Case Report Unilever

TANZANIA

Service Delivery Model Assessment

2018

IDH Introduction

Importance of Service Delivery

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

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

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

About this study

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

Thanks

IDH would like to express its sincere thanks to Unilever Tea Tanzania (UTT) for their openness and willingness to partner through this study. By providing insight into their model and critical feedback on our approach, UTT is helping to pave the way for service delivery that is beneficial and sustainable for farmers and providers. IDH would also like to explicitly thank the Mufindi Out-growers Project (MOG) farmers and groups that provided information and hosted the research team in the farms and offices during the field visit of this study. Finally, IDH thanks all stakeholders that were consulted during this study for their active participation.

UTT Introduction

Service delivery by Unilever Tea Tanzania

Unilever's core tea production experience and expertise lies on its plantations, including Unilever Tea Tanzania (UTT), which largely consist of own estate tea farms, with smallholder farmer green leaf input contributing average of 14% of total production currently.

The SDM's has been pioneering training programs as part of extension services which has helped SHF modernizing their production and improve livelihoods, including breaking the downward spiral and turning it positive through innovative service delivery models which has a catalytic impact on the sector. Providing farm inputs – fertilizers, herbicides on credit and other free services like planting fertilizers, seedling transport, Rainforest Alliance (RA) certification with quality extension services (GAP), has improved yields and improved farmer returns, which is encouraging more investment and improvement on Yield & Quality Vision.

Objectives

The objective of the Mufindi Out-growers Project, apart from supporting the integration of the tea supply within UTT is largely to enhance the livelihoods of smallholder farmers in the villages surrounding UTT estates. All-round strategic initiatives driven together with IDH addresses key issues facing Smallholder farmers, including improving livelihoods through competitive quality bonus and second payments, management of environmental problems (climatic change) and at the same time building capability to farmers on stronger SDM's when there are no external funds for sustainable supply chains- sourcing raw materials from RA certified farmers base.

Unilever

About this study

The SDM analysis has greatly contributed on the sustainability of the supply chain through highlighting fundamental basics that includes setting up of project enablers and pointing out levels of farm sizes that guarantees farmers financial breakeven. The methodical and analytical study approach supported by Unilever and IDH strengthens the project and underpinning the business case to service delivery, investors, service providers, and farmers.

How did it all start?

The Grow Africa Initiative

The partnership between IDH and Unilever on the MOG Project was a result of the Grow Africa Initiative. An initiative founded jointly by the African Union (AU), The New Partnership for Africa's Development (NEPAD), and the World Economic Forum in 2011. The overall purpose of Grow Africa is working on promoting responsible investments into African agriculture through public-private partnerships between governments, farmers and businesses. Tanzania, one of the initial members of Grow Africa, formed the Southern Agricultural Growth Corridor of Tanzania (SAGCOT), an inclusive multi-stakeholder partnership to rapidly develop the region's agricultural potential, in line with national priorities and Grow Africa objectives.

MoU with the Government of Tanzania

In 2013, UTT signed a MoU with the Government of Tanzania through the Ministry of Agriculture, Food Security and Cooperatives for building Private Public Partnerships focusing on further development of tea production and manufacturing in Tanzania. The MoU is in line with the 10 year strategy of the Tea Board of Tanzania (TBT) (2012/13-2022/23) and as per the 5 year strategic plan for the transformation of the tea sub-sector in Tanzania as developed by the Tanzania Smallholder Tea Development Agency (TSHTDA) (2013/14 — 2017/18). The focus was to address challenges including: relatively low smallholder yields, low quality of black tea produced and low market prices paid to the smallholders compared to the major tea growing countries, due to limited involvement of smallholder farmers in the tea value chain and a lack of effective farmer groups as well as cash flow management issues.

Translating commitments into action

In 2014, UTT partnered with IDH to implement the MOG project, with the joint aim to contribute to sustainable smallholder tea development in Tanzania, with a focus on the Mufindi tea growing area. This partnership was split into two phases; with phase one largely implemented and analyzed key results shared in this SDM report. Phase two, being designed now with insights from this report, is expected to be implemented between 2019 and 2020.

Reading Guide

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

In this document you will:

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

SDM General Introduction

Overview and Objectives of the SDM

Structure of the SDM

Services delivered within the SDM

Farm-level impact

Service entities

Financial analysis overall SDM

Conclusions

SDM General Introduction

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

In this section you will:

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

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Service Delivery Models

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

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

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

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

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

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

Service delivery models and the stakeholders that shape them are evolving

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

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

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

Innovative businesses emerge that develop solutions for optimizing service supply

Levels of SDM Analysis

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

SDM STRUCTURE

Financing
Within this structure (financial) resources are invested

Services
Those resources allow for a set of services to be delivered

Farmers
These services are targeted at a (type of) farmer

Application & Impact
The aim of these services is an impact at farm level

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

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

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

Purpose of the SDM Analysis

An outcome of the SDM approach to date was the identification of those issues that the companies with whom we did the case studies found of critical importance, and where they found limited knowledge to be available.

Focus learning questions

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

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

IDH aims to create:

Action driven analysis

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

Action driven analysis

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

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

Individual SDM analysis:

- **Analyze SDM**
- **Identify key success drivers**
- **Identify enabling environment challenges**
- **Identify opportunities for innovation**
- **Evaluate funding needs**

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

Global knowledge hub

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

Enabling environment

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

Blended finance

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

Technical assistance

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

Key relevant questions for this SDM analysis

Questions:

What comparisons can be made between the in- and outgrower models?

SDM STRUCTURE

Financing

- What is the long-term sustainability of the current SDM? How can this be improved?

Services

- Which services in particular contribute to success – i.e. create impact and are cost-effective?
- To what extent can diversification add value to farmers and UTT?

Farmers

- What is the impact of professionalizing farmers and their organizations?
- What affects the adoption and loyalty of tea farmers? How can these be improved?

Application & Impact

- What has been the impact of the MOG project at farm level in terms of productivity, quality, income, resilience and overall attractiveness of growing tea?

Overview and objectives of the SDM

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

In this section you will:

- Learn the basics about the SDM partner
- Understand the value chain in scope
- Get an overview of the flow of goods and resources in the SDM
- Understand the objectives of this SDM
- Get an overview of the data sources used in the analysis

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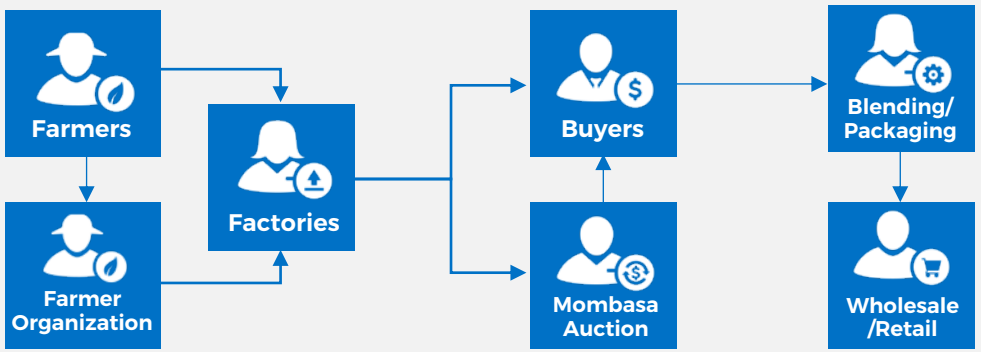
Context – Unilever and Tanzania

UTT

- Unilever is the world's largest tea packer and is committed to sustainable sourcing in order to secure the tea needed for its brands and to make a significant positive impact on communities and the environment.
- Unilever acquired the Unilever Tea Tanzania Mufindi estates and factories in 1984, which now consistently produce some of the highest quality teas in Tanzania creating much needed rural jobs and export earnings from tea.
- UTT has been working with smallholder farmers around its Mufindi estates since 2014 to process their tea in the Unilever factories through the Mufindi Outgrowers (MOG) project, initiated with IDH.
- This SDM analysis focuses on the MOG project as it grew from just 69 farmers back in 2014 to 1520 farmers today.

Overview of the Tanzanian tea value chain

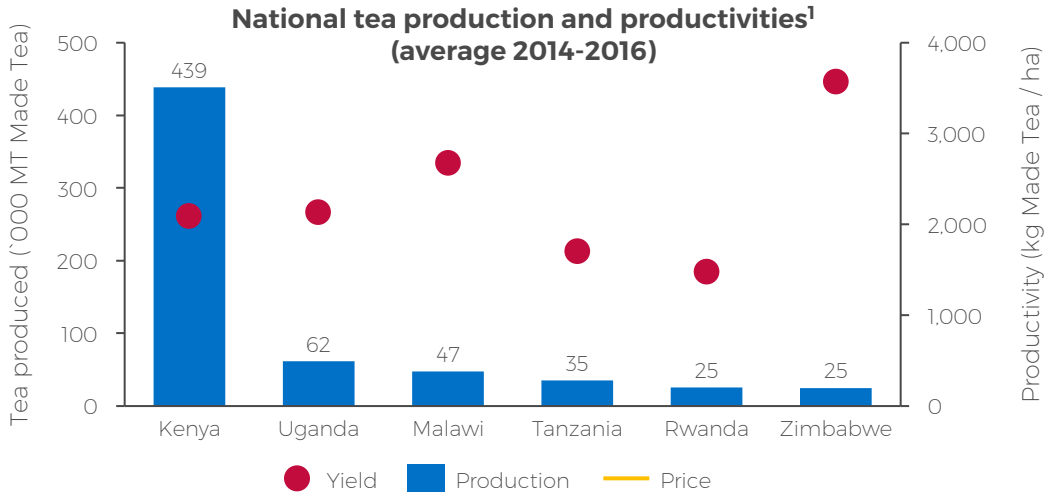


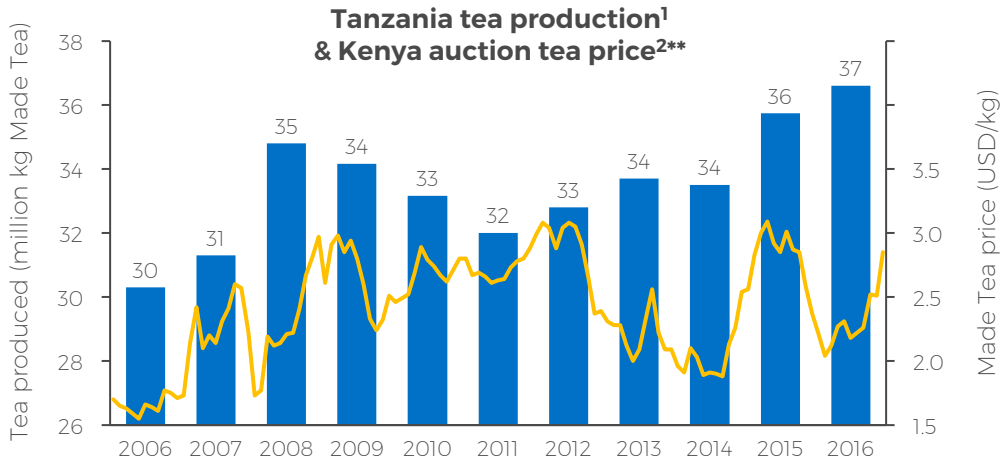
- Tea is the fifth largest export crop of Tanzania, after coffee, cotton, tobacco and nuts[1], with total annual export earnings of USD45 million[2].
- There is around 20,000 ha of cultivated tea farmland, producing 35,000 MT of Made Tea* per year[3]. The Mufindi district alone produces nearly half of this[2].
- From tea processing factories, most tea is either sold directly to international buyers, sold via the Mombasa Auction in Kenya, or sold on the local market.

* When freshly plucked, tea is in the so-called Green Leaf (GL) state. It is transported to nearby factories for processing (in general fermenting and drying of the leaves). The processed tea is then called Made Tea (MT).

Sources: 1: IDH and TSHTDA, Mufindi Smallholder tea farmers report (2017); 2: Intergovernmental Group on Tea, Report of the Tea Industry in Tanzania (2016); 3: FAOSTAT database

Context – production, productivity* and price of Tanzanian tea





- Within the African tea market Kenya is the biggest tea producer with around 439,000 MT Made Tea per year. Among the other tea producing countries in East Africa, Tanzania is an average producer with around 35,000 MT per year.
- Tanzania has about 20,000 hectares of tea farmland. 50% of this is owned by smallholder farmers3, who contribute to only 32% of national production4. The other half of land consists of private estates that produce 68% of national tea.
- With relatively low tea productivities compared to other producers in East Africa there are good opportunities to increase Tanzania's tea production.
- Production has been rising steadily in the past decade from 35,000 MT in 2011 to 37,000 MT in 2016.
- Black tea prices at the Kenya auction are highly volatile, impacting the rest of the value chain.
- Smallholder farmers in Tanzania receive 37% of the tea auction price (2017), compared to 75% for Kenyan (KTDA) smallholders.

Sources: 1: FAOSTAT; 2: indexmundi.com; 3: Theteadetective.com, Teas of Tanzania; 4: Committee on Commodity Problems, Report on the Tea Industry of Tanzania (2016)

*Productivities depend on many factors, such as farmer professionalism (e.g. smallholders vs. estates), weather (rainfall amount and distribution, temperatures), soil type, altitude, irrigation, etc.

**The Kenyan Mombasa auction is a large export hub of Tanzanian tea. Its tea price history provides a good overview of African tea price fluctuations

Context – farmers in the Mufindi district

Farm Demographics

The Farm

- Mufindi district is home to about 1,800 tea farmers3.
- Tea farmers are mostly smallholders, with on average 2.5 ha of farmland, of which ~0.7 ha is dedicated to tea1.
- Farmers generally use low amounts of farm inputs1.

Household

- Mufindi tea farmers have an average household size of 5.4 people 1.
- 65% of tea farmers is male, with an average age of 46 years 1.
- Family members rely heavily on tea and/or crop farming incomes, while half of them contribute to farming activities1.

Income

- Mufindi outgrowers in- and outside this SDM have low incomes, with on average USD1.09/day earnings from tea farming1. Households make USD1.45/day, while the average Tanzanian household income is USD5.90/day4).
- Income from tea is 52% of tea farmers' total income2.

Main Challenges

Agronomic

- Mufindi farmers struggle with low tea productivity of on average 1,165 kg/ha Made Tea1, which is half as much as private tea estate productivities5.
- Average Mufindi farmers are neutrally satisfied with agronomic services. Few farmers participated in agronomy trainings1.

Economic

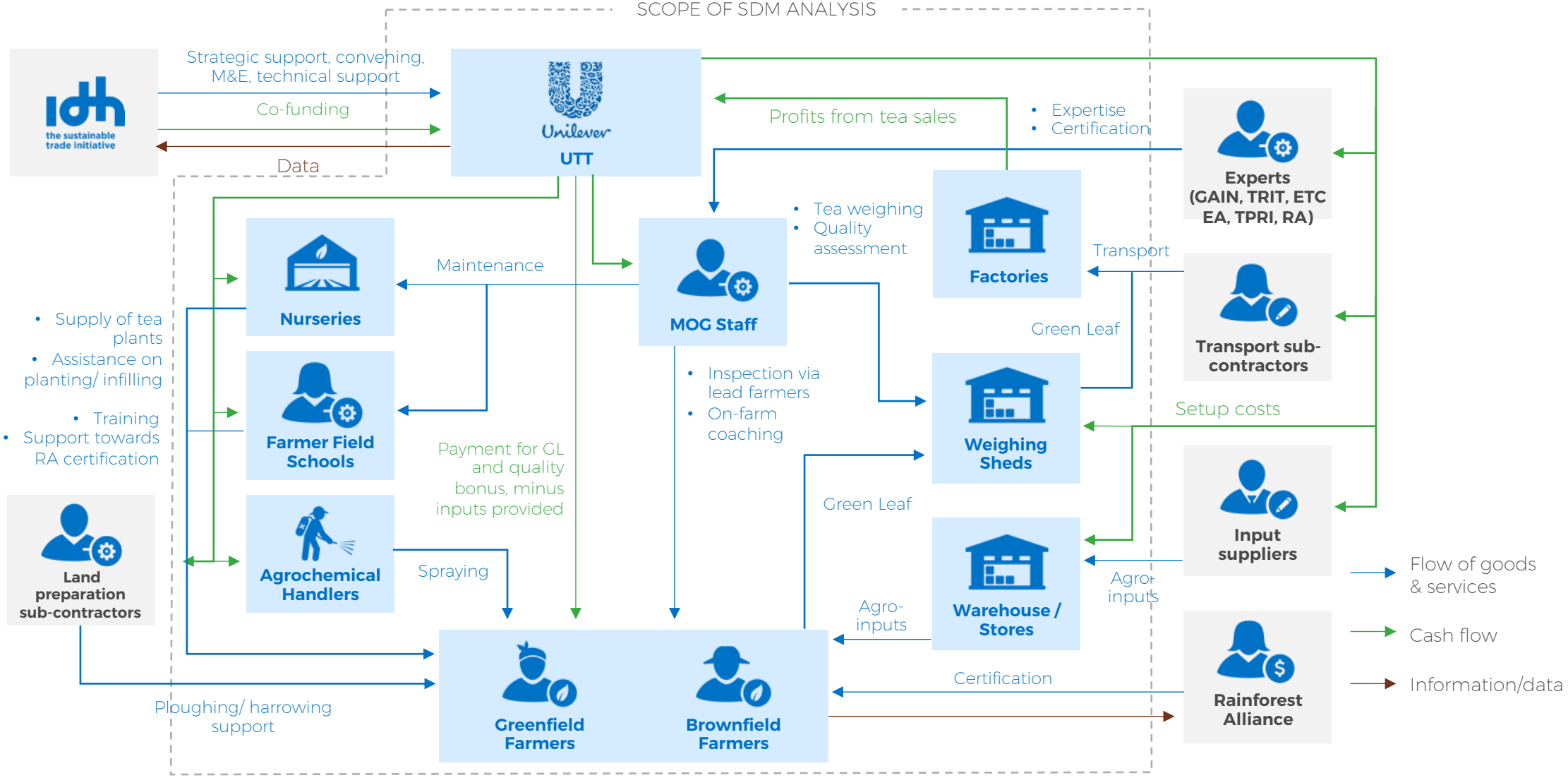
- Tea farmers are often organized as associations or in non-registered groups. These groups cannot receive loans from banks3.
- There is a risk of farmers defaulting input loans, which are often provided by the farmer groups. This negatively affects these whole groups.

Social & Environmental

- Mufindi district has a high potential for improved tea farming, with many farmers already organized and support from tea stakeholders including the government of Tanzania3.
- Relationships between farmers and producers are uncertain since contracts close annually and farmers are dissatisfied with tea prices and profits 1.

Sources: 1: LEI Wageningen: Baseline study of the Mufindi Outgrowers Project, Tanzania (2016); 2: IDH MoG report summary (2017); 3: IDH and TSHTDA: Mufindi Smallholder tea farmers report (2017); 4: Gallup Worldwide Median household income (2013); 5: Calculation based on numbers presented on the previous slide.

SDM Services and Financial Flows



the sustainable trade initiative

SDM Stakeholders and Entities Overview

	Legal Status	Function *(Within this SDM)*	Income Sources *(Within this SDM)*	Main Costs (Within this SDM)
Unilever	Limited liability company	• Provision of services to farmers • Sourcing of tea	• Sales of Tea	• Provision of services • Operation of tea factories
the sustainable trade initiative	Public-private partnership (global aims)	• Co-funding of the MOG project • Support on smallholder engagement (strategic, technical and convening) • Support of project M&E	• None	• Support and assessment of the SDM
Tanzania Smallholders Tea Development Agency	Public Institution	• Alignment of MOG project with national smallholder tea strategy • Provision of extension services	• None	• Salaries of extension officers (UTT pays allowances)
Tea Research Institute of Tanzania	Public Institution	• Research on best practices for farmers • Assessment of tea farmer needs • Supply of tea plants during UTT shortage	• None	• None
SAGCOT Southern Agricultural Growth Corridor of Tanzania	Public-private partnership (local aims)	• Coordination of agriculture stakeholders and investments • Advise on infrastructure improvement	• None	• None

Sources: UTT and IDH, MOG 1.1 Project application (2016); UTT, MOG Partners (MS Excel, 2017). UTT, MOG 2 Proposal – Key Activities (2018)

the sustainable trade initiative

SDM Stakeholders and Entities Overview

	Legal Status	Function *(Within this SDM)*	Income Sources (Within this SDM)	Main Costs *(Within this SDM)*
TEA BOARD OF TANZANIA CHAI	Corporate body	• Coordination of tea pricing • Reviewing & approving contracts, in particular for greenfield farmers	• None	• None
Government of Tanzania	Public institution	• Promoting (formation of) cooperatives • Development of infrastructure	• None	• None
YARA	Public limited company	• Supply of fertilizer to UTT • Conduction of trials with farmers	• Sales of fertilizer	• Provision of fertilizer
Uyole Agricultural Research Institute	Public Institution	• Research on and supply of diversification crops for tea farmers	• Sales of diversification crops (beans)	• Provision of diversification crops (beans)
Rainforest Alliance	Non-governmental organization	• Certification of tea farmers	• Payments for audit services	• Provision of audits of farmers

Sources: UTT and IDH, MOG 1.1 Project application (2016); UTT, MOG Partners (MS Excel, 2017), UTT, MOG 2 Proposal – Key Activities (2018)

SDM Stakeholders and Entities Overview

	Legal Status	Function *(Within this SDM)*	Income Sources *(Within this SDM)*	Main Costs *(Within this SDM)*
TCDC	Civil service commission	• Regulation and promotion of coops	• None	• Supervision of coops
NOSC Njombe Outgrowers Services Company	Limited liability company	• Provision of tea seedlings	• Sales of tea seedlings	• Production of tea seedlings
Knowledge partners (ETC EA, GAIN, TPRI, RA)	Public limited company	• Provide expertise to trainers and extension officers in the SDM	• Repayment by UTT	• Salaries for trainers
Input providers (Syngenta, Monsanto)	Limited liability company	• Provision of agro-inputs	• Sales of inputs	• Provision of inputs

Sources: UTT and IDH, MOG 1.1 Project application (2016); UTT, MOG Partners (MS Excel, 2017), UTT, MOG 2 Proposal – Key Activities (2018)

SDM Objectives

		OUTCOMES PER STAKEHOLDER		
		Farmer	**UTT**	**IDH**
CORE OBJECTIVES	**1 Increase tea productivity and quality, and improve farmer livelihoods**	• Increased profitability from farming • Improved farmer livelihoods	• Increased volumes of higher quality tea • Meet commitments to improve livelihoods	• Increased impact at farmer level
SECONDARY OBJECTIVES	**2 Expand tea smallholder supplier base – in number of farmers and hectares**	• Increased income compared to previous farming practices • Increased income from larger farms	• Increased sourcing volumes • Traceability of supply chain	• More farmers reached
	3 Secure market and increase marketability of tea	• Secured take-off	• Increased and more stable sourcing volumes • Higher farmer loyalty	• More sustainable and larger market
	4 Strengthen farmer organizations	• Improved production efficiency • Increased bargaining power • Higher margins	• Improved sourcing security and efficiency • Improved sustainability of the SDM (with FOs providing services)	• Improved sustainability of the SDM (with FOs increasingly providing services)

Structure of the SDM

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

In this section you will:

- Get an overview of the SDM scale in terms of number of farmers
- Understand the farmer segmentation used for targeting
- Learn the way farmers are organized
- Have insights about the enabling environment around this SDM (policies, actors, etc.)

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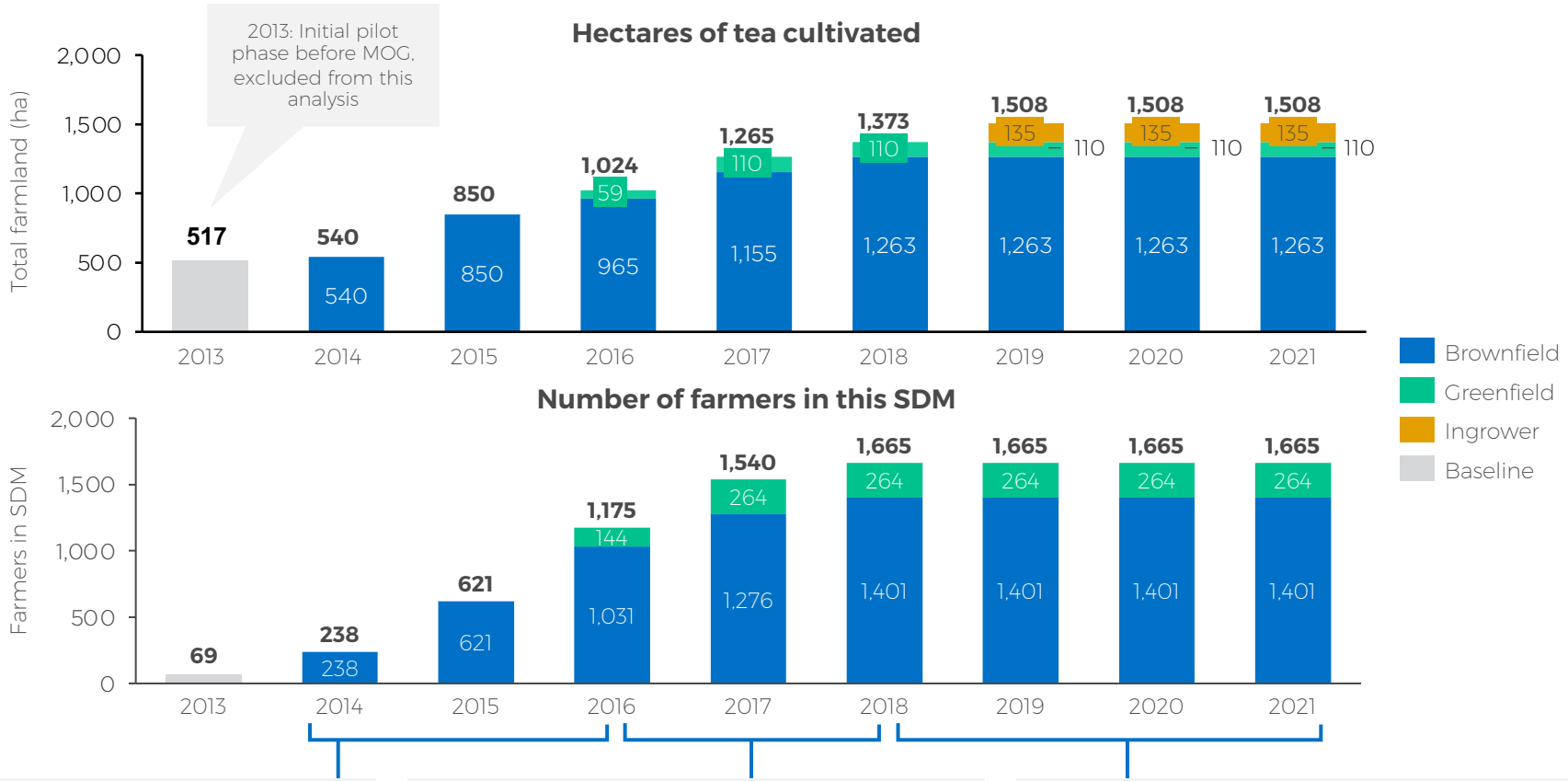
Scale of the SDM and duration in scope of this case study



2014 - June 2016: MOG 1
The UTT SDM in Mufindi started with the MOG project in 2014. Targets were identified and services set up and scaled (e.g. FFS established, inputs provided). New farmland was cultivated by greenfield farmers. Processing capacity was increased.

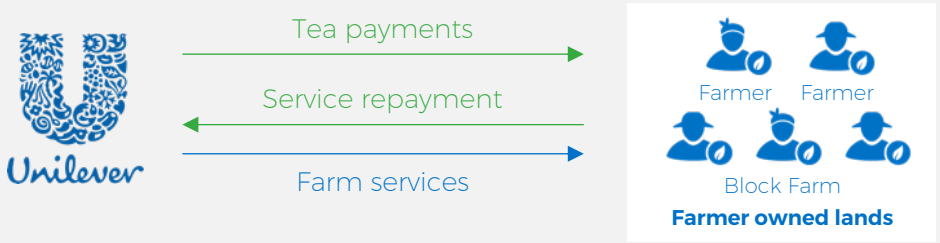
July 2016 - June 2018: MOG 1.1
Before continuation with former plans, an interim phase was decided (MOG 1.1), to assess the SDM thus far and identify barriers and best practices. In the meantime, both greenfield and brownfield farmers kept increasing.

July 2018 onward: beyond MOG 1.1.
As UTT already works with most farmers in the region, the SDM focuses on further improving productivity and quality via training and inputs, and their resilience through the roll-out of new services. In addition UTT is piloting a 135 ha ingrower model before developing another 1,300 ha of tea fields.

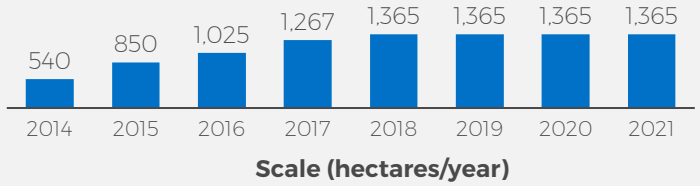
This SDM looks into both an out- and ingrower model

To further increase sourcing from smallholder farmer (SHF) tea, UTT is looking into setting up an ingrower model. UTT is in discussion with the Government of Tanzania to return lands of circa 1,300 hectares which were once owned by Unilever but handed to the government in the 1960's. In preparation for such an event UTT is considering the structure, resources, phasing and partners that could help best utilize and develop this land for the good of the community and the company. First a 135 ha pilot will be conducted.

Outgrower Model



- Lands are owned by individual farmers, groups or associations/cooperatives (organized into block farms)
- Services (training, inputs, capacity building, etc.) are provided to both new greenfield and existing brownfield farmers
- Farmers perform all farm activities, from growing to harvesting. Transportation to processing factories is provided by UTT.
- Farmers buy inputs on credit, repaid at time of harvest



Ingrower Model

- Unilever leases land to successful cooperatives, offering 5-year renewable contracts
- The cooperatives manage exploitation of these plantations by smallholder farmers
- UTT provides inputs, which are refunded by farmers or service entities (in line with current MOG structures)
- UTT pays for Green Leaf (as current MOG structures)
- Optional: Coops arrange deals with service providers themselves, circumventing UTT facilitation and their financing/labor schemes. This involves risks of corruption in non-transparent farmer groups.

Farmer segmentation

Farmers in this SDM are segmented between brownfield and greenfield farmer where greenfield farmers are new to growing tea and receive dedicated support in establishing their plantations. These segments are based on average farmers.

Minimum Criteria

Beneficiaries do not need to meet minimum criteria to be eligible for service provision

Segments

Segments are distinct groups of SDM beneficiaries that differ on **farm characteristics**[1] and/or **services received**

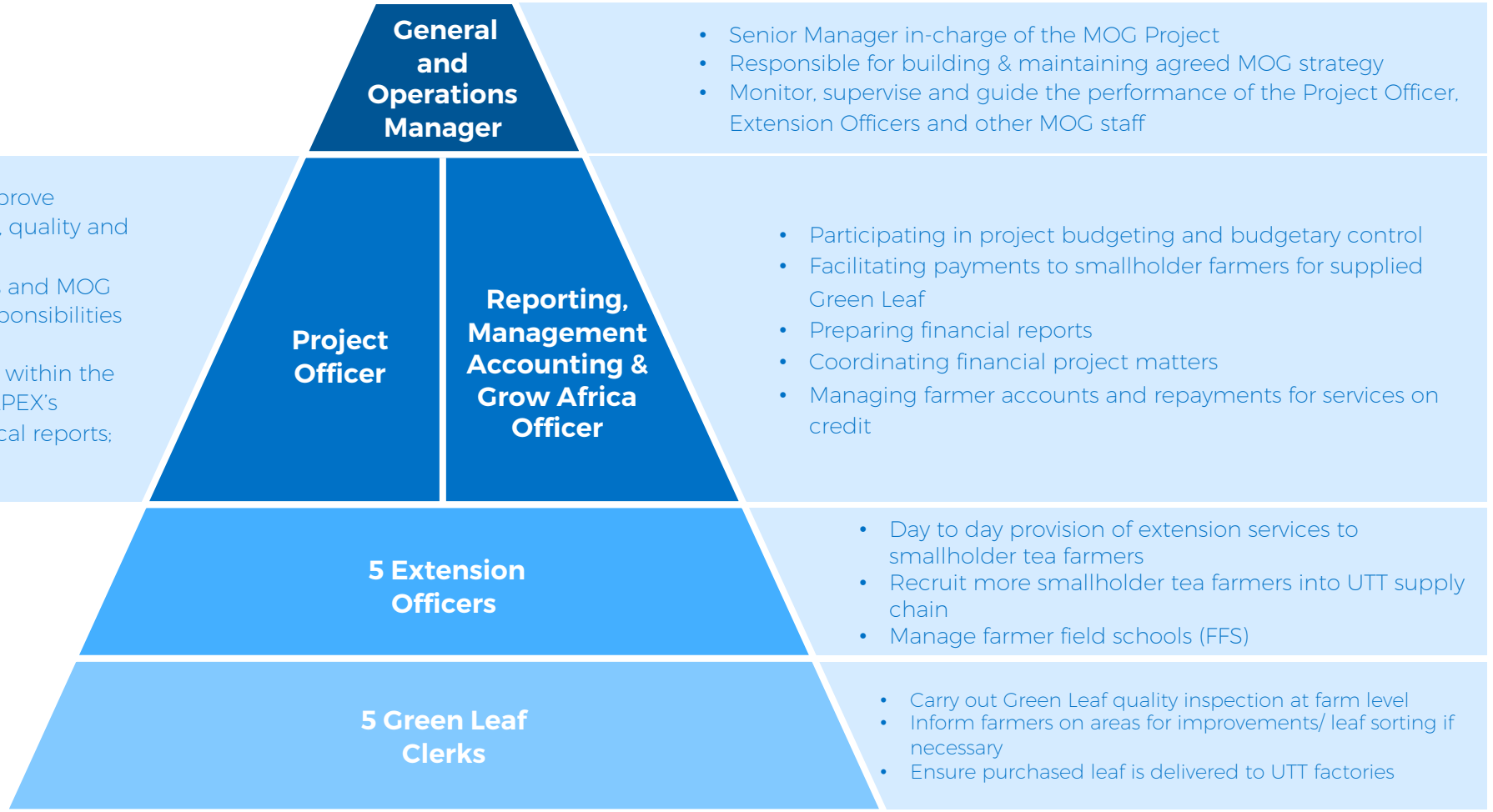
For each segment:

- the estimated **SDM impact at farm level** is shown from slide 42 onwards
- detailed farm agro- and economic **assumptions** to come to those calculations are shown on slide 41

		 **Brownfield Outgrower** **Segment 1**	 **Greenfield Outgrower** **Segment 2**	 **Brownfield Ingrower** **Segment 3**	 **Greenfield Ingrower** **Segment 4**
		Segments based on actual data		**Based on projections**	**Out of scope for this analysis**
Characteristics	**Land Ownership**	Owned by farmers	Owned by farmers	Owned by UTT	Owned by UTT
	Tea Cultivation	Already own and cultivate a (mature) plantation	Establish a new tea plantation; previously farmed other crops	Lease a plot of UTT land, and farm and sell produce to UTT	Lease a plot on UTT land, develop plantation and sell produce to UTT
	Productivity	5,000 – 7,730 kg GL/ha	0 – 5,945 kg GL/ha	11,400 – 15,700 kg GL/ha	
Services	**Land Preparation**	-	UTT pays the part of the initial costs of and supports with land clearance, ploughing, and planting	-	UTT supports with initial land clearance, ploughing, and planting
	Ongoing tea farming services	Farmers receive training, access to inputs and planting materials, infrastructure support and bonus payments			

1) Characteristics include beneficiaries' assets (e.g. land, financial resources), behavior (e.g. trustworthiness, loyalty), and attitude (e.g. eagerness to learn, adopt new practices)

Organizational field structure



Role of farmer organizations in this SDM

Most tea farmers are organized, mainly in non-registered groups (42%) or registered as associations (42%)1. Many of these groups have limited knowledge of tea growing and the tea industry. Therefore, UTT (and other stakeholders, including the Government of Tanzania) prefer farmer groups in becoming more professionally organized as cooperatives.

UTT

Cooperatives

- Clear strategic plan on tea farming
- Additional service provision
- Banks provide loans
- Annual (audit) fees
- Minimum 20 members

Associations / Pre-cooperative societies

- Vision on future tea farming
- Services received
- Banks don't provide loans
- No succession plan in place
- Minimum 10 members

Non-registered groups

- Limited knowledge of tea farming an industry
- Banks don't provide loans
- Low productivities and no trust in future of tea farming

Relationship between UTT and FOs:

Establishment: UTT encourages farmer groups to register as cooperatives

Commercial relationship: UTT sources Green Leaf from smallholder farmers either directly or via farmer groups. If groups are more professionally organized, they can form centralized and increasingly better producing block farms. To avoid coop corruption pitfalls, service providers should pay and recover money directly from smallholders as much as possible, and pay coops only for services provided.

Funding: Cooperatives require annual audits by law, and must come up with the fees themselves. For small groups, these annual fees are substantial (at least TSH 400,000).

Capacity building: There are no specific activities or incentives yet from UTT to stimulate farmers organizing themselves as cooperatives. There are future ideas of coops managing ingrower schemes, which could provide such an incentive.

Relationship between UTT and FOs:

Ownership: Registered groups have elected leaders based on qualifications and constitutional requirements of the group. Non-registered groups have leaders based on social status.

Financial relation: Cooperatives have access to bank loans, whereas associations or non-registered groups do not.

Service provision: With the loans, cooperatives can provide additional services to their farmers (e.g. mechanical harvesting, extension services). Other groups are dependent on services delivered by external parties such as UTT.

Opportunities and challenges in the enabling environment

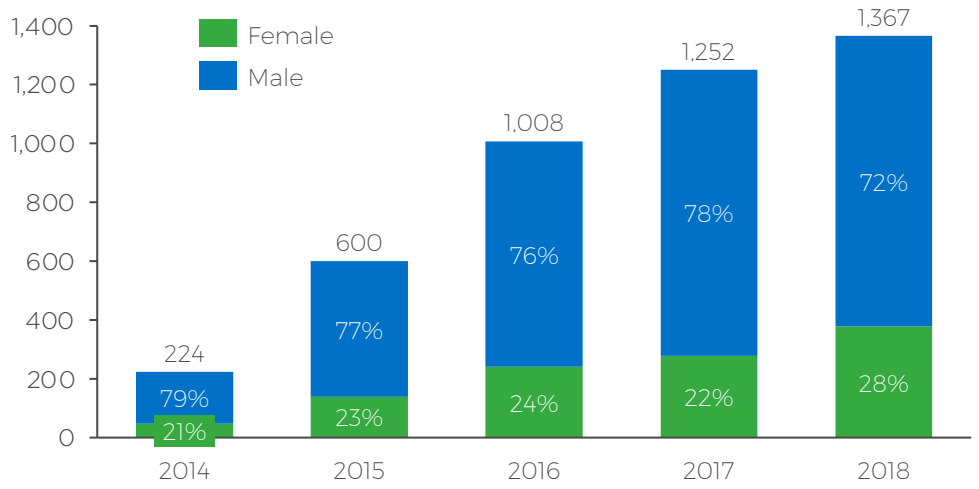
Impact of environment on SDM
-5: very negative impact
+5: very positive impact

	Definition	Key Challenges	Impact	Measures taken by case owner
Governance	**LAND OWNERSHIP** Existence of land ownership rights / regulations and their enforcement. Ease of purchasing/ transferring land	Some farmland is communal or owned by villages; it was recognized that farmers care less for such farms[1]. Some communal lands have conflicts, limiting opportunities for development.[4]	▼ -3	UTT tries to attract farmers by making tea farming more profitable; old farms are rehabilitated/maintained; farmers are supported in starting tea farming.
Governance	**INFRASTRUCTURE** Existence and state of roads, water and electricity networks as well as proximity to main trading / processing hubs (e.g. access to market)	Farms need proximity and good infrastructure to a tea factory (now sometimes >40km away). There is not enough support from the government in maintaining roads.	▼ -2	UTT has added new processing lines in existing factories and associated infrastructure (leaf sheds, chemical stores). UTT has dedicated one factory for outgrowers.
Farm Inputs	**LABOR** Cultural norms that restrict /promote people of certain ages, genders or social groups from farm labor. Availability and cost of labor	In general, farmers are old males[2], while youths who inherit farms often care less about tea farming[1].	Neutral	UTT tries to attract farmers by making tea farming more profitable. Jobs like herbicide application (incl. training) are given to young men.
Farm Inputs	**INPUTS & FINANCING** Availability of affordable, quality inputs and the necessary marketing and distribution mechanisms. Availability of credit. Enabling regulatory environment	Banks are willing to provide loans to farmer cooperatives, not to unorganized farmers or associations[3].	▲ +2	UTT provides inputs on credit, and stimulates farmers to organize as coops who do so too. UTT considers linking service providers directly to farmers.
Crop	**TRADING SYSTEM** Organization of the system through which crops are traded from farmer to market, including the number and type of actors involved	Previous programs between market and farmers in the region were not always continued or successful, making farmers hesitant to join new programs[1].	▼ -2	The exit strategy of the MOG project includes continuation of work between UTT and smallholder farmers.
Crop	**PRICING & COMPETITIVENESS** Market dynamics of the main crop of the SDM, including competition between buyers and possible price-setting by the government or other parties	There is competition between buyers resulting in farmer loyalty issues[1]. Bulk tea prices are volatile[4] and low. High Taste Teas have a better market, but limited growing potential in Tanzania.	▲ +3	UTT actively attracts farmers and has plans to increase loyalty through improving farmer cash flow (on-time payments and quality bonus on a quarterly basis unlike previously when it was on an annual basis)
Sustainability	**ENVIRONMENTAL CONTEXT** Climate change, possibility of extreme weather, soil type, water supply and quality, pests and diseases. Potential environmental damages such as deforestation	Rainfall is unstable and not many farms are irrigated. With climate change and La Niña cycles, droughts are a risk[4].	▼ -3	UTT is increasing internal skills on assessing weather impact. Plans include training on diversification and importing drought resistant tea clones.
Sustainability	**SOCIAL CONTEXT** Availability and quality of schooling / healthcare. Cultural factors. Potential social externalities like child labor, gender disparity	Farmers are skeptical about promises made by service providers, due to bad experiences from the past[1]. Nutritional issues were recognized[1].	▼ -3	Unilever and IDH have a global nutrition program. This was included in MOG 1.1 and shows potential to be scaled up.

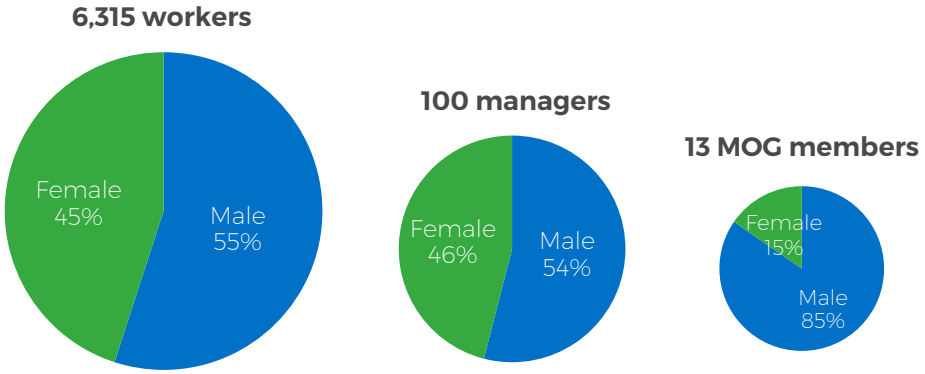
Sources: 1: UTT MoG Learning draft (2017); 2: LEI Wageningen: Baseline study of the Mufindi Outgrowers Project, Tanzania (2016); 3: IDH and TSHTDA, Mufindi Smallholder tea farmers report (2017); 4: IDH and UTT: Project application MoG 1.1 (2016)

Gender Equality

SDM smallholder farmer distribution



UTT staff distribution



SDM farmers and adoption

- Most farmers (currently 72%) in the SDM are male. The percentage of female farmers has been increasing over the past years. This is because, while historically men have been farm owners, now children and increasingly women are inheriting existing tea farms. Some women have also actively bought tea farms.
- Regarding adoption of services, there are small differences between sexes. Female farmers are seen to have higher application of fertilizer (579 versus 438 kg/year for men), likely correlated to their observed higher productivities (5954 versus 5142 kg GL/ha for men), while male farmers score higher at consistent record keeping.

Social & Environmental

- UTT has no specific policy for women rights, but women's rights protection is covered in different policies, such as
  - Parental Leave
  - Nursing Breaks
  - Work Place Harassment
  - Child Protection (identifying practices which go against girls' rights)
- UTT has a strategy to increase the number of female staff to 50% in all levels, including leadership/management positions. Currently women are given priority over men during recruitment. It can be seen that this strategy has paid off with currently 45% of all UTT staff being women.

Services delivered within the SDM

This section expands the information about the services provided to farmers.

In this section you will:

- ✓ Get an overview of the services provided
- ✓ Understand how they are sequenced and how they are related
- ✓ Get a breakdown of the dynamics and flows per service, was well as the delivery method, costs and impact

SDM General Introduction

Overview and Objectives of the SDM

Structure of the SDM

Services delivered within the SDM

Farm-level impact

Service entities

Financial analysis overall SDM

Conclusions

Farmer Testimonials – Mufindi Outgrowers Project

Edina Joseph Mbinda
from Mufindi Tanzania

Edina Joseph Mbinda is a tea smallholder farmer in Mufindi, Tanzania. She owns 10.3 acres of tea. She started growing tea to get money for educating her children and gain income to establish other businesses. Before she joined the MOG project, she had limited knowledge on Good Agricultural Practices and lacked capacity to purchase farm inputs. As a result, her income and production from tea was low.

Edina on the MOG project:

"The training on Good Agricultural Practices and input loans from IDH and Unilever Tea Tanzania help me to pluck on time, apply fertilizer and enable me to infill tea at my farm. **This improves the quality of my tea.** Next to the improved quality, I have increased my production from 150 to 200 Kg Green Leaf per acre per month, to about 500 Kg. I have also started poultry farming, about which I learned in the Farmer Field Schools.

The project's quality bonus payment increased my income and made it possible to pay college fees for my daughter in 2016. This also enabled me to purchase 5.5 acres of land, on which I plan to grow avocado. I also purchased a tank, a water pump, and a generator and pipes for irrigating the farm."

Overview of Services 1/2

Farmer training

- UTT and IDH establish Farmer Field Schools (FFS)
- Extension staff trains farmers on GAP (tea, non-tea) and wider topics like gender, nutrition and record-keeping
- Farmers are trained and supported to become RA certified

Soil analysis & inputs

- UTT provides farmers with fertilizer and herbicides on credit
- Inputs are bought in bulk and delivered by input providers
- UTT subcontracts transportation of inputs to farmers
- UTT conducts soil fertility and leaf sample analyses

Infrastructure

- UTT builds weighing sheds close to farms that serve as central pick-up and quality assessment points
- UTT constructs chemical stores for safekeeping inputs
- UTT seeks ways to improve and maintain the local roads

Planting materials

- UTT establishes and manages nurseries
- Seedlings are provided on credit and are used both for infilling and Greenfield farms
- UTT subcontracts transportation to farmers, groups and FOs

Bonus payments

- UTT assesses and records the quality grade of Green Leaf supplied by farmers on a daily basis
- After establishing the annual average quality grade, a bonus is paid out to farmers during the second payment next year

Overview of Services 2/2

Greenfield support

- UTT selects and trains new farmers on tea cultivation
- UTT subcontracts land preparation activities like ploughing, harrowing, and lining
- UTT provides seedlings and inputs on long-term credit

Transportation

- UTT refunds transportation costs of farmers bringing Green Leaf to the factories
- UTT subcontracts pick-up and transportation of Green Leaf to factories at no cost to farmers

Governance support

- UTT seeks to collaborate with the government to support and professionalize FOs
- Ideally FOs are registered as cooperatives and can serve as independent service providers

Diversification

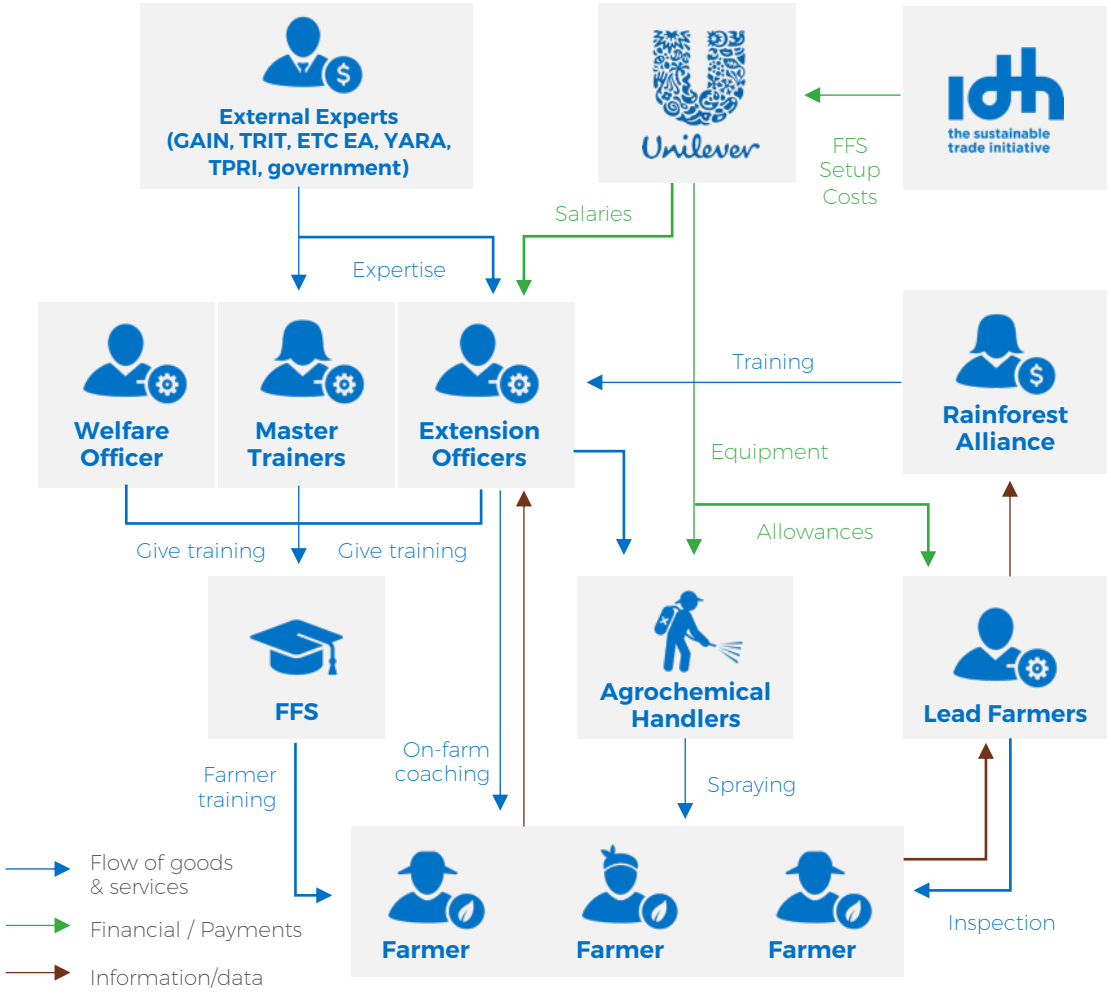
- UTT and IDH seek to improve farmer livelihoods through crop diversification, mainly beans, potatoes and/or avocados
- A business case and organizational model needs to be established before implementation

Climate resilience

- UTT and IDH explore ways to improve farmer resilience to climate change
- Possibilities looked into are providing irrigation services or introducing and distributing drought-resistant tea clones

Training & Certification

Detailed overview



Description / Methodology

- External experts are contracted to train UTT staff on respective topics
- Farmers are trained by UTT staff via FFS and on-farm visits
- Farmers follow a jointly developed curriculum.
- Trainings are given every week, with farmers attending on average once every other week
- RA requires safe application of agrochemicals and farms meeting RA criteria, done by agrochemical handlers and lead farmers resp.

Farmers / trainer	30 farmers / training, 2x per month
Years of training	On-going
Training modules contents	GAP (tea, non-tea) Social (gender, nutrition), Certification
Last-mile delivery	FFS, Extension staff
Training method	Group training, Field visits

Financials

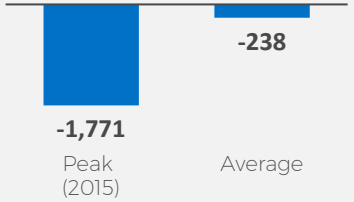
Description

- UTT pays for FFS, training materials and staff salaries and logistics
- UTT provides equipment to agrochemical handlers free of cost

Drivers

- Staff and lead farmer salaries
- Personal Protection Equipment (PPE) and sprayers for agro-chemical handlers

Service expenses per farmer per year (USD)



Impact

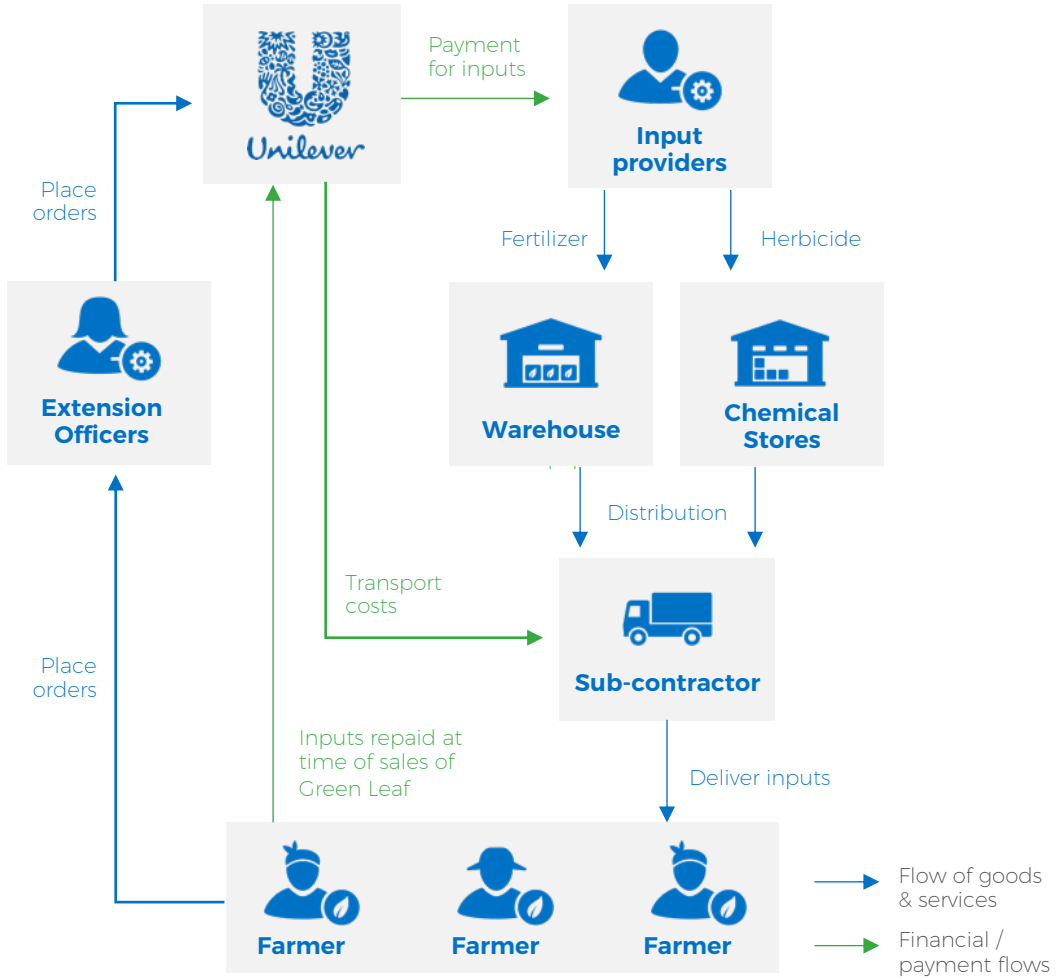
- Increased Green Leaf quality
- Increased farmer income
- Increased transportation efficiency (lower costs, quicker movement of people, produce and inputs)

High start-up costs were borne in 2015, while not many farmers were in the program yet

the sustainable trade initiative

Inputs

Detailed overview



Description / Methodology

- UTT provides farmers with fertilizer and herbicides on credit to be repaid by farmers at time of sales of Green Leaf. Inputs are subsidized (2% of costs, subject to change)
- Fertilizers are delivered to 3 central warehouses (of which 1 is managed by Mkonge cooperative)
- Agrochemicals are supplied to smaller, more distributed chemical stores (currently 11)
- Several 3rd party transporters are subcontracted to pick up and deliver input to farmers

Financials

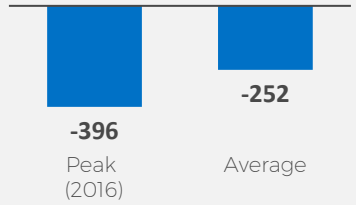
Description

- UTT buys fertilizer and agrochemicals from input providers
- UTT pays 3rd party to deliver inputs to farmers
- UTT deducts outstanding loans from Green Leaf payments
- UTT charges no interest

Drivers

- Input subsidies
- Working capital costs

Service expenses per farmer per year (USD)

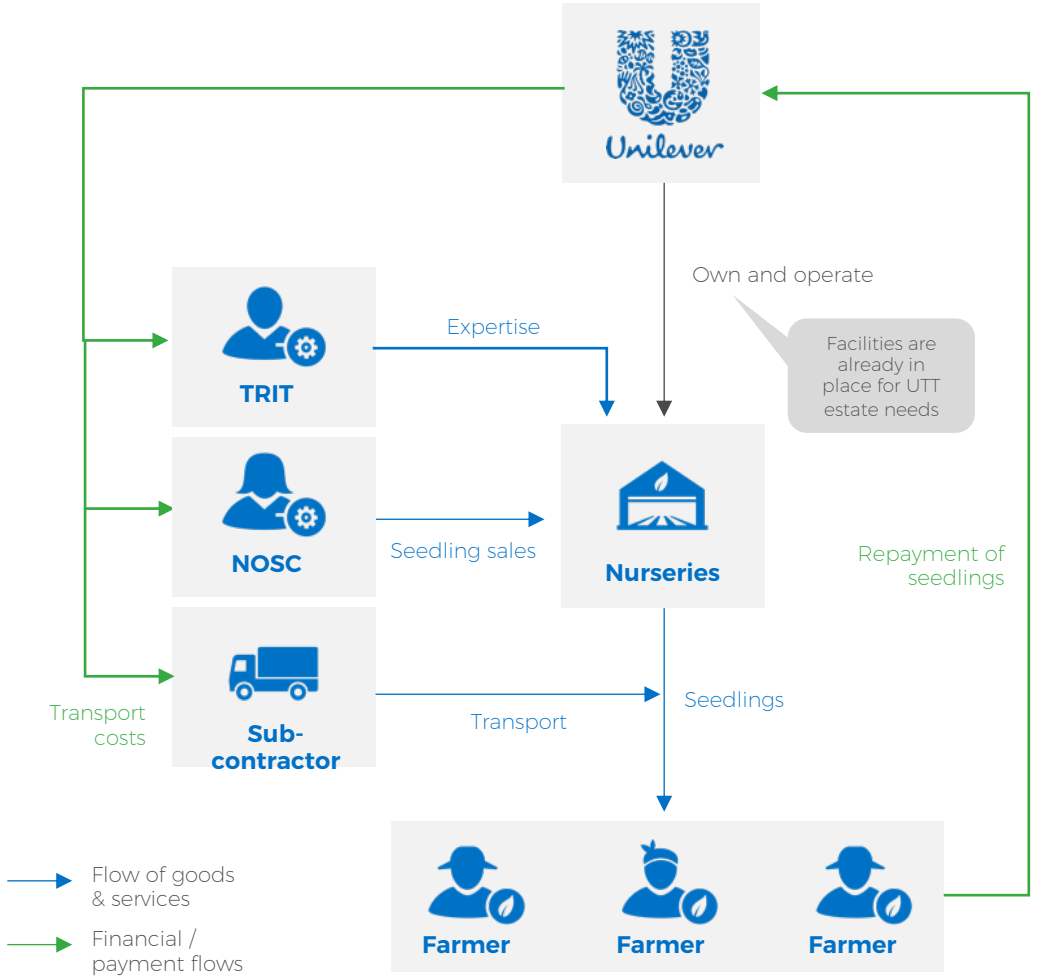


Impact

- Increased Green Leaf productivity

Planting Materials

Detailed overview



Description / Methodology

- UTT has established and manages three big and two smaller nurseries. These were set up for providing seedlings to UTT's own estates, but are now also used for the MOG project. Part of the setup costs are thus charged to this SDM.
- External support comes from research institutes: TRIT provides technical expertise and NOSC seedlings whenever the need arises.
- New varieties have to be tested and verified before they can be multiplied and released in the region
- Most of the seedlings / clones are destined for the UTT plantations, some are supplied to the outgrowers
- UTT contracts transporters to deliver seedlings to farmers
- Brownfield farmers use seedlings for infilling and expansion
- Greenfield farmers use clones for planting new areas of tea & infilling
- Ideally outgrowers manage their own community managed nurseries, becoming self-sufficient

Financials

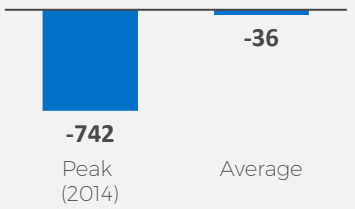
Description

- UTT provides planting material on credit to farmer
- UTT pays subcontractors for transportation
- Farmers repay at time of sales

Drivers

- Nursery setup and maintenance

Service expenses per farmer per year (USD)



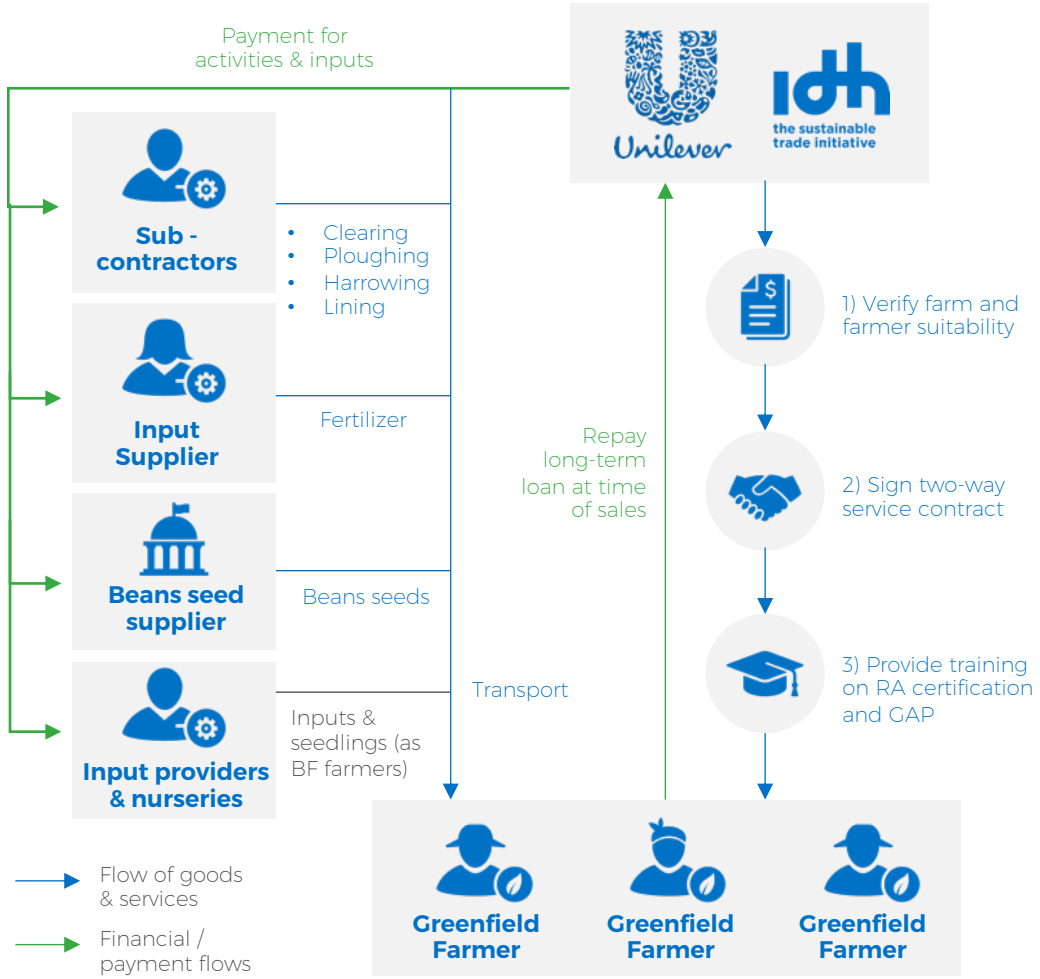
Impact

- Increased productivity
- Increased area under tea

Part of the nursery setup costs in 2014 are charged to this SDM, resulting in a large peak in costs

Greenfield Support

Detailed overview



Description / Methodology

- UTT selected suitable areas for Greenfield expansion based on an assessment performed by ORCA Geo Services in 2013
- Through extension officers, UTT verifies whether farms (i.e. cleared lands, good soils and slopes) and farmers (i.e. own land, are motivated) are suitable for tea cultivation. Farmer and UTT then sign a contract, witnessed by village government leaders
- These new farmers are provided with initial RA certification training and follow and slightly tailored training curriculum via the FFS
- UTT (owning 1 tractor for smallholder support) or 3rd party contractors prepare the land for planting. Land clearing (if not done by farmers themselves) and ploughing and harrowing are provided on credit, while lining and transport are free of charge
- Farmers are provided with planting fertilizers at no cost
- Farmers are provided with seeds for beans as cover crop and food source free of charge. Beans seeds are sourced from Uyole.

Financials

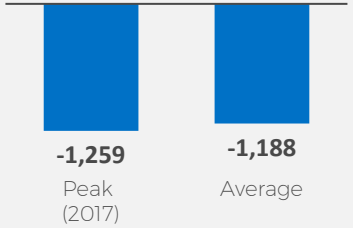
Description

- UTT provides land preparation activities, on credit or free of charge
- Farmers gradually start repaying after 3-4 years as Green Leaf bushes become productive

Drivers

- Land preparation activities
- Tractor maintenance
- Inputs and planting materials
- Working capital (long-term loans outstanding)

Service expenses per farmer per year (USD)

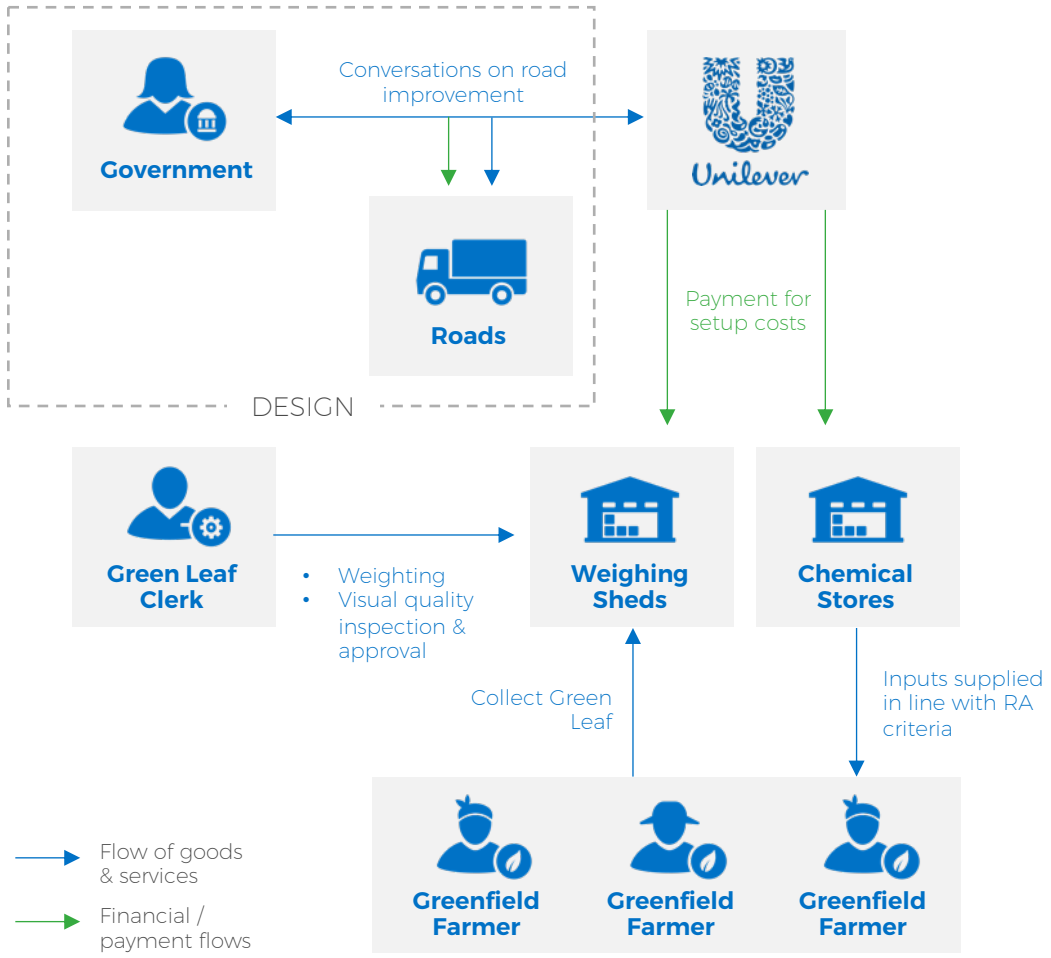


Impact

- Increased area under Green Leaf cultivation
- Increased Green Leaf productivity
- Increased Green Leaf sourcing

Infrastructure

Detailed overview



Description / Methodology

- UTT builds weighing sheds that allow farmers to collect their harvested Green Leaf at a central point. The sheds protect the tea leaves from exposure to the sun. For UTT it facilitates more efficient pickup of Green Leaf
- UTT establishes chemical stores to allow for safe storage of agrochemicals. RA requires safe handling and storing of agrochemicals before farmers can become certified
- UTT is involved in ad-hoc (last time in 2016) road maintenance work. This happens when road conditions are so bad trucks cannot pass at all
- Ideally UTT, the government and other stakeholders come to a joint agreement on investing in and improving the local roads. Improved roads will greatly improve timely deliver of inputs, reduced quality loss, reduced transportation costs, and allows UTT to source from more distant farmers. Rainfall during peak harvesting season further worsens the road conditions

Financials

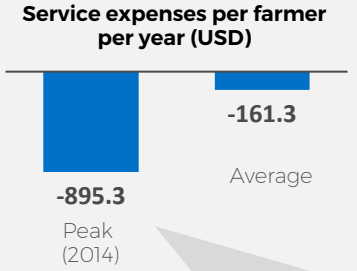
Description

- UTT pays for the establishment of weighing sheds and chemical stores
- UTT pays for ad-hoc road repairs

Drivers

- Number and costs of weighing sheds
- Number and costs of chemical stores
- Road maintenance

Service expenses per farmer per year (USD)



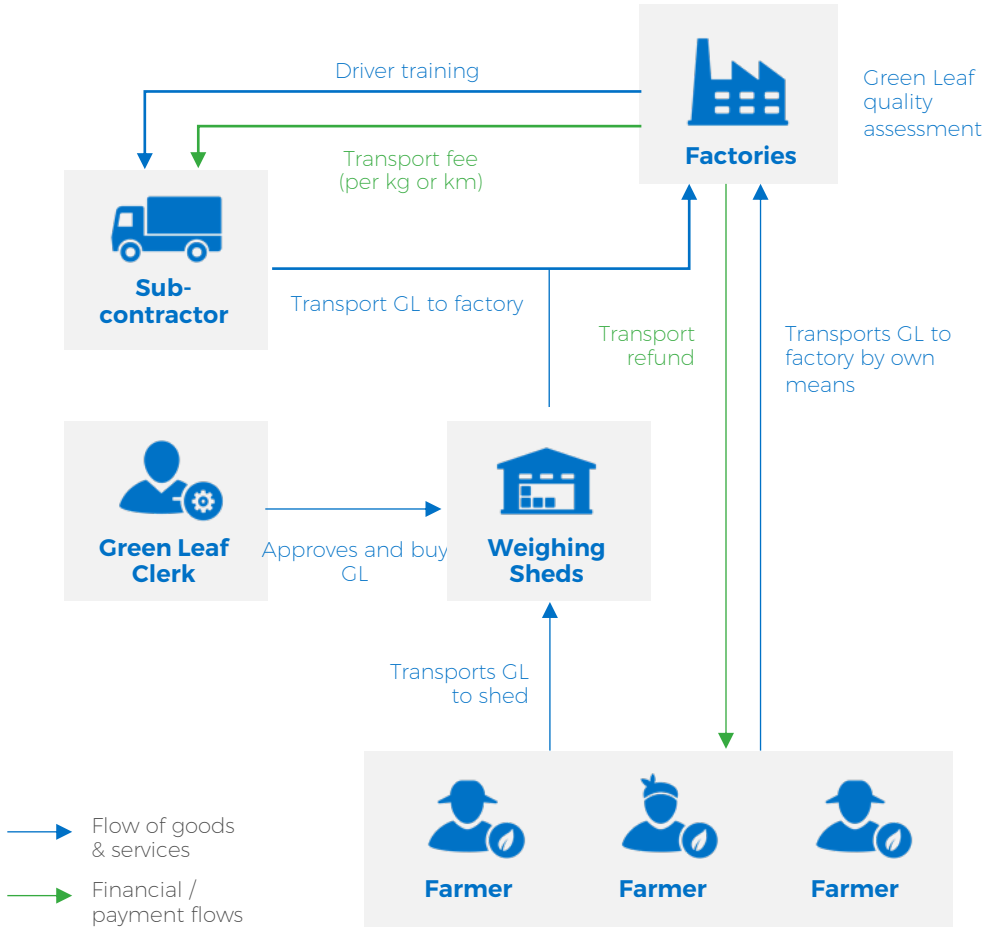
High start-up costs were borne in 2015, while not many farmers were in the program yet

Impact

- Increased Green Leaf quality
- Increased farmer income
- Increased transportation efficiency (lower costs, quicker movement of people, produce and inputs)

Transportation

Detailed overview



Description / Methodology

- Most farmers bring their Green Leaf to weighing sheds. Green Leaf clerks assess the tea, and if approved buy the tea on behalf of UTT. Transportation subcontractors pick up and transport the leaves to UTT factories. UTT typically pays the transporters at a rate of 50 TSH/kg.
- Some farmers are located in remote areas, making pickup of Green Leaf unattractive for transporters. In these cases UTT pays 2,200 TSH per kilometer travelled to compensate for the long distance (~ > 50 km)
- Other farmers have their own means of transportation and bring their leaves directly to the factory. Green Leaf is assessed and bought if approved. UTT refunds farmers (40 TSH/kg).
- In line with company policies UTT trains subcontractor drivers and inspects farmer-owned vehicles for safety reasons. Both are provided free of charge

Financials

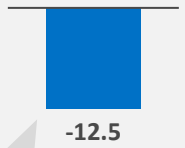
Description

- UTT pays subcontractors per kg GL of km travelled
- UTT refunds transportation costs to farmers

Drivers

- Transportation fees
- Refunds (kg GL supplied, km travelled by trucks)

Service expenses per farmer per year (USD)



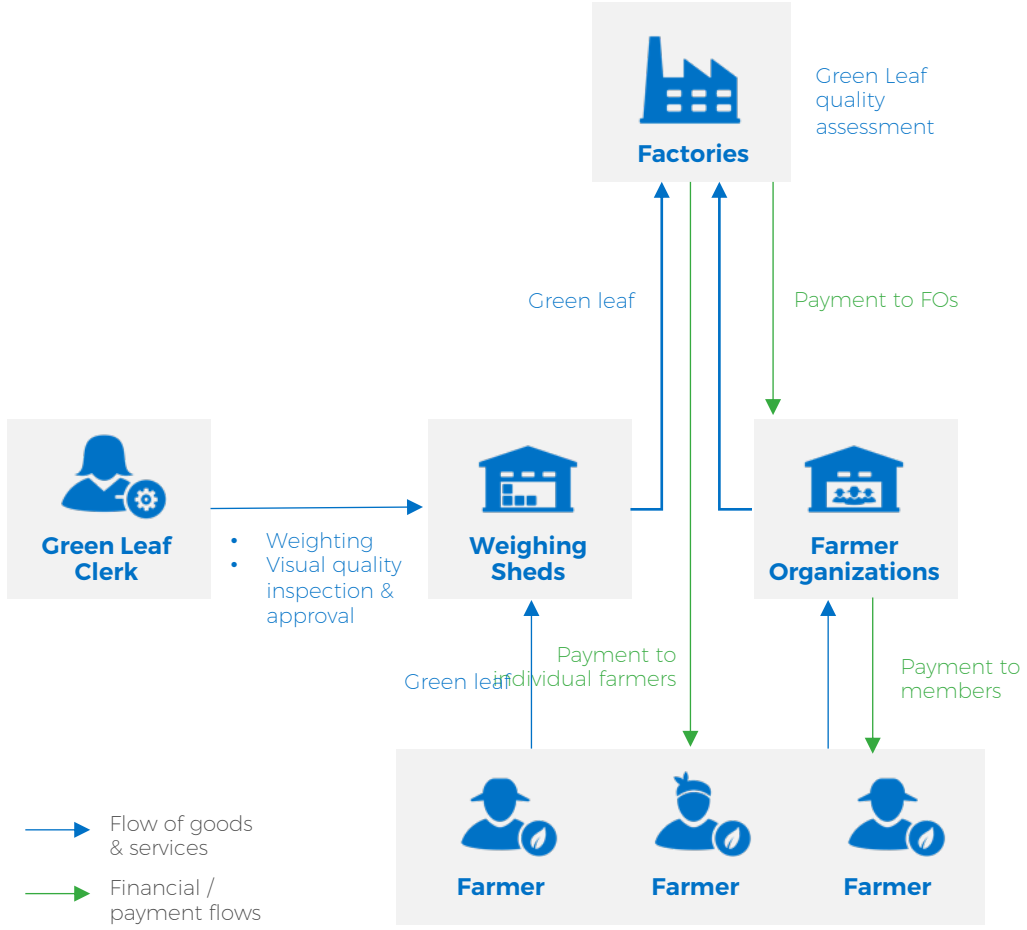
Estimated costs from 2017

Impact

- Increased sourcing efficiency

Bonus payments

Detailed overview



Description / Methodology

- Green Leaf is collected at weighing sheds, farmer organizations or factories
- UTT assesses and records the quality of Green Leaf supplied on a daily basis, at the moment it reaches their factories. Quality is assessed in bulk (per truck) and cannot be traced back to individual farmers
- At the end of the year, based on the daily recordings, UTT establishes the average quality grade from each respective region and pays out the respective bonus at the same time of the second payment
- The size of the second payment is determined by the Tea Board of Tanzania, based on the tea selling price in the past year
- Farmer organizations are typically paid out in bulk, letting them distribute the money across their members. When payments to farmer go through groups like that, complaints by farmers on payments received are more common.

Financials

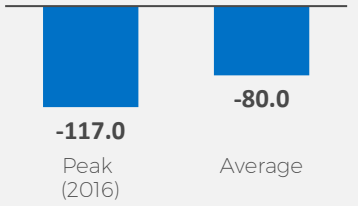
Description

- UTT pays salaries of Green Leaf Clerks
- UTT pays bonus to farmers and FOs

Drivers

- Bonus payments for quality tea

Service expenses per farmer per year (USD)



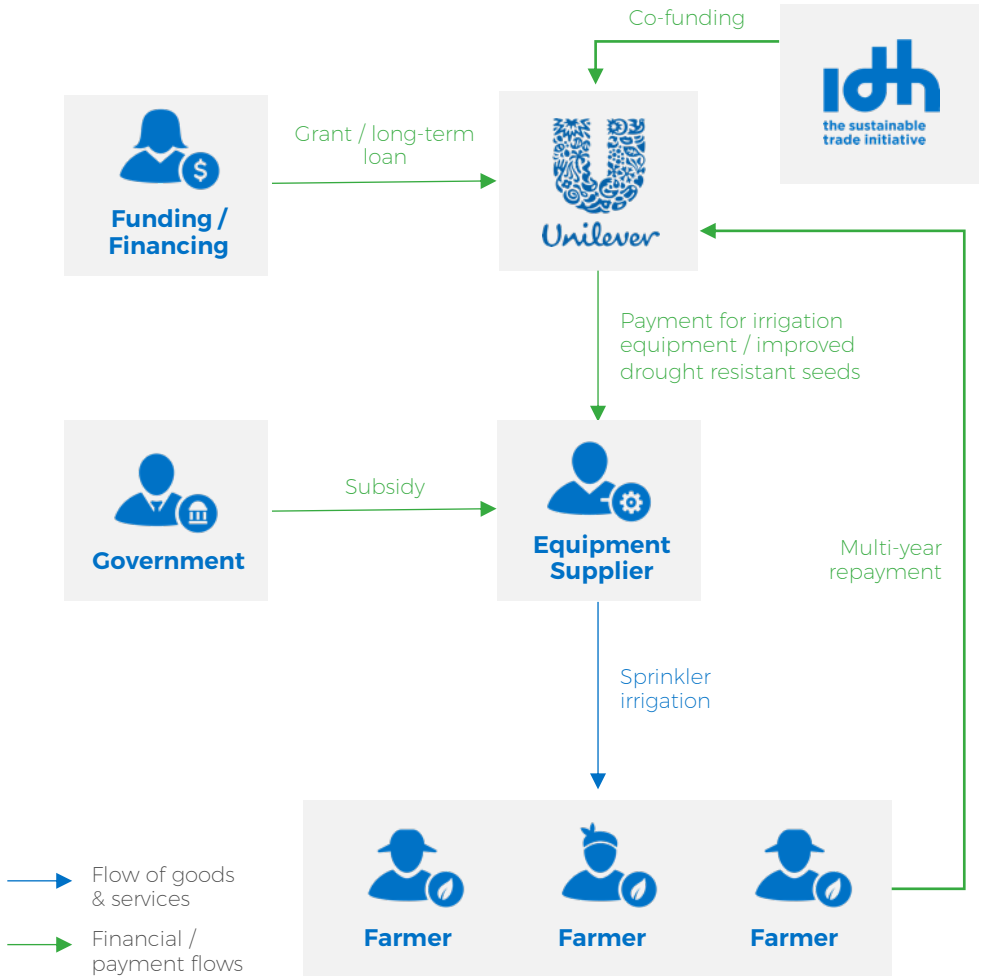
Impact

- Increased Green Leaf quality
- Increased farmer income
- Increased farmer loyalty

Note: these sourcing costs are recovered by sales from the higher quality of the product, and generally fall outside the scope of the SDM

Climate resilience

Detailed overview



Description / Methodology

This SDM explores possibilities to provide farmers with access to irrigation and/or drought resistance clones, improving tea production and farmer livelihoods by reducing the negative impact from droughts. Alternatively, crop diversification (outlined on the next slide) can also mitigate the impact of droughts on farm yields.

A (long-term) business case for SHF's investing in irrigation should be established, i.e. investment costs of irrigation equipment can be recouped through sales revenues from additional production

- SHF have access to / are located near water (e.g.. lake, ponds)
- Governments gives out permits for the use of water
- SHF have access to affordable and effective irrigation equipment
- Governments subsidize irrigation equipment
- External donors are willing to provide patient capital

Financials

Description

- UTT buys and provides irrigation equipment on a multi-year loan
- External donors provide patient capital until farmers start to repay the investment
- Governments subsidize part of the equipment
- UTT buys and distributes drought-resistant seeds to farmers

Drivers

- Water infrastructure
- Irrigation equipment
- Nursery maintenance
- Developing and distributing drought resistant seeds

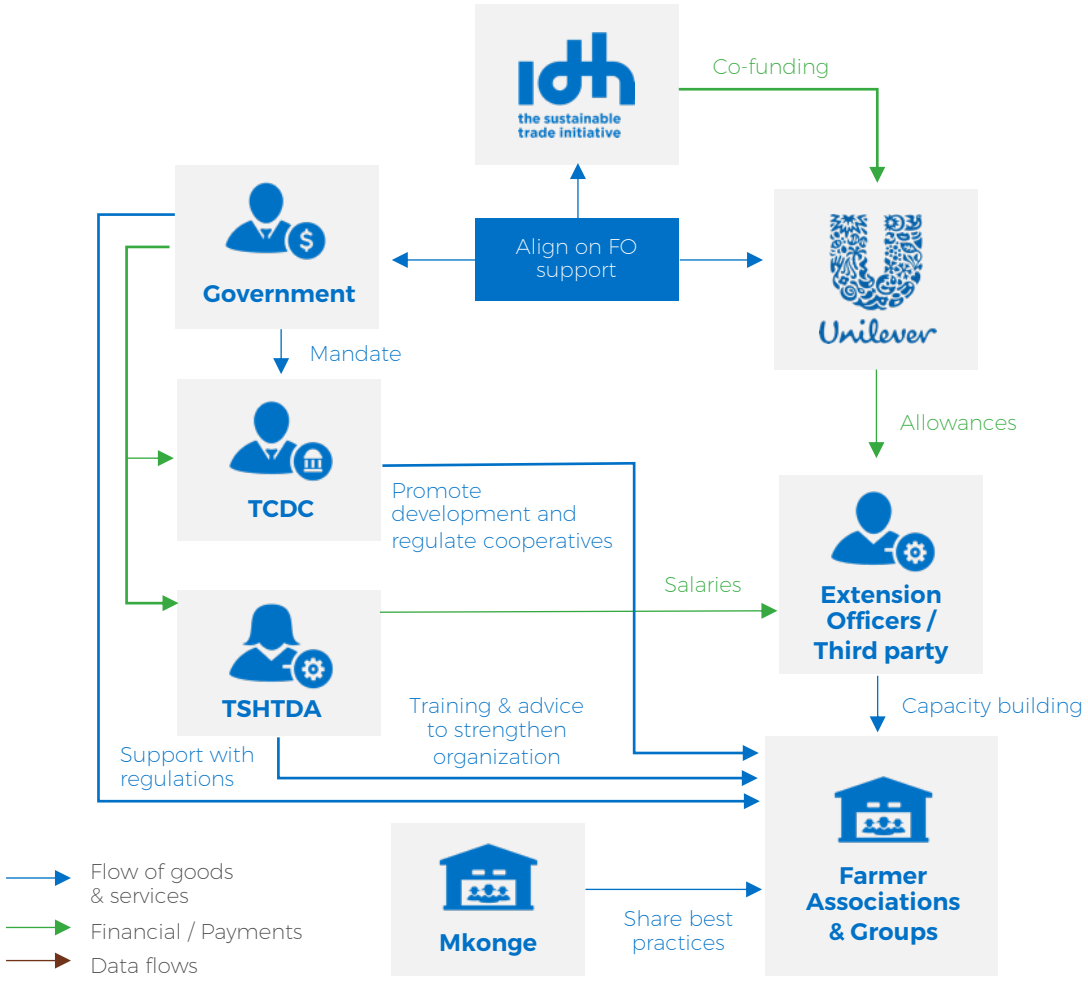
As this service is still under design, no specific costs are included here

Impact

- Reduced impact from droughts
- Increased productivity
- Improved farmer incomes

Governance Support

Detailed overview



Description / Methodology

This SDM seeks to improve FO professionalism and turn them into cooperatives. Groups and associations are trained and supported in collaboration with the government. Ideally, FOs develop into independent service providers.

Conditions for successful farmer governance

- Farmers, farmer groups, associations and organizations should understand the benefits and need to be willing to professionalize, and register as cooperatives
- Governments should be involved and reduce barriers to register as coops
- FO leaders should receive adequate training and coaching on leadership, business and management skills to develop the FO over time
- Farmer members should recognized their leadership
- Ideally, incentives are in place to grow towards professional organizations

Financials

Description

- IDH and other donors provide funds
- TCDC provides technical support for the transformation process
- TSHTDA, the local government and UPP/private sector contribute to coordination of the process in kind

Drivers

- Salaries of extension officers
- Facilitation of coop trainings
- Meetings with government
- Transport costs

As this service is still under design, no specific costs are included here

Impact

- Increased SDM efficiency
- Increased farmer bargaining power

Farm-level impact

This chapter presents the analysis at farmer level.

In this section you will:

- Understand the P&L of the farmers in the SDM according to their segment
- Understand how relevant factors (eg. market price, quality, input adoption) impact the farmer business case
- Get an overview of other impacts (social, environmental)

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Farmer Testimonials – Mufindi Outgrowers Project

Josephat Msakwa
from Mufindi Tanzania

Josephat Msakwa is a smallholder tea farmer in Mufindi Tanzania. He is working in tea since 1993, through his family tea farm of about 2 acres. He joined the MOG project and enrolled in FFS in 2015.

Josephat on the MOG project:

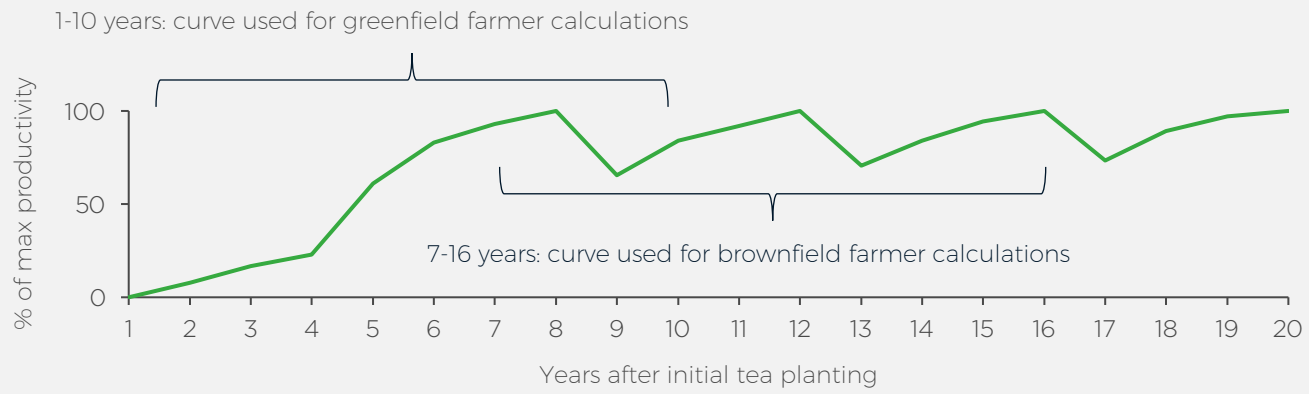
"After a Farmer Field School exchange visit, I learned how other farmers grow and manage tea and increase their income. Another farmer showed me that through applying Good Agricultural Practices and recommended fertilizer rates, you are able to realize good crop and income. From that day, I was motivated and I started to expand my own tea farm. **Between 2016 and 2018, I have established about six acres of tea.** The MOG project supplied the plants as a loan, which I pay back in small instalments.

Through the FFS trainings and applications of GAP, tea production in our family farm has increased and I received more income from my tea farm. **The project's quality bonus has also increased my income, which enables me to pay for education for my children.** I am also planning to expand my farm further."

Key assumptions for farmer analytics

	OUTGROWER			INGROWER
	Baseline	**Brownfield**	**Greenfield**	**Brownfield**
Starting farm size	1 ha			
Productivity	5,000 kg GL/ha	5,000 – 7,730 kg GL/ha	0 – 5,945 kg GL/ha	11,400 to-15,700 kg GL/ha
Farm-gate price	0.15 USD/kg GL			
Bonus quality	None	0.00 – 0.05 USD/kg GL		
Fertilizer NPK	225 kg/ha	225 – 450 kg/ha	25 – 325 kg/ha	225 – 450 kg/ha
Fertilizer TSP	30 g / bush			
Herbicides	2 L/ha	2 - 3 L/ha	0.2 – 2.5 L/ha	2 - 3 L/ha
Infilling	1% / year	5% / year	100% in year 1 20% in year 2 then 5% / year	5% / year

Productivity* over the years



Sources: *UTT Finance Department

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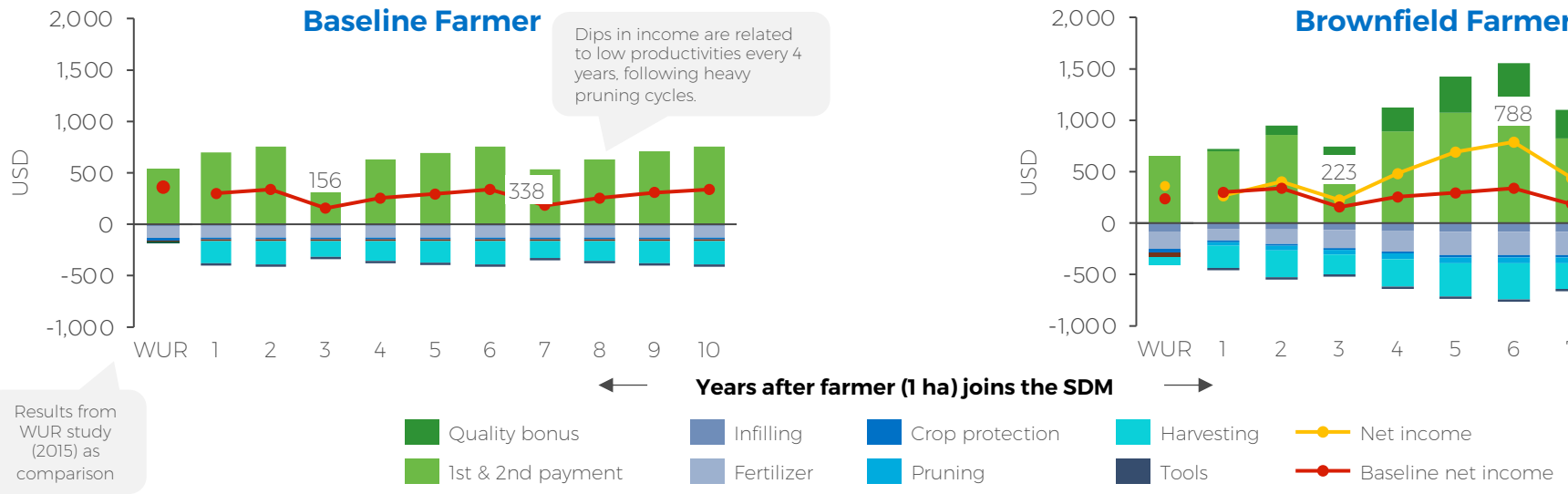
Brownfield outgrower farm P&Ls: overall impact



Economic sustainability at farm level

Costs and revenues are based on 1 ha of tea farmland. In reality, baseline and SDM farmers in the region have on average 0.7 ha dedicated to tea. Brownfield farmers are assumed to start with low productivities in year 1 (5,000 kg GL/ha) and progress to a maximum of 7,730 kg GL/ha in year 5 (the level of current high-performing farmers).

During the initial years in the program, brownfield farmers have a similar income as baseline farmers. This is mainly due to the increased input costs for brownfield farmers, while productivities increase only slightly each year. As such, it takes a few years before the additional costs really start to pay off.

After these initial years, brownfield farmers have consistently and significantly higher incomes than baseline tea farmers.

Compared to the WUR study conducted in 2015, costs and revenues are slightly different here, mainly estimating harvesting costs higher. As a result, net incomes are slightly lower in the first years of this study.

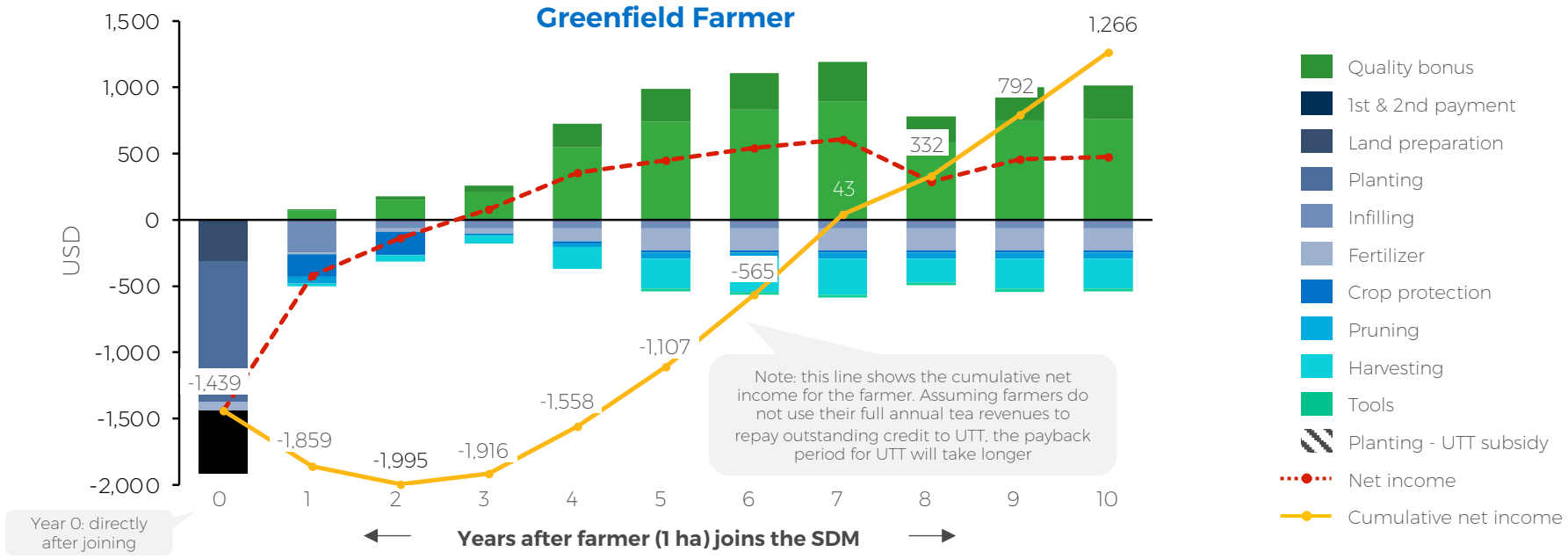
Main cost drivers

- **Harvesting:** Plucking is a major cost of tea farming. Pluckers are hired by farmers and paid a standard fee per kg GL plucked. As such, harvesting costs are always 20-30% of total tea revenues.
- **Inputs:** Brownfield farmers apply more fertilizer than baseline farmers. Within a few years, these costs will be outweighed by the additional tea productivity.

Main revenue drivers

- **Production:** As brownfield farmers in the SDM increase their productivity, so rises their net income above baseline farmers
- **Quality bonus:** Tea quality rises steadily for brownfield farmers in the SDM, fetching higher prices by UTT's bonus payment system. This amounts to a major additional source of income for brownfield farmers compared to baseline farmers.

Greenfield outgrower farm P&Ls: overall impact



Economic sustainability at farm level

To develop a new area of tea farming, large investments are needed initially (year 0) for preparing the land and planting tea. UTT bears around 1/4th of these costs, reducing the investments needed from the farmer.

Still, only 3 years after the original planting does a farmer have his first profitable year. 7 years after planting the full investment has been recouped.

During initial years of no / low tea revenues farmers earn an income by growing crops like beans on other plots they own.

Over the years shown, productivities of greenfield farmers are assumed to progress towards the productivity of an average brownfield farmer (5,945 kg GL/ha). From there, they can advance as brownfield farmers to high performers of 7,730 kg GL/ha (see previous slide).

Main cost drivers

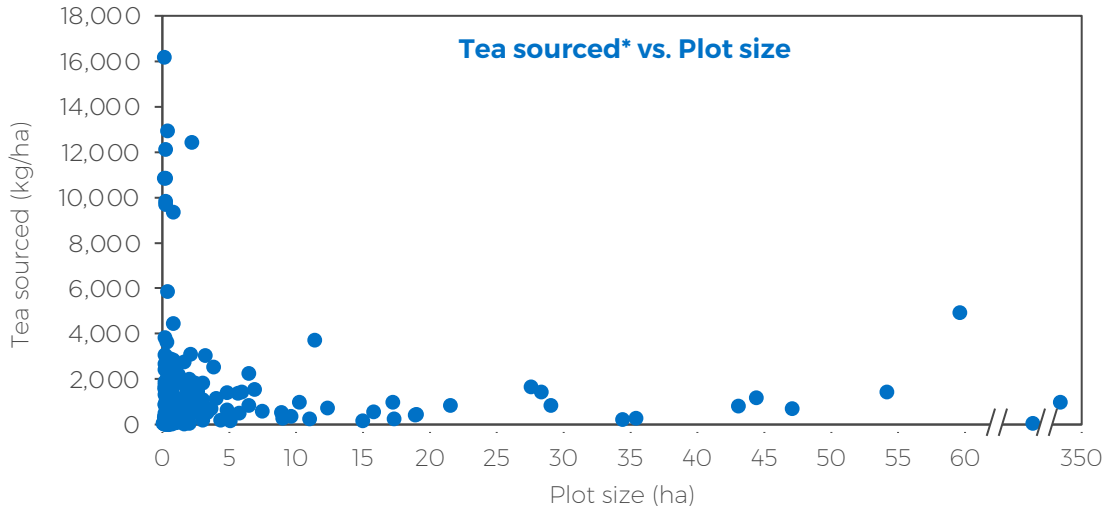
- **Initial development:** The main costs are land preparation and planting in the first year of tea plantation development. In the 2 following years, infilling of bare patches and crop protection of the young tea plants are high.
- **After establishment:** Once the tea plantation is mature, cost distribution is similar to brownfield farmers, with most costs going to harvesting (hired pluckers) and fertilizer.

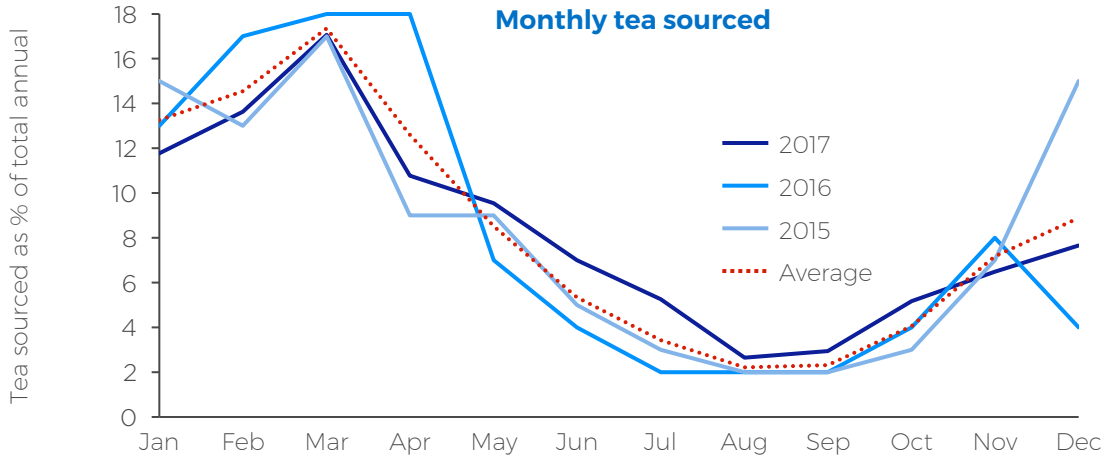
Main revenue drivers

- **Production:** It takes 4 years after initial planting before the plantation productivities significant tea production. Once the plantation is mature and Green Leaf quality is increased, greenfield farmers are effectively the same as brownfield farmers.
- **Quality:** Like brownfield farmers, during later years the quality Bonus system is a significant boost to farmers' income.

Sources: based on productivity curve and cost of cultivation shared by UTT

Productivities and monthly sourcing of tea in this SDM





Relation productivity and plot size

There is no clear relation between tea productivities and farm sizes. Farmers with larger plot sizes are not more or less professionalized than farmers with small plots.

However, the highest productivities occur on small plots; likely because farmers can care for a small farm more easily than a large one. A focus on efficiently applying GAPs and labor on larger farms could stimulate farmers to increase their farm size, and improve productivities on existing large farms.

Monthly tea production

Tea is harvested year round, but with a clear high season around March and a low season around September.

This results in an uneven farmer cashflow, with low income during the low season. Due to the uneven distribution of tea production UTT incurs large costs, as factories cannot process the total volumes of Green Leaf in high season, while being underutilized during low season. The distribution is partially flattened when proper irrigation is applied.

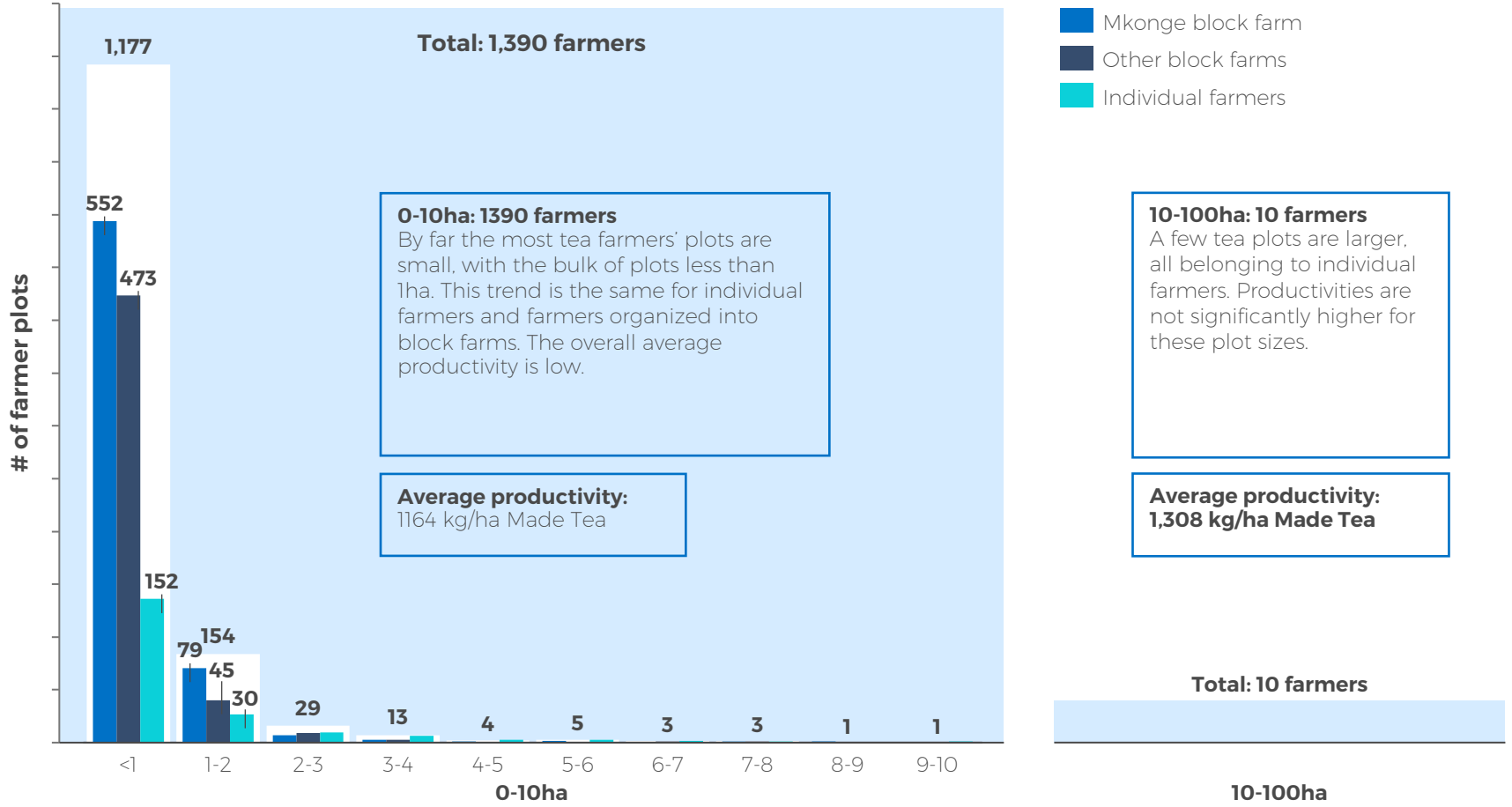
Note that the effects of the large drought at the end of 2016 is clearly visible.

* Numbers indicate only tea that was sourced by UTT; this may be different from farm production.
Productivities are based on data from a group of ~200 farmers. Data gathered by UTT from 2017.

Distribution of tea farmer plot size

Most farmers are organized within block farms, with the Mkonge group by far the largest of all. Plot sizes dedicated to tea are very small (mostly <1ha), with similar distributions for individual and block farmers.

As discussed before, we find no clear relation between productivity and plot sizes*.



*Productivities are based on data from a group of ~200 farmers. All productivities and plot sizes are from 2017 (UTT data).

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Minimal viable plot size for SDM farmers

Average productivity (kg GL/ha)

Plot size (ha)	4,500	5,000	5,500	6,000	6,500	7,000	7,500	8,000
0.5	0	0	0	0	8	41	74	106
0.75	24	74	123	172	221	270	319	368
1	172	237	303	368	434	499	564	630
1.25	319	401	483	564	646	728	810	892
1.5	466	564	663	761	859	957	1055	1154
1.75	614	728	843	957	1072	1186	1301	1416
2	761	892	1023	1154	1285	1416	1546	1677

Based on an average Brownfield productivity of 6,000 kg GL/ha, a plot size of 1.8ha is needed to exceed the household poverty line***

Assumptions

Farmer segment	Brownfield
Household size	5.4 people*
Non-tea income per household	367 USD / year**
Poverty line per person	252 USD / year***
Total household poverty line	1359 USD / year

The farmer P&Ls presented earlier show the business case of farmers with a plot size of 1 ha (net income of USD 539 on average per year for brownfield farmers). On the previous slide was shown that most farmers actually have smaller plots dedicated to tea, resulting in even lower incomes. This raises the question which plot size is economically viable to tea farmers in this SDM. Additionally, productivity is seen to vary wildly between farmers. Here, we elaborate on these observations by analyzing the sensitivity of a brownfield farmer's net income to average productivity and plot size. The top left table presents the resulting annual net income for a brownfield farmer under various combinations of productivity and plot size.

From this, we can determine the plot size that is needed to lift a tea farmer household out of poverty. Farmer household and poverty assumptions are given in the bottom left table. Tea farmers should earn USD992 per year to lift their household out of poverty. Consequently, the sensitivity analysis shows that **a farmer with an average productivity of 6,000 kg GL/ha needs a tea plot size of at least 1.8 ha to reach this income.**

* Based on 2015 WUR baseline study

** Based on IDH MoG report summary (2017). We assume here that this income does not increase for farmers in the SDM.

*** Poverty line based on the World Bank international poverty line set at USD1.90/day, adjusted for local purchase power parity (PPP) using the World Bank 2016 PPP conversion factor for private consumption of 809.32 TZS/USD.

Conditions for an ingrower farmer scheme

Below table shows the main differences comparing an in- to an outgrower model, lists the key (dis)advantages to UTT and farmers and proposes ways to mitigate the risks.

		Comparative (dis)advantage of ingrower model, compared to outgrower model		
	Difference	**UTT**	**Farmer**	**Mitigating risks**
Land ownership	• UTT owns land • Farmer tenant leases land	○ Controls the land, option to end contract ○ No farmer ownership, less incentive to invest in farm thus risk of lower performance	○ Pays fee for leasing ○ No ownership, limited incentive for investment	• Have fair contracts negotiated between farmers and UTT, involving TBT • Offer land to most capable farmers
Farm location	• Centralized farm • Longer distance between farm and fields	○ More efficient monitoring and evaluation, delivery of inputs and pickup of Green Leaf	○ Potential for pooling hired labor ○ Incurs travel costs from and to farm	• Have farmers benefit from reduced transportation costs • Include travel costs in viable farm size calculations (see below)
Farm size and productivity	• Depends on the number of farmers and previous management	○ Can determine which and how many farmers are offered to work on the land	○ Viable plot size allocated ○ No control over (quality of) land allocated to them	• Calculate the maximum number of farmers to join based on minimum viable farm size and current productivity levels

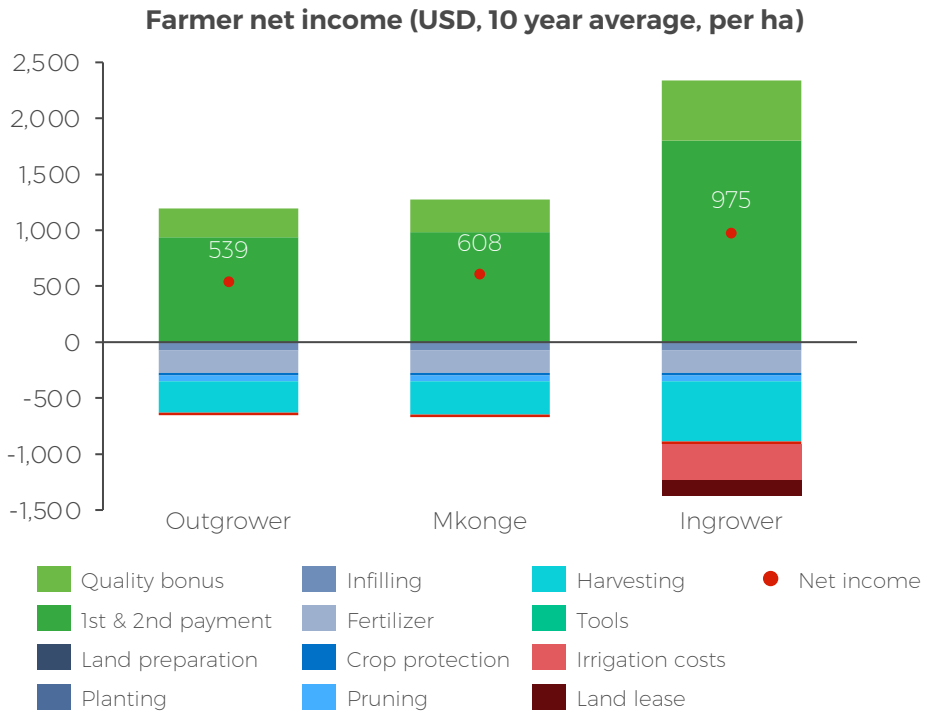
○ Advantage

○ Disadvantage

Calculating the minimal viable plot size for ingrower farmers in done on the next page

* Taken from UTT: MOG 2.0 Proposal, Key activities.

Ingrower farmer business case



	Outgrower	Mkonge	Ingrower
Productivity	From 5,000-7,730 kg GL/ha	From 6,167 to 7,730 kg GL/ha	From 11,400 to-15,700 kg GL/ha
Irrigation costs/ ha	-	-	317 USD/year
Land lease /ha	-	-	135 USD/year
Quality bonus*	88 TZS / kg GL	100 TZS / kg GL	112 TZS / kg GL

Shown on the left is the projected 10-year average net income of farmers from three groups: regular SDM brownfield, farmers from the Mkonge cooperative, and ingrower farmers on UTT land.

The main differences between outgrower and ingrower farmers are:

- **Farm productivity:** UTT land available to ingrowers is prime land for tea cultivation. It has been properly fertilized in the past. This leads to very high tea productivity right from the start. Quality of the tea produced here is also above average, ensuring good quality bonus payments.
- **Irrigation:** these fields already have irrigation infrastructure in place. Maintaining these is costly but a requirement to keep up current tea productivity and quality levels.
- **Land lease costs:** Ingrowers lease the land from UTT

It can be seen that ingrower farmers earn significantly more than either average brownfield outgrowers or Mkonge cooperative farmers, mainly due to the very high yields of the plantations. A remaining risk in attracting farmers to the ingrower scheme is that the annual expenses for ingrower farmers are more than double those of average outgrowers, possibly leading to farmer hesitancy to join.

Ingrower minimal viable plot size

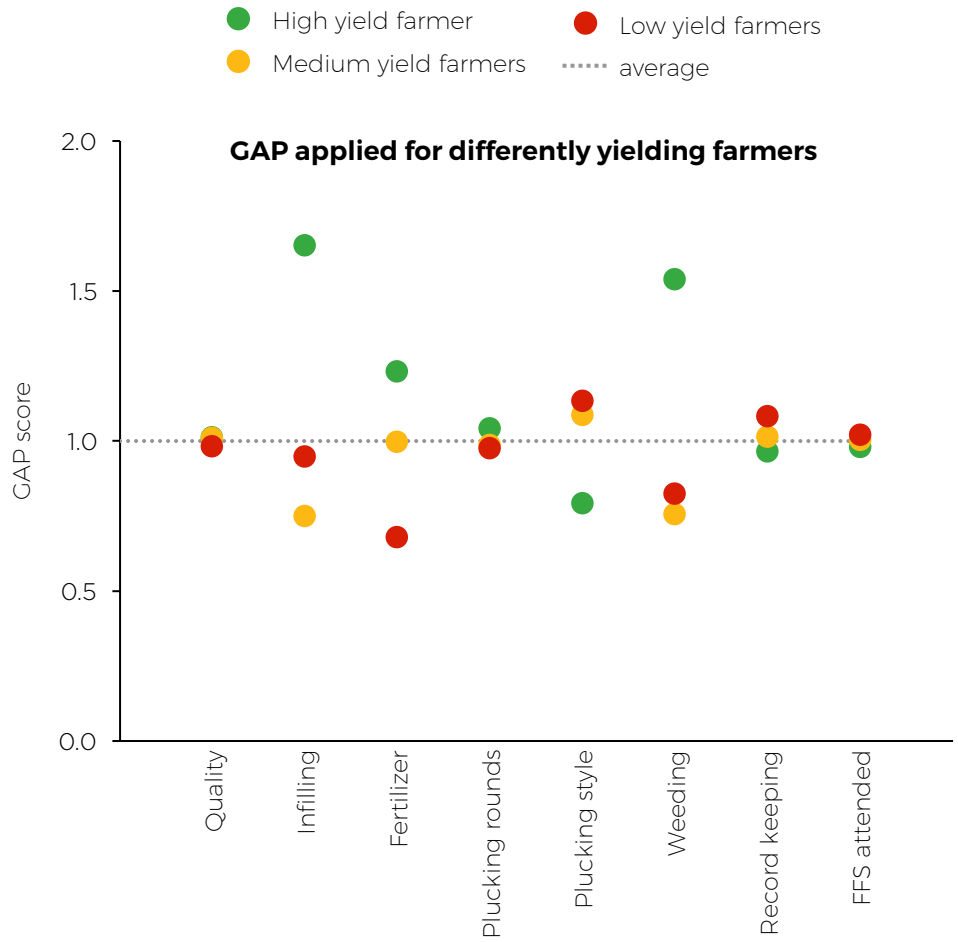
As done for an ourgrower brownfield farmer on slide 46, we can now also calculate the plot size needed for an ingrower farmer to lift his household out of poverty.

Taking into account the additional costs an ingrower incurs (USD450/ha/year), additional quality revenues made (USD550/ha/year) and an average productivity of 13,550 kg GL/ha, the **minimal viable plot size is 1.05 ha.**

For the scale of the ingrower pilot, meant to start on 135 ha of land, this means that UTT can offer the program to **128 farmers.**

* The weighted average price is shown here. While the height of the bonus per quality band is the same for all farmers, the proposed ingrower fields deliver a larger share of higher quality tea.

Relation between adoption and tea productivity



Adoption of recommended GAP

The left graph shows the adoption of different services and GAP of 58 farmers in the SDM. It compares adoption between farmers who have low (<4000 kg GL/ha), medium (4000-7000 kg GL/ha) or high (>7000 kg GL/ha) tea productivities. A score above 1 means that farmers score better than average, and vice versa.

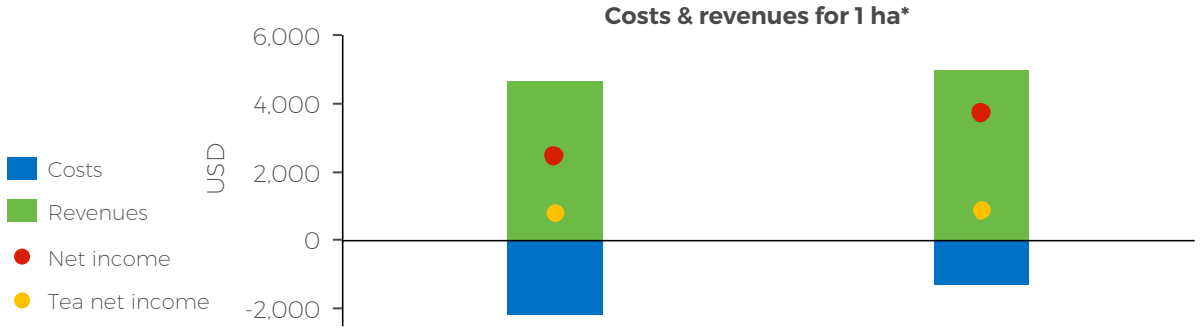
The general trend is that farmers who have high productivities have better adoption of GAP. They score an average of 1.1, while low performing farmers have an adoption score of 0.94.

There is no clear correlation for all GAPs. Large differences can especially be seen for:

- **Infilling:** High yielding farmers consistently have much less empty spaces remaining in their tea fields.
- **Fertilizer application:** Farmers are recommended a certain amount of fertilizer application on their specific farms. Low and medium yielding farmers apply less than this amount, while high yielding farmers apply slightly more than recommended.
- **Plucking:** High productivity farmers have more plucking rounds on average, but have a low plucking style standard, resulting in lower quality tea. Higher plucking standards often means lower productivities because of finer plucking .
- **Weeding:** High productivity farmers do a much better job at weeding, keeping competing plants away from their tea plantations.

Crop diversification

Crop diversification has the potential to enhance food security, income stability and dietary nutritional value. However, the outcome of such diversification for tea farmers and UTT should be carefully explored. Here we discuss two major options of two diversification crops.



	Potato	Avocado
Opportunities	• Good local market • Quick harvest (after 3 months) • Two harvests per year are feasible	• Good domestic and potential international market • Relatively easy to grow (next to tea)
Risks	• (Improved) seeds are expensive • Much attention and inputs are needed for good productivities • Competition in labor with tea	• Little local knowledge, resources and services to grow avocado • Limited infrastructure • Large initial investments needed
Profitability	• Cost of production are high • Net income is USD 1,220 per harvest	• Avocados start yielding three years after planting • Once trees are fully grown, profitability is high
Nutrition	• Rich source of vitamins, minerals and carbohydrates, which make it suitable for a large part of daily diets	• High in vitamins, minerals and fat. With less carbohydrates than potato it is less suitable to take up a large part of daily diets.

*Costs and revenues are based on 1 ha of land, 2 harvest per year for potatoes and avocado productivities 6 years after planting
Sources: UNDP, Avocado value chain mapping in Siha and Njombe districts (2014)

Potato farmers

Potatoes are a good food and cash crop, with high profitability if managed well (as projected here). Realizing high productivities however is notorious for requiring a lot of care; potatoes are sensitive to e.g. fungicides, which can ruin complete harvests. Therefore, it is not recommended as a stable diversification crop.

Avocado farmers

Avocado has a stable local market, but few possibilities for export yet. The latter is key to provide farmers with better prices.

Eventual profitability is high, but preparing a new plantation requires investments during initial years without revenues (similar to greenfield tea). An avocado diversification scheme must pay attention to the low development of avocado farming in the region, resulting in a lack of knowledge, resources, services and infrastructure.

Service provision

UTT does not have the resources to support crop diversification but, run well, such schemes can be mutually beneficial for farmer and the company by stabilising household incomes. Third parties who could work together with cooperatives and smallholders should be included into the SDM. UTT's existing FFS network can be utilized for providing training on other crops.

Service entities

This section presents in detail the information about the service entities that operate in the SDM.

In this section you will:

- ✓ Understand the structure and the financial performance of the different service entities

SDM General Introduction

Overview and Objectives of the SDM

Structure of the SDM

Services delivered within the SDM

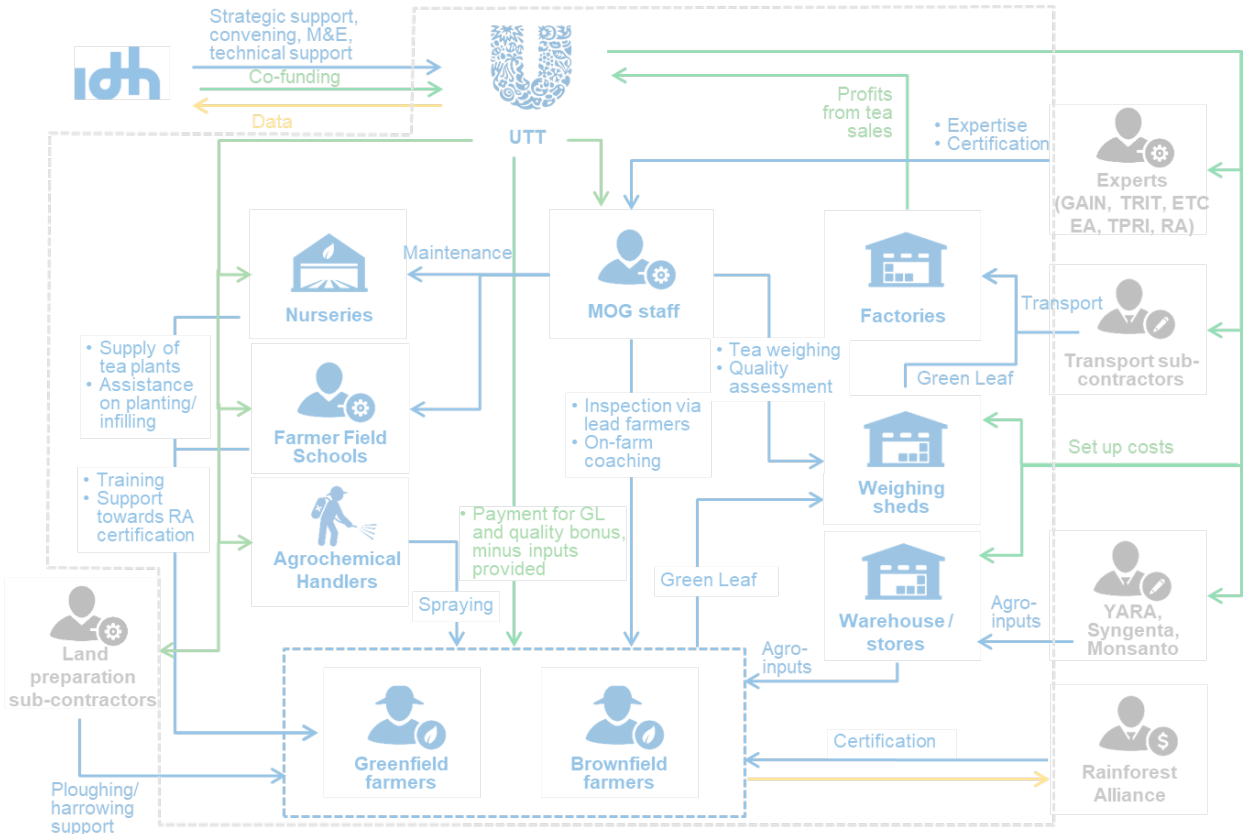
Farm-level impact

Service entities

Financial analysis overall SDM

Conclusions

For this SDM, analyzing the intermediate service providers is not relevant



Discussion

In some cases, the companies we analyze do not provide all services themselves, but make use of intermediate companies. Such intermediate companies can, for example, include nurseries or wet mills. In this section, the business case of these intermediate service providers for participating in the SDM is analyzed. For this SDM, doing such analysis is not relevant and is therefore excluded from the report.

Financial analysis overall SDM

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

In this section you will:

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

SDM General Introduction

Overview and Objectives of the SDM

Structure of the SDM

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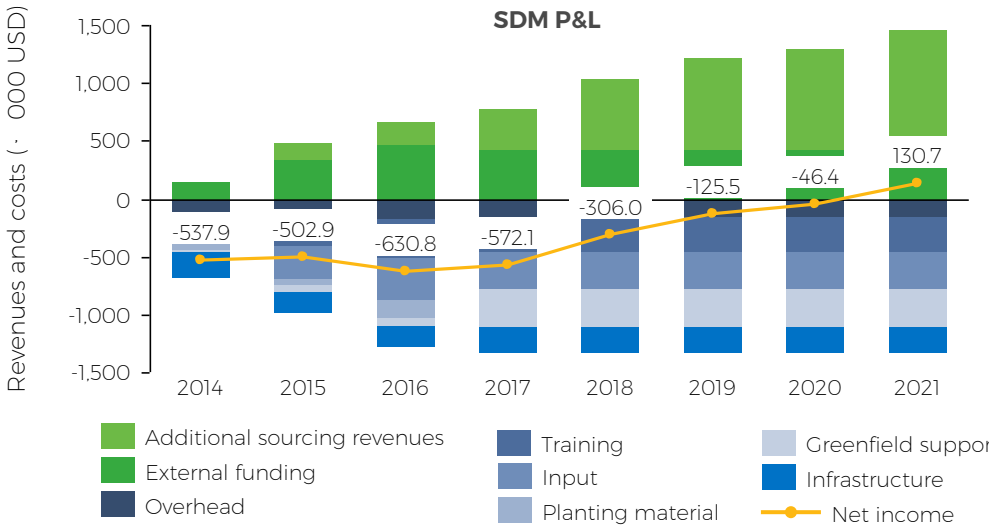
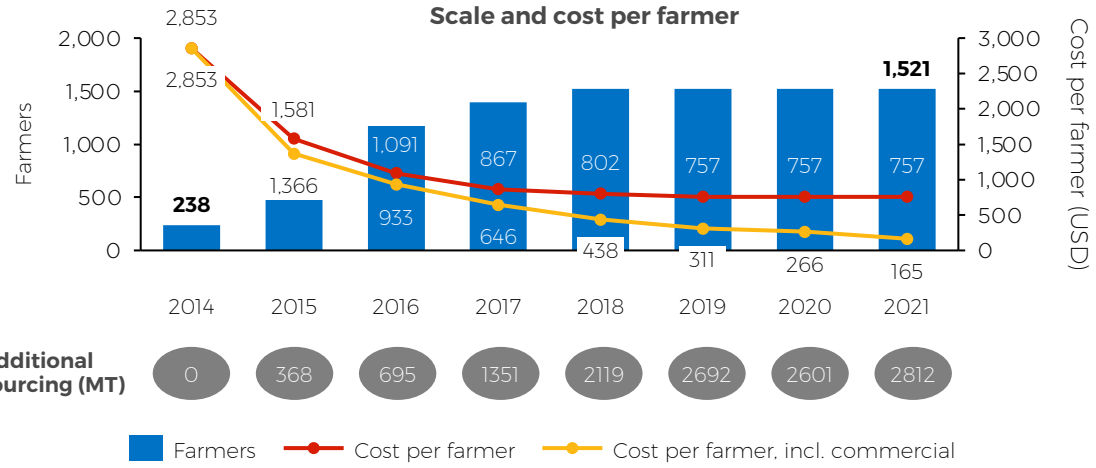
Conclusions

SDM P&L





Economic sustainability

- Not taking into account commercial revenues, this SDM is not economically sustainable, relying heavily on donor funding (31% of cost)
- Including additional commercial revenues (see next slide) and external funding, annual costs are covered from 2020 onward (assuming costs to stay around the 2017 level)

Main revenues drivers

- Increased brownfield productivity and new tea production from greenfield farmers drive up sales volumes and revenues
- Increased GL quality allows UTT to make larger margins on tea sold

Main cost drivers

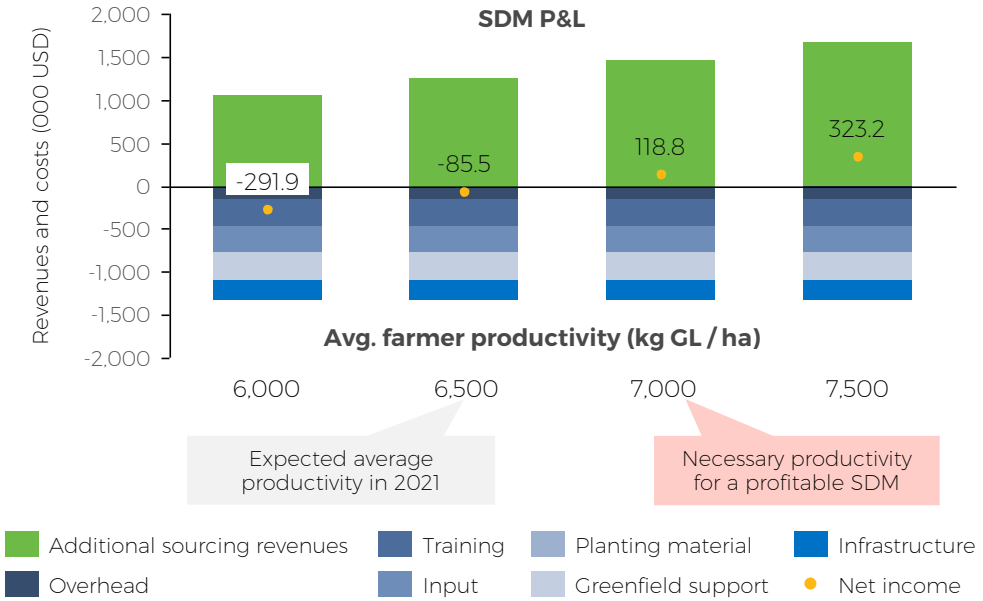
- Services are provided to farmers either at cost or free of charge; no margins are made
- In 2015 a large one-time investment has been the WUR baseline/impact assessment
- In 2016/17 farmer training and inputs ramped up
- So far the investments in greenfield support (USD400,000) have not provided a return as greenfield farmers are not yet producing
- Overhead (management salaries, office equipment, utilities etc.) and infrastructure (weighing sheds and chemical stores) remain relatively stable

Efficiency

- Scaling up from 238 farmers (2014) to around 1,521 brought down the cost per farmer to USD757, while total costs have actually gone up. Further potential for scale up is limited with only around 1,800 GL farmers in the region.

* SDM costs for 2018 are provisional (assuming 2017 costs) as discussions about the design of the next phase of the program are still ongoing.

To reach a financially profitable SDM, high tea yields are key



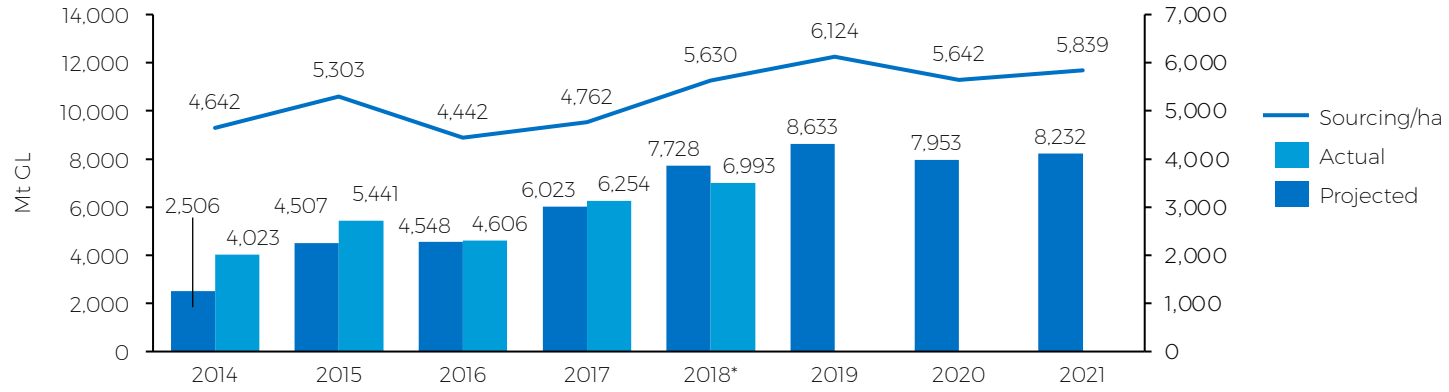
SDM sustainability

- The economic sustainability of the SDM is driven by increased tea productivity and quality.
- On the left, a graph is shown giving the SDM P&L for varying farmer productivity. As tea productivity increases (holding quality constant), so does the additional commercial revenue of the SDM.
- In 2021, farmers are projected to have an average productivity of 6,500 kg GL/ha (taking into account both brownfield and greenfield farmers). At this stage, the SDM still runs at a loss. Average productivity must be increased to 7,000 kg GL/ha to make the SDM financially profitable (which is currently projected to be reached in 2023). Alternatively, a further focus could be given to expanding the existing tea supplier base to reach the additional sourcing volumes necessary, although this will postpone the breakeven moment, since additional investments are then required.
- Next to increasing tea productivity UTT and IDH seek to improve efficiency of service delivery. Three models are being explored (see below table):

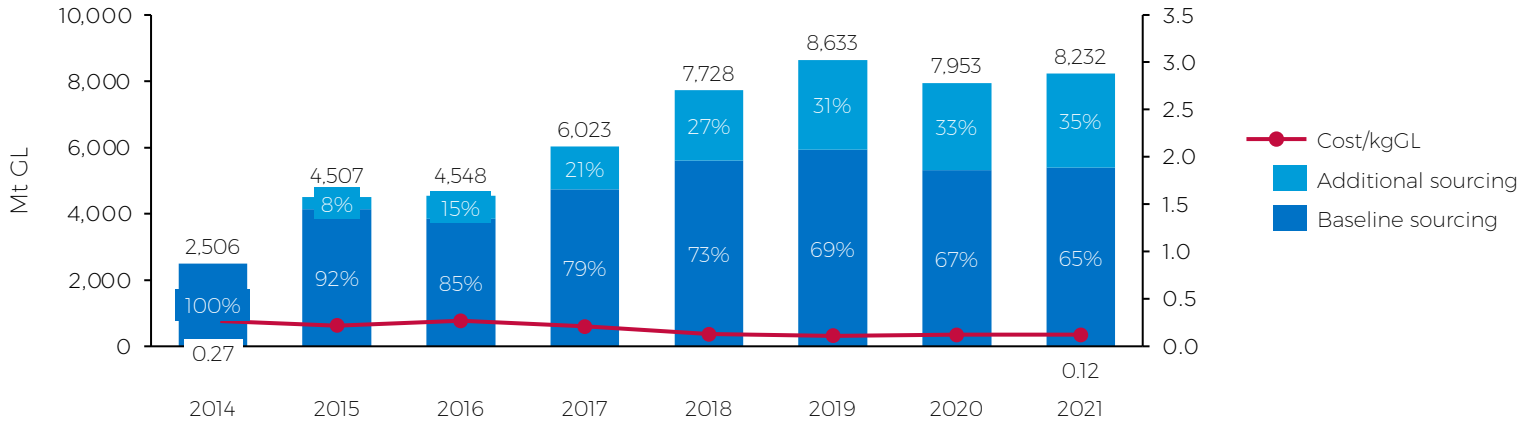
Structure	Revenue model	Additional investment	Challenge	Potential farm impact
Leaner, UTT managed	• Cost of service provision recouped through margins on larger sourcing volumes	• n/a	• Further increasing efficiency of field staff while maintaining quality of service delivery	• n/a
Dedicated service provider (SP)	• UTT: margins on sourcing • SP: margins on service provision	• Building presence of SP in the region • Training staff	• Offering services at competitive yet sustainable prices • Coordinating service delivery and sourcing between 2 parties	• Improved service quality at higher prices
Cooperatives as service provider	• UTT: margins on sourcing • Coop: margins on sourcing and service provision	• Capacity building	• Creating professional cooperatives with sufficient financial resources	• Greater control over service delivery

Brownfield sourcing volumes: actual & projected

Actual* and projected sourcing volumes in Mt GL**



Projected baseline and additional sourcing volumes



Sources: *total annual sourcing volumes reported by UTT operations team, figures for 2018 YTD converted using historic % of volumes brought in up to March; ** calculated based on number of farmers and their % of production volumes delivered to UTT

Additional revenues from increased Green Leaf uptake are key to the economic sustainability of the UTT SDM.

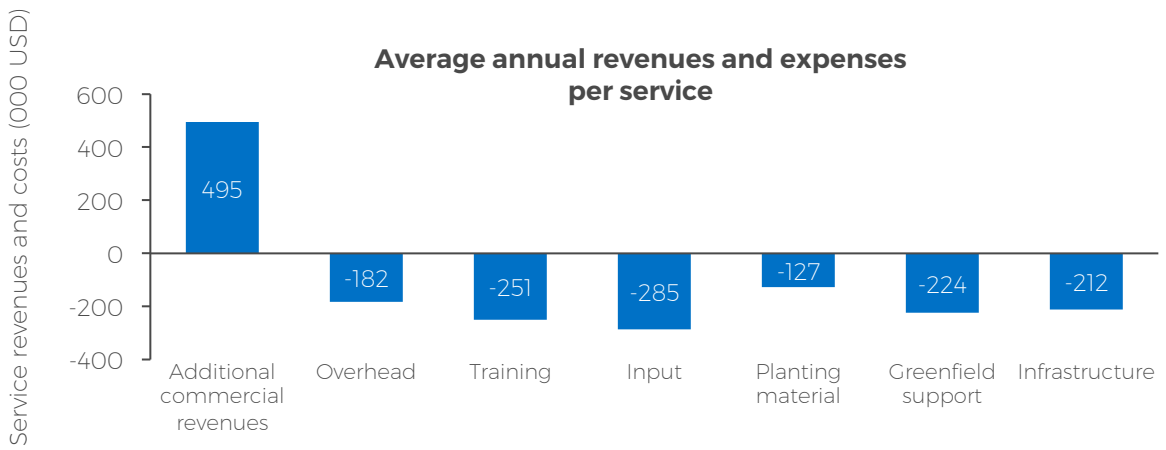
Actual and projected figures have been compared for the past years. Overall projections are accurate with a maximum 4% difference in years 2016-2018. Projections - based on farmer numbers - are lower in 2014-2015 as farmer numbers are relatively low compared to the reported amount of farmland in those years.

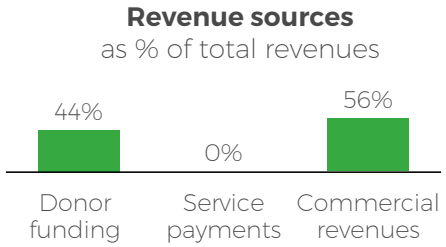
Starting from year 2014, additional sourcing revenues (from improved productivity starting from baseline in 2014) grow steadily to 35% of the total sourcing in year 2021. Without service provision GL sourcing would remain stable from 2018 onwards, at just below 6,000 Mt/year, while with service provision volumes are up ranging between 7,700 and 8,700 MT/year.

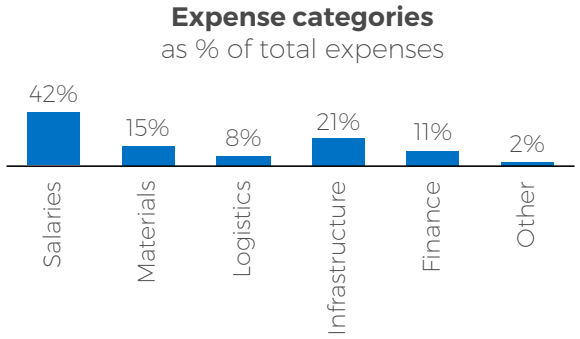
Total service costs per kg GL sourced decreases from 0.27 USD/kg in 2015 to 0.12 USD/kg in 2021.

Overview of total service revenues and costs

Annual averages in '000 USD during 2014 - 2021







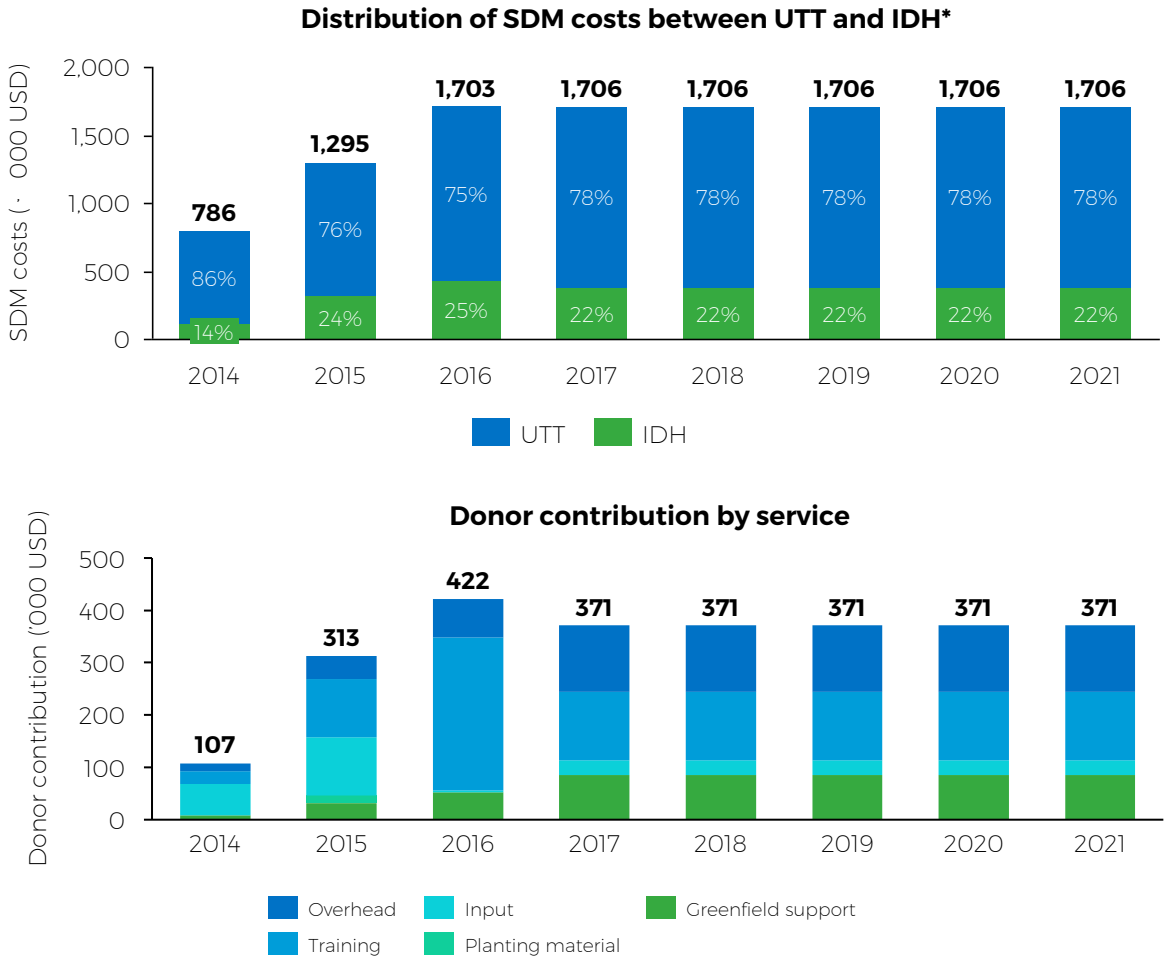
SDM sustainability

This SDM incurs losses on all of the services provided, recouping those costs through the additional commercial revenues from 1) increased sourcing per farmer, 2) increased number of farmers and 3) improved quality of tea delivered to factories.

On average total revenues from donors (44%) and commercial activities (56%) do not cover the costs.

Excluding the costs of sourcing, the main types of costs are staff salaries with 42% (management and field staff) and infrastructure costs with 21% (factories, nurseries, leaf sheds and chemical stores). Additionally, materials (inputs, planting materials) and finance (working capital interests and the cost of farmers defaulting) costs contribute 15% and 11% to total costs respectively.

SDM funding sources



* Donor contributions for 2018 are provisional (assuming 2017 distribution of costs) as discussions about the design of the next phase of the program are still ongoing.

Distribution of costs among actors

This SDM is a joint investment from UTT and IDH, where UTT bears around 78% of total costs.

Future investments of UTT and IDH have not been confirmed yet. These depend on the design of the next phase of service provision.

There are no other sources (current or envisioned) of donor funding.

Donor funding per service

IDH has mainly invested in baseline / impact assessment performed by WUR (2015), farmer training setup (FFS) and running costs (salaries, travel, accommodation of extension officers) and greenfield support.

In turn, UTT covers the costs of factory depreciation and infrastructure (initially for their own estates, but also employed to run this SDM). Although farmers pay for inputs and planting materials, some provision costs remain for UTT.

SDM KPIs for 2014-2021

Farmer Economics

Productivity change (Year-on year growth starting from baseline productivity; increase of average annual SDM farmer from average annual baseline)	**7% ; 50%**
Profitability change (Year-on year growth starting from baseline profitability; increase of average annual SDM farmer from average annual baseline)	**13% ; 100%**
Ratio of net income to poverty line* (SDM farmer ; baseline farmer)	**SDM: 4.3 Baseline: 2.1**
Ratio of net income to median country income (SDM farmer ; baseline farmer)	**SDM: 0.2 Baseline: 0.1**

These numbers are part of a pre-defined set of indicators which are calculated for SDM's across many countries and commodities. Compared to other SDMs, they can provide overarching insights into scale, efficiency, economic viability and corresponding best practises of SDM operation.

*Poverty line based on the World Bank international poverty line set at $1.90/day, adjusted for local purchase power parity (PPP) using the World Bank 2016 PPP conversion factor for private consumption

Sustainability

Average annual SDM net income	**-1,202,000 USD**
Average annual SDM net income, including donor funding	**-818,000 USD**
Average annual SDM net income, including donor funding and commercial revenues	**-323,000 USD**
Average annual SDM profit margin (from service payments)	**0%**
Percentage of costs recovered (from donor funding; from service revenues; from sourcing)	**31%; 0%; 38%**
Change in percentage of costs recovered (from donor funding; from service revenues; from sourcing)	**19%; 0%; 64%**
Breakeven commercial margin (baseline; SDM sourcing;150% sourcing)	**0.16% ; 0.03% ; 0.02%**
Average annual value creation at farm level: farmer net income created compared to baseline, per dollar invested in the SDM (excluding and including sourcing revenues)	**0.25 USD; 0.65 USD**

SDM KPIs for 2014-2021

Efficiency	
Average annual SDM expenses per farmer	**USD -1,183**
Average annual SDM net income per farmer	**USD -523**
Change in annual net loss per farmer (first to last year)	**-62%**
Annual net income per farmer (as % of value of total production)	**66%**
Annual net income per farmer (as % of value of total sourcing)	**33%**
Sourcing value in year 1 ('000)	**USD 1,300**
Change in sourcing value per farmer (compound annual growth rate)	**8%**
Annual SDM net income per MT sourced	**USD 615**
Change in sourcing efficiency (increase in SDM net income per MT sourced)	**21% increase in efficiency**
Loyalty rate (share of total farm production sold to case owner)	**100%**
Change in loyalty rate (first to last year)	**0%**
Adoption rate (share of farmers that implement services provided)	**100%**
Change in adoption rate (first to last year)	**0%**

Gender	
Segmentation based on gender?	**No**
Number of female farmers in the SDM	**378 (28%)**
Year-on-year growth rate of female farmers	**68%**
Percentage of female staff employed (in the SDM; in UTT)	**15% ; 45%**
Percentage of female staff in leadership positions (in the SDM; in UTT)	**0% ; 46%**
Year-on-year growth female staff in leadership positions (in the SDM; in UTT)	**n/a ; n/a***
Policy in place supporting women's empowerment?	**Yes**

These numbers are part of a pre-defined set of indicators which are calculated for SDM's across many countries and commodities. Compared to other SDMs, they can provide overarching insights into scale, efficiency, economic viability and corresponding best practises of SDM operation.

*Data available only for one year

Conclusions

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

In this section you will:

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

SDM General Introduction

Overview and Objectives of the SDM

Structure of the SDM

Services delivered within the SDM

Farm-level impact

Service entities

Financial analysis overall SDM

Conclusions

Reflection on SDM objectives

These results do not represent an official assessment of SDM success or failure by IDH or NewForesight. An indication is given based on the analysis done in this forward-looking study and assumptions provided by the SDM operator(s). Actual assessment should be done during and after the SDM, using measured data

SDM aims to…	Discussion
1 **Increase tea productivity and quality, and improve farmer livelihoods**	• With adequate support and given that farmers adopt practices, we estimate brownfield farmers are able to improve their productivities from 4,642 kgGL/ha to 7,730 kgGL/ha (67%) and incomes due to increased tea quality • The greenfield business case is less optimistic with farmers making a USD79 average annual net income over a 10-year horizon. Still, with the right repayment schedule developing new land can be profitable for UTT and farmers
2 **Expand tea smallholder supplier base – in number of farmers and hectares**	• Between 2014 and 2017 UTT has managed to successfully expand their supply base in terms of farmers (238 to 1,521) and hectares (540 to 1,314) • With the total number of tea farmers in Mufindi region at around 1,800, a promising way for UTT to further expand is by developing 1,300 ha of land that may be granted by the government in the near future
3 **Secure market and increase marketability of tea**	• UTT has been able to attract more farmers by introducing a bonus payment system rewarding higher quality tea, even with relatively stringent tea sourcing requirements. The percentage of tea produced by Mkonge cooperative that is sold to UTT grew from 42% in 2014 to 82% in 2018 • High quality and RA certified tea improves marketability. Branding tea as being produced by smallholders has not been a proven concept yet
4 **Strengthen farmer organizations**	• A study has been conducted to map and understand the strengths, weaknesses, opportunities and challenges of farmer organizations • No structural support has been provided to strengthen FOs in the region • Increased outreach, capacity building and incentives for FOs, next to stronger collaboration with government is recommended to further professionalize FOs

Reflection on SDM learning questions 1/2

1	What has been **the impact of the MoG** project at farm level in terms of productivity, quality, income, resilience and overall attractiveness of growing tea?	Brownfield farmers' productivities and incomes have increased with 55% and 196% respectively. Greenfield farmers make an average annual net income of only USD79/ha over a 10 year time horizon. Overall tea quality has improved, seen from the lower percentage of tea rejected (from 65% in 2016 to 58% in 2018). There is not enough evidence to indicate farmer resilience has improved. While incomes have increased, farmers' incomes have not been diversified much, nor do (climate) risk mitigating measures (irrigation, drought-resistant seeds seem to be applied nor readily available on the short-term.
2	**Which services in particular contribute to success** – i.e. create impact and are cost-effective?	Farmer training, inputs and planting materials, with the support of the extension staff have increased farmer productivity and quality. A service by service impact assessment is difficult to make as all services are interlinked. The bonus payment system introduced in 2015 has provided a strong incentive for farmers to sell to UTT and improve their quality as indicated by the percentage of tea produced by Mkonge cooperative that is sold to UTT growing from 42% in 2014 to 82% in 2018.
3	What affects the **adoption and loyalty** of tea farmers? How can these be improved?	Presence of UTT's extension officers in the field is key in maintaining good relationships with farmers and ensuring they apply good agricultural practices. The above average prices paid out to farmers meeting UTT's strict quality requirements improve loyalty rates over time while also attracting new farmers that see the benefits their neighbors experience.

Reflection on SDM learning questions 2/2

4	What is the **long-term sustainability** of the current SDM? How can this be improved?	Currently most service costs are recouped through additional commercial revenues. Becoming financially sustainable would require a further reduction of service costs by offloading those activities onto the supply chain (i.e. coops) or commercial service providers. For this to happen, the government, UTT and IDH should join their efforts: registration fees for coops have to be reduced, coops have to be trained and supported and be given the mandate and responsibility to provide services to farmers beyond their member base. At this moment (2018) it seems that greenfield support has been a large investment with significant risks involved, while not yet showing a clear return.
5	What is the impact of **professionalizing farmers and their organizations?**	FOs can potentially become independent service providers, servicing their own member and other farmers in the region. By offloading some of the service costs this could improve the SDM's efficiency. Currently, only the most professionalized coops are likely capable to provide such services successfully.
6	What comparisons can be made between **the ingrower and outgrower models?**	Compared to existing outgrowers, farmers being part of the 135 ha brownfield ingrower model will be receiving the same services, plus an additional charge for leasing the land from UTT. For the 1,300 ha of land to be developed by smallholder ingrowers, irrigation will be important in ensuring optimal productivities are obtained. The potential productivity of the land provided to farmers will be driving to what extent the farmer business case is comparable.
7	To what extent can **crop diversification** add value to farmers and UTT?	There are few benefits for UTT in supporting tea farmers to grow other crops, like potato and avocado. For farmers it can be interesting to diversify their crops to improve their cash flow and mitigate against price shocks and diversify their diets. Challenges for the two highest potential crops need to be overcome: farmers will require access to regular training to effectively manage potatoes, the regional production of avocados needs to be scaled up and linked to international markets to obtain good prices.

Innovation in the UTT SDM

Type of innovation	Bonus quality payments	Data collection	Diversification
Description	Since its introduction in 2015 UTT rewards farmers delivering higher quality with bonus payments on top of the farm-gate price set by TBT. Tea is graded (unacceptable, 1st, 2nd and 3rd quality band) after which the total price to be paid out is determined. While the strict (above average in the region) tea quality requirements set by UTT initially daunted farmers, farmers are now selling to UTT because they recognize the good prices and support that UTT provides for the high quality tea.	In 2015 UTT and IDH commissioned WUR to perform a baseline study about tea farmers in the region. Such rigorous studies, which can be followed up on over time to measure farm level impact of services provision and cost effectiveness of the program investments, are rarely seen. Additionally, the way UTT and IDH are measuring farmer adoption of practices is unique with respect to the level of detail, allowing granular insights and understanding of what drives adoption and resulting impact. In turn it informs the strategy of UTT and IDH (this being part of a wider data collection effort).	One way UTT and IDH seek to improve livelihoods is by supporting farmers in diversifying the portfolio of their crops. The region seems suitable for cultivation of potato and avocado. By bringing in other stakeholders into the SDM, farmers could benefit from access to GAP training, inputs and markets for those crops, eventually leading to improved incomes.

Conclusions: key drivers for success and key risks

Key drivers of success

- **The quality bonus payments**, coupled with training on good agricultural practices and strict (and above average) quality requirements **attract farmers to the SDM and improve loyalty rates**. Farmers see the added value of the training and input investments while being sensitive to the higher prices paid out.
- Different from many other SDMs, the **service provision and commercial activities are closely integrated** ensuring internal alignment between activities. Sourcing is an important revenues driver covering more than 30% of SDM costs on an annual basis.
- This SDM benefits from UTT managing their own plantations in the area as well, allowing UTT to **use some of their resources more efficiently** (e.g. factories, transport, nurseries). Also the expertise gained on the plantation can be easily transferred to the smallholder program.

Key risks

- **The MOG is relying to a large extent on donor funding.** Key activities that have been invested in and are now in place could cease to continue in case funding dries up. This has been the case for farmer managed nurseries that were left unattended when no financing was available anymore.
- Thought has been given to the continuation of specific services if donor funding ceases. The general plan for UTT is to retain a lean service structure, and hand over other service delivery to sufficiently capable coops. The success of this is to a large extent dependent on the profitability of tea farming, determined by high yields.
- While scale is often a key driver and sometimes even a prerequisite to reach breakeven, **the number of farmers in Mufindi region is limited** at 1,800 (THSDA estimate 2016). The SDM focuses on improving productivity and increasing the average tea area per farmer to mitigate this risk.
- The planned greenfield ingrower model demands a **large investment requiring long-term commitment of farmers to invest in and later supply to UTT**. In case this relationship is not managed and contracted well, UTT and/or farmers could incur significant losses. Another risk to the ingrower model is **the large investment in irrigation** required to obtain maximum potential productivities. To mitigate that risk UTT and IDH are first piloting a smaller scale brownfield ingrower model to be able to apply those lessons learned on a larger scale.

Lessons learned during the study exercise

Opportunities for improvement

- **Further strengthening the relationships with farmers can further improve farmer adoption and loyalty**, through more frequent communication and increased exposure to the extension team.
- **In order to diversify farmer incomes and crops grown in the region (potato, avocado), different service providers and/or buyers need to be drawn into the SDM.** These should be brought in to provide support in developing adequate training curricula, as well as linking the region to international markets ensuring steady offtake and higher prices.
- While data collection is already a key focus area of the program, **further automatization can improve efficiency**, allows reaching more remote farmers, and will provide more up to date insights on farmer economics and behavior.
- With independent farmer organizations (especially Mkonge cooperative) capable of providing services to farmers being a promising exit strategy, the program would benefit from increasing investments in aligning with governments and other capacity builders **to strengthen FOs' management, financial, marketing and organizations skills.**

Key factors in replication of the model

- **UTT and IDH have invested heavily in collecting high quality data.** For example, they have commissioned a study to WUR to assess the baseline and SDM farmer economics to understand how service delivery contributes to the impact at farm level over time. Also the field staff is gathering detailed information about adoption of practices and the effect on productivities. Continuing these efforts will allow UTT and IDH to continuously improve the model based on fact-based insights.
- **Increasing productivity to breakeven levels while transferring services provision to well-established cooperatives** (or an independent service provider operating in the region), **would be an exit strategy that can be applied to other regions as well.** Measures still to be taken include:
  - Increased and continuous investment in capacity building of and sharing best practices between existing farmer organizations.
  - Implementation of farmer organization graduation model and incentive structure (e.g. linked to bonus payments) rewarding scale, quality and service provision.
  - Reduced financial and administrative barriers to set up cooperatives.

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Standard glossary (1/2)

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

Standard glossary (2/2)

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