organization segmentation	Segmentation	Are farmer organizations within the program segmented (i.e. receiving different services)
C4.05	Farmer organization segmentation	Number of segments	The number of different farmer organization segments
C4.06	Farmer organization	Type of organization	How are farmers organized?
C4.07	Farmer organization	FO setup support	Does the case owner support the establishment / formation of FOs?
C4.08	Farmer organization	Main service beneficiaries	Which actors are the main beneficiaries of services provided in this SDM?
C5.01	Services	Organizational support	Whether organizational support is provided as a service
C5.02	Services	Farmer training	Whether farmer training is provided as a service
C5.03	Services	Certification	Whether certification is provided as a service
C5.04	Services	Crop protection	Whether crop protection is provided as a service
C5.05	Services	Fertilizer	Whether fertilizer is provided as a service
C5.06	Services	Rejuvenation	Whether rejuvenation is provided as a service
C5.07	Services	Crop diversification	Whether crop diversification is provided as a service

#	Category	Definition	Methodology
C5.08	Services	Financing	Whether financing is provided as a service
C5.09	Services	Mechanization	Whether mechanization is provided as a service
C5.10	Services	Social services	Whether social services are provided as a service
C5.11	Services	Other (please specify)	Whether other services (please specify) are provided
C5.12	Services	Service offering	How are services offered to farmers (as package or menu)
C6.01	Data & analysis	Time horizon	Total SDM duration within the scope of the analysis
C6.02	Data & analysis	Backward looking years	Percentage of backward looking years (actual data)
C6.03	Data & analysis	Forward looking years	Percentage of forward looking years (projections)
C6.04	Data & analysis	Baseline data assurance	% of data points based on measured data (i.e. from FFBs, M&E, surveys, etc.)
C6.05	Data & analysis	Farmer data assurance	% of data points based on measured data (i.e. from FFBs, M&E, surveys, etc.)
C6.06	Data & analysis	Cost data assurance	% of data points based on measured data (i.e. from FFBs, M&E, surveys, etc.)
C6.07	Data & analysis	Commercial data assurance	% of data points based on measured data (i.e. from FFBs, M&E, surveys, etc.)
1.01	Farmer economics	Productivity (end versus start)	Change in farm productivity (production per ha) after 10 years in the SDM versus baseline production
1.02	Farmer economics	Profitability (end versus start)	Change in farm profitability (net income) after 10 years in the SDM versus baseline net income
1.03	Farmer economics	Productivity (10-yr average)	Change in average farm productivity (production per ha) over 10 years in the SDM versus average baseline production over 10 years
1.04	Farmer economics	Profitability (10-yr average)	Change in average farm profitability (net income) over 10 years in the SDM versus average baseline net income over 10 years
1.05	Farmer economics	Poverty (SDM farmer)	Ratio of SDM farmer income to poverty line defined by World Bank (\$1.9/day regardless of country)
1.06	Farmer economics	Poverty (baseline farmer)	Ratio of baseline farmer income to poverty line. To compare against indicator 1.05
1.07	Farmer economics	Median income (SDM farmer)	Ratio of SDM farmer income to median country income
1.08	Farmer economics	Median income (baseline farmer)	Ratio of baseline farmer income to median country income. To compare against indicator 1.07
2.01	Efficiency	Total cost per farmer	Total SDM costs (duration of the SDM) per farmer, net of service revenues received but excluding donor funding and commercial revenues
2.02	Efficiency	Total cost per farmer (excl. service payments)	Total SDM costs (duration of the SDM) per farmer, excluding service revenues, donor funding and commercial revenues

#	Category	Definition	Methodology
2.03	Efficiency	Total cost per farmer (as % of value of production)	Total cost of the SDM per farmer (KPI 2.01) as a percentage of the total value of crop revenues per farmer
2.04	Efficiency	Total cost per farmer (as % of value of product sourced)	Total cost of the SDM per farmer (KPI 2.01) as a percentage of the total value of crops sourced per farmer
2.05	Efficiency	Cost per farmer per year	Average annual SDM costs per farmer
2.06	Efficiency	Cost per adopting farmer per year	Average annual SDM costs per adopting farmer
2.07	Efficiency	Change in cost per farmer	Change in average annual SDM costs per farmer between the first and last year of the SDM
2.08	Efficiency	Baseline sourcing	Baseline sourcing
2.09	Efficiency	Change in sourcing	Change in sourcing per farmer over 10 years in the SDM versus baseline sourcing. Sourcing is defined as the total amount of produce sold per farmer
2.10	Efficiency	Cost per MT sourced	Average annual SDM costs per MT sourced
2.11	Efficiency	Change in cost per MT sourced	Average annual SDM costs per MT sourced
2.12	Efficiency	Loyalty rate (baseline)	Baseline loyalty rate
2.13	Efficiency	Change in loyalty rate	Change in loyalty per farmer over 10 years in the SDM versus baseline loyalty. Loyalty is defined as the percentage of production that is sold to the case owner
3.01	Adoption	Adoption measured	Indication of whether case owner does or does not keep track to what extent farmers adopt practices
3.02	Adoption	How adoption is measured	Indicates how adoption is measured in the SDM. This can be baseline study, on-going data collection, end-line study.
3.03	Adoption	Adoption rate	Percentage of farmers receiving services that implement practices in the field
4.01	Sustainability	Total SDM cost	The total net income of the SDM, including service revenues and donor funding, and excluding commercial revenues
4.02	Sustainability	Total SDM cost (excluding donor funding)	The total net income of the SDM, including service revenues, yet excluding donor funding and commercial revenues
4.03	Sustainability	Percentage costs recovered from donor funding	Percentage of SDM expenses recovered by donor funding (duration of SDM)
4.04	Sustainability	Percentage costs recovered from donor funding. First half of SDM	Percentage of SDM expenses recovered by donor funding in the first half of the SDM. Comparing to 4.03, this can show a change in funding sources as the SDM matures
4.05	Sustainability	Percentage costs recovered from donor funding. Second half of SDM	Percentage of SDM expenses recovered by donor funding in the second half of the SDM. Comparing to 4.03, this can show a change in funding sources as the SDM matures
4.06	Sustainability	Percentage of SDM costs recovered from payment for services	Percentage of SDM expenses recovered by revenues from SDM services
4.07	Sustainability	Percentage SDM costs recovered. First half of SDM	Percentage of SDM expenses recovered by revenues from SDM services in the first half of the SDM. Comparing to 4.05, this can show a change in funding sources as the SDM matures

#	Category	Definition	Methodology
4.08	Sustainability	Breakeven margin (5 years)	Additional margin on top of farm-gate price required to break even on SDM expenses, assuming payback period of 5 years and 150% increase in farmer production versus baseline
4.09	Sustainability	Breakeven margin (10 years)	Additional margin on top of farm-gate price required to break even on SDM expenses, assuming payback period of 10 years and 150% increase in farmer production versus baseline
4.10	Sustainability	Value creation at farm level - 5 years	Total value created at farm level (over 5 years) per dollar invested in the SDM. Includes adopting and non-adopting farmers
4.11	Sustainability	Value creation at farm level - 10 years	Total value created at farm level (over 10 years) per dollar invested in the SDM. Includes adopting and non-adopting farmers
5.01	Costs	SDM costs: Overhead	Percentage of costs related to overhead
5.02	Costs	SDM costs: Overhead cost per farmer	The amount of money spent in the SDM, per farmer, outside of services
5.03	Costs	SDM costs: Organizational support	Percentage of costs related to organizational support
5.04	Costs	SDM costs: Farmer training	Percentage of costs related to farmer training
5.05	Costs	SDM costs: Certification	Percentage of costs related to certification
5.06	Costs	SDM costs: Crop protection	Percentage of costs related to crop protection
5.07	Costs	SDM costs: Fertilizer	Percentage of costs related to fertilizer
5.08	Costs	SDM costs: Rejuvenation	Percentage of costs related to rejuvenation
5.09	Costs	SDM costs: Crop diversification	Percentage of costs related to crop diversification
5.10	Costs	SDM costs: Financing	Percentage of costs related to financing
5.11	Costs	SDM costs: Mechanization	Percentage of costs related to mechanization
5.12	Costs	SDM costs: Social services	Percentage of costs related to social services
5.13	Costs	SDM costs: Other (please specify)	Percentage of costs related to other services (please specify)
6.01	Service: training	Cost per farmer (total)	The total cost of training a farmer over the duration of the SDM
6.02	Service: training	Cost per farmer (peak)	Highest observed annual training cost per farmer
6.03	Service: training	Cost per farmer (annual average)	Average annual training cost per farmer

#	Category	Definition	Methodology
6.04	Service: training	Price charged to farmer: training (\$)	Average annual price charged to farmer for training services, expressed as a percentage of total costs per farmer
6.05	Service: training	Price charged to farmer: training (%)	Average annual price charged to farmer for training services, expressed as a percentage of total costs per farmer
6.06	Service: training	Days of training per farmer	Average annual number of training days per farmer
6.07	Service: training	Farmers per training	Average annual number of farmers per training
6.08	Service: training	Training method	The method of training that farmers are reached with (group training, individual coaching, training of and by lead farmers)
6.09	Service: training	Type of training - Agronomic	Whether or not the SDM includes agronomic trainings (comprising of one or more topics related to agronomics)
6.10	Service: training	Type of training - Business	Whether or not the SDM includes Business trainings (comprising one or more topics related to business practices)
6.11	Service: training	Type of training - Social	Whether or not the SDM includes Social trainings (comprising one or more topics related to practices enhancing social welfare of the household or communities)
6.12	Service: training	Type of training - Environmental	Whether or not the SDM includes Environmental trainings (comprising one or more topics related to sound environmental practices)
6.13	Service: training	Number of modules	Total number of topics covered (of all categories). Modules can be weeding, fertilizer application, financial management, child labor prevention, etc.)
7.01	Service: rejuvenation	Nursery operational costs	Average annual cost per seedling to operate the nursery. Includes labor, materials and transportation costs
7.02	Service: rejuvenation	Price charged to farmer: rejuvenation	Price charged to SDM farmer plant materials (e.g., seedling)
7.03	Service: rejuvenation	Number of nurseries	Total number of nurseries in the SDM
7.04	Service: rejuvenation	Nursery production capacity	Average number of seedlings produced per nursery per year
7.05	Service: rejuvenation	Nursery management	Person or group of people responsible for managing the nursery. This can be case owner, case owner contracts or the SDM beneficiaries
8.01	Service: inputs	Amount of fertilizer applied	Percentage of amount of fertilizer applied compared to amount recommended
8.02	Service: inputs	Fertilizer costs	Costs of fertilizer (per ha) incurred by SDM farmer
8.03	Service: inputs	Price charged to farmer: fertilizer	Price charged to SDM farmer for fertilizer
8.04	Service: inputs	Amount of crop protection applied	Percentage of amount of crop protection applied compared to recommended amount
8.05	Service: inputs	Crop protection costs	Costs of crop protection (per ha) incurred by SDM farmer
8.06	Service: inputs	Price charged to farmer: crop protection	Price charged to SDM farmer for crop protection

#	Category	Definition	Methodology
9.01	Service: finance	Average loan per farmer	Average annual amount of cash loan or input credit a farmer receives
9.02	Service: finance	Average loan duration	Average time (in months) until a loan is repaid
9.03	Service: finance	Default rate	Percentage of farmer not repaying their debts
9.04	Service: finance	Interest rate (alternative interest rate)	Interest rate charged to farmers (alternative interest rate available to farmers if borrowing outside the SDM)
9.05	Service: finance	Cost of capital	Cost for the case owner of providing financing (and other) services
10.01	Service: diversification	Crops included in services provision	The number of crops the SDM provides services on (e.g. training on GAP, provision of seeds)
10.02	Service: diversification	Food crops included in services provision	The number of food crops the SDM provides services on (e.g. training on GAP, provision of seeds)
10.03	Service: diversification	Crops sourced	The number of crops that are sourced within the SDM
10.04	Service: diversification	Degree of diversification	Percentage of gross revenues not coming from the main crop supported within the SDM

8.2

PROFILE OF CASES

In this annex a snapshot is provided on each of the 30 cases that have been analyzed as part of this report. The snapshot includes basic information on the case, such as country of activity, the services provided to farmers, scale of service delivery and the objectives.

ANATRANS / FMS



COUNTRY



SDM DURATION (Years of analysis)

6 Years
(2016 - 2021)

CROPS

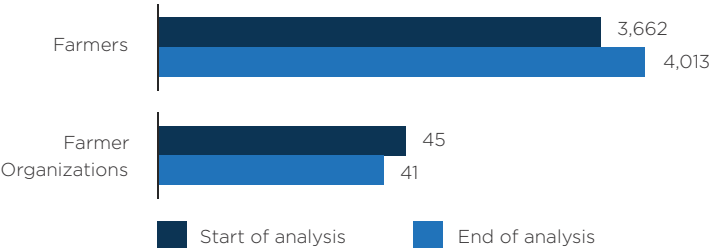


Cashew Nuts

ARCHETYPE

Local/Regional

SCALE



SERVICES



OBJECTIVES

- Increase supply security
- Increase product traceability
- Increase farmer loyalty
- Improve product quality
- Build PO capacity
- Improve sourcing efficiency
- Achieve financially sustainable service delivery
- Increase supply of certified product

BABBAN GONA



COUNTRY



SDM DURATION (Years of analysis)

10 Years
(2012 - 2021)

CROPS

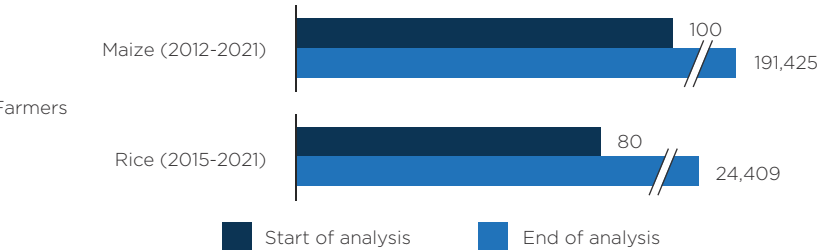


Maize
Rice

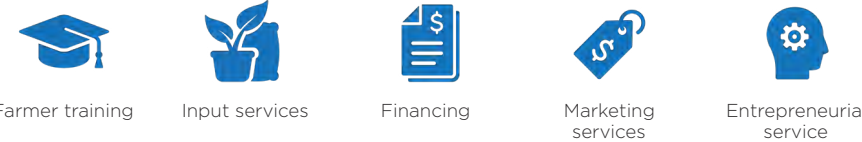
ARCHETYPE

Service focused

SCALE



SERVICES



OBJECTIVES

- Increase farm productivity
- Improve social conditions
- Increase SDM scale

BARRY CALLEBAUT



COUNTRY



SDM DURATION (Years of analysis)

5 Years
(2016 - 2020)

CROPS

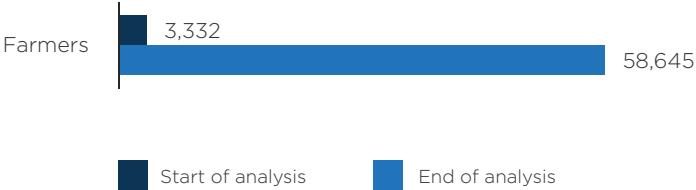


Cocoa

ARCHETYPE

Global Sourcing

SCALE



SERVICES



OBJECTIVES

- Improve access to finance
- Improve farmer livelihoods (especially income)
- Increase farm productivity
- Increase farmer loyalty
- Increase supply security

BARRY CALLEBAUT / PROVA



COUNTRY



SDM DURATION (Years of analysis)

5 Years
(2017 - 2021)

CROPS

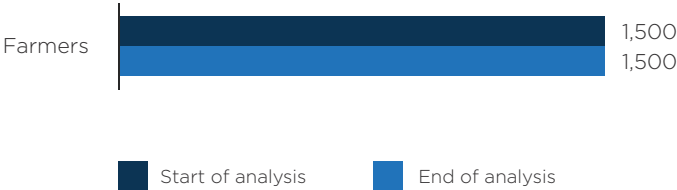


Vanilla
Cocoa

ARCHETYPE

Local/Regional

SCALE

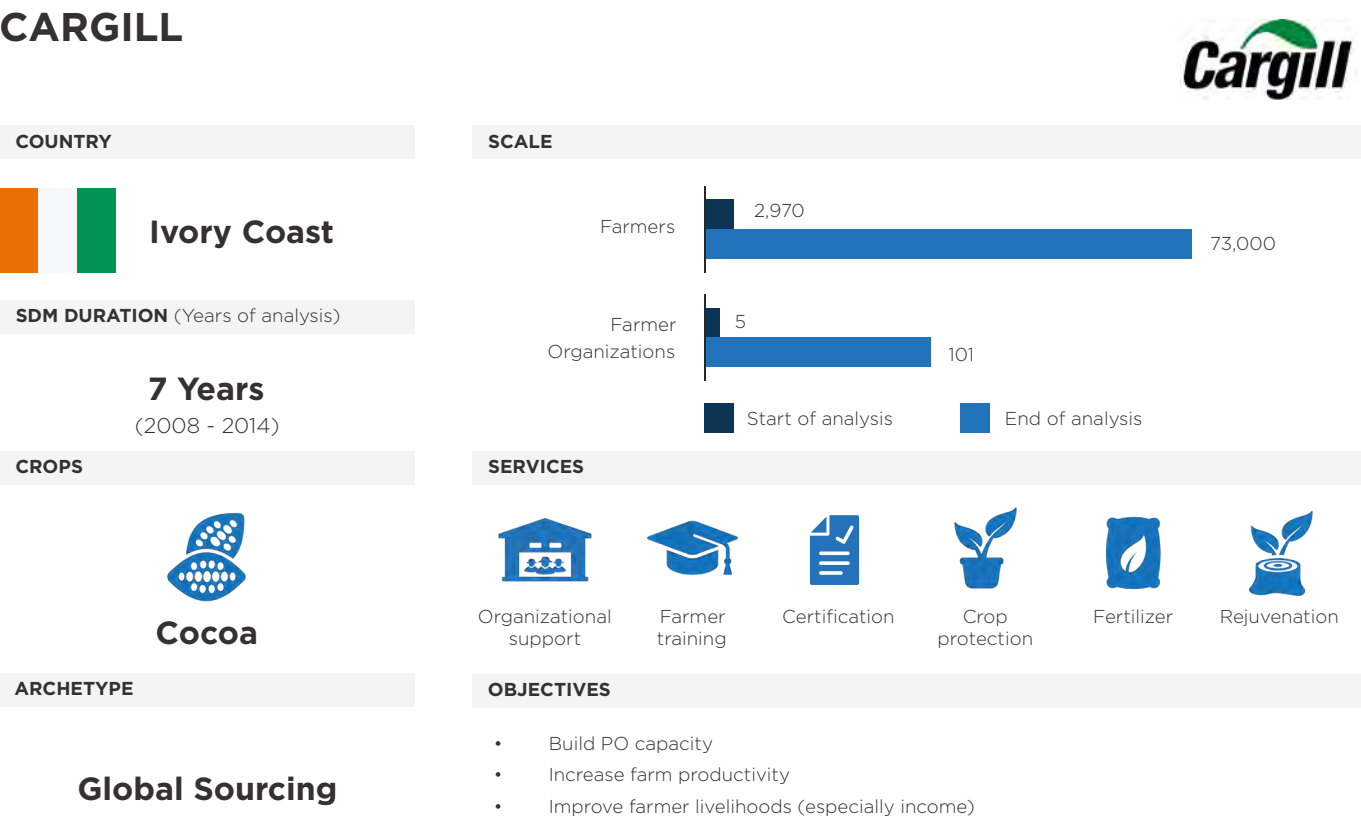


SERVICES

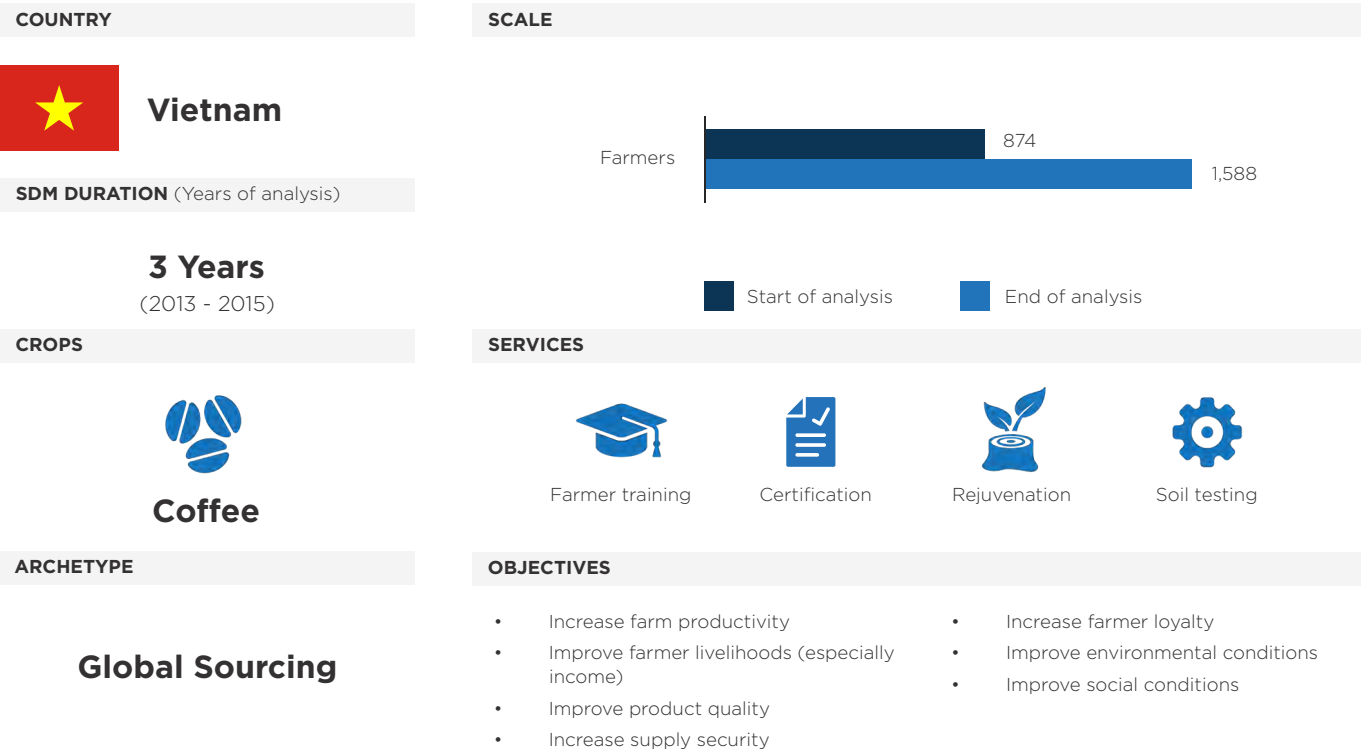


OBJECTIVES

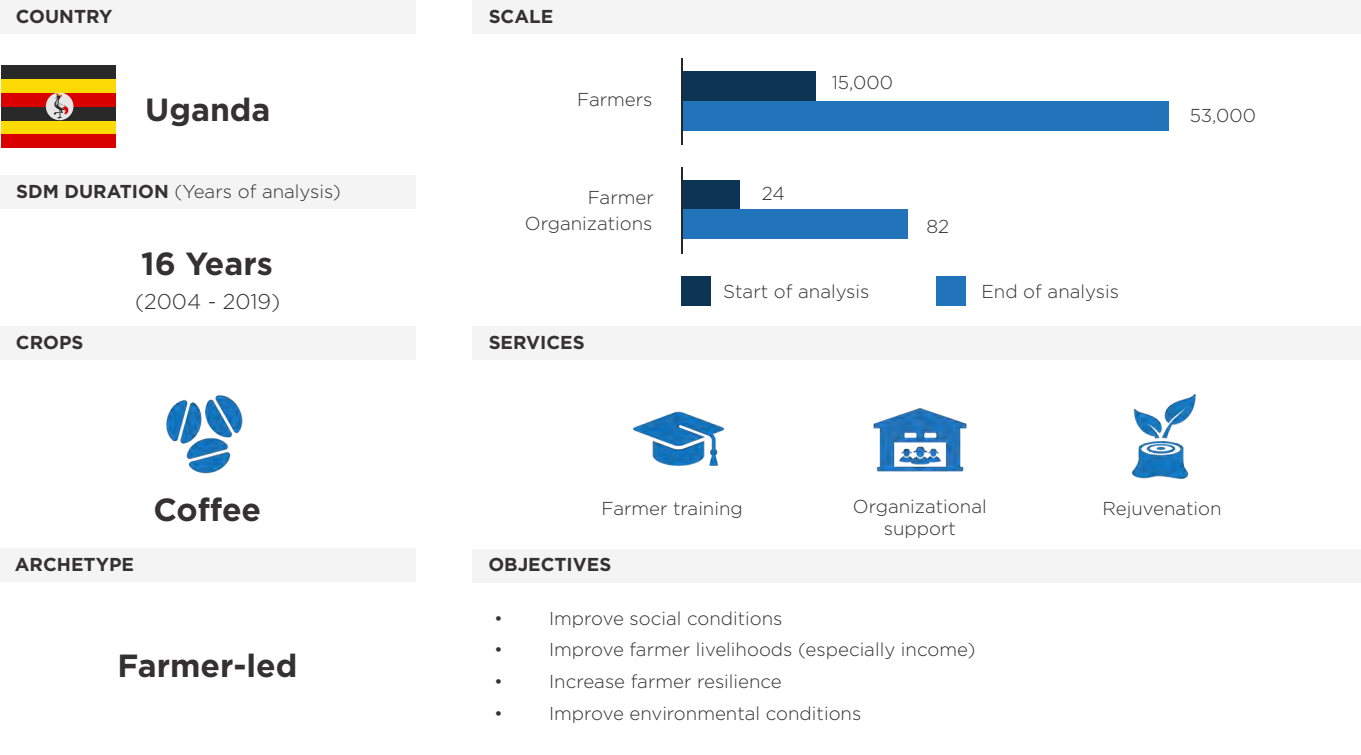
- Increase supply security
- Increase farm productivity
- Additional post-harvesting value creation for farmers and producer organizations
- Improve farmer livelihoods (especially income)
- Increase farmer resilience
- Increase product traceability
- Improve social conditions



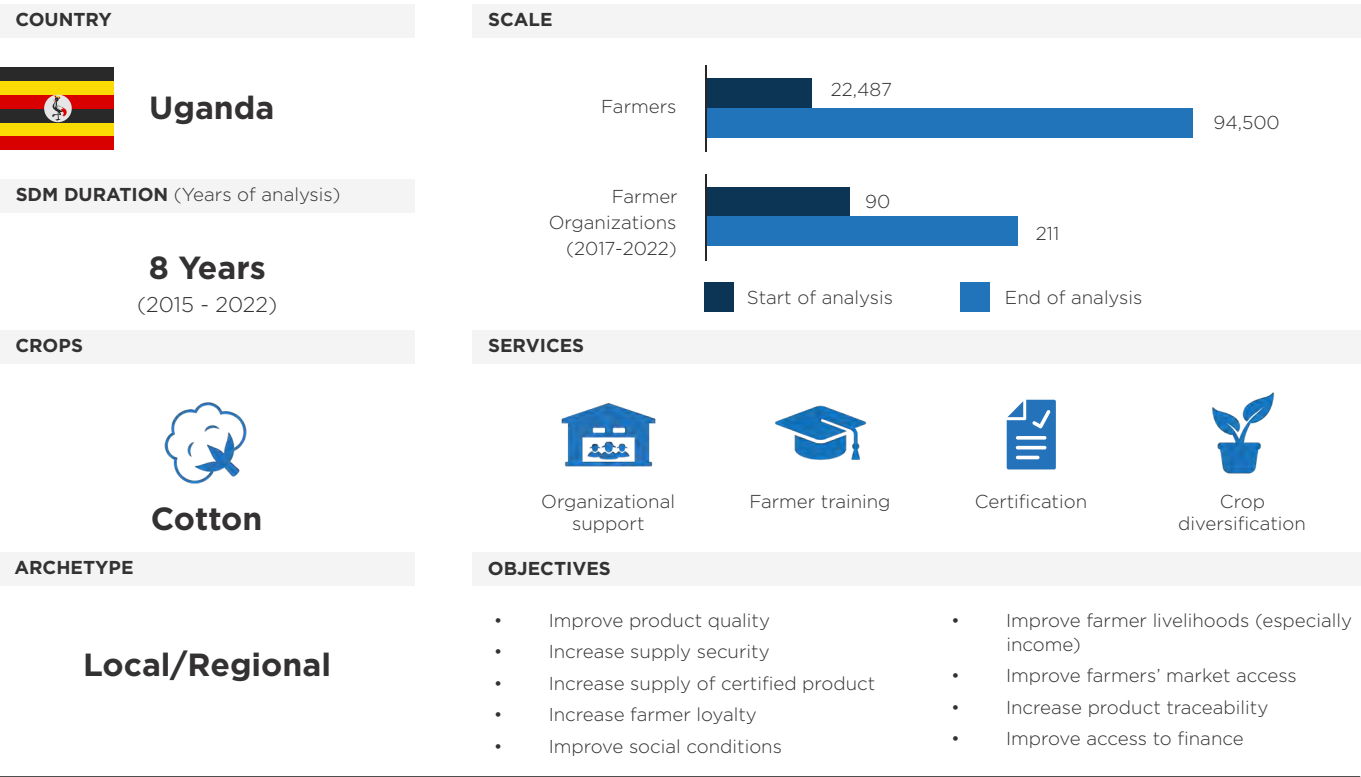
ECOM



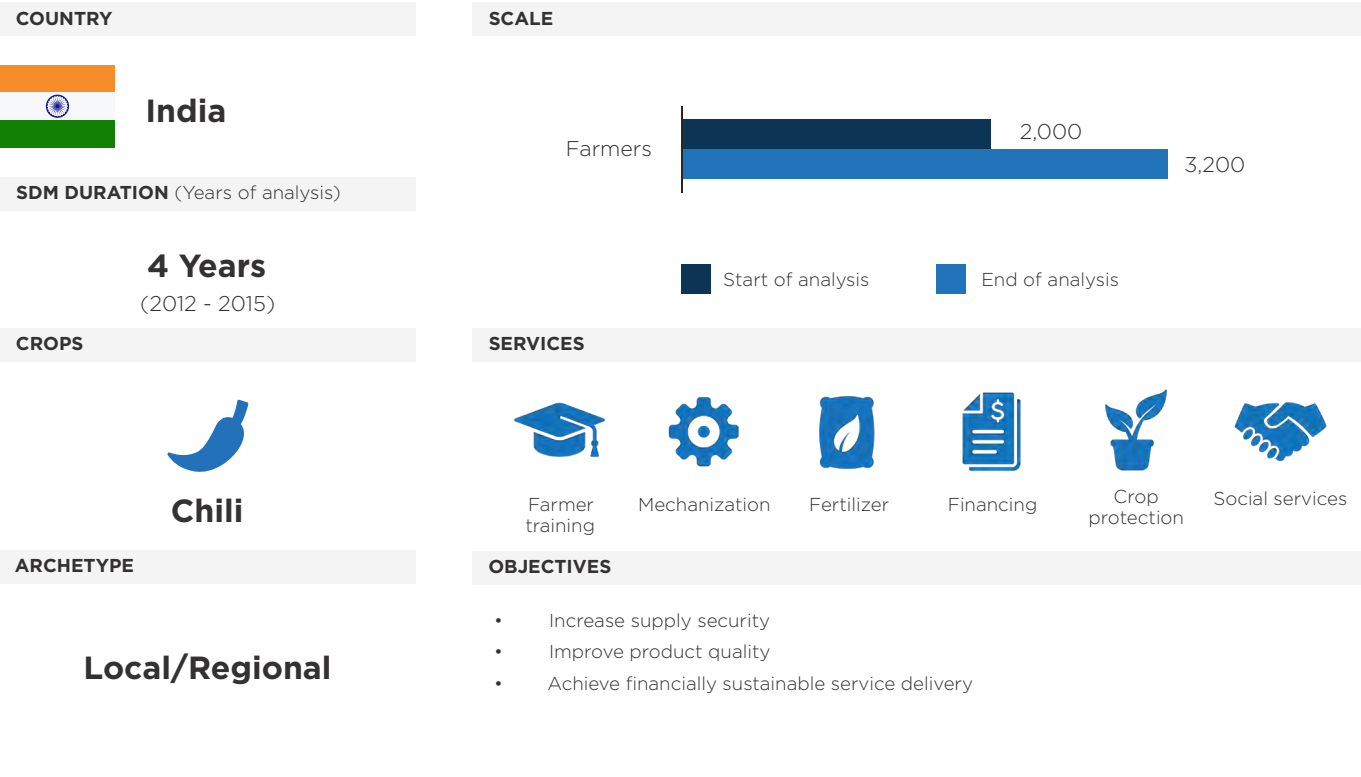
HRNS - HANNS R. NEUMANN STIFTUNG



GADC - GULU AGRICULTURAL DEVELOPMENT COMPANY



ITC



COUNTRY

Indonesia

SDM DURATION (Years of analysis)

12 Years
(2013 - 2024)

CROPS

Cocoa

ARCHETYPE

Global Sourcing

MARS

SCALE

Farmers

400

48,000

Start of analysis

End of analysis

SERVICES

Farmer training

Certification

Rejuvenation

Fertilizer

Crop protection

OBJECTIVES

- Increase farm productivity
- Improve farmer livelihoods (especially income)
- Improve product quality

COUNTRY

Ivory Coast

SDM DURATION (Years of analysis)

7 Years
(2016 - 2022)

CROPS

Cashew nuts

ARCHETYPE

Global sourcing

OLAM / FMS



SCALE

Farmers

13,500

30,500

Farmer Organizations

211

165

Start of analysis

End of analysis

SERVICES

Organizational support

Farmer training

Financing

Commercial services

Social services

OBJECTIVES

- Increase farm productivity
- Improve product quality
- Build PO capacity
- Increase product traceability
- Increase supply security
- Achieve financially sustainable service delivery

COUNTRY

Cameroon

SDM DURATION (Years of analysis)

8 Years
(2009 - 2016)

CROPS

Coffee

ARCHETYPE

Global Sourcing

OLAM



SCALE

Farmers

800

3,500

Farmer Organizations

29

90

Start of analysis

End of analysis

SERVICES

Organizational support

Farmer training

Rejuvenation

Fertilizer (on credit)

Inputs

Market information

OBJECTIVES

- Improve farmer livelihoods (especially income)
- Increased farm productivity
- Build PO capacity

COUNTRY

Kenya

SDM DURATION (Years of analysis)

3 Years
(2015 - 2017)

CROPS

Maize

ARCHETYPE

Service focused

ONE ACRE FUND



SCALE

Farmers

136,095

233,794

Start of analysis

End of analysis

SERVICES

Farmer training

Input distribution

Financing

Funeral insurance

Crop insurance

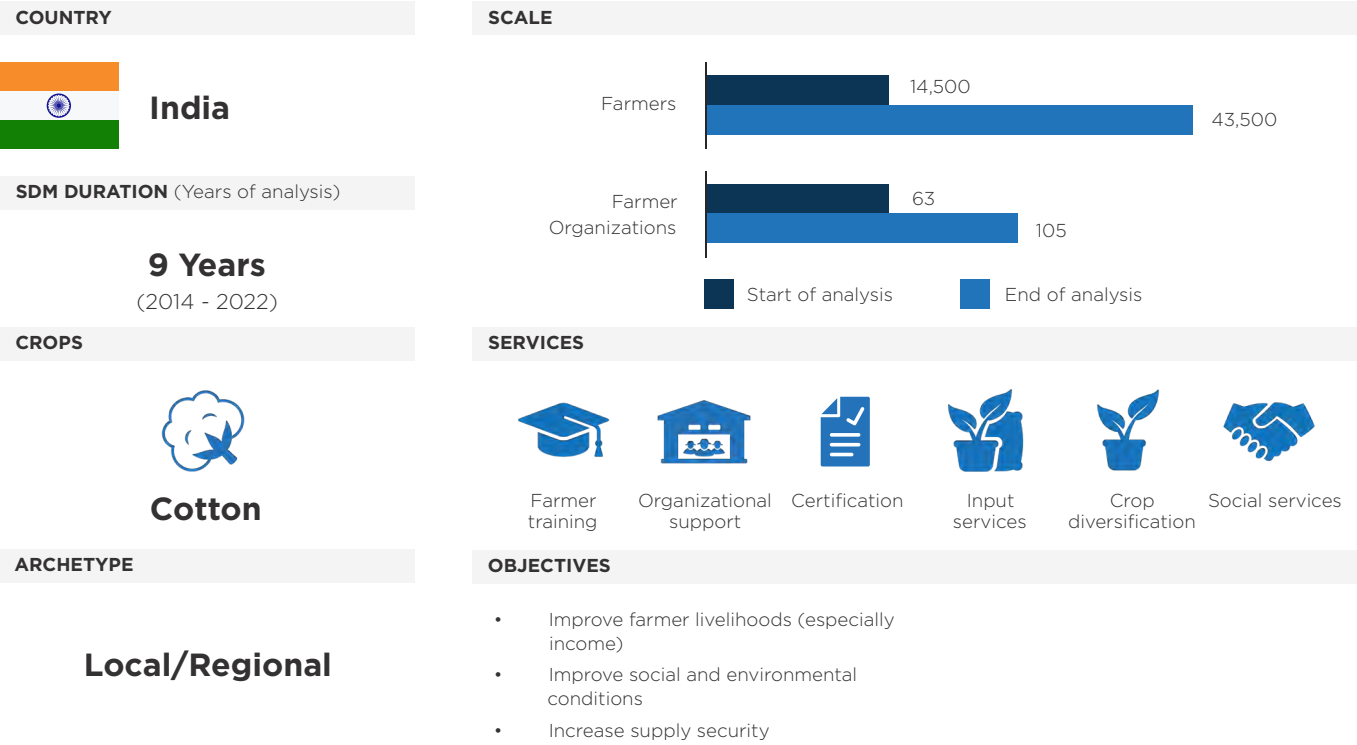
OBJECTIVES

- Improve social conditions
- Improve environmental conditions
- Increase farm productivity
- Improve farmer livelihoods (especially income)
- Increase farmer resilience

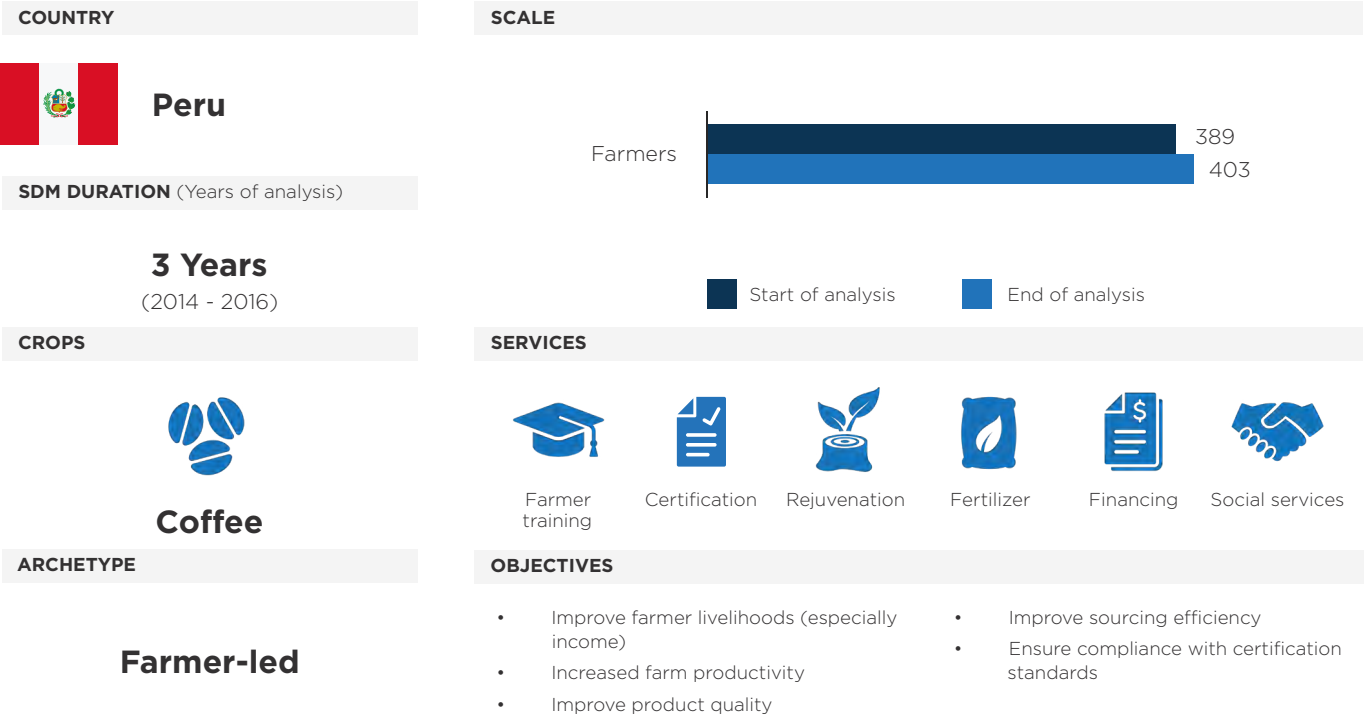
90

91

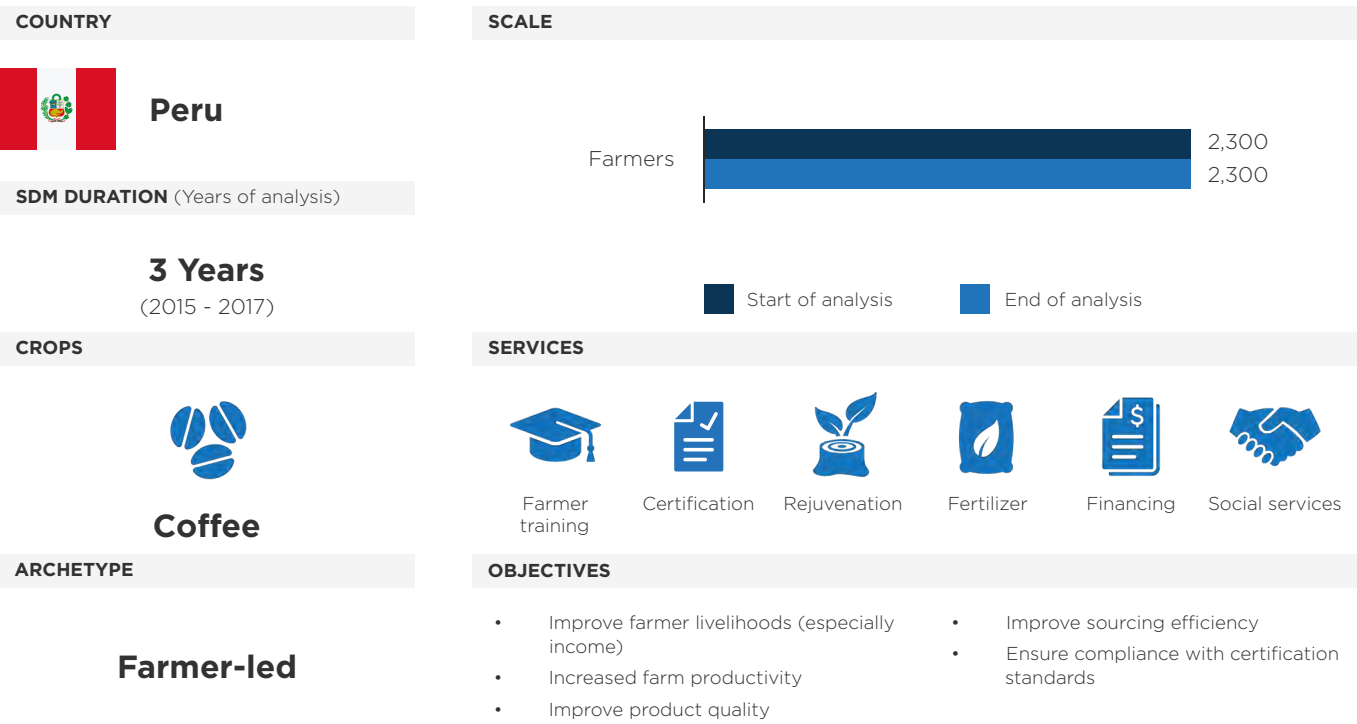
PRATIBHA



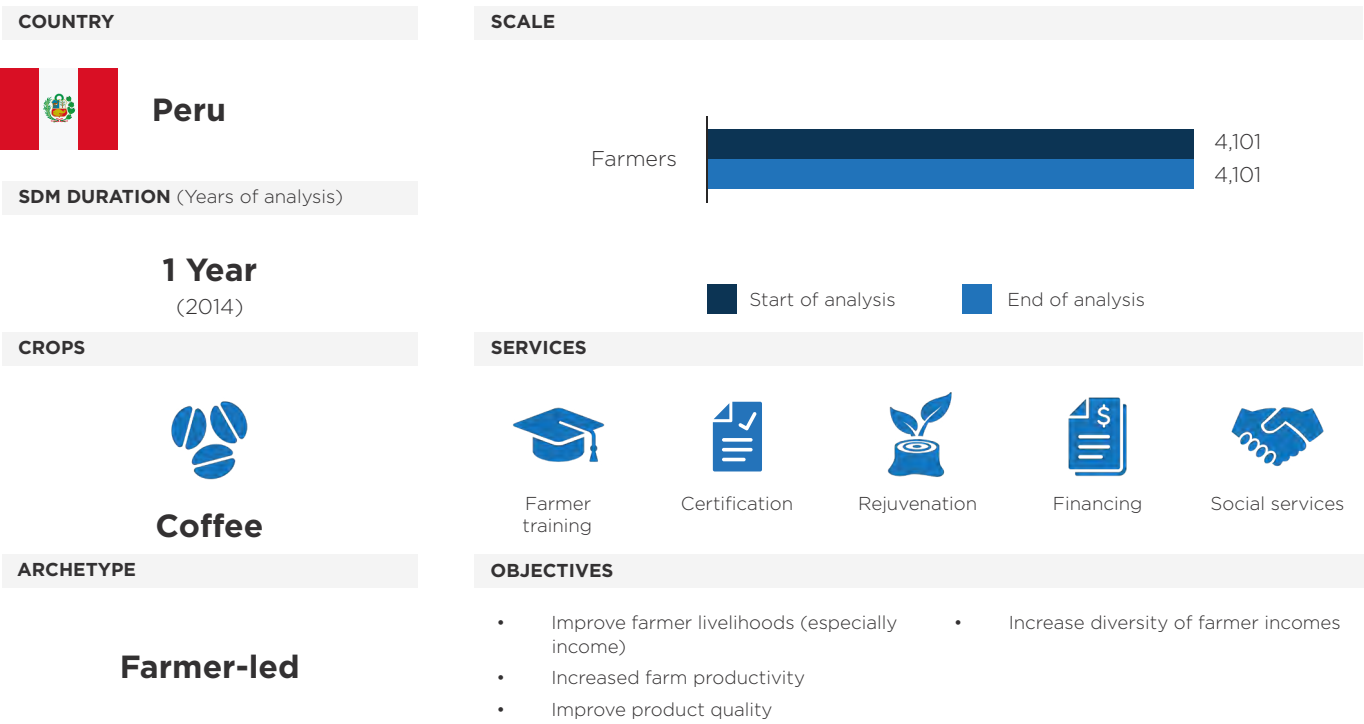
ROOT CAPITAL (PERU 2)



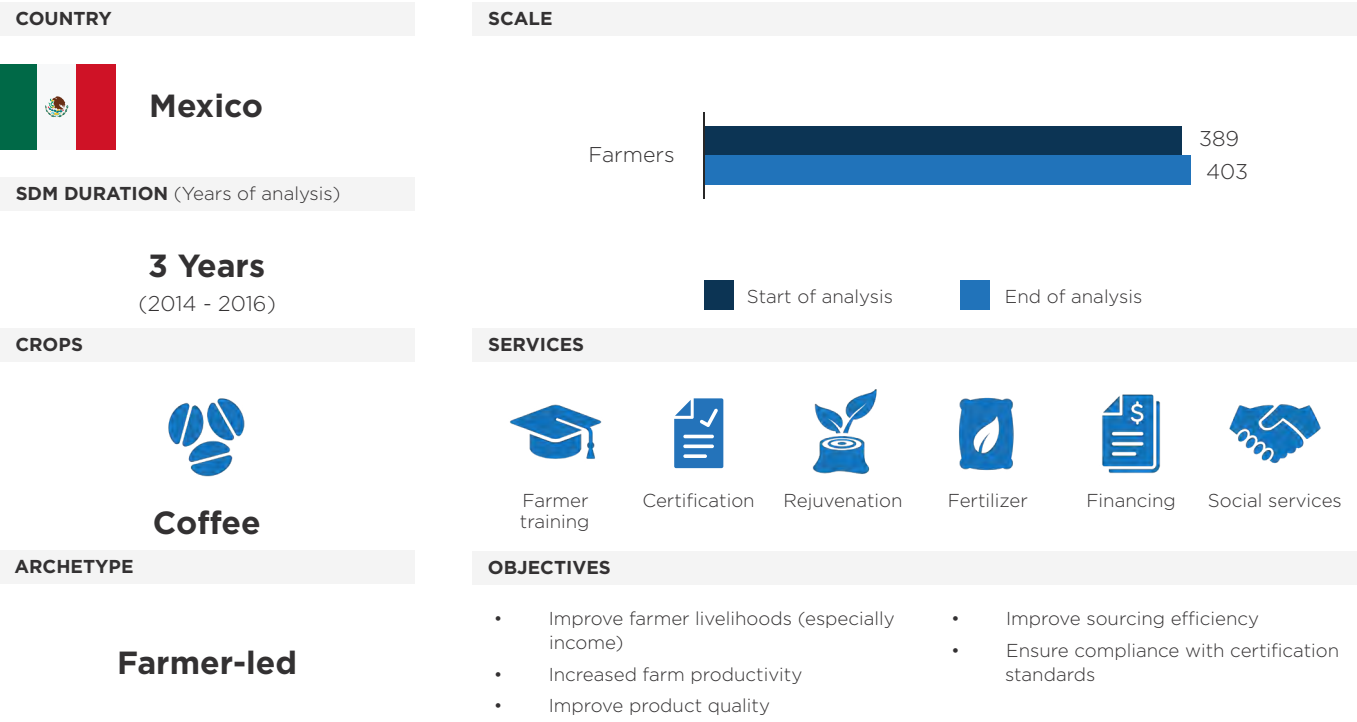
ROOT CAPITAL (PERU 1)



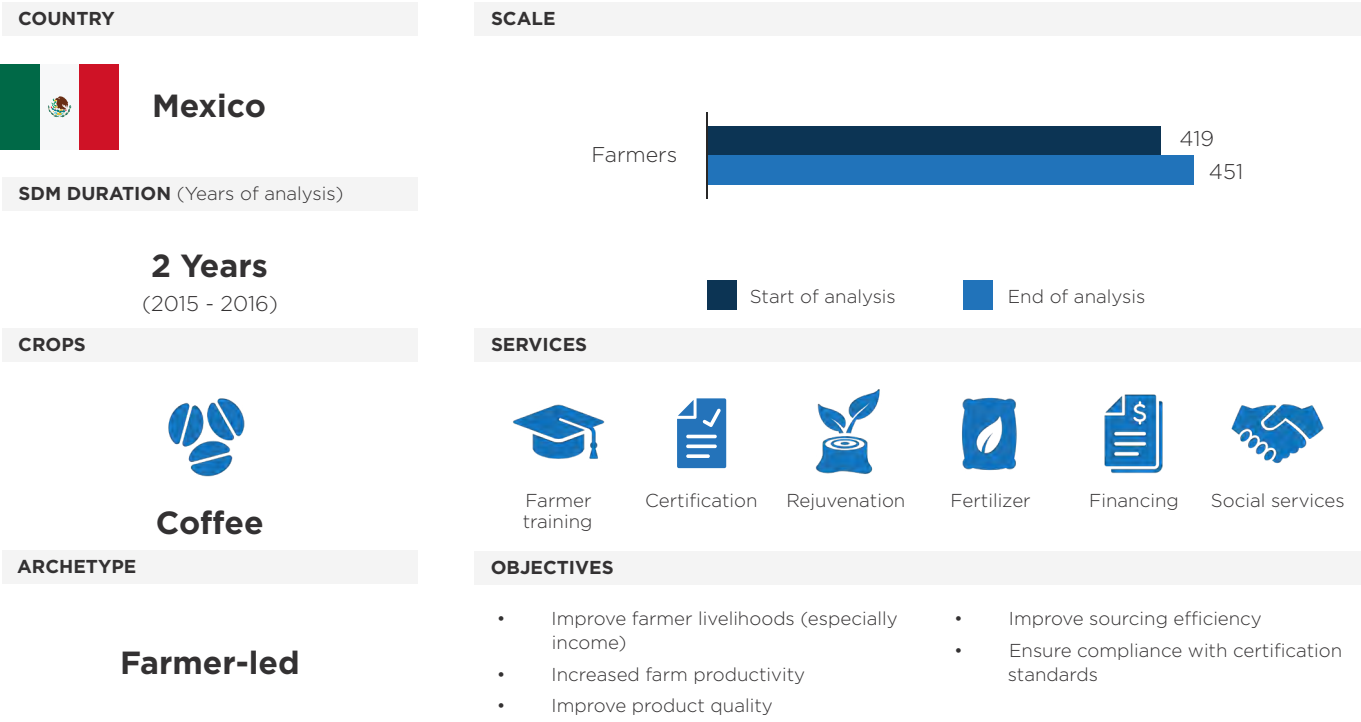
ROOT CAPITAL (PERU 3)



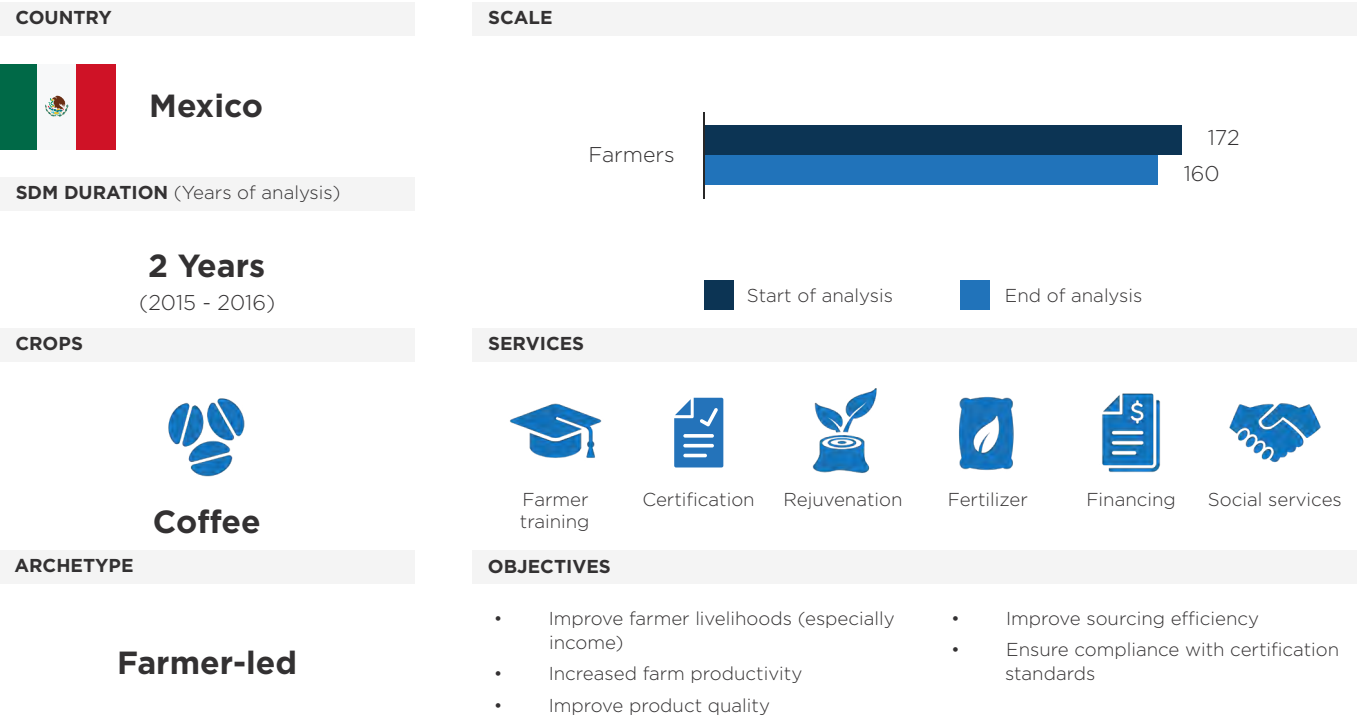
ROOT CAPITAL (MEXICO 1)



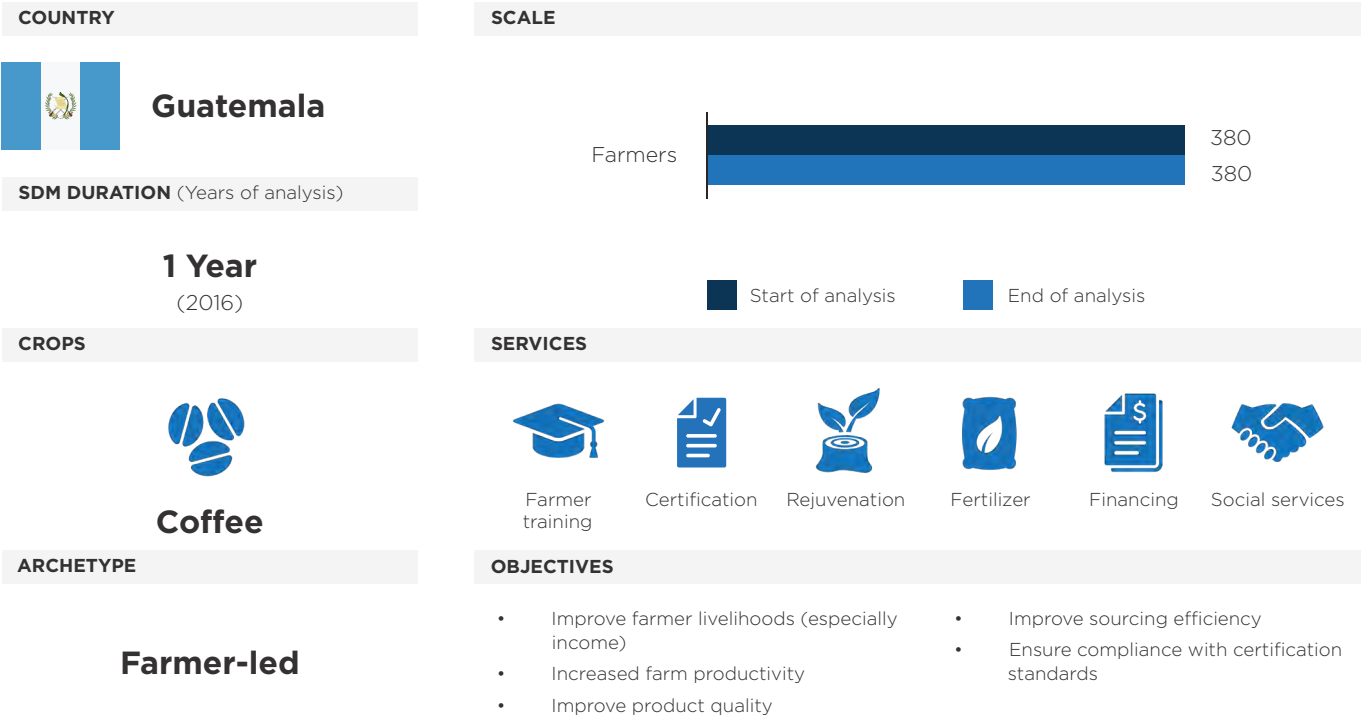
ROOT CAPITAL (MEXICO 3)



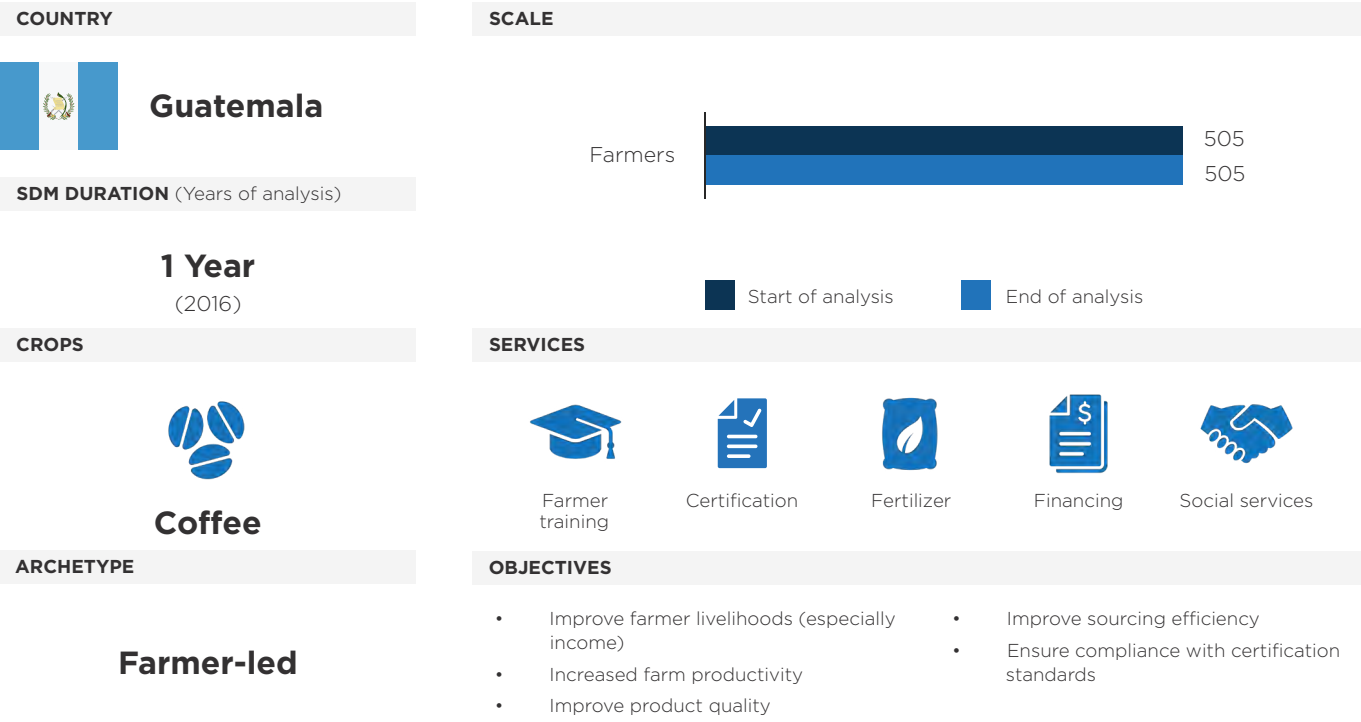
ROOT CAPITAL (MEXICO 2)



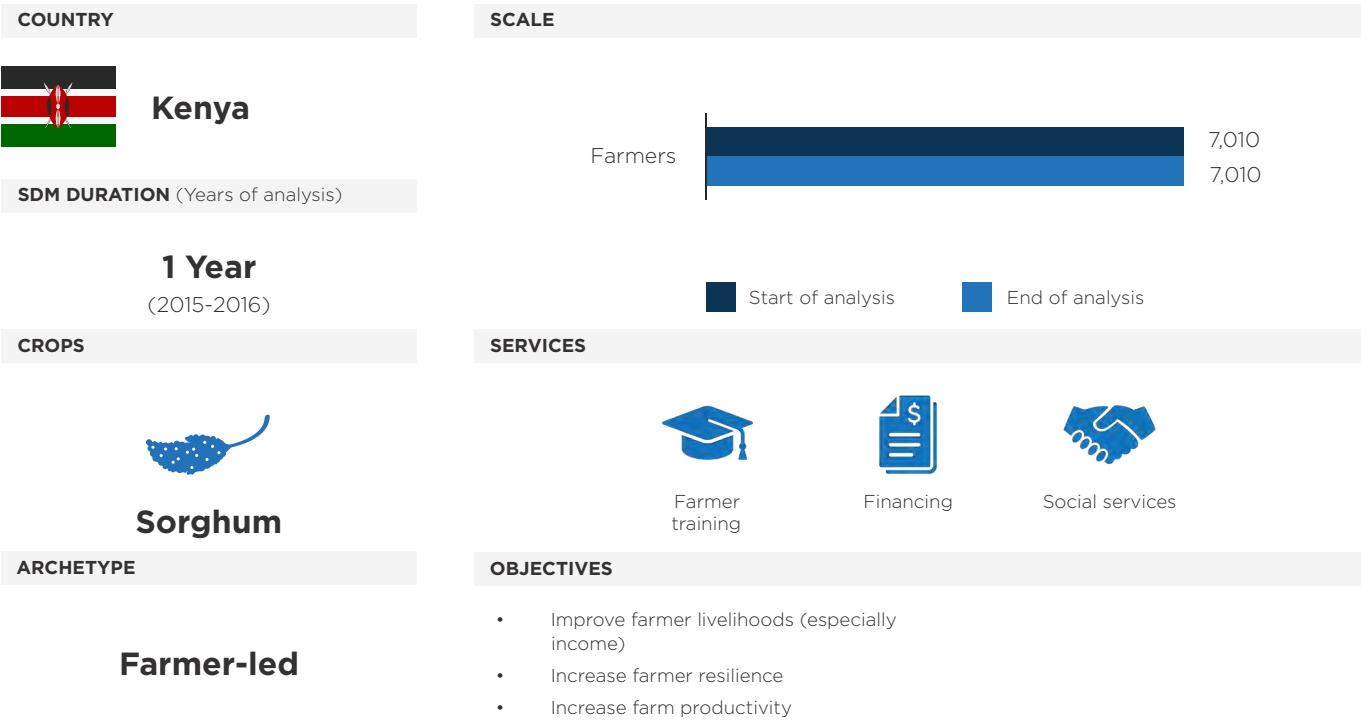
ROOT CAPITAL (GUATEMALA 1)



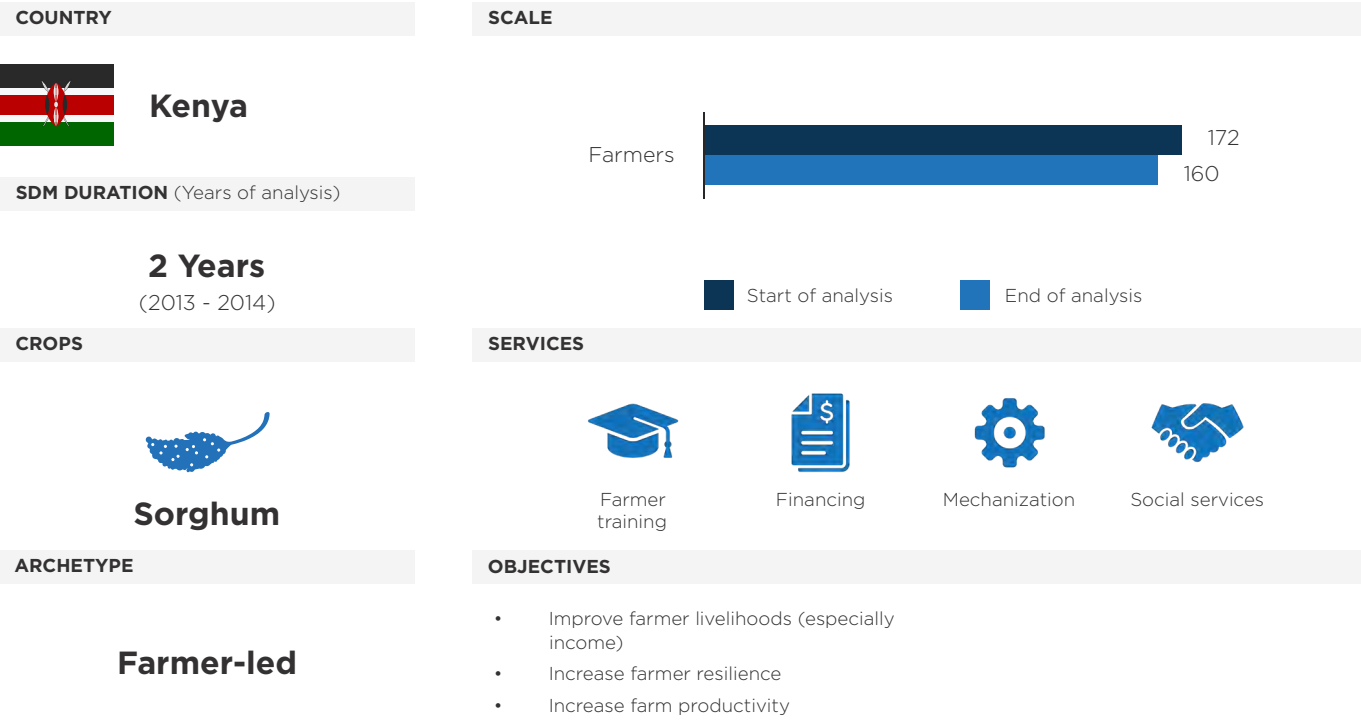
ROOT CAPITAL (GUATEMALA 2)



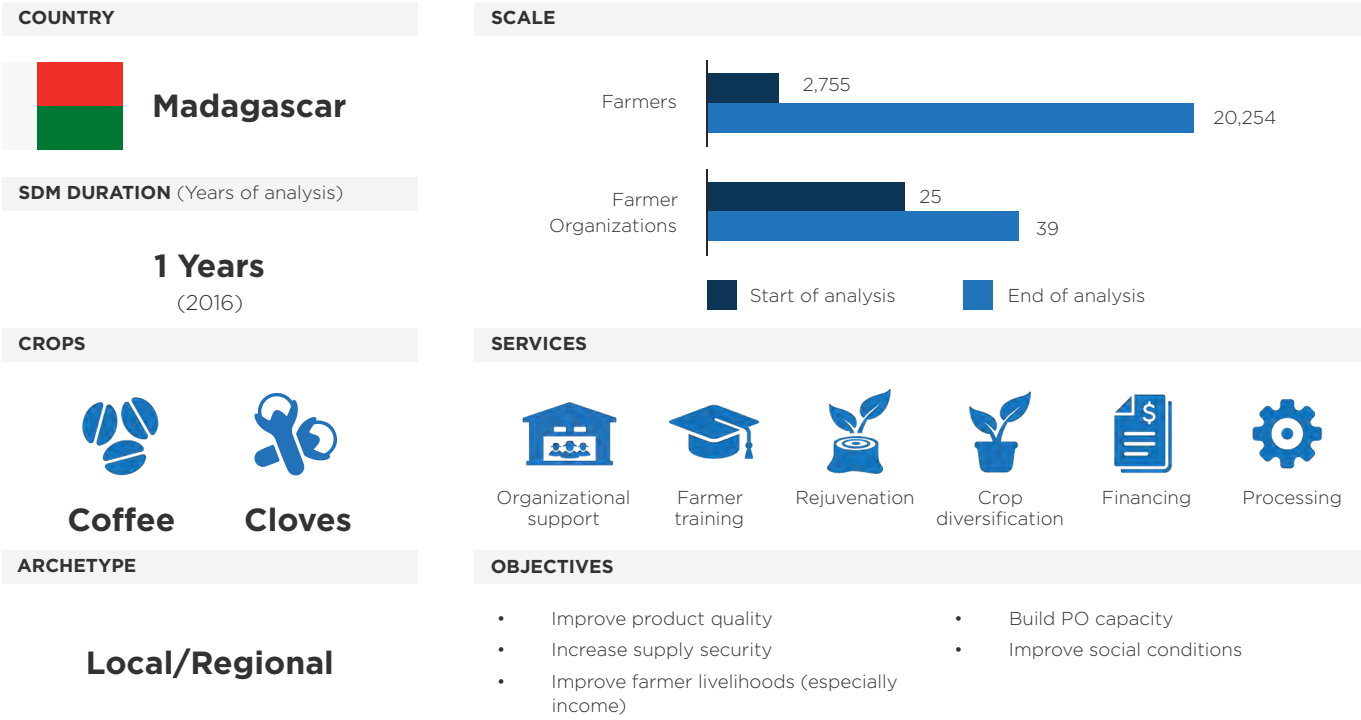
ROOT CAPITAL (KENYA 2)



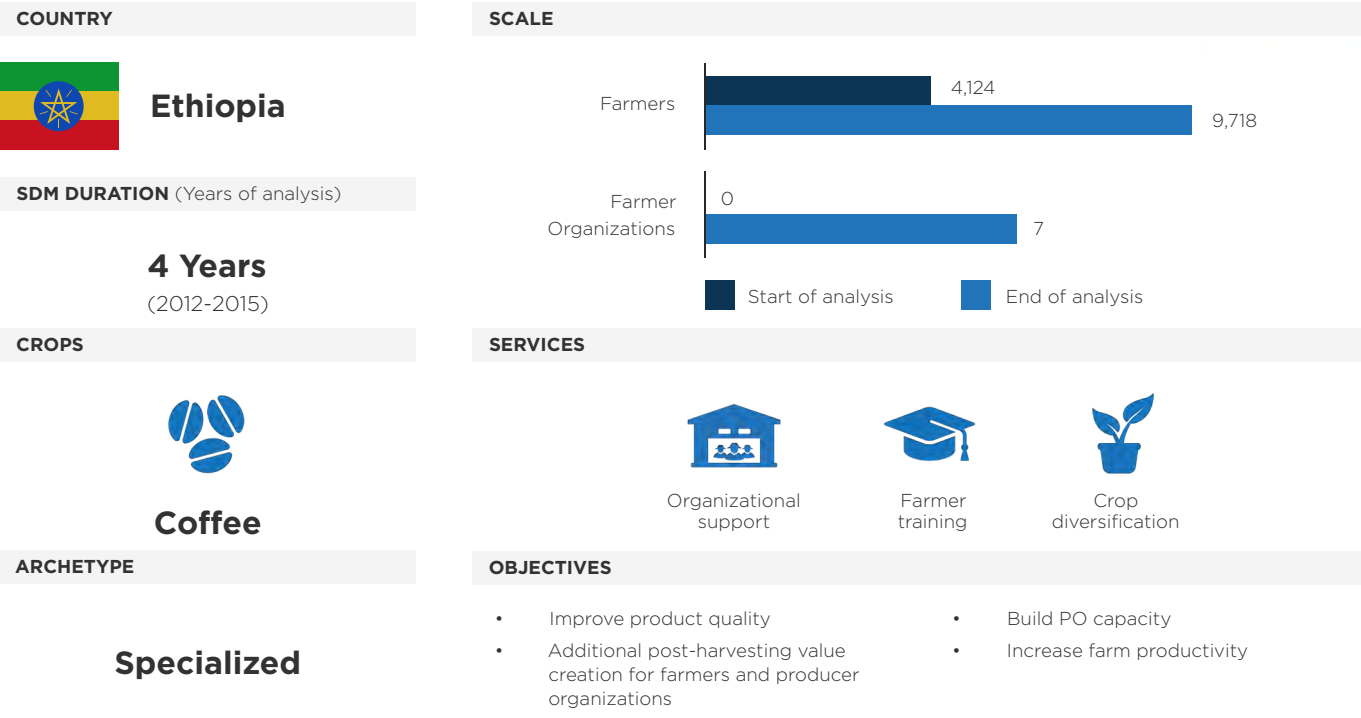
ROOT CAPITAL (KENYA 1)



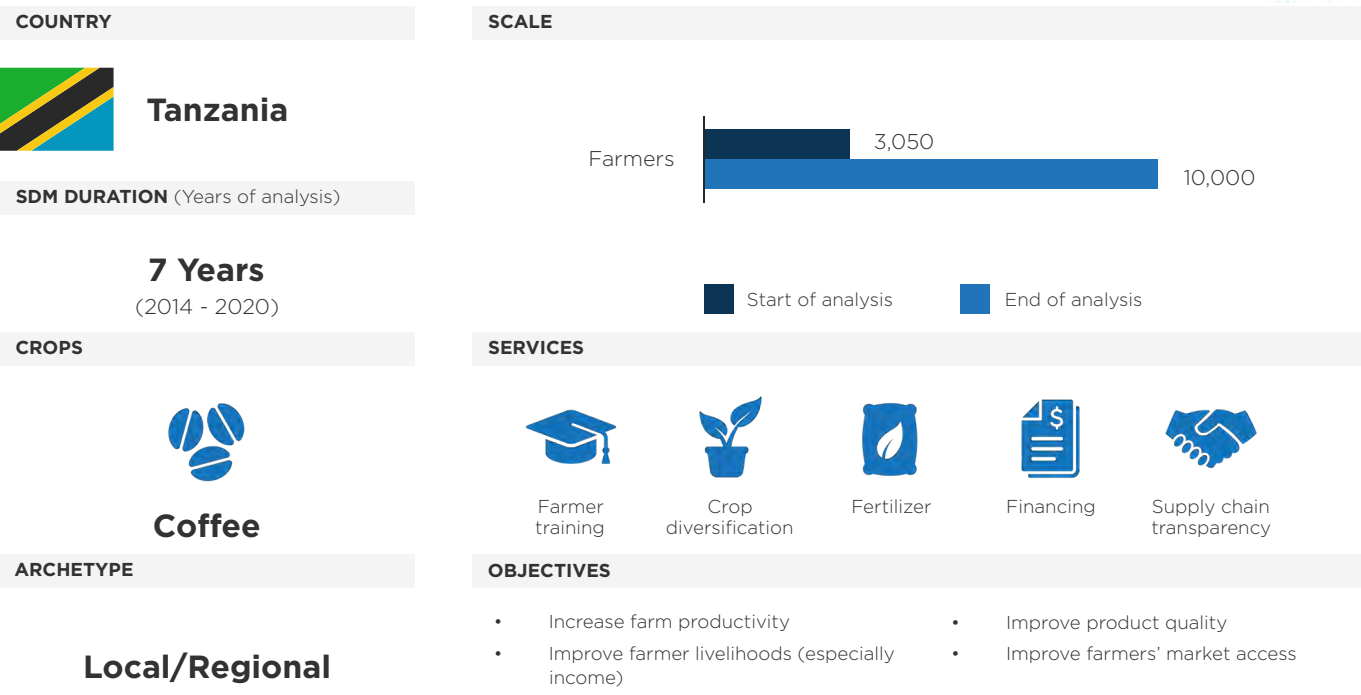
SANGANY



TECHNOSERVE



TEMBO



COLOPHON

AUTHORS

Iris van der Velden (IDH, The Sustainable Trade Initiative) with assistance of William Saab (NewForesight), Joost Gorter (NewForesight), Wouter van Monsjou (NewForesight), Julia Bolton (IDH), Gillian Evans (IDH)

DESIGN

James Cooper (ONIC Design)

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