

Exploring the implementation of an Inclusive Short Food Supply Chain

A case study of how to successfully link small-scale farmers to the local business sector in Kenya



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Abstract

Title	Exploring the implementation of an Inclusive Short Food Supply Chain
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Collaborators	Kenya Organic Agricultural Network (KOAN), Swedish Society for Nature Conservation (SSNC) and Swedish International Development Cooperation Agency (Sida)
Background	Developing and strengthening the agricultural sector is an important tool for reducing poverty, hunger and inequalities in developing economies. Successful linkages between small-scale farmers and the business sector through supply chains and business models are necessary to bridge the current gap between them and create mutually beneficial partnerships within the modern food industry. The concepts of Short Food Supply Chains and Inclusive Business Models have been developed to address different aspects of these issues, but few practical examples have been made as to how these could be combined and implemented in a developing context. This study attempts at exploring this through a single case study of a project in Kenya run by KOAN and financed by SSNC.
Purpose	Explore how to successfully link small-scale farmers to the local business sector in a developing economy by applying the concepts of Inclusive Business Models and Short Food Supply Chains.
Research questions	<p>RQ1. What factors in the external environment hinder or enable the successful linking of small-scale farmers to actors in the local business sector in a developing economy?</p> <p>RQ2. What internal capabilities and resources are needed for the successful linking of small-scale farmers to actors in the local business sector in a developing economy?</p> <p>RQ3. How can success be achieved when linking small-scale farmers to the actors in the local business sector in a developing economy?</p>
Methodology	Single, embedded case study.
Findings	The study found that the volatile environment that characterises a developing economy, where a lack of trust in business and society at large is prominent, demands a strong intermediary organisation in the link between farmers and business sector. The study results in the introduction of a new concept called Inclusive Short Food Supply Chains and the suggestion of 10 necessary building blocks for the successful implementation of the concept in a developing context.
Key words	Short Food Supply Chains, Inclusive Business Models, developing economies, food industry, Inclusive Short Food Supply Chains

Sammanfattning

Titel	Undersökning av hur en inkluderande kort försörjningskedja bör implementeras
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Samarbetspartners	Kenya Organic Agricultural Network (KOAN), Naturskyddsföreningen och Sida
Bakgrund	Att utveckla och stärka jordbrukssektorn är ett viktigt verktyg för att bekämpa fattigdom, hunger och ojämlikhet i utvecklingsländer. Framgångsrika sammanlänknings av småskaliga bönder och lokala företag genom försörjningskedjor och affärsmodeller är nödvändigt för att överbrygga det rådande gapet dem emellan och därmed nå gemensamt gynnsamma samarbeten inom den moderna livsmedelsindustrin. Koncepten Korta Försörjningskedjor samt Inkluderande Affärsmodeller har utvecklats för att adressera just de frågorna, men få praktiska exempel på hur dessa kan kombineras och implementeras i utvecklingsländer har lagts fram. Denna studie utforskar just detta genom en fallstudie av ett projekt som drivs av KOAN och finansieras av Naturskyddsföreningen i Kenya.
Syfte	Utforska hur småskaliga bönder och lokala företag i ett utvecklingsland framgångsrikt kan sammanlänkas genom att applicera koncepten Inkluderande Affärsmodeller och Korta Försörjningskedjor.
Forskningsfrågor	<p>RQ1. Vilka faktorer i den omgivande miljön hindrar eller möjliggör för framgången i sammanlänkningen mellan småskaliga bönder och lokala företag i en utvecklingsekonomi?</p> <p>RQ2. Vilka interna förmågor och tillgångar behövs för framgången i sammanlänkningen mellan småskaliga bönder och lokala företag i en utvecklingsekonomi?</p> <p>RQ3. Hur kan framgång uppnås i sammanlänkningen mellan småskaliga bönder och lokala företag i en utvecklingsekonomi?</p>
Metod	Singel, inbäddad fallstudie.
Slutsatser	Studien kom fram till att den oberäkneliga miljön som karakteriserar ett utvecklingsland, där avsaknaden av tillit i affärer och samhället i stort är markant, kräver en stark mellanhand som länkar samman bönder med de lokala företagen. Studien introducerade ett nytt koncept kallat Inkluderande Korta Försörjningskedjor samt ett förslag på 10 byggstenar som behövs för en framgångsrik implementering i livsmedelsindustrin i utvecklingsländer.
Nyckelord	Korta försörjningskedjor, inkluderande affärsmodeller, utvecklingsländer, livsmedelsindustrin

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Abbreviations

3PL - Third Party Logistics

BM - Business Model

BMC - Business Model Canvas

BS - Business Strategy

CF - Contract Farming

CF is an institutional measure where contracts are used by the actors in the food supply chain in order to ensure the right quality and volumes of raw materials for actors down-stream. Smallholder farmers can be more integrated into the value chain as they are provided with inputs, technical assistance and access to markets.

CSP - Case Study Protocol

DRM - Design Research Methodology

FH - Food Hub

A FH is an intermediary organisation or business which works as the supply chain manager and provides a logistical and organisational platform for the aggregation and distribution of source-identified food products from local and regional producers to both wholesale buyers and end consumers.

GMO - Genetically Modified Organism

IBM - Inclusive Business Model

An IBM can be defined as a business model that do not leave behind small-scale farmers, and in which the needs of actors in developing countries are recognised.

ICS - Internal Control System

ISFSC - Inclusive Short Food Supply Chain

A food supply chain with few intermediary steps which creates a mutually beneficial linkage between small-scale farmers and local business sectors in a developing economy

JIT - Just-In-Time

KOAN - Kenya Organic Agriculture Network

KOAN is a non-profit organisation with a mission to lead, coordinate and create public exposure of the national organic sector in Kenya and promote its contribution to economic, environmental and social benefits.

LSP - Logistics Service Provider

MRP - Materials Requirement Planning

NGO - Non-Governmental Organisation

PGS - Participatory Guarantee System

PGS is a form of quality assuring certification system which is created and upheld by the farmers and consumers it serves. It does not require a third-party certifying partner but focus on high levels of trust and knowledge exchange within the network.

SFSC - Short Food Supply Chain

A food supply chain that includes none or few intermediary steps between the producers of food and the consumers of it, thus creating a shorter distance and closer relationship between the actors in the chain. Furthermore, a SFSC is typically committed to sustainability, cooperation and economic development of the communities it serves.

Sida - Swedish International Development Cooperation Agency

SME - Small or Medium-sized Enterprise

SSNC - Swedish Society for Nature Conservation (Naturskyddsföreningen)

SSNC is a non-profit organisation that works for environmental sustainability both in Sweden and abroad.

TCO - Total Cost of Ownership

1 Introduction

This chapter goes through the background, purpose, scope and delimitations of the thesis, as well as presenting the research questions for the study. In addition to this, the liabilities towards the collaborators of the thesis, as well as the structure of the report are covered.

1.1 Background

1.1.1 The global food system

The food industry is the system of industrial activities used to process, convert, prepare, preserve and package food produce (Malagie et. al., 2019). This system has undergone a rapid modernisation during the 20th century, driven by changes in consumer preferences and purchasing power as well as increased urbanisation. Large investments in the food industry, especially within developing economies, have increased the degrees of industrialisation leading to longer supply chains and a standardised mass production system focused on processing, reliability, food safety and low prices, with few but powerful actors in each step of the value chain (Renting et. al., 2003; Vorley et. al., 2008; FAO, 2017b). These changes offer both challenges and opportunities for the different stakeholders within the food supply chain (Vorley et. al., 2008), and one major problem is that the structure and logic of these supply chains cause unsustainability in the industry, where the opportunities do not reach the small-scale producers at the bottom of the pyramid (Marsden et. al., 1999).

As a response to these industrialising changes, Short Food Supply Chains (SFSC) that minimise the number of intermediaries from farm to table, has gained momentum, both in business and research. By creating a closer relationship between the different stakeholders, as well as creating a shorter and less complex supply chain, the SFSC offers the opportunity to increase transparency and traceability for the involved actors while at the same time contributing to economic and social sustainability of the agricultural sector and rural communities (Renting et. al., 2003). However, these types of food supply chains have mainly been researched in a developed economic context, where the purchasing power of the consumers is higher. Little research has been made on how these types of supply chains could be used in a developing context.

The Global Sustainability Goals explicitly state the need to reduce food insecurity, minimise poverty and create a sustainable agricultural sector, which is especially crucial in the developing economies. These goals are highly connected to the food industry, in particular the local one. In developing economies the degree of smallholder participants in the agricultural supply chain is higher than in developed economies. These small-scale farmers, who often have limited access to information, productive assets and knowledge, have a hard time to keep up with the market changes which increases the risk of failure following a drastic change in the food industry landscape (Orr et al, 2018). The larger industrialised suppliers have the upper hand in terms of knowledge, quantity and quality of supply and infrastructure and are thus better fit for competing in the industrialised system than the small-scale producers. In an attempt to address these particular issues, policy makers and researchers have developed the concept of Inclusive Business Models (IBM). The inclusiveness within the business model refers to its ability to not leave behind the smallholder suppliers in rural areas in developing countries, and to recognise their voices and needs in the pursuit of capturing business value (Vorley et. al., 2008). This concept addresses the business and policy aspects of the agricultural sector with an expressed objective of linking farmers to the local business sector, but the current research falls short of providing implementation ready solutions in a developing economy.

1.1.2 Small-scale agriculture in Kenya

In Kenya, 3 out of 4 people are relying on agriculture for an income, and it is one of the biggest sectors in the country's economy (Central Intelligence Agency, 2019). Nevertheless, the conditions for farming are not optimal in the unreliable and volatile climate the country is subject to, and the connections between the farmers and the formal markets are often lacking. A majority of the farming in Kenya is small-scale (MoALF, 2017), and the previously mentioned obstacles for small-scale farmers to participate in the industrialised system are highly relevant in this context. Many non-governmental organisations (NGOs) and international organisations are involved in assisting these small-scale farmers, who don't have the means or resources themselves, to develop the farming industry in the country (Naturskyddsöreningen, 2019). In the past decades organic farming has also gained more momentum in Kenya and a growing demand for organically produced food among consumers has been observed (Bett and Kiarri, 2019).

Working in the intersection between organic production and small-scale farming is the local organisation called Kenya Organic Agriculture Network (KOAN). KOAN is an NGO with a mission to lead, coordinate and create public exposure of the national organic sector in Kenya and promote its contribution to economic, environmental and social benefits. KOAN is furthermore the official coordinator of the organic certification in the country, where they offer support and conduct auditing of the farmers as well as provide organic labelling. Their network consists of 200 000 members, including farmers and NGOs as well as exporters and traders, which gives them a broad reach in the country (KOAN, 2019). KOAN initiated a new project in the last quarter of 2018 focused on creating market opportunities for small-scale farmers, as part of a greater effort to support organic farmers in Kenya. This particular project, in this report referred to as the Collection Center Project, is financed by The Swedish Society for Nature Conservation (SSNC) with funds from the Swedish International Development Cooperation Agency (Sida) for supporting civil society organisations in low- and middle income countries. SSNC is a Swedish NGO that works for sustainability in different contexts, where one of them is focused on sustainable agriculture and organic farming. They carry out this cause by supporting different organisations related to organic farming. SSNC finances the three year supply chain project, while KOAN has the operational and executive responsibility for it.

The Collection Center Project was initiated with background in the prevailing obstacles for small-scale farmers in Kenya and KOAN's mission of leading, coordinating and exposing the organic sector in the country. KOAN identified the need to organise the supply chains connecting their farmers with the local business sector in Nairobi in a more systematic way in order to facilitate long-term business relationships. Through coordinating the use of storage facilities for farmers, called collection centers, KOAN hopes that the Collection Center Project will strengthen the individual small-scale farmers and create a robust business and logistics linkage to the final marketplace. Furthermore, KOAN wishes to create a replicable model for a food supply chain which can be used to benefit more smallholder farmers in Kenya. So far the project is still in a planning and implementation phase and many challenges with respect to the configuration of the supply chain and division of responsibilities, remain unsolved.

1.2 Problem formulation

There is a gap between small-scale farmers and the local business sectors in the food industry. A marketing paradox occurs where, while downstream actors often complain about inadequate supply, the producers at the bottom of the pyramid complain about lack of access to a reliable market (Shepherd, 2007). Specifically within developing economies where agriculture often play an important role in the livelihood of rural communities, developing and strengthening the

agricultural sector is an important tool for reducing poverty, hunger and inequalities as stated in the Global Development Goals. Thus, successful linkages between small-scale farmers and the business sector through supply chains and business models are necessary to bridge this gap within modern food supply systems (Shepherd, 2007; Berdegué et. al., 2008; Vorley et. al., 2008). Yet, such a linkage must overcome many challenges in order to succeed in becoming sustainable and inclusive of all actors. These challenges are often related to the lack of knowledge and experience amongst the small-scale farmers, the growing distance between the producers of food and consumers (EIP-AGRI, 2015; Renting et. al., 2003; Todorovic et. al., 2018; Kneafsey et. al., 2013), as well as the often volatile environment in the developing economies (Devaux et. al., 2018; Vorley et. al., 2008). The linkages must therefore make use of the opportunities in the external environment and the strengths within the organisation in order to counteract the threats and weaknesses facing the organisation. The concepts of Short Food Supply Chains and Inclusive Business Models have been developed to address different aspects of these issues. As illustrated in Figure 1, these food supply chains should, when combining theory on Inclusive Business Models and Short Food Supply Chains alike, consist of an intermediary organisation linking trained and organised farmers to the actors in the receptive business sector (Berdegué et. al., 2008). This intermediary organisation, in theory referred to as a partnership facilitating organisation, is necessary to successfully create a mutually beneficial linkage between farmers and buyers. Though theory emphasises that the intermediary organisation is dependent on facilitating public policies in the external environment, it provides little exemplification of what specific characteristics in a developing economy that affects the implementation of the supply chain. Furthermore, theory is divergent when it comes to stating how these types of supply chains should be organised and presents few tangible examples of successful implementations. Theory does however present a number of capabilities and resources that are typically missing in the organisations, but yet again few practical examples have been made as to how these findings could be combined and implemented in a developing context in order for the supply chains to become successful (EIP-AGRI, 2015; Renting et. al., 2003; Todorovic et. al., 2018; Kneafsey et. al., 2013; Vorley et. al., 2008).

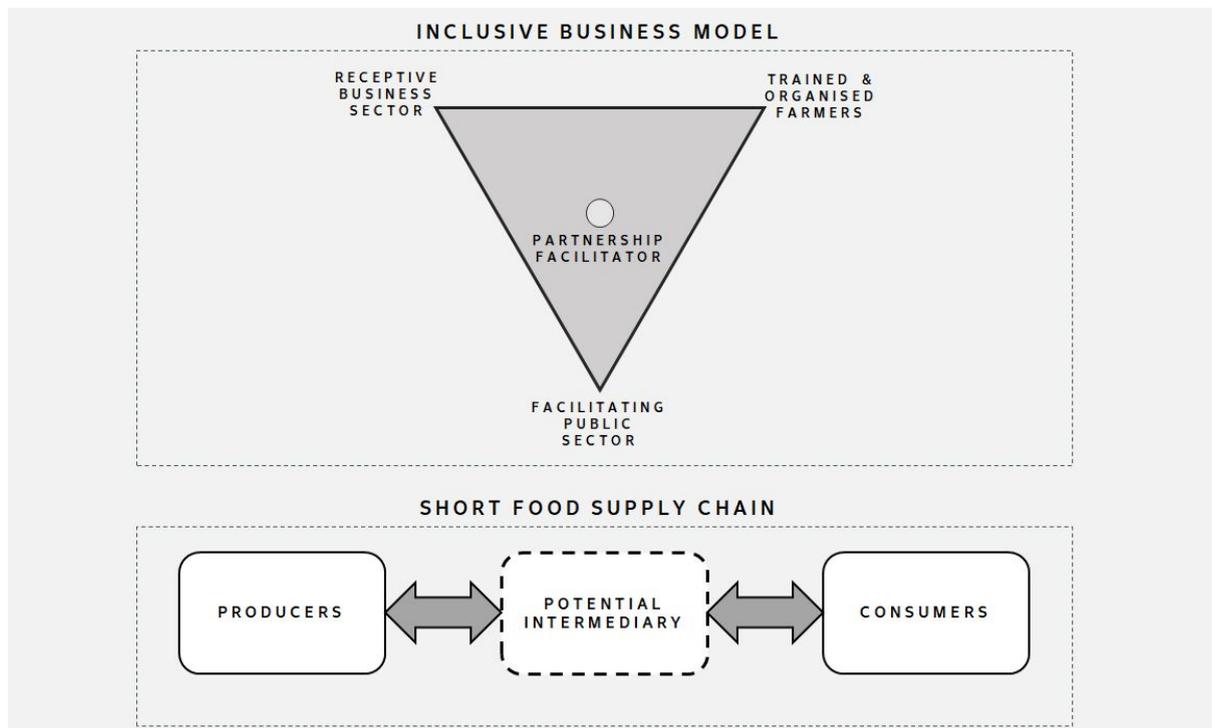


Figure 1. The concepts of Short Food Supply Chains and Inclusive Business Models. Adapted from Todorovic et. al. (2018) and Berdegué et. al. (2008).

1.3 Purpose

The purpose of the thesis is to explore how to successfully link small-scale farmers to the actors in the local business sector in a developing economy by applying the concepts of Inclusive Business Models and Short Food Supply Chains.

1.4 Research Questions

The following three research questions have been posed in order to guide the researchers throughout the study in their aim to fulfill the purpose of this master thesis;

- RQ1. What factors in the external environment hinder or enable the successful linking of small-scale farmers to the actors in the local business sector in a developing economy?
- RQ2. What internal capabilities and resources are needed for the successful linking of small-scale farmers to the actors in the local business sector in a developing economy?
- RQ3. How can success be achieved when linking small-scale farmers to the actors in the local business sector in a developing economy?

1.5 Scope and delimitations

The focus of the study is Inclusive Business Models (IBM) and Short Food Supply Chains (SFSC). Thus, the scope includes the organisation of food supply chains in rural areas in developing economies. The thesis looks at how to achieve success, in terms of succeeding in becoming sustainable and inclusive, in the logistics and business models from small-scale farmers to stakeholders within the local business sector. Inbound supply for the farmers is excluded from the scope as well as the final consumers of the food products. The thesis is centered around a single case study of the Collection Center Project lead by KOAN and is part of a larger initiative funded by SSNC. Due to the characteristics of the project, the scope is limited to the implementation phase of the supply chain. Thus, the researchers will not attempt to analyse future phases in the progression of the project. The focus of the case study is the successful solution of the business model and the logistics for the actors in the food supply chain from an operational perspective, therefore it does not consider or evaluate KOAN as an organisation nor the support from SSNC.

1.6 Target audience

This study is financed with a scholarship by the Sida initiative called Minor Field Studies. The main target audience, aside from the academic audience at Lund University, is KOAN and SSNC who act as collaborators in the study. For the collaborators the thesis should provide insights into the performance of the Collection Center Project, and assist in identifying improvement potential in the operational implementation. For academia, the thesis offers a valuable opportunity to apply the theoretical findings from the research on SFSCs and IBMs in a real-life, complex context and provide new insights into how these two concepts are interlinked. The results may also be interesting to other organisations focusing on market opportunities for small-scale farmers in developing countries.

1.7 Structure of report

This report is initiated with an extensive *Literature Review* focused on general theory on Supply Chains & Logistics and Business Models as well as applied theory in Short Food Supply Chains and Inclusive Business Models. The literature review ends in the introduction of a new concept called Inclusive Short Food Supply Chains (ISFSC) as well as an investigation framework connecting the research questions with the theory, which consequently guides the rest of the report. This is then followed by a coverage of the *Methodology* for the case study, which describes the methods and procedures used by the authors for gathering and analysing data to answer the posed research questions. Thereafter the collected data in the case study is presented in the chapter called *Case description - the ISFSC in the Collection Center Project*. Following this is the chapter which presents the analysis of the case called *Evaluation of the ISFSC in the Collection Center Project* which continues in the chapter *Achieving a successful Inclusive Short Food Supply Chain in the Collection Center Project*, where recommendations for the collaborators and their feedback to those recommendations are presented. The findings from the case study are further discussed in relation to the theory from the literature review in the discussion chapter named *Success factors for the implementation of an Inclusive Short Food Supply Chain*. This chapter ends in the introduction of a number of building blocks necessary for the implementation of the new concept in a developing economy. Finally the *Conclusions* and answers to the research questions are presented. A number of Appendices can be found at the end of the report, covering detailed data about the case, an interview guide and contact information to the collaborators.

2 Literature review

This chapter covers the relevant theory on the topics relevant to the case study. First, general concepts in the field of logistics and supply chains are covered, followed by a review of the more applied supply chain concept of Short Food Supply Chains. The chapter is continued with theory on Business Models at large, and in the applied context of the food industry in developing economies, i.e. Inclusive Business Models. The reviewed theory is then synthesised, leading to the introduction of a combined theoretical concept as well as an investigation framework which guides the continued report through the results and analysis chapters in order to answer the posed research questions.

2.1 Logistics & Supply Chains

2.1.1 Background & definition

Logistics at a general level concerns the efficient and effective management of material flows from producer to end-customer (Bjørnland et. al., 2003, p.12). However, many different definitions exist in the literature. The American Council of Logistics Management gave a more comprehensive definition in 1986; *“Logistics is the process of planning, implementing and controlling the efficient, effective flow and storage of raw materials, in-process inventory, finished goods, services, and related information from point of origin to point of consumption (including inbound, outbound, internal and external movements) for the purpose of conforming to customer requirements.”* This shows that logistics is not solemnly devoted to the transportation of goods to customers, as cheaply as possible, but rather concerns all types of movements within the supply chain, with the goal of meeting the customers demands. What is more important is that it includes the information flow in addition to the material and financial ones (Bjørnland et. al., 2003, pp.14-15).

Other definitions have added the strategic aspect of logistics management (Christopher and Towill, 2001), and one often speaks of logistics at a strategic, tactical and operational level within the company (Stevens, 1989). As markets have developed towards a surplus of supply and an increased competition among companies for customers, logistics and efficient supply chains have become an important competitive tool (Christopher and Towill, 2001; Stevens and Johnson, 2016). All through the second half of the 20th century and beginning of the 21st, the developed economies moved towards lowered economic growth and an increased global trade which has increased competition (Stevens and Johnson, 2016). Companies have therefore been forced to increase their market and customer orientation in order to differentiate themselves, which has required shorter product development time, increased market understanding, shorter lead times and flexible production, as well as fast deliveries, precision and reliability (Bjørnland et. al., 2003, pp.31-32).

As a consequence of these market changes, the logistics field changed as well. At the emergence of the field, logistics within companies focused on the steps in the supply chain in isolation, with a short planning horizon and a reactive approach. As the field evolved, this view moved towards functional integration where cost reductions were the center of attention and internal trade-offs had to be made. This then shifted from just cost, to a larger focus on customer service and internal efficiency in processes, putting logistics on a tactical level rather than just operational. The final stage of development involves the integration of external stakeholders, suppliers and customers, where logistics is the key to strategic differentiation and success in the market

(Stevens, 1989). In the latest years the focus has been on supply chain networks, logistics outsourcing as well as agility and sustainability (Stevens and Johnson, 2016).

2.1.2 Key logistics activities

According to Bjørnland et. al. (2003, pp.17-18) the main activities within the field of logistics are:

- Transport
- Warehousing and materials handling
- Order management and customer service
- Forecasting
- Production planning
- Purchasing

On a higher level these can be summarised into three main systems: inbound, production and outbound. These all contain material flows that need to be managed, and coordination is needed to synchronise the material with the information and financial flows, which are equally important aspects of the logistics system (Bjørnland et. al., 2003, pp.22-25).

Transport

Transport concerns the physical movement of goods throughout the supply chain. Transports affect the customer service, the quality of the product and the price of it (Bjørnland et. al., 2003, p.127). Therefore quality of transports are measured both in *efficiency*, i.e. minimisation of costs, and *effectiveness*, i.e. the service aspects of the transport (Bowersox et. al., 2010, p.23). When talking of efficiency in transportation the terms “economies of scale” and “economies of distance” are frequent. These are relevant as transports incur a multitude of overhead and fixed costs, which should ideally be distributed over larger volumes (scale) and longer distances (Bowersox et. al., 2010, p.194).

One of the main concerns in transportation is the choice of transport mode. There are four modes of transport relevant in normal business conditions; air, sea, rail and road. The choice between them basically depends on the value of the product shipped, the desired delivery speed, the size of the shipment and the shipment distance. Combining transport modes, so called Intermodal Transportation, is a common way of utilising the benefits of multiple transport modes (Olhager, 2019, pp.205-211), and a way of improving the sustainability of transports by for example using rail transport in combination with last-mile transport by road (Bjørnland et. al., 2003, pp.141-142). Infrastructure is another important concern in transports, as they enable or hinder the usage of different transport modes. Access to, and quality of, infrastructure is an important decision factor in logistics (Olhager, 2019, pp.205-211).

Warehousing and materials handling

Warehousing concerns the storage of products throughout the supply chain while materials handling concerns the movement of the goods internally as well as the packaging of them. For this, decisions such as warehouse locations and sizes, layouts and storage policies, safety stock levels and service levels, order volumes and choices of storage and handling equipment, have to be made (Bjørnland et. al., 2003, p.17). The activities included in the warehousing and materials handling process are: receiving, put-away, storage, picking, packing and shipping (Bartholdi and Hackman, 2019, pp.23-24), see Figure 2.



Figure 2. The warehousing and materials handling process. Adapted from Bartholdi and Hackman (2019, p.24).

It is a commonly accepted fact in distribution and warehousing that having as few storage locations as possible in a distribution system is more profitable. This stems from the fact that the costs of operating a warehousing and keeping products in stock outweigh the lowered service and transport costs that a higher number of storage locations offer, see Figure 3. Practical examples have also shown that the customers experience an equally good or even better logistics service with fewer storage locations compared to more. This can be explained by those fewer warehouses getting larger budget cuts, due to less competition, and becoming more skilled and specialised (Bjørnland et. al., 2003, pp.97-99).

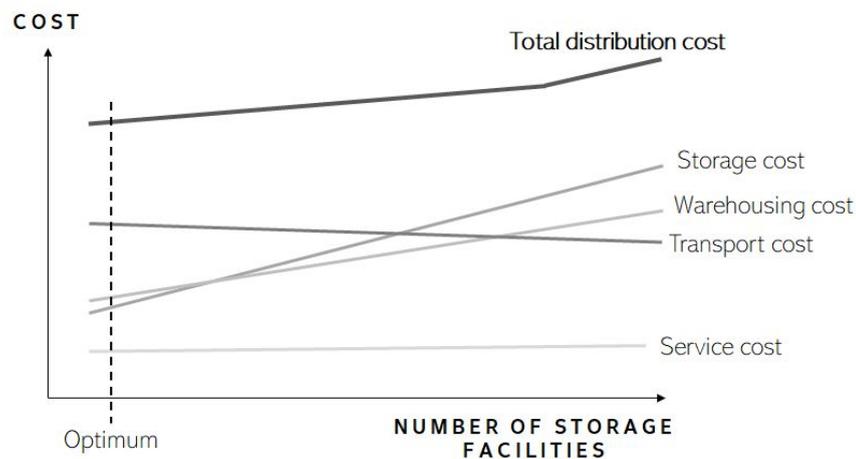


Figure 3. Model for distribution costs in relation to the number of storage facilities. Adapted from Bjørnland et. al. (2003, p.98).

Order management and customer service

Order management and customer services concern the receipt of customer orders, order handling and delivery. This concerns both the internal management of these activities but also the communication of, for example, inventory levels and delivery dates to the customers (Bjørnland et. al., 2003, p.17). Therefore, this topic is strongly connected to information management, and the usage of IT-systems to achieve efficiency is very common nowadays.

Forecasting

Forecasting is defined as systematic methods of predicting future events or states. It is needed in logistics to plan for capacity needs in storage, production and transportation. The forecast is used together with other information and data to create plans that form the foundation for decision making. In logistics these decisions relate at large to capacity planning. Forecasting for capacity planning is not just based on demand in the market but also on internal analysis of production and purchasing needs to fulfil that demand. Forecasting can be done both qualitatively, which is most often the case for long-term, strategic planning, and quantitatively which is more commonly used in short-term planning and is based on historical data (Bjørnland et. al., 2003, pp.186-192).

Production planning

The production process is the transformation of input materials through the use of resources into a product, which results in an enhancement of value (Bjørnland et. al., 2003, pp.216-217), see Figure 4. Typically, one divides production systems into *Pull systems* and *Push systems*, where the common differentiation is made between making-to-order (Pull) or making-to-stock (Push). A more scientific differentiation is that Pull systems are production systems that put a limit to the work-in-progress in the manufacturing process, while Push are those systems that do not (Spearman and Zazanis, 1992). This means that Push systems will continuously initiate new production orders, and let them wait in a queue or stock until there is free capacity, while a Pull system will only initiate a new production order once another one has finished, thus minimising the need for in-process storage and waiting. Push systems, such as Materials Requirement Planning (MRP), are the traditional systems of mass production that were developed during the mid 20th century. These types of systems have in more recent years been criticised as inefficient, complicated and expensive (Bjørnland et. al., 2003, p.224).

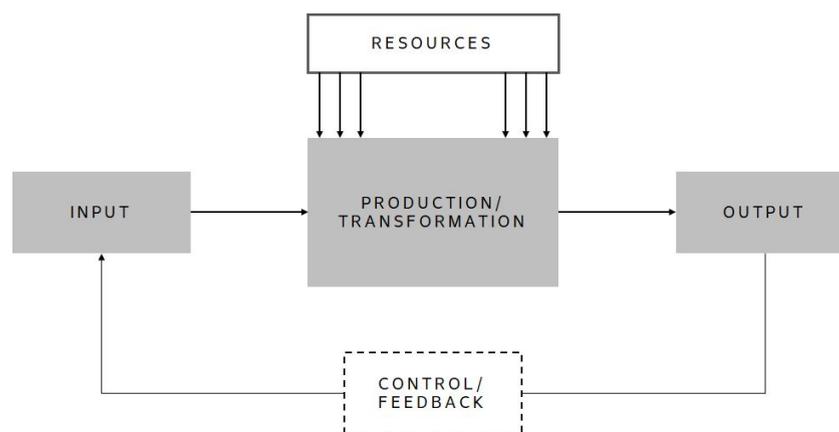


Figure 4. The general production process. Adapted from Bjørnland et. al. (2003, p.217).

Related to Pull and Push, are the concepts of *Lean* and *Agile* production or operations. Agile systems focus on flexibility in all processes of the company in order to increase customer service and handle market volatility (Christopher and Towill, 2001). Lean instead focuses on minimising waste in all aspects of operations, but especially in production, by reducing variability and buffering and working with continuous improvements. The original Lean system is the Toyota Production System, often also referred to as Just-in-time (JIT) production (Bjørnland et. al., 2003, p.242). These types of systems are typically more suitable for situations where demand is stable, as opposed to the agile ones that are developed to handle more uncertainty (Christopher and Towill, 2001).

Purchasing

Purchasing is the internal process for securing supply within a company. The definition varies, but according to van Weele (2014) purchasing is “*The management of the company’s external resources in such a way that the supply of all goods, services, capabilities and knowledge which are necessary for running, maintaining and managing the company’s primary and support activities is secured under the most favourable conditions.*” Thus, the purchasing process does not just concern raw and input material but also core and supporting services (van Weele, 2014, p.3). The process includes defining needs, selecting suppliers, specifying payment routines, creating contracts and orders as well as monitoring and evaluating of the process (Bjørnland et. al., 2003, pp.250-251).

2.1.3 Intermediaries in distribution and logistics

Intermediaries are specialised actors who have developed competence in specific areas of the logistics field such as: building assortments for certain customer segments, warehousing, distribution, customs handling, international trade etc (Bjørnland et. al., 2003, p.96). According to Bjørnland et. al. (2003, p.96), intermediaries are needed in the distribution when the supply chain; is widely geographically dispersed; needs frequent and/or fast deliveries to customers; needs a wide product assortment; contains standardised products; or needs storage close to customers.

Since the end of the 20th century the market for logistic operations intermediaries has been growing (Bjørnland et. al., 2003, p.96). These types of intermediaries are called Logistics Service Providers (LSP), and refer to companies that are solely dedicated to performing different types of logistics activities for other companies (Martikainen et. al., 2014). The span of activities provided by LSPs varies, but one type of LSP that has been generating traction is Third Party Logistics (3PL). The 3PLs take on a more holistic responsibility for the logistics of a company and performs planning, administration and execution of all or most logistics activities (Bjørnland et. al., 2003, pp.106-114). The logic of this distribution model can be viewed in Figure 5. These types of LSPs have mainly been relevant for larger, and often global corporations, and the adoption among small or medium-sized enterprises (SME) has been lacking. This can partly be accredited to the weaker negotiation position of an SME (Martikainen et. al., 2014).

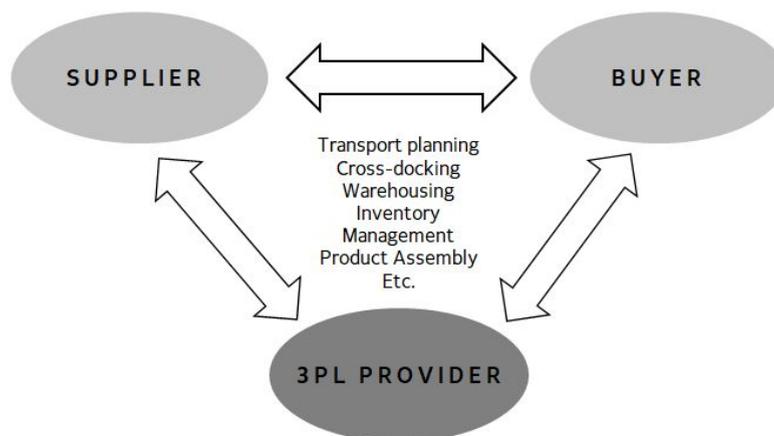


Figure 5. Schematic over supply chain including third party logistics (3PL). Adapted from Eriksson (2019).

The decision to use an LSP for some or all logistics activities in a company has to be made based on weighing the potential gains against the potential risks. In some supply chains it might be more motivated for the company itself to run the distribution and thus deliver directly to the customer (Bjørnland et. al., 2003, p.96). This, according to Bjørnland et. al. (2003, p.96), is the case when:

- Using a Pull production system, thus no intermediary storage is needed
- The products are perishable
- The products are under development and therefore connected to a lot of risk
- There is a small number of customers
- The value of a customer order is very high and the intermediary cannot enjoy economies of scale
- There is a substantial need for technical services

2.1.4 Pricing strategies

Selecting an appropriate pricing strategy is an important aspect in Supply Chain Management. The price should be determined based on both internal and external factors, where the internal factors are those which the supplier to some extent can control, and relate to areas such as technology, inventory, infrastructure, quality, or product specifications. External factors are outside of the supplier's control, and examples are changes in the external environment such as legislations, product technology, economy and politics. Depending on in what way and to what extent the product is affected by the internal and external factors, three different pricing models could be used: *Cost-based pricing*, *Market-based pricing* and *Competitive bidding*. When using cost-based pricing, which is more commonly used for refined and input products as well as services, the purchase price is directly derived from the supplier's costs, adding a profit margin to all costs including the cost of sales. In Market-based pricing, the purchase price is determined by the market characteristics in terms of supply, demand and political factors and. This model is typically used for low-value products such as raw materials. Competitive bidding is the most common pricing model and refers to when the price is both influenced by market factors as well as the costs (van Weele, 2004, p. 342). A fourth pricing model can be applied, called *Value-based pricing*, in situations where competition is low and the value for the customers is high. Generally the selling price of a product should be decided based on (van Weele, p. 344):

- The expected demand
- The number of competitors
- The expected development of the cost price per product unit
- The customer's order volume
- The importance of the customer to the supplier
- The value of the product to the customer

Calculating the costs and benefits that a purchase generates for an organisation requires necessary tools and resources. The *Total Cost of Ownership* (TCO) approach can be used to facilitate the process. Total Cost of Ownership is defined as "*The total costs that the company will incur over the lifetime of the product that is purchased*" (van Weele, 2004, p. 10). The TCO concept encompasses three fundamental areas connected to the purchase of product; The inclusion of all expenses; the adoption of a long-term life-cycle perspective; and the inclusion of the costs and benefits of all activities associated with the specific purchase (Ferrin and Plank, 2002). Calculating the TCO can thus help an organisation to better understand the costs and benefits of a specific supplier in a purchasing decision, and requires a change from price orientation in purchasing towards understanding all costs. Traditional approaches to supplier selection often focus on the price alone, omitting other aspects of a supplier's performance. The inclusion of such costs in the TCO approach is one of its strengths (Ellram, 1995). The elements of Total Cost of Ownership are illustrated in Figure 6.



Figure 6. Elements of Total Cost of Ownership. Adapted from Laurent (2018).

The TCO model is useful for both buyers and suppliers, where suppliers can increase their knowledge and understanding for how their offer creates value for the final consumer. The buyer makes use of the model in, for example, supplier selection decisions and in ongoing supplier performance evaluations. Also, the model can help the buyer avoid putting too much emphasis on price (Ellram, 1995). Also, as the model relies on calculations where suppliers' expertise and knowledge of their production costs are combined with the buyers' experience in customer value creation, the TCO model can help suppliers and buyers engage in trust-based, long-term relationships (Herrera Piscopo et. al., 2008; Ellram, 1995).

2.1.5 The strategic importance of logistics

According to Bjørnland et. al. (2003, p. 30) logistics has the potential to positively affect the financial performance of a company in three ways; improved customer service; lowered costs; and reduced tied-up capital. However the means to achieve all of these three are contradicting. For example, increasing the inventory volumes improves the customer service (e.g. reduced lead times), but leads to more tied-up capital due to decreased turnover rate of the inventory. Stevens (1989) expresses this as a balance between a number of trade-offs in order to achieve lower costs and higher service levels.

Quality of logistics practices can be defined and measured in many ways, and it is an important aspect in assuring the strategic competitiveness of the company (Bjørnland et. al., 2003, pp.55-56). One definition of logistics quality is understanding the customer requirements and demands of service and having a strategy that enables the company to fulfil these demands and requirements (Bjørnland et. al., 2003, p.57). The service aspects of logistics can generally be measured through; the service level, i.e. the probability that a product is in stock when requested; lead time, i.e. the time taken from order to delivery; delivery reliability, i.e. the degree of dependability of the delivery accuracy; information exchange, i.e. the amount of information shared both ways; customer adaptation, i.e. ability to satisfy customer requests; as well as flexibility, i.e. the ability to adapt to changing conditions (Bjørnland et. al., 2003, p.58).

2.2 Short Food Supply Chains

2.2.1 Background for Short Food Supply Chains

The industrialised food system has successively spawned aggravation among both producers and consumers in the developed world since the end of the 20th century (Renting et. al., 2003). Producers have suffered smaller and smaller margins due to an ever increasing need for investment in technology to decrease production costs and meet stricter quality standards, while the production volumes have not increased enough to enable profitable economies of scale (Renting et. al., 2003; Berti and Mulligan, 2016). Overall the development of the industrialised food industry in the 20th century has left farmers with a very small share of the market value of the food they produce (Renting et. al., 2003).

Consumers in the developed economies have at the same time developed a lack of trust in the industrialised food system as a consequence of major scandals regarding food safety, but also a general frustration with the lack of transparency and perceived distance from farm to table (Renting et. al., 2003). In addition to this, Renting et. al. (2003) conclude that the increasing trend and lifestyle aspect of food consumption has been an important driver of change, where the location and production method of the food has become more and more important for the individual consumer's identity.

All of these changes in the food industry have opened up the possibility for alternative food systems that shorten the supply chain and offer better transparency and fairer value distribution, while also enabling new ways for consumers and producers to interact in the food supply chain.

2.2.2 Definition of Short Food Supply Chains

In response to the perceived issues and discontent with the industrialised food system, so called Short Food Supply Chains (SFSC) have emerged all over Europe (EIP-AGRI, 2015; Renting et. al., 2003; Kneafsey et. al., 2013). The concept of SFSC is relatively loosely defined, and definitions vary across research. However, the common trait of all definitions is that the supply chain includes none or very few intermediary steps between the producers of food and the consumers of it (EIP-AGRI, 2015; Renting et. al., 2003; Todorovic et. al., 2018; Kneafsey et. al., 2013). In addition to this, many definitions take into account the closer relationships between stakeholders in the supply chain as well.

Renting et. al. (2003) mean that SFSCs are short in three dimensions; they "short-circuit" the conventional, long supply chains in industrial food production; they shorten the physical and informational distance between consumer and producer; and they enable more local food production. Thus, a SFSC is typically committed to sustainability, cooperation and economic development of the communities it serves (EIP-AGRI, 2015; Todorovic et. al., 2018). Multiple case studies found in literature point out that SFSCs typically include small to medium sized producers, and not the massive farms typically associated with the industrialised food system (EIP-AGRI, 2015; Renting et. al., 2003; Kneafsey et. al., 2013), even though this is not explicitly stated in any of the given definitions.

2.2.3 Characteristics and organisation of Short Food Supply Chains

As stated above, a SFSC contains a limited amount of intermediaries distributed over a smaller geographical area, in contrast to the industrialised food systems. This means the number of steps between the producer and consumer in a SFSC are fewer, making the network less intricate, see Figure 7.

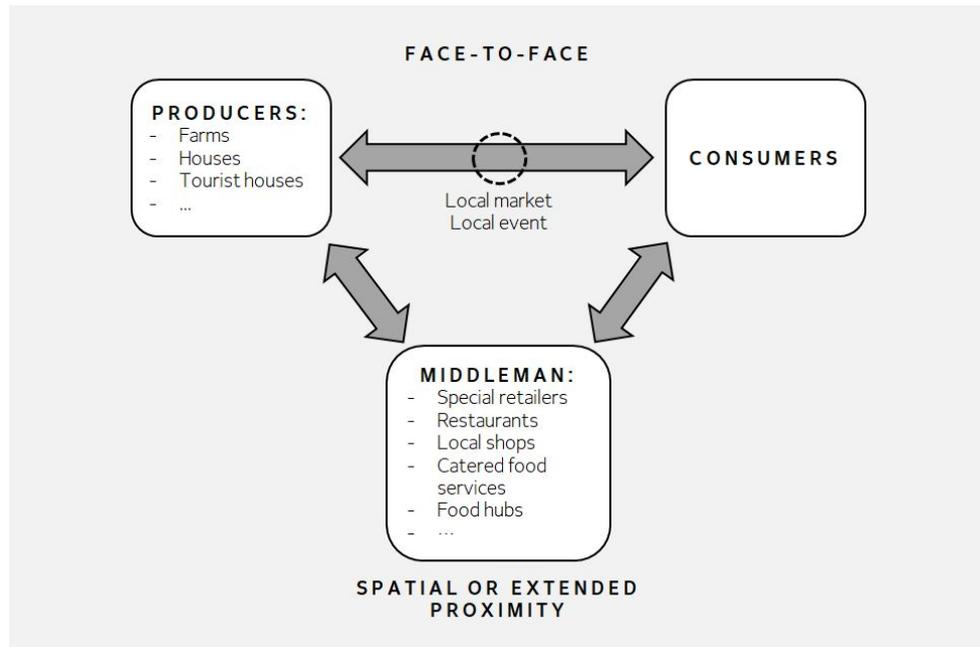


Figure 7. Organisation of the Short Food Supply Chain. Adapted from Todorovic et. al. (2018).

SFSCs are not just characterised by the distance in the chain, but also the quality attributes of the products. Renting et. al. (2003) divide SFSCs into two categories based on the quality aspects of the products, namely if they are connected to a specific bioprocess, or to a certain location or production method. Often the farmers use a hybrid between these two characteristics (Renting et. al., 2003). A similar categorisation is made based on traditional vs. neo-traditional SFSCs, where traditional refer to those schemes that focus on artisanal and traditional farming principles and methods, often family-run businesses, while neo-traditional is a more complex network of farmers, consumers and institutions with a focus on social innovation (Kneafsey et. al., 2013). A review of the SFSCs present in the EU shows that the most common types of products in a SFSC are fresh fruits and vegetables, and that *organic production* is common, even though it is not always labeled as such (Kneafsey et. al., 2013).

One common way of organising SFSCs is through direct interaction between producers and consumers through, for example, local farmers markets, where local farmers bring their fresh produce and sell it directly to the consumers (EIP-AGRI, 2015; Renting et. al., 2003). This type of arrangement could also be done virtually via a website administered by the farmers themselves (Renting et. al., 2003; Nakandala and Lau, 2019). In urban or peri-urban areas, the interaction between producer and consumer can often take the form of box subscriptions with home delivery (Nakandala and Lau, 2019). It could also be arranged that the consumer travels directly to the farm to purchase the foods (EIP-AGRI, 2015; Renting et. al., 2003; Todorovic et. al., 2018;). All of these organisation forms have in common that there are no intermediary steps or actors between the producers and consumers.

There are also examples of SFSC organisations that resembles or makes use of the industrialised food system, where producers are selling their produce through conventional market channels like supermarkets, wholesalers, or specialised shops. This type of arrangement is typically built on some type of certification label to market the local food (Renting et. al., 2003). This shows that SFSC don't have to be *local* in geographical distance, but can then be considered local or short based on the production methods and reputation of the farm or farmer (EIP-AGRI, 2015; Renting et. al., 2003). The farms in this type of organisation often belong to the category of SFSCs focusing on artisanal and traditional products and methods, and have a sales market that is not necessarily bound to the location of the production, e.g. Parmigiano Reggiano cheese (Renting et. al., 2003).

Most SFSCs are organised in some sort of middle way between direct interaction between producer and consumer, and the intricate network of the industrialised system, through usage of *third party intermediaries*. The organisation of these supply chains are often built upon different ways of collaborating (Renting et. al., 2003). The collaborations can take the form of formalised cooperatives between both farmers and consumers or more loose structures such as networks. It could also be more structured supply chains including an intermediary like a processor, butcher or specialised shop and the customer could then be an organisation instead of individuals, e.g. schools or companies (Renting et. al., 2003). Within this category falls also specialised farmers' events and markets that are arranged by a third-party, i.e. not the farmers themselves or the consumers of the food.

In contrast to the industrialised food systems, where consumers often pay three to four times the price that is being paid to the producer, SFSCs attempt to give more value to the producers by removing the middleman, while keeping an affordable sales price to the consumers (Todorovic et. al., 2018). One of the benefits with SFSCs mentioned in theory is the increased income for the producers, where the elimination of the middlemen enables the producer to receive a greater share of the profits. Theory also suggests that these products can be sold at a *price premium* compared to products sold through conventional food supply chains (EIP-AGRI, 2015; Kneafsey et. al., 2013). The perceived higher value of products sold through a SFSC, where the quality is closely related to ethical, social and environmental values rather than just the quality of the product itself, can be translated into the consumer's willingness to pay a higher price for the products (Kneafsey et. al., 2013; Marsden et. al., 2000). However, case studies suggest that what is perceived as higher value differ depending on the socio-economic status of the consumer (EIP-AGRI, 2015), why the appropriate values must be conveyed to the consumer in order for the price premium to be viable in the market (Kneafsey et. al., 2013)

2.2.4 Benefits and challenges in Short Food Supply Chains

The opportunity to strengthen the profitability and increase the incomes of small-scale farmers is seen as one of the greatest opportunities and most important benefits of SFSCs, which in turn can help strengthen the development of rural areas (Kneafsey et. al., 2013; Marsden et. al., 2000). There is also evidence from research that this is in fact the case (Marsden et. al., 2000), although they conclude that the magnitude of the improved economic sustainability of farmers depends on a multitude of factors (Kneafsey et. al., 2013). Moreover, by minimising the distance between consumers and producers they allow for better transparency in the supply chain and can serve as a platform for social interaction in rural communities (EIP-AGRI, 2015; Todorovic et. al., 2018; Renting et. al., 2003; Berti and Mulligan, 2016). It also allows for consumers to have a larger impact and appreciation for what it is they consume and the ability to make a conscious decision of its value (EIP-AGRI, 2015; Renting et. al., 2003; Marsden et. al., 2000). SFSCs are argued for as an opportunity to create a more sustainable food system in general, but exactly in what sense is not always clear in the literature. From an economic and social perspective the advantages are pretty clear as stated above, but little evidence have been put forward as to the ecological sustainability of SFSC (Todorovic et. al., 2018). Some arguments have been made in reference to organic and chemical-free production which is common in SFSC (Renting et. al., 2003). In a report from the EU by Kneafsey et. al. (2013) it is stated that the environmental benefits from SFSCs compared to conventional food systems depends on three factors where all three have to be fulfilled to achieve environmental advantages; local production, seasonal production, and using ecologically sound production methods.

There are general challenges that apply to any food supply chain due to the *perishability* of the food products, especially fresh produce, which puts pressure on the time efficiency of the supply chain (Nakandala and Lau, 2019). The exposure to weather conditions in food production also

poses challenges for the food supply chain (Nyamah et. al., 2017). The weather exposure creates uncertainty and volatility in the supply which is something the supply chain has to bridge in order to match supply with demand (Nakandala and Lau, 2019).

When it comes to challenges discussed in the literature that are specific to SFSCs, it seems that all are more or less derived from the fact that most farmers participating are SMEs, i.e. more or less small-scale. Because of this they are unable to supply large volumes, which is typically needed to achieve economies of scale (Martikainen et. al., 2014). A small-scale farmer typically also lacks the necessary resources and knowledge to market, distribute and sell their produce and is thus in need of help from outside the farmers' own organisation (Todorovic et. al., 2018; EIP-AGRI, 2015). In addition to this, the rural location of many farms, and sometimes insufficient infrastructure, makes distribution more complicated. Governmental regulation on food safety and production procedures also impose barriers for small-scale farmers to set-up their production efficiently (EIP-AGRI, 2015). This is furthermore related to the lack of access to financial capital, i.e. bank loans, which is needed to make necessary investments in equipment for production, distribution and marketing (EIP-AGRI, 2015). The importance and value of recognisable and informative labelling of products is also highlighted in literature, especially when there is no face-to-face contact between producers and consumers (Renting et. al., 2003). This puts demands on farmers to understand and invest in marketing (EIP-AGRI, 2015; Kneafsey et. al., 2013).

2.2.5 Success factors for Short Food Supply Chains

The importance of *collaboration* among all stakeholders in the SFSC is stated in almost all literature. Collaboration includes coordination, adaptation and relationship building and should be supported by communication infrastructure that enables information and knowledge sharing (Nakandala and Lau, 2019). The biggest motivation for collaboration among farmers in the SFSC is the possibility to scale up operations and achieve similar benefits to that of economies of scale, so called "co-operativist scaling" (Berti and Mulligan, 2016). Aside from providing scale to the business of multiple farmers, it also allows for better marketing systems. In a report from the EIP-AGRI focus group (2015) the following additional benefits of collaboration for the farmers in SFSCs were found:

- Improved product range to consumers
- Resource sharing among producers and processors
- Maintaining local food chain infrastructure
- Increased negotiating power
- Reduced competition between small-scale producers
- Mutual support to prevent stress

Other articles find that collaboration among farmers on the logistics activities in particular, enable improved utilisation of resources and improved delivery reliability and efficiency, which in turn allows for lowered logistics costs and higher service levels (Martikainen et. al., 2014).

“Close and active co-operation between the customers and suppliers in the chain is needed in order to improve new product development, increase customer-orientation and to understand better the customers' needs and the value creation process.”

- Martikainen et. al., 2013

Successful collaboration between organisations is fundamentally built on a shared interest and goals between the organisations (Matopoulos et. al., 2007). These goals, especially in the case of SFSCs, often goes beyond that of profit and revenue. Many successful examples of SFSCs are built on organisations coming together with the shared motives of advancing social, ecological and economic impacts on the surrounding communities (Berti and Mulligan, 2016; Nakandala and Lau, 2019).

In a multiple case study by Nakandala and Lau (2019) on the supply chain strategies adopted in SFSCs on the rural-urban interface of Sydney, Australia, it was found that vertical integration (upstream and downstream in the supply chain) and collaboration in the supply chain are important success factors. The research presented case studies which had SFSCs that were organised and coordinated by a third party as intermediary. It was found that the intermediary organisations that were able to develop *trust-based relationships* with both suppliers and customers succeeded better in being operationally efficient and responsive to customer needs, which in turn gave them a competitive advantage (Nakandala and Lau, 2019).

Trust as a means of success in collaboration, especially vertical collaboration, is widely recognised in literature (Berti and Mulligan, 2016; Nakandala and Lau, 2019; Matopoulos et. al., 2007). In an article by Matopoulos et. al. (2007) the risk of dependence and the influence of power on the trust in the collaboration is highlighted. Especially with smaller companies collaborating with large ones, the power balance can easily be skewed towards the larger party, and the smaller one thus risks becoming dependent on the larger one (Matopoulos et. al., 2007). However, the study also showed that collaboration, although suffering from power-asymmetry at the start, can lead to a strengthened position for the smaller companies as they seek additional partnerships and improve their operations to meet the demands of the larger one (Matopoulos et. al., 2007).

Building on the advantages of vertical collaboration is the concept of *Food Hubs* (FH), which is a focused effort at creating collaboration among all stakeholders in a SFSC (Berti and Mulligan, 2016). Although different interpretations exist, generally it can be said that a FH is a community or business organisation acting as an intermediary in a structured network of farmers and customers, both consumers and wholesale buyers (institutions, restaurants, hotels, pubs, retail outlets etc.), with the goal of connecting local supply with demand in a way that benefits all stakeholders in the supply chain. The collaboration is built on quality, healthiness, sustainability, locality, transparency, democracy, equity and access (Berti and Mulligan, 2016). The FH is typically responsible for the following activities and operations:

“ [A Food Hub is] an intermediary organisation or business which works as the supply chain manager and provides a logistical and organisational platform for the aggregation and distribution of source-identified food products from local and regional producers to both wholesale buyers and end consumers. ”

- Berti & Mulligan, 2016

- Logistics, e.g. aggregation and distribution
- Marketing, e.g. consumer and producer recruiting and commerce management
- Product services, e.g. packaging, storing and processing
- Producers consultancy services, e.g. food safety, branding and trainings
- Community engagement, e.g. volunteering and cooking programs, farm visits and social events
- Web of practices, e.g. communication networks, expertise sharing and formalised learning

Digital technology is also highlighted as an important enabler of FHs, offering cheap and accessible ways of communicating, performing transactions and sharing information (Berti and Mulligan, 2016).

Furthermore, 3PLs could play an important part in the logistics solutions for SFSCs (Martikainen et. al., 2014). The needed investments and understanding in distribution systems and logistics makes specialised LSPs more equipped to meet the service requirements from customers in an efficient and effective way. In a case study by Martikainen et. al. (2014) the following service need among local food producers were identified; distribution and transportation services; intermediate inventory and processing terminal services; payment transfer and invoicing

services; sales and marketing services. The study found that these service needs can be fulfilled to varying degrees among 3PLs and that especially the services of payment and invoicing as well as marketing offers great additional value to local food producers who do not possess the knowledge and skills to perform these activities in an efficient way themselves (Martikainen et. al., 2014).

In conclusion, the successful organising of a SFSC has been found in the literature to depend on six different factors, as illustrated in Figure 8 below.

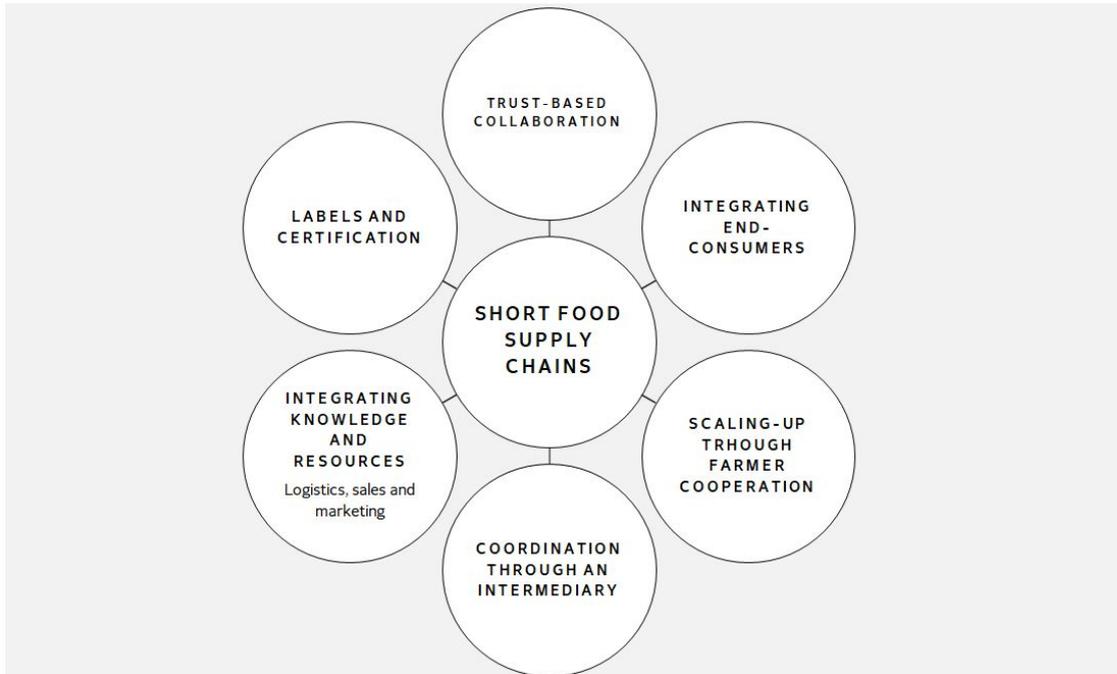


Figure 8. Success factors for the organisation of a Short Food Supply Chain.

2.3 Business Models

2.3.1 Definition of Business Models

A business is in theory defined as “A human activity in a competitive market setting, usually characterised by the exchange of goods and services for money”. Casadesus-Masanell and Heilbron (2015) further describes a business as a collection of people, decisions, resources, buildings, products, values, actions and more necessary resources needed to conduct an activity. From this description of a business, a Business Model (BM) can be used to understand the way a firm imposes decisions on the actors who work for it. (Casadesus-Masanell and Heilbron, 2015)

Nevertheless, there is no clear consensus in literature for defining BMs, and the concept is often studied without a clear characterisation. Scholars have referred to BMs as a statement, a description, a representation, an architecture, a conceptual model or tool, a structural template, a method, a pattern or a set (Zott et. al., 2010). Osterwalder and Pigneur (2010) provide one commonly used description by defining a BM as “The rationale of how an organization creates, delivers and captures value”. Another similar definition is provided by Amit and Zott (2001), defining the concept as “The content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities”. Jackson and Street (2015) provide a more simple explanation by stating that BMs are “Stories that explain how a business work”. Although the theoretically provided definitions are not stringent, a common denominator is the emphasis on how the different components within the organisation interrelate. Morris et. al. (2005) describe this relationship within the BM in their definition: “A Business Model is a

concise representation of how an interrelated set of decision variables in the areas of venture, strategy, architecture, and economics are addressed to create sustainable competitive advantage in defined markets". Scholars agree on the strong relationship between the success of an organisation and its ability to form strong relationships between the involved actors. Thus, understanding its BM can help the organisation understand who the actors are in a business scenario and how they relate and exchange value.

BMs are linked to, and sometimes confused with, the concept of Business Strategy (BS). Even though there is a difference between the two terms, they are sometimes used interchangeably (Magretta, 2002). Strategy in itself can be explained as the idea of how to reach a chosen purpose from a predetermined direction and start position (Spender, 2014). Spender (2014) continues with defining BS as *"The vast variety of goals that lie open to businesses in a capitalist society and the difficulties achieving them"*. According to Stefan and Branislav (2016) *"A Business Strategy explains how, where and for what purpose and goal a Business Model will be used"*. Moreover, the field of strategy can be described as *"The firm's ability to ensure and sustain superior returns"* (Casadesus-Masanell and Heilbron, 2015). A firm's BS is meant to fit the organisation to the environment, and thus eliminating inefficiencies and maximising the firm's potential (Spender, 2014). Notwithstanding their differences, BMs and BSs together form the base for the company's long-term existence (Zott and Amit, 2013).

2.3.2 Business Model components

The external alignment and the internal constitution are the core aspects that together form a firm's BM (Casadesus-Masanell and Heilbron, 2015). The internal constitution are the competencies and building blocks within an organisation that decide the firm's ability to coordinate the productive activity. Moreover, as emphasised by Osterwalder and Pigneur (2010), a firm's ability to capture value from its processes is also determined by the surrounding environment. Thus, developing a good understanding of the organisation's internal competencies as well as the external environment is crucial in order to understand the overall output performance of the organisation in its strive to create business value (Osterwalder and Pigneur, 2010).

Literature often explains the concept by defining its different components that together form a unity referred to as a Business Model. Several divisions of a BM are found in literature, however regardless of the framework considered, scholars agree that the components in a BM are interrelated and dependent on one another. Osterwalder and Pigneur (2010) believe that a BM can be explained with nine building blocks which cover the four main components of a business; customers, offer, infrastructure and financial viability. The nine blocks are integrated through processes, systems and a clear BS (Osterwalder and Pigneur, 2010). Together, these nine blocks form the basis for a practical tool called the Business Model Canvas (BMC), illustrated in Figure 9. The BMC can be used by organisations to analyse and revise their BM. Many more divisions are found in theory, and Morris et. al. (2005) provide another division of a BM where it is divided into six fundamental components: value proposition, customer, internal processes/competencies, external positioning, economic model and personal/investor factors.

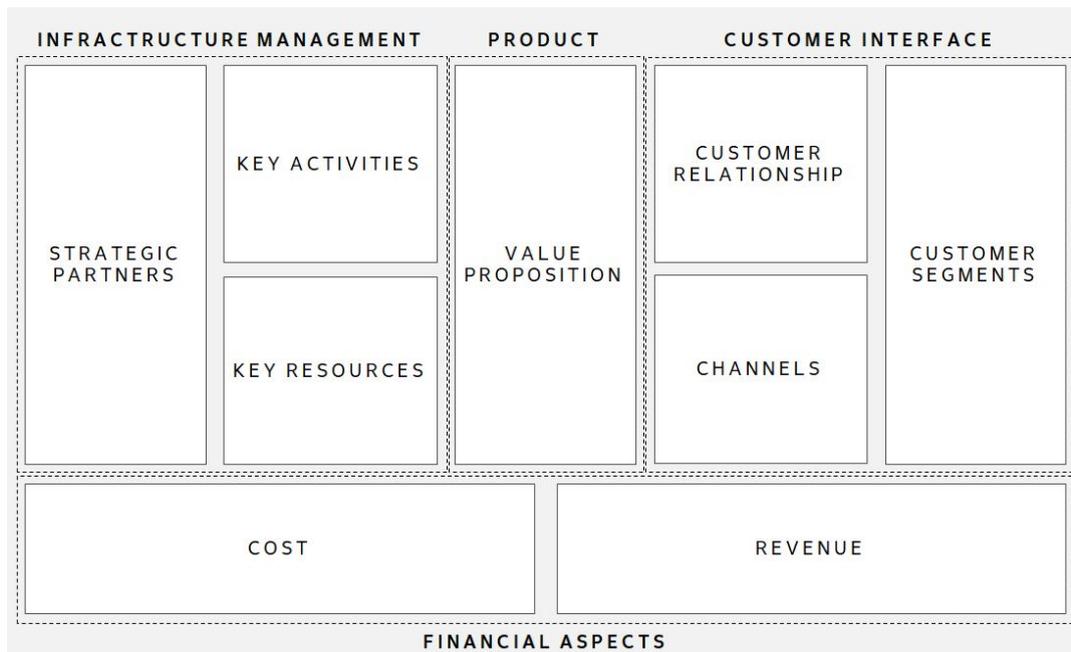


Figure 9. The Business Model Canvas. Adapted from Osterwalder and Pigneur (2010, pp. 18-19).

By understanding the function and relationship of the different components in an organisation's BM, the organisation has a better chance to adapt to changes in the market, economic conditions, competitive landscape and customer demands (Osterwalder and Pigneur, 2010). Furthermore, this understanding is a prerequisite in developing the appropriate economic model and price setting strategies for the business, which is much affected by both internal and external factors. Evident is that all components in the BM interrelate and affect the business' value proposition and relative advantage in the competitive market (Morris et. al., 2005). The value proposition creates the foundation of the BM and is therefore fundamental in the creation of a Business Strategy. Developing a *value proposition*, i.e. a statement which clearly identifies the measurable benefits for the consumers, is therefore an essential component of a BM. Understanding the value proposition demands an analysis of the value created and delivered to the internal and external stakeholders in the organisation (Osterwalder and Pigneur, 2010).

2.4 Inclusive business models

2.4.1 Background to Inclusive Business Models in the food industry

As a response to the prevalence of poverty in the current global landscape and in order to harvest the unused potential for consumption and production amongst low-income communities, United Nations Development Programme (UNDP) founded the concept of Inclusive Business Models. The obstacles when doing business with low-income communities can be plentiful, nevertheless both the poor and the businesses have gains to collect from engaging in a joint business model, where the benefits often go beyond immediate profit and higher income. Despite the challenges for businesses seeking to engage in Inclusive Business Models, which are highly connected to the insufficient knowledge and skills of the poor as well as the insufficient political and legal environment surrounding them, a growing number of businesses are successfully operating in these poor markets. (UNDP, 2008)

The concept of Inclusive Business Models have gained traction in the global food industry, where the imbalance related to power and possibilities to capture value within the current BMs of food systems has generated debate, specifically regarding the opportunities for small-scale

farmers in rural areas in *developing economies* (Vorley et. al., 2008). The traders, processors and retailers in the business sector hold the concentration of purchasing power, thus allowing them to demand high quality and high volumes of produce from the suppliers (FAO, 2017b), see Figure 10. As a consequence, food businesses downstream in the value chain often make use of their dominant position and play groups of small-scale farmers off against each other (Berdeguè et. al, 2008).

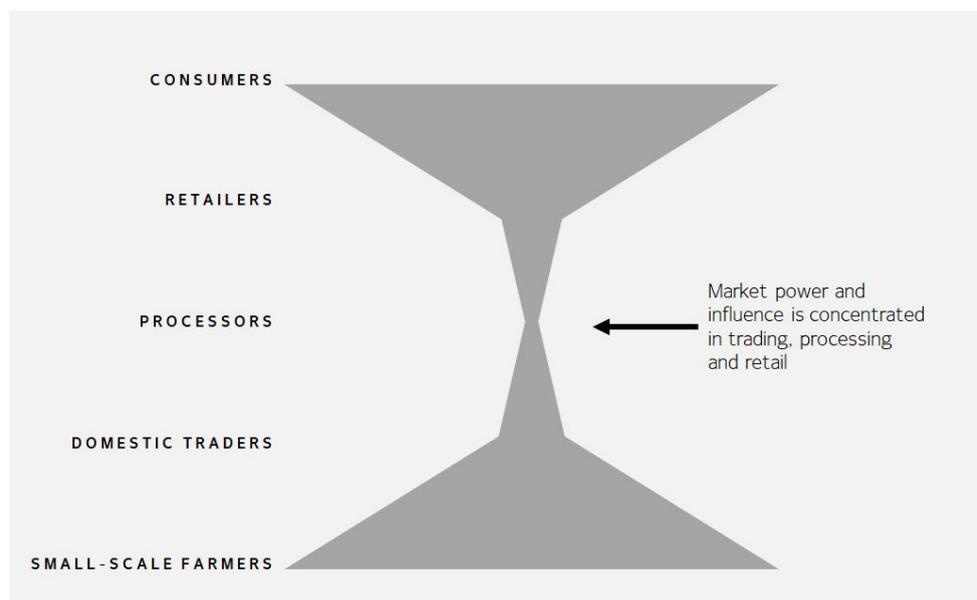


Figure 10. The many farmers and consumers have little power in the food value chain. Adapted from IAASTD (2009).

As illustrated in Figure 10, the market power and influence within the BMs of food systems is unevenly distributed, where only a few percent is allocated to the farmers at the bottom of the pyramid, thus giving them little of the value created in return for their work. This is especially evident in developing economies, where small-scale producers are many but powerless, and often lack the skills to cater to the changing consumer demands (IAASTD, 2009).

In low-income countries, up to 90 percent of food consumption originate from domestic sources in rural areas. These areas suffer heavily from food waste which is mainly connected to limitations in technology, storage, packaging, processing and marketing. Many poor people rely heavily on food production in their livelihoods, which is why developing agriculture value chains is key to reducing poverty and hunger. To achieve this requires actions that effectively link farmers to the market (FAO, 2017b), as well as strengthens micro-enterprises within agribusiness (Devaux et. al. 2018).

While changes in the business landscape make it difficult for small-scale farmers in developing countries to reach the market with their produce, there is at the same time a growing demand for produce at the consumer market. A marketing paradox expressed by Shepherd (2007), is that downstream actors such as supermarkets and processors often complain about inadequate supply, while producers complain about lack of markets. A growing gap is created between, on the one side, small-scale farmers in rural areas and on the other side, large scale processors and retailers. Innovation in BMs and supply chains for small-scale farmers can help link them effectively to markets and strengthen the farmers at the bottom of the pyramid. (FAO, 2017b)

2.4.2 Definition of Inclusive Business Model

There are several different definitions of an IBM provided in theory, however they all rely on creating mutual benefits for the involved actors as well as sustainable profitability through correct market integration of the products in the value chain. UNDP defines an IBM as “*Models that build bridges between poor people and business community*”, while the concept is more simply explained as “*Mutual beneficial partnerships*” by the German organisation GIZ (Gesellschaft für Internationale Zusammenarbeit)(UNDP, 2008). The *inclusiveness* of the Business Model refers to aspects such as fair distribution of benefits in the value chain, shared decision making amongst the stakeholders and common goals and responsibilities of the involved actors (FAO, 2017a). Emphasised in literature is that developing the value chain towards including smallholder suppliers should only take place when there is a viable business case, and where it results in a sustainable BM. It is therefore important for actors within these BMs to evaluate the trade-offs that need to be made between the viability of a BM and the constraints of linking poor producers to markets (Vorley et. al., 2008).

Specifically for IBMs acting in the food industry, authors Vorley et. al. (2008) define an IBM as a business model that “*does not leave behind small farmers and in which the voices and needs of those actors in rural areas in developing countries are recognized*”. IBMs within the food sector are thus those structures that improve the inclusiveness, fairness, durability and financial stability of trading relationships between small-scale farmers and their downstream collaborators within the supply chain in developing economies. Although the general concept of IBM does not specifically focus on developing economies, where the poor communities can refer to people living in developed and developing economies alike, Vorley et. al. (2008) clearly limit their definition to developing economies. This as the prevalence of poor farmers are highly focused to these countries, where the lack of skills and insufficient access to reliable markets is hindering their socio-economic development. (Vorley et. al., 2008)

2.4.3 Characteristics and organisation of Inclusive Business Models in the food industry

It is seen that a key pattern across case studies, countries and continents when creating IBMs in the food industry include integrating some sort of specialised *partnership facilitator* within the linkage between the producers and consumers of food. This linkage should, furthermore, involve the following foundational elements, as illustrated in Figure 11; collaborative arrangements between trained and organised farmers, a receptive business sector and conducive public policies and programmes (Berdeguè et. al., 2008). Theory thus emphasise the importance of improved knowledge amongst the small-scale farmers on the one hand, and the need for the businesses down-stream to be attentive to their voices and needs on the other. Furthermore, the public policies in the external environment must create a hospitable setting for the IBM to succeed. The partnership facilitator does not necessarily have to be in the shape of a third-party organisation but can take different forms depending on the actors’ and the environmental characteristics. However, all aforementioned elements need to be present in order to find sustainability in the market linkage (Vorley and Proctor, 2008). The demanded level of collaboration between these actors - namely the farmers, business sector and partnership facilitator - and their relative importance in the BM depend on their individual capacities, the market characteristics and the external environment. As highlighted by Berdeguè et. al. (2008) the successful arrangement of this collaboration is key to the inclusion of small-scale farmers in the dynamic food markets.

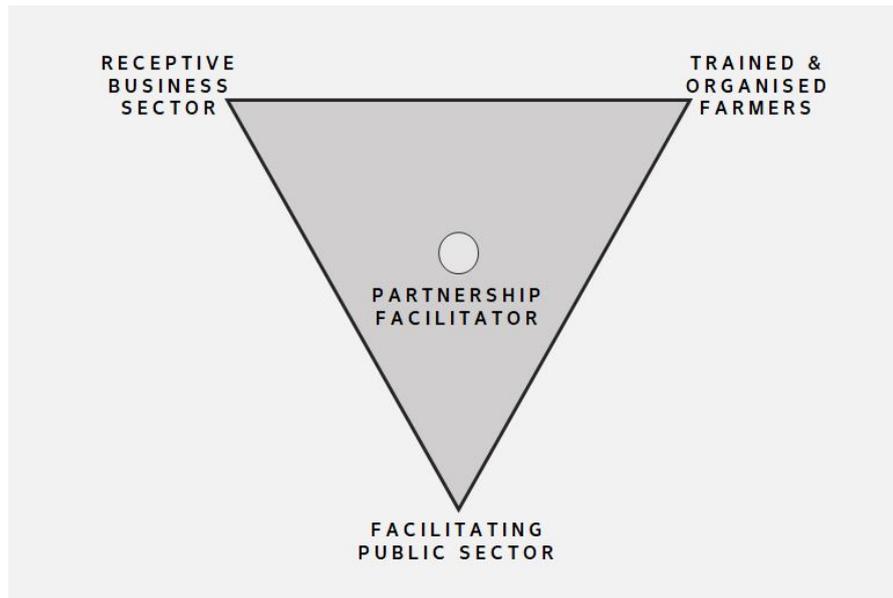


Figure 11. Foundational elements of an Inclusive Business Model. Adapted from Berdeguè et. al. (2008).

Keys to overcoming the costs and risks in an IBM in the food industry are, according to Vorley et. al. (2008) producer coordination, market coordination and intermediation, service and finance provision, management of knowledge and information as well as buyer behaviour. Moreover, the structures for IBMs in the food industry can be divided based on the relative roles of the individual actors in the chain. Thus, they fall into one of the following categories; producer-driven models i.e. those focusing on developing and supporting producer organisations, buyer-driven models, i.e. those that are driven by the buyers, or intermediary-driven models i.e. those that are driven by specialised intermediary organisations. Although they differ in original objective and management structure, where producer-driven models main objectives often lie in finding new markets with a higher price for the producers, buyer-driven seek to assure a secure supply, while intermediary-driven models often focus on regional development for the producers or consumers, they all seek to enable a good market integration for a mutually beneficial collaboration. Different structures of these models are common globally, where they often rely on informal linkages between the actors, however, knowledge and research on how to sustainably develop these informal linkages is scarce. Nevertheless, case studies illuminate that the common limitations for farmers in skills and knowledge hinder the progression of producer-driven models, where they often fail in reaching the modern markets. (Vorley et. al., 2008)

For buyer-driven models, direct procurement, sufficient information flow and collective action amongst the producers are seen as success factors (Vorley et. al., 2008). One example of a buyer-driven model which has gained traction in the global food industry is *Contract Farming* (CF). CF is an institutional measure to ensure the right quality and volumes of raw materials for exporters, processors, distributors and other actors within the food supply chain (Nhan and Yutaka, 2019). According to Nhan and Yukata (2019), CF can solve major constraints for small-scale farmers related to access to human and physical resources and is commonly used as a way to link small-scale farmers in developing economies to modern markets (Vorley et. al., 2008). By engaging in contracts, smallholders can be more integrated into value chains as they are provided with inputs, technical assistance and access to markets. However, case studies show that CF does not necessarily bridge the challenge with an uneven balance of power, skills and resources within the food supply chain due to lack of power in negotiations and contractual knowledge of farmers (Devaux et. al., 2018).

Case studies on intermediary-driven models have showed that, if the intermediary organisation succeeds in being both business and development oriented in their actions, these can offer good potential when bridging the gap between poor producers and buyers in developing economies (UNDP, 2008).

Participatory certification systems

Certification systems have evolved in the food industry as a response to the growing distance between producers and consumers. Particularly for organic production practices, certification is a way of guaranteeing the organic status of the produce to consumers, processors, traders and also to agencies in charge of ensuring the right food safety and food quality. Modern and global certification systems that have been established for the export market are however often costly and requires much administration and knowledge from the actors that are being certified. This is argued to create a barrier for smallholder farmers to get certified as organic, especially in developing countries where the lack of these resources is evident. (Källander, 2008)

According to Källander and the International Federation for Organic Agriculture Movements (IFOAM), there are three main ways to guarantee that organic production standards are being met; Third Party Certification; Group Certification & Internal Control Systems (ICS); and Participatory Guarantee Systems (PGS) (Källander, 2008; IFOAM, 2019). *Third-party certification* is most commonly used for organic trade in international markets. This type of certification is, however, often associated with high costs and extensive administrative work, which have pushed for the development of other certification systems where groups of farmers create alternative methods for certifying their produce that are more adapted to their reality. Group Certification & ICS are ways where producers organise themselves in groups and conduct an internal control system. Here, external certification by a third-party organisation is used to check that the internal certification system is working correctly, and not to control the producers individually. The third version of certification, *Participatory Guarantee Systems* (PGS) make for a shift in responsibility for the certification network compared to the two aforementioned systems. Although the PGS system share many similarities with Group Certification & ICS, the main difference between them lies in the extent to which the farmers are involved in creating the structures and regulations to be followed, where PGS gives more authority to the farmers. Also, while Group Certification & ICS is limited to providing certification for the produce, PGS is a certification system for the whole farm. The PGS is created by the farmers and consumers it serves, as a way of engaging the actors but also requiring their participation. The PGS are quality assurance systems that are built on a high level of trust and knowledge exchange, and the belief that the farmers can themselves be trusted to create a similar guarantee as to third-party certifications. The participant farmers create standards and norms for the collective, and mechanisms that should be followed for farmer compliance. These shared rules are often adapted from already existing systems and often shaped around fair-trade, social justice and environmentally just practices. Peer review is a central aspect in PGS, where the participating farmers are engaged in auditing the other farms for compliance (IFOAM, 2019; Källander, 2008). PGS demands less administrative skills and lower costs compared to Group Certification & ICS as well as third-party certification, and it does not require a third-part to audit the individual stakeholders. It is therefore more suitable to small-scale producers in developing countries. While focusing on certification of the produce PGS also address ways of creating transparent linkages with a mutual trust and power balance within the food supply chain (Vorley et. al., 2008). Furthermore, Vorley et. al. (2008) state that pro-participatory certification models, where group certification and combined audits are made such as in PGS, have proven a success factor for business relationships between small-scale farmers and the business sector. As a result, participatory certification systems are spreading in application globally (Källander, 2008).

2.4.4 Benefits and challenges with Inclusive Business Models in the food industry

Organising the supply from a dispersed group of producers can cause issues in securing the quality, quantity, consistency, safety, traceability, compliance with rising standards, and packaging in a food supply chain (Vorley et. al., 2008). Enterprises working with smallholder farmers often face the challenge of responding to evolving consumer demands while at the same time supporting the small-scale suppliers (Devaux et. al., 2018). Furthermore, working with many small-scale farmers can cause difficulties with the loyalty and commitment to contracts, negotiation time and costs as well as political opposition to commercialisation of peasant agriculture (Vorley et. al., 2008). Small-holder farmers often lack the knowledge and resources to create successful contractual arrangements, where larger modernised retailers and supermarkets down-stream in the supply chain often have more experience. From the perspective of the small-scale farmers, challenges seen in IBMs are often connected to the management of the food supply chain (Devaux et. al., 2018).

Another challenge threatening small-scale farmers participation in the market is their lack of access to financial stability, which is particularly problematic in rural areas where financial services are fewer. Case studies show that the current lack of access to investment capital for farmers in developing economies creates a substantial hinder to their market participation. Also, as innovations such as microfinance institutions are yet to be used by the broad mass, Vorley and Proctor (2008) express the importance to develop innovative financial products that cater to the needs of small-scale farmers in rural areas.

However, from the perspective of the retailer, small-scale farmers have some competitive advantage against large-scale suppliers. With a rapid growth in demand for high-value products in both developing countries and foreign markets, smallholders have the ability to supply markets with diverse foods and high-value, labour intensive products where they often have deep knowledge of traditional production methods (Devaux et. al., 2018). Vorley et. al. (2008) writes that benefits for retailers and downstream actors when sourcing from small-scale farmers include securing supply, new business opportunities, community goodwill and CSR. In addition, other benefits such as spreading risk through sourcing from several smallholders within a wide geographical area, as well as the ability to ramp up or down production are mentioned (Vorley et. al., 2008).

For the smallholder producers, there are both qualitative and quantitative benefits from engaging in an IBM. The quantitative aspects include increasing production volumes and quantity, increasing net income and improved distribution of income and risk within the supply chain. The qualitative benefits could be an increase in skills and relationships, as well as collective innovation within the supply chain (Vorley et. al., 2008).

2.4.5 Success factors for Inclusive Business Models in the food industry

Although all IBMs are structured according to its specific context and objective and, therefore, are original in its characteristics, case studies reveal shared patterns for successful implementations. UNDP (2008) list five core strategies for creating a viable IBM in the specific environment; adapting products and processes i.e. create specialised structures for the specific stakeholders; invest to remove market constraints i.e. helping the poor reach the market by providing the necessary knowledge and skills; leverage the strengths of the poor i.e. leverage local knowledge and trust; combine resources and capabilities with others i.e. engaging other actors in beneficial collaborations; and engage in policy dialogue with governments i.e. work to change public policies to favor the business relationship (UNDP, 2008).

Based on these success factors stated by UNDP, authors Berdeguè et. al. (2008) list success factors tailored to the food industry in order to successfully link small-scale farmers to the business sector in developing economies. Here, much emphasis is put on training and coordination of producers which can strengthen the small-scale farmers. By engaging in *cooperatives* and collective action, farmers can increase their ability to participate in the market and help bridge the challenges facing the farmers due to lack of power and insufficient volumes and quality of supply (Berdeguè et. al., 2008; Vorley et. al., 2008). Further mentioned success factors in theory of IBMs include; upgrading of technical skills, infrastructure and management capacities; specialisation with multi-agent organisational arrangements; and increased working and investment capital (Berdeguè et. al., 2008; Vorley et. al., 2008). The need for financial services is also mentioned by Vorley et. al. (2008) as an important aspect affecting the small-scale farmers' production abilities. The provision of such services requires skills that are often lacked by the individual farmers, where linking organisations that work for partnership facilitation can help by offering financial services and integrating liquidity into the chain (Vorley et. al., 2008).

Facilitating organisations and intermediaries between suppliers and retailers may help the large-scale downstream actors with securing a more reliable and regular supply as well as ensuring produce quality and safety. Stores and retailers often prefer to work through intermediaries rather than directly with small-scale suppliers, as they have the ability to organise production and coordinate deliveries more efficiently (Devaux et. al., 2018). These intermediaries can aid in providing necessary resources such as market coordination, service and finance provision, information and knowledge management, as well as regulatory and legal management (Vorley et. al., 2008). Intermediaries linking the suppliers to the market should work to satisfy the requirements of downstream actors while also ensuring inclusion and development of small-scale farmers at the bottom of the pyramid (Berdeguè et. al., 2008).

An overarching theme in theory on IBMs within the food industry is the dependency on a high level of trust between all stakeholders in the supply chain (Shepherd, 2007). Shepherd (2007) states that mutual trust between the actors in IBMs is an essential part in establishing sustainable collaborations. Trust and transparency will lower the risk for failure of contractual agreements between actors. All stakeholders such as business sector, suppliers and potential intermediaries working as partnership facilitators need to show a willingness to exchange information, and considerable work is required to develop the needed trust between parties (Devaux, A. et. al., 2018). It is seen that certification systems can be used as a way to build that needed trust in the food supply chains and help ensure the correct food quality for the buyers. Moreover, certification systems such as a PGS, that are adapted to the level of knowledge and administrative resources for farmers in rural areas and that engage the producers in the structure and management of the system, can help in the creation of a successful IBM (Källander, 2008).

In conclusion, the success of an IBM depends on the relationship and coordination between the actors, their skills and level of commitment as well as the characteristics of the competitive business landscape, consumer market and the surrounding environment (Berdeguè et. al., 2008). While theory lacks in defining the exact structure of an IBM within the agricultural sector, a number of success factors for the creation of a mutually beneficial collaboration in an IBM can be found in literature, illustrated in Figure 12 below.



Figure 12. Success factors for the creation of an Inclusive Business Model in the food industry.

2.5 Combining Short Food Supply Chains with Inclusive Business Models

2.5.1 Inclusive Short Food Supply Chains

The literature review showed that SFSCs offers the opportunity to shorten the distance between the food producers and food consumers, increase the transparency in the supply chain and contribute to social and economic sustainability in rural communities. These supply chains are dependent on efficient collaboration and trust among all stakeholders in the supply chain in order to succeed. As most farmers participating in SFSCs are SMEs, they are also in need of outside expertise, especially in logistics and marketing, which can favourably be contributed from an intermediary organisation or business. Developing the logistics is especially important in the modern business climate, as literature shows that logistics has become a competitive tool and a way for companies to differentiate themselves. Differentiation and competitive advantage is moreover a central aspect of BMs, where the BM dictates the organisation's ability to create value through its business depending on both company specific factors as well as the surrounding context. For BMs that, aside from creating value in the food sector, also aim to be inclusive of small-scale farmers in developing economies, it becomes more challenging. The problem caused by a gap in skills, objectives and knowledge between on one side large-scale companies within the business sector and on the other side small-scale farmers in rural communities, has to be bridged through high levels of trust. This requires specialised partnership facilitators which facilitate the coordination and linkage between the stakeholders.

By combining these findings from the literature review, a new concept can be introduced: Inclusive Short Food Supply Chains (ISFSC). In line with the definitions of the two individual theoretical concepts of IBMs and SFSCs, the authors define an ISFSC as *a food supply chain with few intermediary steps which creates a mutually beneficial linkage between small-scale farmers and local business sectors in a developing economy*. The theoretical success factors for this new concept can be derived from the success factors for creating a SFSC and an IBM alike. Firstly, the importance of **collaboration and trust** in the supply chain became evident in both theory on

SFSCs, where one of the success factors is “trust-based collaboration” and in theory on IBMs, where “a high level of trust” is a success factor. Secondly, the collaboration between the farmers is a crucial aspect for the success of both SFSCs and IBMs, where literature on SFSC state that **farmer cooperation** can be used to facilitate up-scaling of the supply chain while farmers cooperatives are stated as a way of empowering and helping the farmers in theory on IBMs. Thirdly, the value of an intermediary organisation is described in theory on SFSCs but even more emphasised in IBMs where it is referred to as a “**partnership facilitating organisation**”. This intermediary organisation assists in finding solutions to the organisation of the supply chain that benefits all actors and creates economic sustainability. Furthermore, the intermediary organisation can help mediate between the actors in the chain and overcome any shortcomings, in terms of resources and knowledge, that the actors experience. This leads to the fourth success factor of an ISFSC which is the **integration of knowledge and resources** in the organisation. A common issue in SFSC is the small scale of the business and inexperience of the farmers in marketing and logistics, which is even more prominent in developing economies.. Therefore, the farmers are in need of training and financial support to participate in the supply chains and become sustainable. The fifth factor, which is found as a success factor in both SFSC and IBM literature, is the integration and development of **certification procedures and labelling** that can help increase transparency and trust in the chain and serve as a marketing tool. Furthermore, theory on IBMs highlights the importance of **a facilitating public sector**, something that is also briefly mentioned in SFSCs with regards to regulations on food safety. This constitutes the sixth success factor for the ISFSC as the role of governments and public policies are seen as especially important in a developing context which is where this concept is applied. The business sector, mentioned in the success factors of IBMs is seen as part of this. Nevertheless, as the business sector also constitutes a part of the food supply chain and thus the functioning collaboration, it is not awarded its own factor. Lastly, theory on SFSCs highlights the importance of **integrating the down-stream actors**, and in particular the **end-consumers**. This as a means of shortening the distance from farmers to consumers, and offer transparency to them. Therefore this is considered a success factor, however, as the consumers are outside the scope of the case study it will not be possible to analyse this factor in-depth in this study.

In conclusion seven success factors for the implementation of an ISFSC have been identified in the combination of the findings from the literature review on SFSCs and IBMs alike. These success factors are illustrated in Figure 13 below.

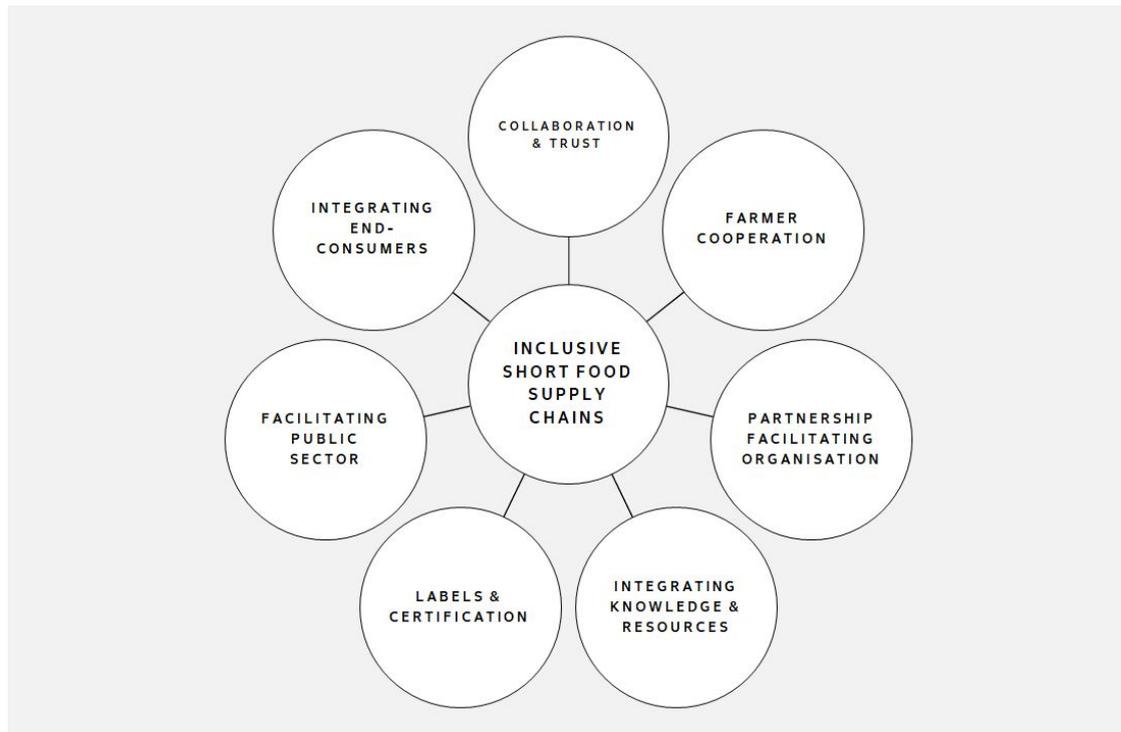


Figure 13. Theoretical success factors for the organisation of an Inclusive Short Food Supply Chain.

2.5.2 Investigation framework

As shown in theory on SFSCs and IBMs and further explained by the success factors of an ISFSC, the context surrounding the business, its internal configuration and the actors' capabilities and resources are all important for its success. The influence of the external environment is especially evident for organisations acting in developing economies. The surrounding environment can, in accordance with the environmental analysis tool called PESTEL, be described from the following six parameters: politics, economy, society and culture, technology, ecology and climate as well as legislation. The first research question (RQ1); *What factors in the external environment hinder or enable the successful linking of small-scale farmers to actors in the local business sector in a developing economy?* address the environmental context and its effects on the ISFSC. The second research question (RQ2) focuses on the internal actors and the competences and resources they contribute with, and need for the success in the linking, in the ISFSC: *What internal capabilities and resources are needed for the successful linking of small-scale farmers to actors in the local business sector in a developing economy?* The third research question (RQ3) focuses on, at a more general level, how to achieve the desired success in the implementation of the ISFSC; *How can success be achieved when linking small-scale farmers to the actors in the local business sector in a developing economy?* This is the question that aims at identifying success factors for an ISFSC, as illustrated in Figure 13.

In order to further define and crystallise the scope of the study, the authors have defined five functions and operations from the general theory on logistics and business models. These functions and operations serve as a means of structuring and solidifying the study of the ISFSC in order to avoid becoming too vague and theoretical, which is a risk seeing as the study only focuses on the implementation phase of the supply chain. The five functions and operations included in the scope of the study are:

- Product & Production
- Distribution & Warehousing
- Price & Payment

- Sales & Marketing
- Collaboration & Trust

Furthermore the study focuses on the three core stakeholders in an ISFSC; the farmers, the actors in the local business sector and the partnership facilitator. The literature showed that different types of intermediaries acting as partnership facilitators should be included in order to facilitate mutually beneficial partnerships between the actors and ensure long-term survival of the collaboration, which is why it is considered a core stakeholder.

All of the identified aspects relevant for the successful implementation of an ISFSC are illustrated in the investigation framework (Figure 14). The framework illustrates the scope of the study, where the enabling environmental aspects from the PESTEL analysis surrounds the stakeholders acting in the ISFSC. The three stakeholders are connected through the different functions and operations while at the center of the organisation of the supply chain the success factors that will help the stakeholder achieve success in the collaboration are placed. The exact configuration and relationship between these different aspects are to be decided by the outcome of the study. The investigation framework therefore sets the scope of the study which guides the forthcoming chapters of this report. Note that the investigation framework places consumers outside of the main focus of the research. This is motivated by the nature of the research questions, which are centered around the business and supply chain from farmer to business sector.

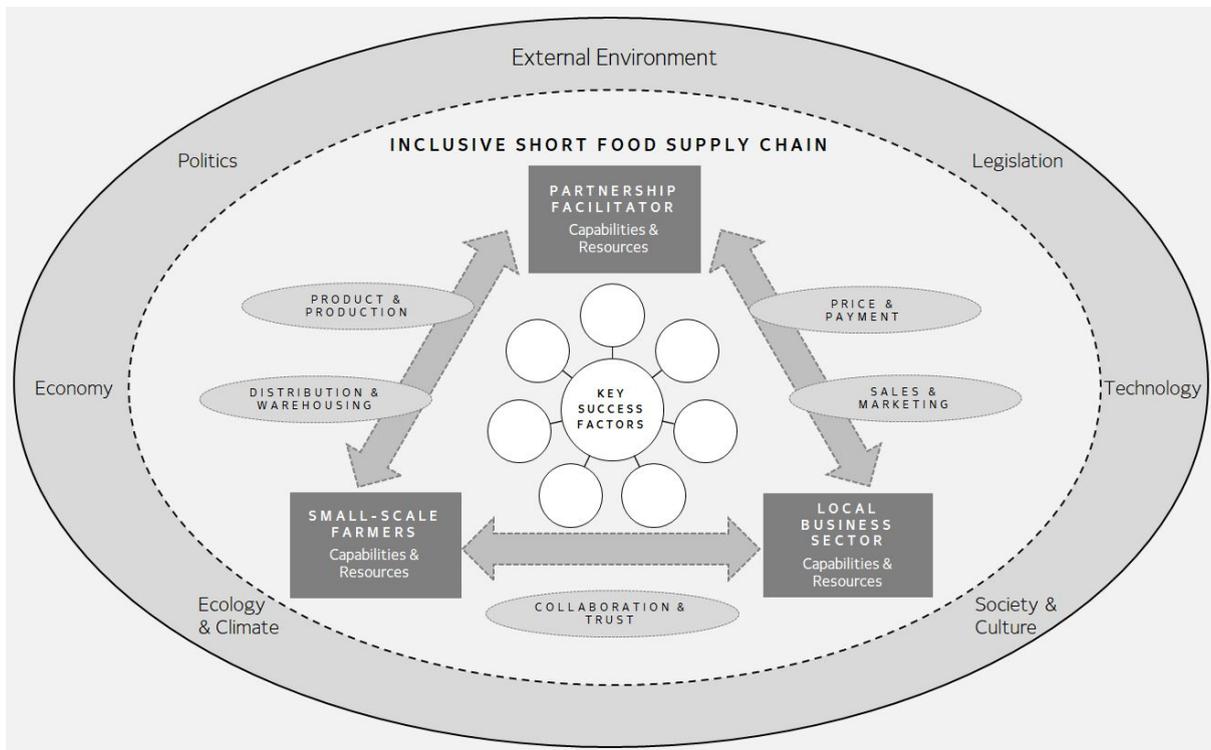


Figure 14. The investigation framework.

3 Methodology

The method chosen for answering the posed research questions in this master thesis is to perform a qualitative case study. This chapter covers the methodology followed in the performed case study, based on the theory presented in literature by Yin (2014), Miles, Huberman and Saldaña (2014) and Säfsen and Gustavsson (2019).

3.1 Case study approach

3.1.1 Criteria for performing a case study

Yin (2014) claims that the criteria for deciding whether a case study is the appropriate method lies in the formulation of the research questions, which in turn reflect the purpose of the study. Typically, research questions based on “how” and “why” formulations, are suitable for case studies, as the answers often rely on chains or links of events and/or people. One of the strengths with the case study in comparison to for example experimentation or history which can also be used to answer “why” and “how” questions, is the possibility to use a range of data sources, such as documents, interviews, observations and artifacts which allow for more depth in the analysis (Yin, 2014, pp.9-14).

Given that the purpose of this thesis is exploratory, and the questions formulated from the literature review have the aim of understanding how certain aspects of the supply chain organisation affects the stakeholders and how these interact with each other, a case study is deemed suitable based on the criteria presented by Yin (2014). For this particular purpose the authors want to understand how the theoretical concept of Short Food Supply Chains and Inclusive Business Models fit in the context of small-scale farming in a developing economy.

3.1.2 The case study process

The case study is a method of analysing and understanding a complex phenomenon or context through an example from reality. One of the strengths of the case study is that it allows for a holistic understanding of a complex real-world phenomena, that other research methods fall short of (Yin, 2014, p.4).

Yin (2014, p.1) describes the process for conducting reliable and trustworthy case study research by dividing the process into six steps; plan, design, prepare, collect, analyse and share. The process for the case study in this particular thesis project is illustrated below, in Figure 15. The process is adapted from Yin’s proposed process and theory presented by Miles, Huberman and Saldaña (2014) alike, and indicates the steps needed to perform the whole project and how they are linked. Note that the collection and analysis phase is iterative, where data collection and analysis takes place in parallel in order to be flexible and adjust the collection plan according to the results. Also indicated in the figure is that the results from the workshop with one of the collaborators gave input to the findings from the case study and verified the legitimacy of the conclusions.

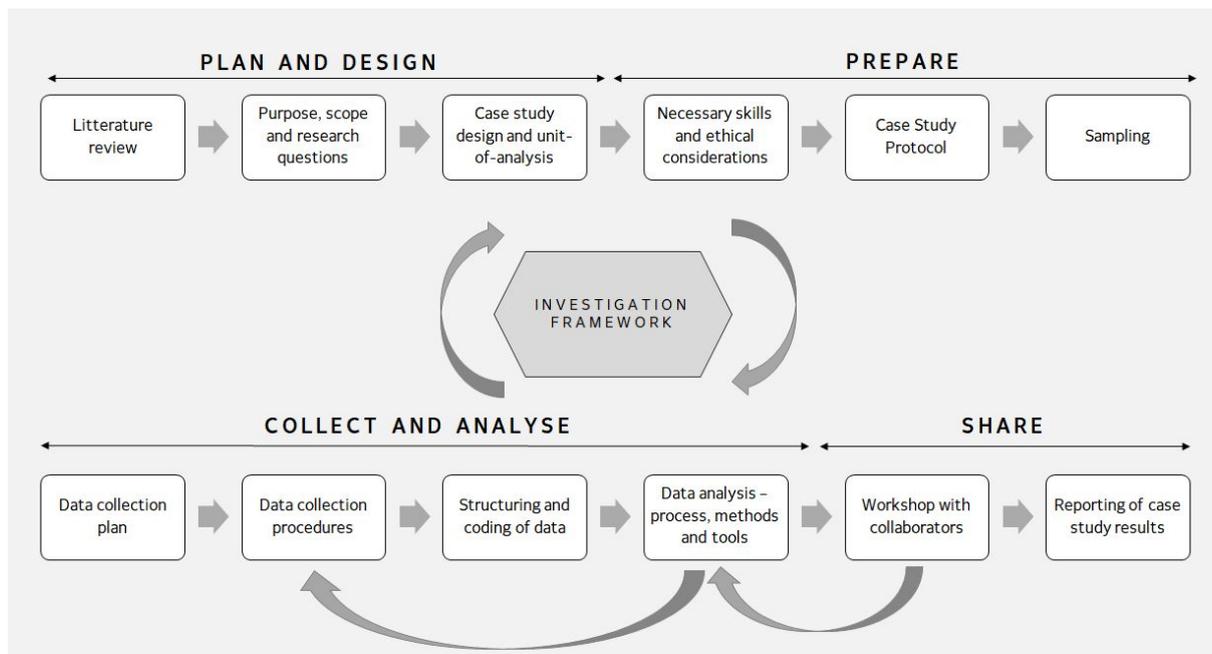


Figure 15. The process of the performed case study.

3.2 Plan and Design

3.2.1 Case study design and unit-of-analysis

Research design is an important aspect of any research and is focused on defining the activities and processes needed to deliver a solution to a problem in a systematic and satisfactory way (Säfsen and Gustavsson, 2019, pp.112-113). When it comes to case studies in particular, the formal design can typically be defined by two parameters; the number of cases used and the number of units-of-analysis used per case. The unit-of-analysis defines and bounds the case, which is particularly crucial when the case being studied is an event or organisation where the beginning and end might be hard to define. Through defining precise and clear research questions and purpose of the research, the unit-of-analysis should become rather evident (Yin, 2014, pp.31-34).

The two parameters generate four potential case study designs: single-case holistic, single-case embedded, multiple-case holistic and multiple-case embedded, illustrated in Figure 16. Single case designs are relevant for many types of studies, where one common rationale for choosing single design is wanting to highlight a revelatory case, which is especially interesting for exploratory studies. Multiple case designs are more relevant when wanting to replicate data to achieve more robust results. Embedded vs. holistic research design depends on the level of analysis performed in each case in the study. Holistic is when only the top level of the unit-of-analysis is analysed, for example a company. In embedded, also subunits in the unit-of-analysis are analysed in order to understand the top level better, for example employees within the company. In general, embedded design is preferred, as long as the resulting analysis does not focus too much on the subunits and thus overlooks the overarching level (Yin, 2014, pp.49-63).

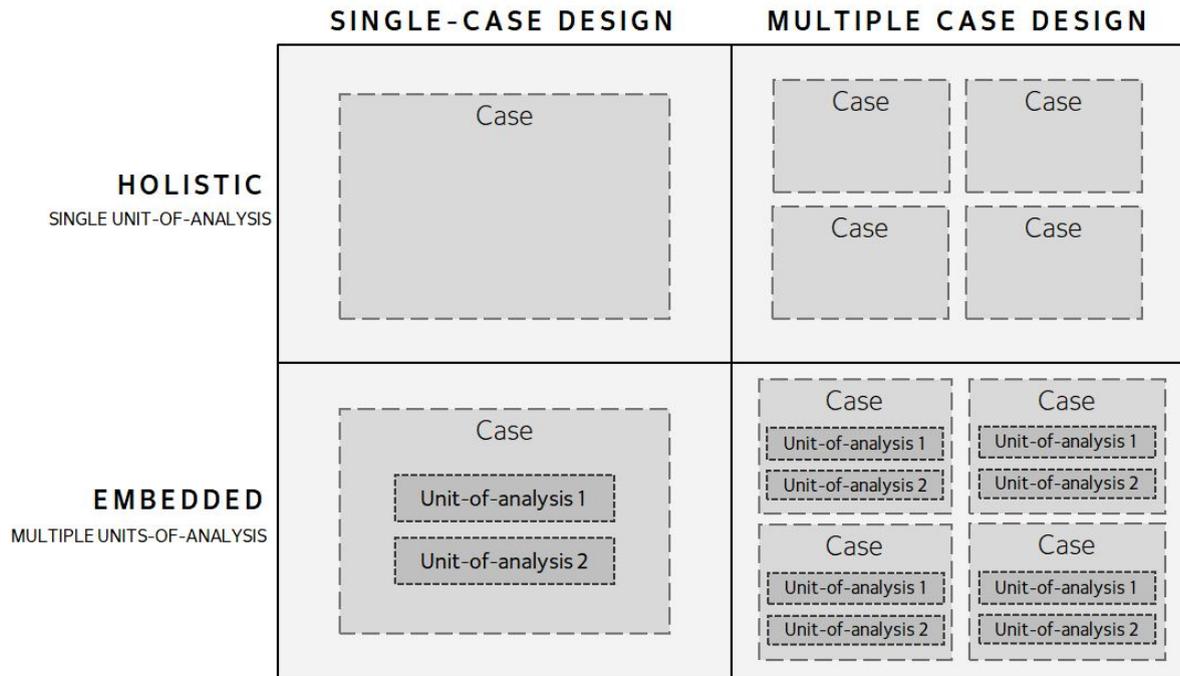


Figure 16. The four different case study designs. Adapted from Yin (2014, p.50).

In this thesis project, the selected case is the Collection Center Project organised by KOAN. This case is a real-life instance of an attempt to link small-scale farmers to the local business sector with a functioning supply chain. From the purpose and research questions posed in the study it becomes evident that the focus of the case study should be how the supply chain should be implemented in the project. This supply chain is more specifically defined as the flow between the collective of farmers to the final marketplaces. However, seeing as the project is still in an implementation phase and no physical flows of goods have started, it is not possible to choose the supply chain as the unit-of-analysis. Instead, the main stakeholders in the project that principally make-up the supply chain - the farmers, buyers and intermediary organisation which in line with theory on IBM will be referred to as the “partnership facilitating organisation”- are chosen as unit-of-analysis. By focusing on these three groups individually and obtaining an understanding for their specific challenges and motives in the project, it will be possible to identify solutions to the logistics and business models that create benefits for everyone, which is essentially the aim of this thesis. The three main stakeholder groups thus make up the three embedded units-of-analysis that allows the authors to get a holistic image of the supply chain at the core of the study. This means that the design of the case study is a single, embedded study, see Figure 17.

As a result of the main focus of the study being concentrated around how to integrate the farmers in the market as a part of a larger effort to battle poverty in the area, the input suppliers to the farmers and the consumers are excluded from the analysis. Including these stakeholders would have required other types of data collection. Therefore, and given the limited time frame of the study, a prioritisation had to be made about which stakeholders to focus on. The scope of the study is illustrated in the investigation framework (Figure 14).



Figure 17. The single, embedded case study design.

3.3 Prepare

3.3.1 Necessary skills and ethical considerations

An important aspect in all research, but specifically in qualitative research, are the skills and values of the person conducting the study. Case study research is hard as it requires mediating continuous interaction between the data collected and the theoretical issues being studied. This has to be done through judgment calls made by the researchers themselves and there is no standardised routine that can be followed (Yin, 2014, pp.72-73). Furthermore, Yin states that some good qualitative skills in the researcher when doing qualitative data collection are; asking good questions and interpreting them fairly; being a good listener not trapped by preconceptions; staying adaptive and embracing new situations; having a firm grasp of the issues being studied; and avoiding biases by being sensitive to contrary evidence and behaving ethically (Yin, 2014, p.73). The authors of this master thesis attempted to apply these skills over the course of the data collection in the performed case study.

There are a number of unethical practices in research relating to the results and contribution of the research. These practices have fallen under the name Scientific Misconduct and include: fabrication of results, forged data and plagiarism (Säfsen and Gustavsson, 2019, pp.246-250). Conducting case study research is specifically related to a number of ethical issues in addition to Scientific Misconduct. These relate in particular to the protection of human subjects as case study research often means interviewing people in order to understand real-world, real-time cases (Yin, 2014, pp.77-79).

Careful attention was directed to the ethical aspects of the performed case study in the Collection Center Project and a number of actions to ensure privacy, anonymity and transparency were taken. In order to ensure confidentiality and anonymity to the participants in the performed case study, all collected data that concerned the stakeholders' roles and perspectives in the Collection Center Project was anonymised and the documentation was protected from external visibility. The collected data was treated according to transparent agreements with the participants, and any relevant results were presented to the participants after the study in accordance with the agreement. All written, recorded and photographed documentation was collected with the explicit consent of the participants and treated with

confidentiality and privacy. The collected data has not been shared in other forms than finalised reports with other people than the owners of the data, i.e. the authors to this report.

3.3.2 Case Study Protocol

The Case Study Protocol (CSP) is an important way of increasing the reliability of the study with the aim of guiding the researcher through the whole data collection process. This a useful tool in the preparation process as it forces the researcher to anticipate issues before they occur and to stay focused on the purpose of the study throughout the process. The CSP should cover, but is not limited to, the following areas: overview of case study, data collection procedures, data collection questions, and guide for the case study report (Yin, 2014, pp.84-86).

Before starting the data collection for this master thesis project an extensive CSP was created, in order to prepare the researchers for the process and create a structure and purpose for the data collection. This CSP is accessible in the case study database of the project, and the relevant excerpts from it can be viewed in Appendix A and B of this report, presenting the interview guide as well as contact information to the case collaborators.

3.3.3 Sampling

Sampling is another necessary part of case study preparation. According to Miles, Huberman and Saldaña (2014, pp. 30-37), sampling is the action of deciding what people as well as what settings and possible events to collect data from. The samples chosen for data collection should connect directly to the research questions and should represent examples of the focus of the study. The sampling strategies can be set ahead of time or be evolved during the data collection process. Different strategies of sampling that can be applied both within and across cases include; *random*, *strategic*, *purposive* or *convenience* sampling. Strategies can also be used for selecting the participants ahead of data collection. Here, sampling strategies can be divided into; *comprehensive sampling* - when every case in the population is examined; *quota selection* - when samples from the main identified subgroups are chosen; *reputational case selection* - when samples are chosen based on recommendations from an expert; and *comparable case selection* - when samples with similar characteristics are chosen over time. When sampling within cases, the researcher needs to use the right samples in order to clarify the main patterns and understand the context in order to draw viable analytic conclusions. Samples are also chosen based on if they are feasible in terms of accessible resources, and whether they are ethically acceptable. (Miles, Huberman and Saldaña, 2014, pp. 30-37)

In the performed case study, sampling was made by the authors in cooperation with KOAN, who made the executive decision on which stakeholders in the project were accessible. Thus the sample selection process followed a reputational strategy, were KOAN acted as the recommending expert. However, this strategy was combined with that of quota selection, since only a few samples from the farmers were selected.

3.4 Collect

3.4.1 Data collection plan

There are six main data sources when collecting data for case studies: documents, archival records, interviews, direct observations, participant-observations and physical artifacts. All types of data sources have different advantages and disadvantages depending on the type of case study to be conducted (Yin, 2014, p.105). The characteristics of the different data sources, and the applicability in case study research can be found in Table 1.

Table 1. Characteristics and usage of different data sources in case study research (Yin, 2014, pp.105-118).

Data source	Documents	Archival records	Interviews	Direct observation	Participant-observation	Physical artifacts
E.g.	Letters, Emails, Event reports, Records, News articles	Public statistical data, Budget, Personnel records, Survey data	Structured, Unstructured, In-depth, Survey	Researcher(s) observe events/ conditions/ factors in the context	Researcher(s) participate in events/ activities in context	Tools, Instruments, Technological device, Work of art
Usage	Validate and highlight evidence	Validate and highlight evidence	In-depth understanding and personal reflections	Additional information on topic	Insider perspectives	Additional information on topic

Typically in qualitative research, one wants to triangulate evidence from multiple sources in order to make the conclusions more convincing and accurate. The open nature of the case study makes the use of multiple sources in parallel possible, which constitutes one of its advantages. Triangulation can be done in different ways depending on the design of the study; Data triangulation (of data sources); Investigator triangulation (among different evaluators); Theory triangulation (of perspectives to the same data set); or Methodological triangulation (of methods). The advantage of using multiple sources of evidence lies in the development of converging lines of inquiry, i.e. multiple sources pointing towards the same conclusion (Yin, 2014, pp.118-123). In this study both the methods of theory triangulation, in the form of asking the same questions to different stakeholders, and methodological, in the form of using multiple methods of data collection, were used.

The data collection in this study had two different focus areas, based on the posed research questions a) The external environment of the case (RQ1) and b) The perspectives and capabilities of the involved stakeholders on the project (RQ2+3).

The main data collection method for both of these areas was to perform semi-structured interviews with individuals in the project as well as with external stakeholders. The interviews were complemented with archival records and documents provided mainly by KOAN and external organisations in Kenya as well as from online sources. For the external environment, information was collected through a range of documents and archival records, such as news articles, encyclopedias and online databases, but also through three interviews. One with the CEO of KOAN, Eustace Kiarii, one with the programs officer at KOAN, Martin Njoroge, and finally one with the Programme Manager of Agriculture and Rural Development at the Swedish Embassy in Kenya, Duncan Marigi. Finally the data on the stakeholders' perspectives on the project was collected through in-depth interviews with individuals from the relevant stakeholder groups in the project, representing the three embedded units-of-analysis in the case study: farmers, buyers and the partnership facilitating organisation consisting of KOAN and the coordinators. Information about the farmers was further complemented with data from a Baseline Survey of the individual participant farmers performed by KOAN at the beginning of the Collection Center Project as well as from a presentation provided by Samuel Ndung'u at KOAN's office. The data collection plan including all data sources, data types, number of respondents/samples as well as the location for the interviews in the case study is illustrated in Table 3 below. The data sources used in the Literature Review of the thesis are not included in the table.

Table 2. Data collection plan for the case study of the Collection Center Project.

Data Source	Data Type	Number of samples	Location
Farmers	Interview	6	At farm
Buyers	Interview	5	In shop
Partnership Facilitator (i.e. the organisation of KOAN)	Archival Records	1	N/A
	Interview	4	KOAN's office
Swedish Embassy	Documents	2	N/A
	Interview	1	Swedish Embassy
External sources	Archival Records	5	N/A
	Documents	28	N/A

3.4.2 Data collection procedures

As previously stated, the main data source in this case study was interviews. In case study research, interviews often takes the form of an unstructured or in-depth interview where the stream of questioning is more fluid than rigid. The importance of sticking to the line of inquiry and avoiding leading and biased questions in the interview increases due to this open nature (Yin, 2014, pp.110-111). Three different tactics can be used in order to pose useful questions in an interview: prompt, probe and check. Prompt is used to get the interviewee to tell more about a topic that has not been covered or only partly covered. Probe is used to receive more developed and detailed answers. And check is used to summarise the interviewee's response and allow them to clarify if needed (Säfsen and Gustavsson, 2019, pp.152-154). All of said techniques were used in the performed interviews for this thesis.

Practical considerations for interviews include; the location for the interview; the dynamic between the interviewer and the interviewee; the number of interviewers; the number of interviewees per interview slot; face-to-face or phone interviews; and whether to record or take notes (Säfsen and Gustavsson, 2019, p.154). Interviews were performed with all relevant stakeholders in this case study research, with a primary focus on the farmers and buyers. The respondents were interviewed one by one and face-to-face in their everyday contexts (the farm, office or store etc.) and their responses were written down by the researchers as well as recorded by audio. The information provided in the interviews was then coded and structured in matrices shortly after the interviews were conducted, allowing for further analysis to be easily conducted later on in the research process. The used interview guide for farmers and traders can be viewed in full in Appendix A.

During qualitative case studies, important observations that deserve analytical attention are often made by the researchers during field studies and interviews. This information can be of high importance to the analysis, and is therefore best documented as observation comments to be used for analysis (Miles, Huberman and Saldaña, 2014, p.93-95). For this case study, any information that was found relevant by the researchers in the form of observations on site was systematically collected and coded. This information was kept separate from the other

information that was collected during the interviews and marked as *Interviewers Comments*, so as to not mix the perceptions of the researchers with that of the interviewees.

3.4.3 Structuring and coding of data

Organising and documenting the data collected in a case study in a database is an important activity. Doing this allows for better transparency of the research process and increases the reliability of the conclusions to someone wanting to review the results of the study (Yin, 2014, p.123). All collected data in this performed case study can be found in the form of interview reports and summarised (coded) data sheets in Google Drive.

Coding is an essential part when handling qualitative data. The process for coding can according to Miles, Huberman and Saldaña (2014) be divided into two cycles with two separate objectives and results. During the first coding cycle, code words are used to retrieve and categorise data from interviews into groups so that the researcher more easily can analyse and find information connected to a specific topic, hypothesis or research question. During the second cycle of coding, also called Pattern coding, the data is further condensed into smaller units that facilitate the analysis by creating an overall schematic map of the collected data, its incidents and interactions. The patterns found in the collected data are used to simplify the analysis and to display the data in a comprehensible manner. There are two main types of coding, Deductive coding and Inductive coding. Deductive coding is when a list of codes connected to the conceptual framework and research questions is created prior to the interviews. Inductive coding is when codes emerge during data collection due to the characteristics of the information gathered during the interviews, where information that was not expected can appear (Miles, Huberman and Saldaña, 2014, pp. 70-104).

The coding process in this thesis project followed these two cycles and used both inductive and deductive coding. The deductive coding was performed by dividing the interview guide into distinct sections based on the thesis investigation framework. These sections were then also used to structure the collected data in the case study database. In the second round of coding, inductive coding was performed on the summarised data to discover common patterns and allow aggregation in tables. This is further explained in section 3.5.

3.5 Analyse

3.5.1 Process for data analysis

Säfsen and Gustavsson (2019) state that there are three types of analysis methods for qualitative data, the first two being Thematic Analysis and Content analysis, while the third one is a more general approach to qualitative data analysis that takes aspects from both aforementioned methods into consideration (Säfsen and Gustavsson, 2019, pp. 208-212). Miles, Huberman and Saldaña (2014) describe this method in detail, and also state that analysis of qualitative data can be divided into three flows of activity: data condensation, data display and drawing and verifying conclusions. These three flows are interlinked and all depend on each other during the data collection process (Miles, Huberman and Saldaña, 2014, pp 12-14).

Data condensation is the process of simplifying and transforming the data into a more comprehensible documentation for conclusions to be drawn and verified. Data condensation occurs throughout the data collection, and entails writing summaries, coding, developing themes and further condensing the documentation for a final report. Data display on the other hand, is the organised and comprehensible assembly of information that facilitates for drawing conclusions and understanding the data. The display can be of many different types such as

matrices, graphs, charts, networks or plain text. The data should be displayed in a plain manner in order for the information to be accessible and comprehensible for the analyst. Finally, drawing and verifying conclusions is the process of noting patterns, flows and explanations from the collected and displayed data in order to draw final conclusions. The conclusions need to be verified and confirmed by their validity (Miles, Huberman and Saldaña, 2014, pp. 12-14). The three flows form a cyclical process together with the data collection, as illustrated in Figure 18.

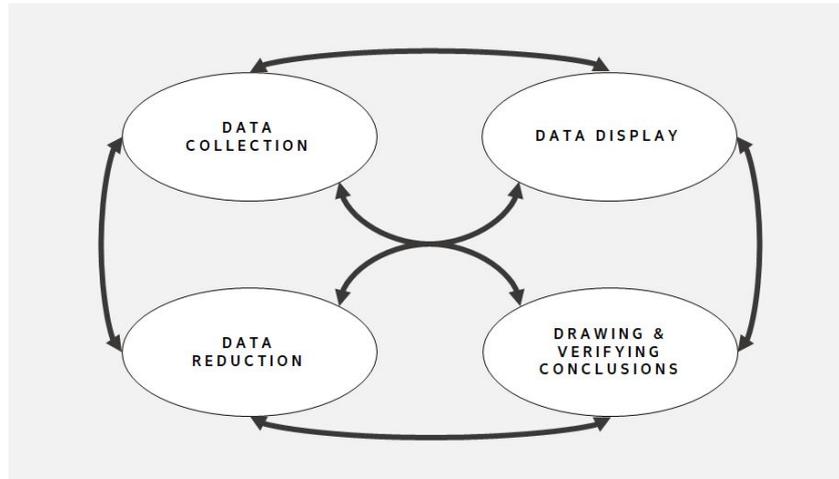


Figure 18. Components of data analysis. Adapted from Miles, Huberman and Saldaña (2014, p.14).

3.5.2 Methods for data analysis

Different matrices and networks can be used for analysing qualitative data to help the researcher simplify and draw conclusions from the collected information. These methods are described as sequential yet iterative processes of exploring, describing, ordering, explaining and predicting, see Figure 19 for illustration. (Miles, Huberman and Saldaña, 2014, p. 272)

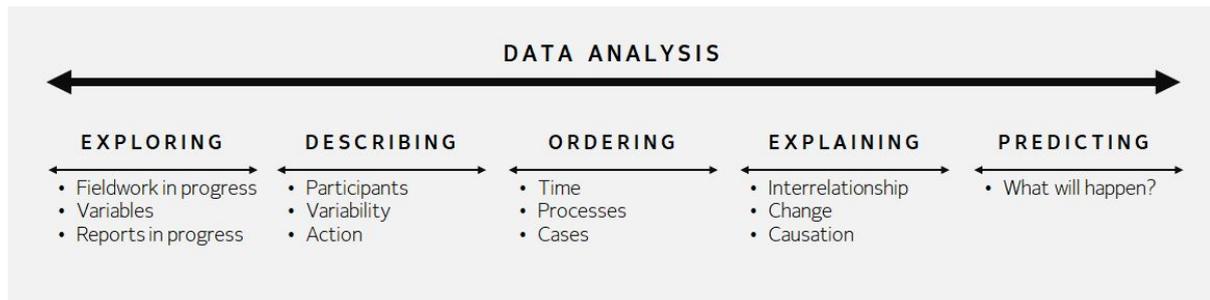


Figure 19. Methods of treating the data and findings from the case study.

For the performed case study in this thesis the process of data analysis followed the three flows of activity described by Miles, Huberman and Saldaña (2014), i.e data condensation, data display and drawing and verifying conclusions, in an iterative process in order to make the gathered information comprehensible. Methods for exploring, describing and explaining the gathered information were performed. No method of ordering or predicting was conducted. This as there are yet no established flows in the project supply chain that would be subject to ordering, and as methods for predicting refer to looking ahead of time to predict future events, which lie beyond the scope of the study.

The whole analysis process was made on four different levels, starting at the theoretical and general level for the concept under study, going successively down to the individual level of the people who were interviewed. As mentioned previously, the collected data had two different

focus areas, which also divided the early steps of the analysis: the environmental factors and internal factors. These were then combined in order to get a comprehensive understanding of the performance of the supply chain and wherein the challenges and obstacles lie. Finally the results of the study, and the input on them from the study collaborator, KOAN, were compared and further analysed to reach conclusions on the answers to the posed research questions.

The process for analysis, including the tailored methods for the specific study, are described in detail below, and illustrated in Figure 20.

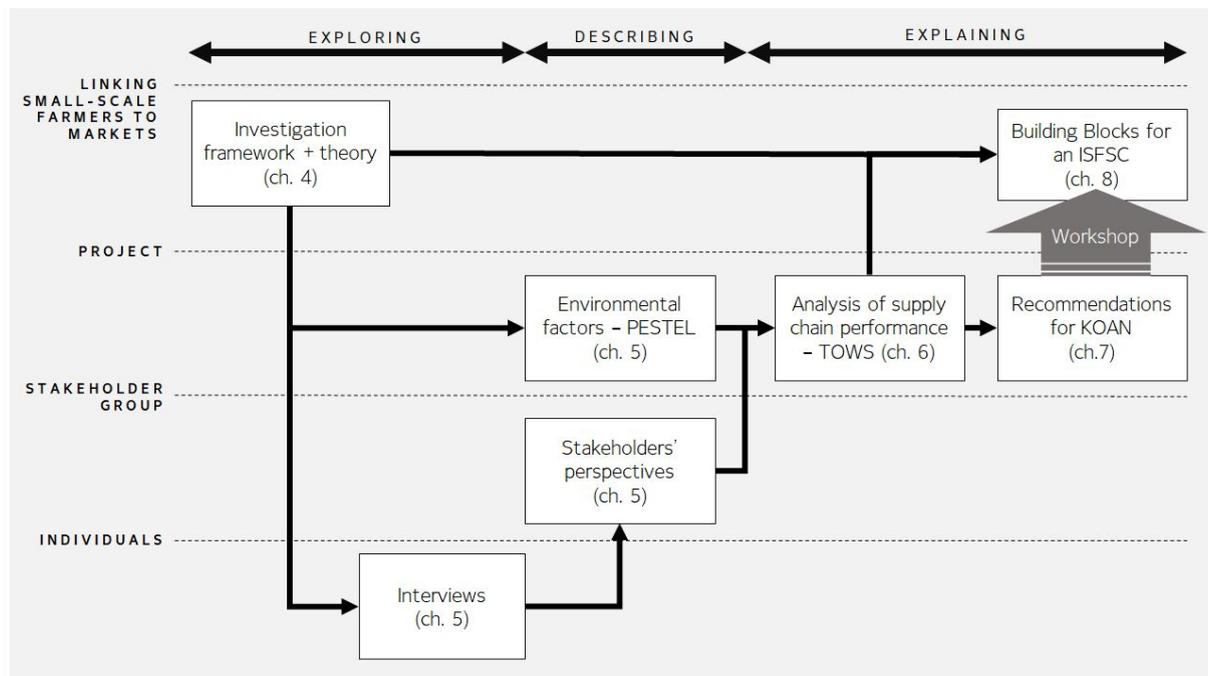


Figure 20. Process and levels for analysis of the collected data in the case study.

Methods of exploring

Methods of exploring refers to the first attempt at making sense of the gathered information when using methods of initial conceptualisation, and are intended for the researcher to analyse the data in progress. Here, the data is favourably displayed in simple forms of matrices used for exploring the fieldwork in progress, variables and reports in progress (Miles, Huberman and Saldaña, 2014, p. 122).

During the phase of exploration a literature review was performed, which resulted in the introduction of a new concept called Inclusive Short Food Supply Chains (ISFSC). In addition to this, an investigation framework was created which guided the collection of data from interviews with individual stakeholders. The qualitative interviews which constituted the main method for data collection in the study, were written down and condensed by the researchers and further summarised in simple forms of matrices. A first round of deductive coding was conducted to condense and organise the documentation. Each interview was compiled into its own matrix in order to simplify the understanding for the respondents individual responses. These matrices were, as previously mentioned, stored as data sheets in Google Drive. Archival records and other documents that were gathered for the context analysis were collected and further summarised in the same database and structured according to relevance and topic.

Methods of describing

Methods of describing refer to the different ways of displaying data for describing participants, variability and social action. A solid descriptive foundation of the data is an enabler of higher

analysis and interpretation, and helps the researchers understand *what* they are investigating through the case study (Miles, Huberman and Saldaña, 2014, p. 162).

In this performed case study the process of describing the collected data included a second round of coding, so called Pattern coding, to identify any relevant structures, similarities and differences between the interviewees in each group of stakeholders as well as between the different groups as a whole. The individual matrices which were created during the exploration process were thus merged per group of stakeholders into a total of six new matrices, of two different types, in order to understand and describe the participating actors. The matrices were structured according to the investigation framework and the posed research questions. The first type focuses on the motives and objectives for participation in the project for each unit-of-analysis, i.e. farmers, buyers and partnership facilitating organisation. The second type summarises the experienced challenges and suggested solutions for each group of functions and operations in the supply chain. The data in these six matrices was used to understand where the current flaws of the system lies, and how the development of the supply chain in the Collection Center Project could be done in an effective and efficient manner that benefits everyone.

In order to aggregate the findings for each group of stakeholders, mainly farmers and buyers, the identified patterns for challenges and solutions were counted for frequency of appearance among interviewees answers, similar to the analysis method called Content Analysis. Only the patterns, in this case general themes, that were mentioned by more than one interviewee in one of the two main stakeholder groups (i.e. farmers and buyers), were included in the final results in order to reduce the amount of data and eliminate outliers.

In addition to the six matrices that summarise the perspectives of the stakeholders, another matrix was created for the environmental aspects, based on the logic of the PESTEL framework, which is a tool commonly used for analysing an organisation's external environment, see section 3.5.3. This matrix summarised the most important environmental factors seen to affect the implementation of the supply chain, found in the collected data from both interviews and documents and archival records. The final matrices can be viewed in the chapter called "Case description - the ISFSC in the Collection Center Project" of this report (Chapter 4).

Methods of explaining

Methods of explaining compose explanations for connecting research findings to outcomes. Here, matrices and networks is an aid in conducting cause-and-effect analyses. Instead of focusing on understanding *what* is happening, methods for explanation focuses on *why*. The goal of a scientific explanation is not to prove, but merely to suggest based on identifying mechanisms, variables and processes within the studied case. Methods of explanation focus on explaining interrelationships, change and causation that are important for illustrating the system as a whole (Miles, Huberman and Saldaña, 2014, p. 222).

The final step of the analysis in this case study focused on connecting the results from the mapping of the context, the stakeholders and the supply chain activities in the previous steps with their effects on the supply chain at large. This was done through a TOWS analysis, where interrelationships and effects on the implementation of the SFSC, from internal strengths and weaknesses and external opportunities and threats, were identified and developed into tangible actions. The analysis of the environmental factors was done with the help of the PESTEL framework, which provided the opportunities and threats, while the stakeholder analysis provided the strengths and weaknesses for the TOWS. Further details about these analysis tools can be found in the section below. The concluded findings helped illuminate possible problems within the network, and could thus serve as a base in the TOWS analysis for establishing recommendations for KOAN, found in this report in chapter 7.

The final part of the analysis takes the findings from the case study to a general level, comparing it to the reviewed literature, and discusses these in order to arrive at a suggestion for success factors relevant when linking small-scale farmers to local business sectors in a developing economy. This discussion is found in chapter 8.

3.5.3 Tools used in data analysis

The PESTEL framework

The PESTEL framework is a tool for analysing the macro-environment of an organisation or business in order to understand its potential influence on the choice of strategies. The tool helps the analyst find patterns in the environment and draw out implications for the organisation, based on six different factors. These factors include; Politics, which identifies the role of governments; Economics, which refers to macro-economic factors such as GDP growth; Social, which identifies influences from culture and demographics; Technology, which highlights the influences of new innovations; Environmental, which refers to ecological and climate issues; and finally Legal which covers legislative constraints or changes. The focus of the PESTEL analysis should be to identify key drivers of change within each factor, to avoid getting stuck in details. These key drivers should be those implications in the environment that are most likely to affect the success or failure of different strategies chosen by the organisation. The implications identified in the PESTEL analysis can then be categorised into threats and opportunities to later be used in a SWOT or TOWS analysis (Johnson et. al., 2009, pp. 25-50). In this study the PESTEL provides a framework and blueprint from which to analyse the environmental context that affects the project supply chain, thus helping to answer the first research question (RQ1) of the study.

The TOWS Analysis

The TOWS analysis is an extension of the famous SWOT model. SWOT is a strategy tool that summarises the internal capabilities, in the form of strengths and weaknesses, with the environmental factors affecting the organisation, the opportunities and threats, to give a holistic image of the organisational context (Johnson et. al., 2009, p.81). Where the SWOT is more focused on the internal and external factors affecting the company as compared to other competitors, the TOWS takes the analysis one step further in order to develop tangible strategic actions. The TOWS matrix puts the strengths and weaknesses in relation to the opportunities and threats, see Figure 21. By combining the four factors one can address four types of strategic actions; Maxi-Maxi where strengths are used to take advantage of opportunities; Mini-Maxi where opportunities are seized by overcoming weaknesses; Maxi-Mini where strengths are used to overcome threats; and finally Mini-Mini where actions are taken to minimise weaknesses and avoid threats. The TOWS is not limited to the development of strategies, but can be applied for developing both tactics to implement certain strategies as well as for finding more specific actions that support a certain tactic or strategy (Wehrich, 1982). In this study the TOWS is used to understand the internal structures of the network, and find useful recommendations on how to organise and implement the project supply chain for the case collaborators, thus helping to answer the second and third research question (RQ2+RQ3).

		INTERNAL FACTORS	
		STRENGTHS	WEAKNESSES
EXTERNAL FACTORS	OPPORTUNITIES	Maxi-Maxi Use strengths to take advantage of opportunities	Mini-Maxi Seize opportunities by overcoming weaknesses
	THREATS	Maxi-Mini Use strengths to overcome threats	Mini-Mini Take action to minimise weaknesses and avoid threats

Figure 21. The TOWS analysis tool. Adapted from Wehrich (1982).

3.6 Share

3.6.1 Workshop with collaborators

At the end of the field study in Kenya the authors held a workshop together with KOAN and one of the coordinators at KOAN’s office. During this workshop the authors presented their findings, including strengths, weaknesses, opportunities and threats in accordance with the TOWS-framework, thereafter the recommendations for improvement of the supply chain were presented and discussed together with KOAN and the coordinator. One of the main objectives with the workshop was for the authors to provide a new perspective on the organisation of the project supply chain to the main case collaborator and stakeholder in the partnership facilitating organisation, i.e. KOAN. Furthermore, the authors sought to validate the findings from the case study with KOAN, seeing as they have much knowledge about the external environment in Kenya and insights into the strengths and weaknesses within the supply chain organisation. The feedback given by KOAN on the presented recommendations could then be incorporated in the development of the final success factors for an Inclusive Short Food Supply Chain, which further strengthens the reliability of the results.

3.6.2 Reporting of the case study results

The report which communicates the findings of a case study can be composed in different forms including; linear-analytic, comparative, chronological, theory-building, suspense and unsequenced. The structure and presentation should be adapted to the case study audience, which could be: academic colleagues, policy makers, practitioners, community leaders, funders of research etc. (Yin, 2014, pp.179-190). For communicating the results of a master thesis project Säfsen and Gustavsson (2019) suggest an approach for academia and industry respectively, and divides it by written and oral communication, see Table 3.

Table 3. Suggested communication formats of a general master thesis project within engineering. Adapted from Säfsen and Gustavsson (2019, p. 268).

Communication format	Target Audience	
	Academia	Industry
Written	Report according to university requirements	Short summarising report Handbook Software
Oral	Presentation and defence of report	Presentation according to organisation requirements Workshops

This comprehensive master thesis report, covering Methodology, an extensive Literature study, Results, Analysis, Discussion & Conclusions, is the mode of communicating the findings of the case study of the Collection Center Project for academia. In addition to the report, the thesis was also presented and defended to supervisors at the university.

As a part of the case analysis and as a mode of communicating the findings to the main collaborator, a presentation and workshop was conducted at the end of the case study in Kenya with KOAN and other relevant stakeholders in the project supply chain. Here, the participants gave feedback on the case study findings and verified the legitimacy of the conclusions and recommendations for the future structuring of the supply chain in the Collection Center Project. Lastly, a presentation was conducted at the office of SSNC in Stockholm, Sweden. The purpose of the presentation was to provide information about the case study conducted in Kenya, and in addition, providing information about how the findings can be replicated in similar projects which are financed by SSNC.

3.7 Quality aspects of the case study

The quality of qualitative research can be judged by its trustworthiness, credibility, confirmability and data dependability. These aspects are measured in four tests; construct validity, internal validity, external validity and reliability (Yin, 2014, pp.45-49). Validity and reliability is relevant for the quality of any research. Validity concerns the logical construct of the research that ensures that what is studied is relevant to the purpose of the study, and is typically divided into internal and external validity. Reliability on the other hand concerns the trustworthiness of the results of the study and the possibility to replicate them (Säfsen and Gustavsson, 2019, pp.221-223). The relationship between validity and reliability is illustrated in Figure 22.

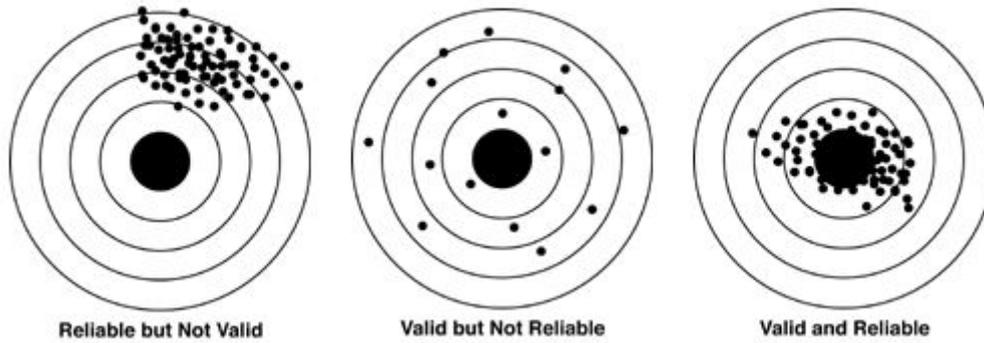


Figure 22. Illustration of validity vs. reliability (Säfsen and Gustavsson, 2019, p.223).

To achieve validity and reliability in the performed case study different tactics based on suggestions from theory by Yin (2014, p.45) were used, which can be viewed in Table 4.

Table 4. Tactics to address the quality of the case study.

Test	Description	Tactic used in this case study
Construct validity	Identifying correct operational measures for the concepts being studied	<ul style="list-style-type: none"> • 3 units-of-analysis • Multiple interviewees for each stakeholder group • Clear and multiple steps in data analysis procedure
Internal validity	Seeking to establish a causal relationship, as distinguished from spurious relationships	<ul style="list-style-type: none"> • The investigation framework provides a logic for the study • Explanation building through funnel logic in data analysis procedure • By staying critical to the answers in interviews, rival explanations were addressed • Same questions asked to each stakeholder group
External validity	Defining the domain to which a study’s findings can be generalised	<ul style="list-style-type: none"> • The results from the data collection is compared to the results from the literature review
Reliability	Demonstrating that the operations of a study can be repeated with the same results	<ul style="list-style-type: none"> • An extensive case study protocol was made • All collected data is gathered in a structured database

3.8 Weaknesses in the case study

Although the authors made efforts to increase the quality of the study by increasing the credibility, validity and reliability of the data collection, some critical aspects must be mentioned. First and foremost, performing semi-structured interviews can create difficulties in understanding the interviewees response, particularly when conducting them in a second language. Whenever interpretations are made this entails some subjectivity from the authors, and although these interpretations were minimised by efforts from the authors to always clarify whenever there were any uncertainties in the response in addition to being able to go back to check recordings from the interviews, this constitutes a weakness with the study. Furthermore, as KOAN and the coordinators choose what farmers to interview for the study, this could have affected the credibility of the study. The farmers who agreed to be interviewed for the study possibly had a strong commitment to the project, and a close relationship to KOAN or the

coordinators. Also, farmers were chosen based on the most convenient location, as the authors were limited in time and resources during the field trips. The limited access to resources and furthermore, the constraints in time also hindered more interviews to be conducted. A greater sample of farmers would have improved the reliability of the study.

Most of the interviews with the buyers, KOAN and the coordinators were conducted in the sole presence of the two authors of the study. However, as a result of the coordinators company during the field trips to visit the farmers, these interviews were conducted in their presence. This might have affected the answers from the farmers to questions related to their relationship with KOAN and the coordinators.

4 Case description - the ISFSC in the Collection Center Project

In this chapter all the collected data relevant for the three posed research questions, following the method described in chapter 2, is presented. First of all, an overview of the case is given, including the overall objectives, organisation and role of the collaborators, as well as a description of the current state of the supply chain. This is followed by a section covering the external environment of the case, where the contextual factors relevant for the agricultural sector in Kenya are identified, following the PESTEL framework. Secondly, the internal environment, in the form of the characteristics and challenges facing the main stakeholders in the project throughout the supply chain, as well as their perspectives on how to solve those challenges, are presented. The final section also includes the coded responses from the performed interviews with the main stakeholders, in Table 6-11, in descending order of frequency of mentions among the stakeholders.

4.1 Project overview

4.1.1 Description of project

The case study focuses on studying the supply chain in the Collection Center Project which is organised by KOAN and financed by SSNC with funds from Sida. KOAN formulate the project aim as the following:

“Developing a sustainable supply system for fruits and vegetables from smallholder farmers in Murang’a and Machakos counties to modern markets in Kenya.”

The project aims at creating a more efficient supply chain by using so called collection centers. Here, small-scale and certified organic farmers in the counties of Murang’a and Machakos in Kenya can aggregate their produce in order to distribute it to buyers in the city of Nairobi (see Figure 23 for an image of Murang’a and Machakos counties). In addition to more efficient distribution, the project also aims at eliminating the middlemen who trade products from the farms to the markets, i.e. brokers, as they often take a large profit for themselves and disbenefit both farmers and the actors in the local business sector, referred to as buyers (Ndung’u, 2019a). Seeing as the nature of the supply chain is to bridge the gap between small-scale farmers and business actors in a developing country, the supply chain is considered to be inclusive in its characteristics and will henceforth be referred to as an Inclusive Short Food Supply Chain.

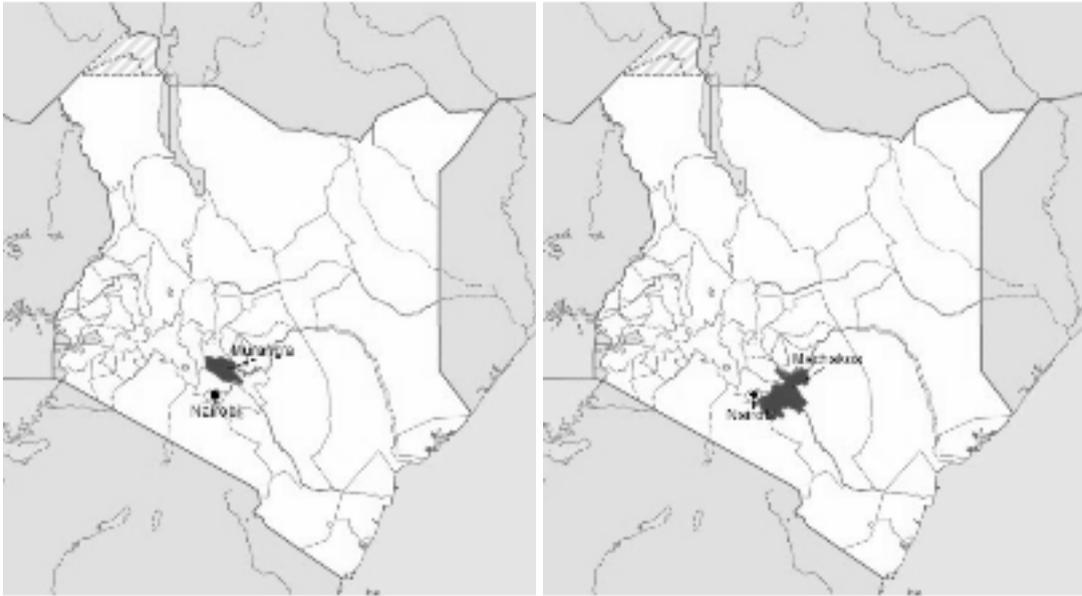


Figure 23. Picture of Murang'a (left) and Machakos county (right), located 85 km and 105 km respectively outside the city of Nairobi. (Wikimedia Commons contributors, 2020a; Wikimedia Commons contributors, 2020b)

SSNC is solely an external financier of the project and does not hold any operational liabilities. As of now, KOAN has the overall administrative and organisational responsibilities of the Collection Center Project. KOAN also does auditing and provides support for the participatory guarantee system (PGS) used by the farmers in the project for the organic certification of the produce. Furthermore, KOAN has created the structures and timeplan as well as recruited the main stakeholders and resources for the supply chain in the project. The plan is however for the supply chain to become self-sustainable and for KOAN to gradually leave the network. According to the current agreement SSNC will finance the Collection Center Project up until the end of 2020¹, which is when KOAN also seeks to have ended their involvement in the project. Two coordinators, one for each of the counties, have been employed by KOAN for handling operational aspects as well as the overall coordination of information and products between farmers and buyers.

KOAN is currently covering the following running costs in the project: salary and travel expenses for the coordinators, capacity building for farmers and buyers through trainings, and the rent for the collection centers. In accordance with the exit strategy this coverage will however gradually decrease from 100 percent to 80 percent in the first half of 2020 and then 50 percent in the second half. In the current phase of the project, KOAN will also pay for one-time costs such as the cost of renovating the collection centers and installing cold rooms in the storing facilities (Ndung'u, 2019b).

Although the coordinators are employed by KOAN, this master thesis will henceforth separate the coordinators from the organisation at large, which has a bigger mission and other responsibilities apart from those related to the Collection Center Project in specific. Thus, when referring to KOAN, the authors do not include the coordinators, while when referring to both of them, the authors will use the term "partnership facilitating organisation".

¹ The contract might be extended for another year, meaning SSNC would finance the project during all of 2021 as well.

4.1.2 Current state of the supply chain

The project is currently in the phase of establishing resources and implementing structures for the material and financial flows through the supply chain. The collection centers are planned to be up and running at the beginning of 2020. The main stakeholders within the supply chain, five buyers and 90 farmers, have been recruited to the project, and the communication and structures for collaboration between these have been initiated through the two coordinators (Ndung'u, 2019b). See Figure 24 for an illustration of the current state of the project supply chain.

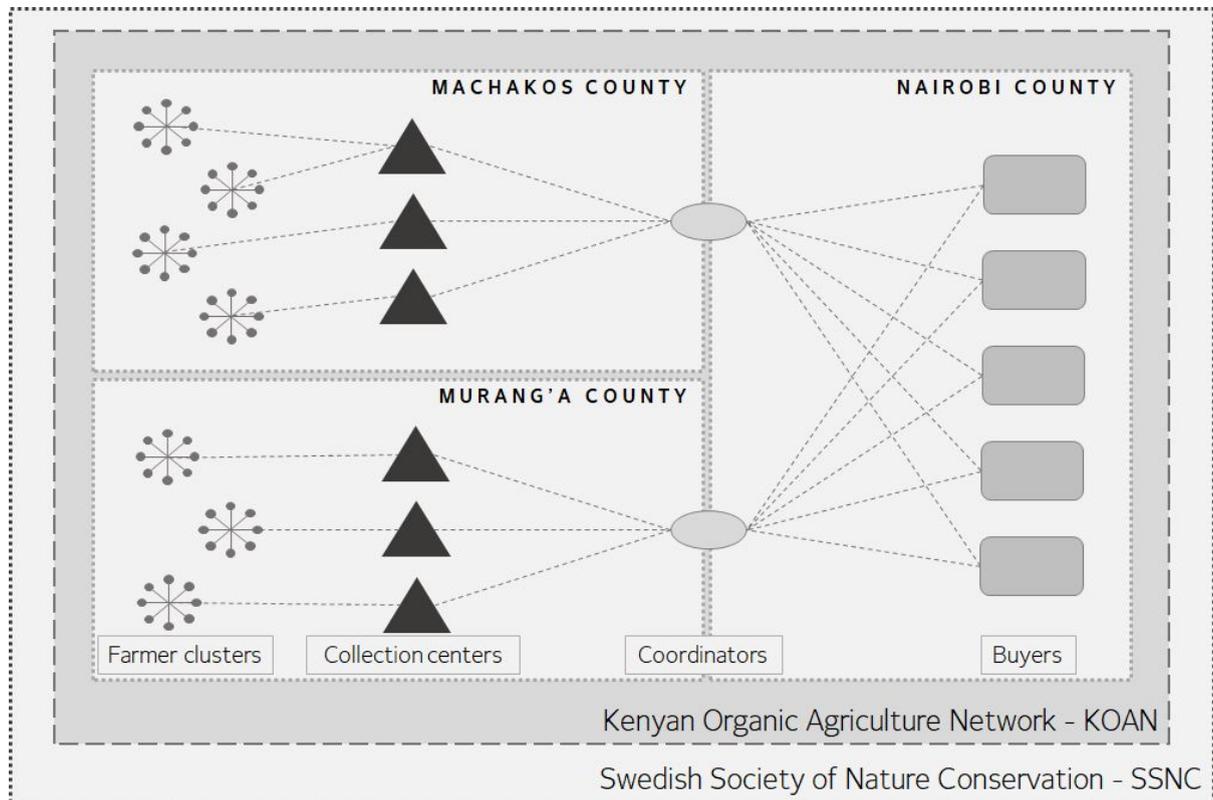


Figure 24. Schematic view over the flow of information between the stakeholders in the current state of the ISFSC in the Collection Center Project.

Collection centers

Six collection centers in total, three in Murang'a and Machakos respectively, have been searched for and selected by the farmers in the project. As of now, none of the chosen collection centers have cold rooms, meaning products can only be stored there for 1-2 days before they spoil. Some collection centers are also in need of renovations, such as construction of walls. According to KOAN, who still has the responsibility over the collection centers, there is a plan to renovate the collection centers as well as to equip them with scales which will be used for sorting and grading of produce. Furthermore, KOAN plan on installing cold rooms in only two of the collection centers, one per county, due to budget restraints. See Figure 25 for an image of one of the collection centers in Machakos county, which at the time of the photograph was awaiting installation of protective walls.



Figure 25. Image of one of the collection centers in Machakos county for the Collection Center Project. The photograph was taken by the authors during a field trip.

Farmer organisation

The farmers in the project are responsible for production of the needed products, in a manner compliant with organic farming procedures, for which they have a PGS which is audited by KOAN. Farmers are also responsible for transporting their products from their farms to the collection centers. For organisational purposes the farmers have been arranged into clusters, with currently three and four clusters in Murang'a and Machakos counties respectively. Each farmer cluster belongs to a collection center, meaning that two of the clusters in Machakos belong to the same collection center. Each cluster also has a committee which is responsible for coordination and communication with the individual farmers in their cluster. In addition to this, there is one main committee in each of Murang'a and Machakos county. These two main committees hold the responsibility of making decisions for the farmers in their county, as well as communicating and negotiating with the buyers and partnership facilitators in the network. The committees are in the process of becoming officially registered cooperatives, in order to simplify the interaction and collaboration with the business sector and government alike (Ndung'u, 2019b).

KOAN has arranged trainings for the participating farmers in the project related to, for example, organic practices and recordkeeping. KOAN's large network of organisations and businesses active in the organic market has been used for these trainings. For example, farmers in Machakos have been trained in non-chemical organic pesticides and fertiliser use through a local agrovet, who sells those kinds of products. Local extension officers from the two county governments, who can offer support in general agricultural matters, have also been involved in some of these.

Communication structures

Information between the stakeholders in the supply chain is mainly shared through the mobile messaging app WhatsApp, where the coordinators have a central role. Several WhatsApp groups

are used; one for KOAN and the coordinators, one per buyer together with the coordinators and KOAN, one for each of the farmers committees and coordinators, and one for all farmers in each county with the corresponding coordinator.

Current processes and future plans

As of now only a few deliveries of the farmer's products have been made to the buyers, and in those cases logistics has been solved in an ad-hoc and temporary manner, mainly through the coordinators delivering in person. The major discussions currently taking place concerns a) how to solve the transportation, i.e. who should be responsible for it, what types of transportation to use and scheduling for deliveries, and b) pricing of products and payment processes, i.e. finding price levels all stakeholders can agree on, and when and how farmers should be paid from the buyers. So far in the project, the price negotiations between farmers and buyers have been made through the coordinators, meaning there has been no direct contact between the farmers and buyers. The coordinators have gotten price offers for certain products from buyers, then met with the farmers during committee meetings to discuss these offers and come up with counter offers. These negotiations are still going on in full bloom, but for some products and some buyers, temporary agreements have been made. Thus, a few deliveries of goods have been possible to achieve, in addition to deliveries of samples for which the buyers do not pay anything. The buyers are however paying for the small "real" deliveries, for which the price currently does not include the transport costs for the coordinators who take the products on the public bus. Instead the transport cost is covered by KOAN who reimburses the coordinators for their travel expenses. Upon delivery, the coordinators are paid by the buyers for the farmers' products, typically in cash or mobile payment services, and it is then their responsibility to redistribute the correct amounts to the farmers in question. The buyers request a certain volume in an order but do not commit to purchasing any fixed volumes in advance. Instead they decide upon delivery which products are meeting their quality standards and the rest is returned to the farms or gone to waste. This means that the farmers do neither know how much of their delivered volumes they will get paid for when sending it, nor to what selling price it will be sold.

Going forward, the plan from KOAN concerning the distribution is that the individual farmers will transport their own products from the farm to the nearest collection center, using some sort of public transportation or alternatively a pick-up service with a lorry or motorbike, as most of the farmers don't own their own means of transportation. From the collection centers the buyers will either send their own or a hired truck to pick up their orders, or the farmers clusters will arrange some sort of transportation. Further into the future of the project, the plan is that the farmer cooperatives will own their own trucks for distributing the products to the buyers in Nairobi. KOAN is also in the process of buying crates for packaging that can be used by the farmers during transportation, which protect sensitive products better than the currently used sacks.

A past incident affecting the current state of the supply chain - The Cilantro Incident

At an early phase of the project implementation, around September/October 2019, there was an attempt to get the production and deliveries going in the project. However this was before some central issues had been solved and resulted in what the authors will refer to as "The Cilantro Incident". The Cilantro Incident started out with the farmers planting cilantro, under the belief that there was a market waiting for it. Upon harvest all the buyers who had previously committed to buying the produce backed out, meaning the cilantro remained unsold and quickly spoiled, leading to a loss for the farmers. It has not been possible, or desirable, for the authors to identify a clear cause or blame for the incident, but it became clear during the interviews that this incident has left a mark on the continued project implementation, especially for the farmers. After it happened, KOAN has explained that they decided to start fresh and focus on small

volumes and low demands on commitment to achieve a viable proof-of-concept before scaling-up, so as to not rush the process.

4.2 External environment for case study



Figure 26. Image of Kenya and its bordering countries in Africa (Google Maps, 2020).

4.2.1 Politics

The political system in Kenya has historically been turbulent, and is much affected by the British colonial rule that lasted until 1963 (Central Intelligence Agency, 2019). Since its independence the society has struggled with corruption, single party rule and later on violent elections (Svenska FN-Förbundet, 2016). In 2007 the election violence peaked as accusations of vote rigging were cast and around 1 100 people were killed in the subsequent riots (Central Intelligence Agency, 2019). The violence highlighted the antagonism between ethnic groups in Kenya, which has been, and still is, a highly political problem where different political parties represent the different ethnic groups (Svenska FN-Förbundet, 2016). As a consequence of the unrest that followed the 2007 election, a new constitution was developed and later adopted in 2010. This constitution decentralised power and divided the government into two levels, the National and County, with clearly defined functions, where the counties have the responsibility for the implementation of national strategies (MoALF, 2017). The 47 counties created through the new constitution are based on geographical areas, which also coincide to a large extent with the ethnic groups represented in the country (Svenska FN-Förbundet, 2016; Central Intelligence Agency, 2019).

Although considered a rather functioning democracy with free media institutions, regular elections and an independent judiciary, Kenya still struggles with major problems in regards to corruption in the government (Svenska FN-Förbundet, 2016; African Development Bank Group, 2019). According to Transparency International, Kenya scored 27 out of 100 on the Corruption Perception Index in 2018, which gives them a world ranking of 144 out of 180 countries (Mbithi Kimeu, 2018). In an investigation from 2018 by the Ethics and Anti-Corruption Commission, the national institution fighting corruption in Kenya, it was found that 62 percent of the respondents had paid bribes to receive government services, which was an increase with 16 percentage points from just two years earlier (Warungu, 2018). As recently as July this year (2019) Kenya's Minister of Finance was also arrested based on corruption charges (BBC News, 2019a).

Under the current government, led by Uhuru Kenyatta, an economic plan for the country's future called the Big Four (B4) plan has been developed. The B4 plan indicates that the country will focus on four major areas for improving the society and economy: manufacturing, affordable housing, universal health coverage and nutrition security (African Development Bank Group, 2019). The B4 plan is a part of the Vision 2030 strategy which aims to accelerate sustainable growth, reduce inequality, and manage resource scarcity, and is supported by The World Bank together with other partner organisations (Vision 2030 Delivery Secretariat, 2019; The World Bank, 2019). The plan highlights the importance of agriculture to politics in Kenya through the focus on food security, where the main goal is to increase volumes and keep the prices of food affordable (M. Kimani Njoroge 2019, interview, 23 Oct). When it comes to the question of food security there are opposing political forces in the workings, with different interpretations of the issue. The Ministry of Agriculture is putting forth policies favouring large-scale manufacturing and pushing down the prices, while the Ministry of Health wants regulation of the use of harmful pesticides and a movement towards organic farming (E. Gacanja Kiarrii 2019, interview, 24 Oct).

4.2.2 Economy

Kenya is since 2014 ranked as a lower middle income country, with a growing entrepreneurial middle class and solid economic growth of over five percent during the last decade (Central Intelligence Agency, 2019; The World Bank, 2019). In 2017, national GDP consisted of 17 percent from industry, 35 percent from agriculture and about 44 percent from the service sector (Statista, 2017). Small-scale consumer goods followed by agricultural products are the two largest industries in Kenya by value of annual output. The export market remains important for the country's economy, where tea, horticultural products, coffee and petroleum products are topping the list in regards to highest-value products (Encyclopedia Britannica, 2019a). Although there is great potential for self-sufficiency in Kenya for important staple foods such as tea, coffee, maize, wheat and vegetables, there is a net importation of them in the country (MoALF, 2017). Aiming to decrease the dependency on exporting volatile agricultural products, Kenya has attempted to diversify its export market since the end of the 20th century, looking more into exporting commodity goods. The share of GDP from agriculture has since declined, but remains an important part of the export market (Encyclopedia Britannica, 2019a). Many farmers are consequently moving away from producing the major export crops, also called cash crops (i.e. coffee and tea), due to decreasing margins, and instead moving to domestic crops or other occupations completely (E. Gacanja Kiarrii 2019, interview, 24 Oct).

Kenya's economy is continuously facing the challenges of high income inequality, high unemployment and high poverty (African Development Bank Group, 2019). Today, the unemployment rate is estimated to be around 40 percent, although exact figures remain difficult to determine due to the high percentage (83 percent) of the working population estimated to be employed in the informal sector (Institute of Economic Affairs, 2019). Furthermore, approximately three quarters of Kenya's population work at least part-time within the agricultural sector, particularly in rural areas where farming is the main economic activity (Central Intelligence Agency, 2019; MoALF, 2017). Kenyan agriculture is composed by a majority of smallholders and a comparably small number of larger scale farms. Only 16 percent of the agricultural produce is processed and the rest is sold as raw materials. As a consequence, the agricultural sector faces challenges to commercialisation including low productivity, use of low quality inputs, high post-harvest losses, low automation and mechanisation, poor market linkages, and inadequate business skills (MoALF, 2017). Furthermore, a large portion of the produced crops are sold on the local, informal markets in the villages, where there is a sustaining issue of price volatility as the price is solely determined by supply and demand which makes it vulnerable to seasonality and weather (E. Gacanja Kiarrii 2019, interview, 24 Oct).

4.2.3 Society & Culture

The Kenyan society and culture has been found in research, based on the World Values Initiative, to be influenced by the traditional and religious (mainly christian) values, where paternal authority, skepticism towards deviant sexualities, contraceptives and abortion as well as focus on family life are all prominent. Lack of trust in other people is also found to be an important indicator of the Kenyan culture (Tausch, 2018). The culture is also heavily influenced by the diversity of ethnic groups. The largest group, to which 17 percent of the population belong and which the current president represents, is called Kikuyu. The second largest is the Luhya, followed by Kalejin and then Luo, at 14, 13 and 11 percent respectively (Central Intelligence Agency, 2019). There are also large Indian and Asian minorities in Kenya, affecting the society and market demand likewise. With different culinary traditions, the range of food products cater to the different groups' preferences, and products used in Asian and Indian cuisine often have a higher market value than the traditional Kenyan varieties (E. Gacanja Kiarrii 2019, interview, 24 Oct).

Socio-economic inequalities in Kenya are manifested in the lack of access to services, resources, and power, both on a national and county level. According to the World Bank's estimation in the World Development Indicators from 2015, 37 percent of the total population in Kenya lives in poverty. The persistence of poverty can in part be attributed to the high population growth over the last decades. Related to the issues of poverty is the lack of access to health services and water and sanitation infrastructure (Central Intelligence Agency, 2019), as well as food security, seeing as 11 percent of the children are malnourished in Kenya (MoALF, 2017). These issues affect the low income levels of the Kenyan society more than anything, where the poor or non-existing medical services lead to dire health consequences and even deaths, which could be easily avoided by an improved access to basic healthcare (UNDP, 2019).

Agriculture is deeply rooted in the Kenyan society, and according to Eustace Kiarrii, CEO of KOAN (2019), "Everyone is a farmer in Kenya". However, the profession is now losing its status. Farming is often inherited through the generations, but urbanisation is causing more young people to leave their plots unused in the pursuit of education and work in the major cities, which leaves the elderly in the countryside to do farming (E. Gacanja Kiarrii 2019, interview, 24 Oct). Organic farming has a higher social status than conventional much due to organic producers' higher degree of education and training (E. Gacanja Kiarrii 2019, interview, 24 Oct).

Agriculture and food has become more debated over the past years due to the increasing burden of non-communicable diseases, such as diabetes and cancer (World Health Organization, 2014; BBC News, 2019b). In the course of one month during 2019, three prominent public figures in Kenya died of cancer, which put the disease high on the media agenda (Nyawira, 2019). In 2015, experts at a food safety conference in Nairobi raised the question of pesticide use and other harmful organisms in food as a threat to consumer health (Koech, 2015). Since then the issue has gained traction in the media and people are getting more aware of the unsustainable production methods with pesticides and their connection to diseases such as cancer (Kamau, 2019; Saya, 2019; Ngotho, 2019). Organic farming practices have been suggested as a response to this increasing issue, and doctors are encouraging people to choose organic food to live a more healthy lifestyle (Kamau, 2019; E. Gacanja Kiarrii 2019, interview, 24 Oct).

4.2.4 Technology

The technical development in Kenya has made several important leaps in the last decades. One of the most important examples of this is the penetration of the mobile phone among the whole population, which in turn has resulted in the introduction of innovations such as the mobile payment system M-pesa. M-pesa, which was first available in 2007, has essentially provided

broad access to instant money transfers, and it is widely used throughout all layers of the Kenyan society (GSMA Intelligence, 2019). Following the emergence of M-Pesa is the paperless banking service M-Shwari, offering instant and short term loans through the mobile phone (Safaricom, 2019).

The introduction of new technologies such as M-Pesa has also influenced the agricultural sector (Hjort and Poulsen, 2018). Most farmers in Kenya nowadays have access to smartphone technologies which are mainly used for accessing market information and as well as for communication purposes (E. Gacanja Kiarri 2019, interview, 24 Oct). Whether or not this development is entirely positive has however been debated, where the critique lies in the potential barriers that access to capital and education create among farmers (Krone et. al., 2016). Age related inequalities can also be enhanced due to the fact that older farmers are generally not very comfortable with the emerging technologies (E. Gacanja Kiarri 2019, interview, 24 Oct). Nevertheless, some research indicates that using ICT offers improved bargaining power for the farmers, especially those that are small-scale (Hjort and Poulsen, 2018). Other examples of successful implementations of ICT in agriculture currently exist, and more are in the making, where ICT is used to facilitate communication between all actors and give traceability along the food supply chain (D. Marigi 2019, interview, 28 Oct).

One such example, working at the intersection between ICT and agriculture, is a logistics solutions company called Twiga Foods. Their business model consists of a platform connecting small-scale farmers with vendors in urban markets in Kenya through providing efficient logistics systems and making use of a mobile app and M-pesa for payments. They currently have a network of 17'000 farmers and 8'000 vendors in the country, and became an even more relevant player in this space when they secured \$30M in venture capital funding from primarily Goldman Sachs (Bright, 2019). Another company integrating ICT in the agriculture sector, although with a slightly different focus, is WeFarm. WeFarm is a platform, or digital network, connecting farmers with each other in order to solve problems, share knowledge and spread innovation. The platform makes use of bulk-sms, in order to avoid the need to be connected to the Internet, and machine learning technology to help farmers connect in an efficient way. They currently have 1M farmers in their network across Kenya, Tanzania, and Uganda combined (WeFarm, 2019).

One major flaw in the technical development in Kenya is the poor state of the infrastructure (The Economist, 2017). According to the assessment from 2018 in The World Bank's benchmarking tool for logistics capacity, called the Logistics Performance Index, Kenya scores a 2.81 out of 5, which ranks them number 68 in the world². The low score can in part be attributed to the heavy reliance on the weak road network, which constitutes 90 percent of freight and passenger transport. When it comes to efficient business operations this is a hinder, and almost 22 percent of Kenyan enterprises report experiencing poor road networks (African Development Bank Group, 2019). The road network is especially lacking in rural areas, where some roads can be inaccessible during heavy rains, creating constraints to the local and commercial agriculture sector (E. Gacanja Kiarri 2019, interview, 24 Oct).

4.2.5 Ecology & Climate

Kenya is located in East Africa along the equator (see Figure 26), where the climate allows for production of a variety of food, commodity and horticultural crops (MoALF, 2017; MOA&I, 2019). The major crops produced in Kenya are tea, coffee, maize, wheat, sugarcane, vegetables and dairy products (Central Intelligence Agency, 2019). Approximately 80 percent of the land area is arid or semi-arid, and the rest of the land is of high and medium agricultural potential

² For comparative purposes, Sweden ranks number 2 with a score of 4.05.

(MoALF, 2017). In the highlands surrounding Nairobi the climate and landscape is generally more favourable for farming (Central Intelligence Agency, 2019). These areas have historically experienced moderate temperatures and reliable rainfalls, coming in two seasons, one shorter and one longer rainfall (Encyclopedia Britannica, 2019b). In the past years, however, the rains have become much less reliable as a consequence of climate change. Since approximately 98 percent of the country's agricultural activities are rain-fed (MOA&I, 2019), climate change greatly affects many farmers (D. Marigi 2019, interview, 28 Oct), not just with respect to the amount of water they have access to but also the planning of their production, which has to be more flexible in response to the volatile rains (E. Gacanja Kiarri 2019, interview, 24 Oct). Climate change has also led to more frequent and severe droughts and rising temperatures, which further affects agriculture and thus also the food production, making it more volatile. This volatility can be observed in the decline of average yield per hectare from the major commodity crops during the last 30 years (MOA&I, 2019). However, the level of environmental damage varies between the counties and is much influenced by governmental policies and climate variability (MoALF, 2017).

Other ecological issues are related to the effect the current agricultural practices have on the environment, especially when it comes to soil degradation and pests (MoALF, 2017). Due to the changing rainfall patterns and temperatures caused by climate change there are expectancies of the emergence of new pests and diseases in Kenya. The agricultural sector has already experienced an increased burden from disease outbreaks and pest attacks, leading to low agricultural productivity, food and nutrition insecurity as well as insufficient levels of income for many small-scale farmers (MOA&I, 2019). To mitigate the damage from pests and diseases, farmers turn to extensive use of chemical fertilisers and pesticides, which not only negatively affects the soil through soil degradation but also the water quality of surrounding areas (Central Intelligence Agency, 2019). Organic farming has the potential to mitigate these issues as it preserves the soil fertility, which also makes it more resistant to the effects of climate change as this soil preserves water better. After a severe drought in 2018, more farmers realised the benefits of organic production as a way of staying resilient to climate change (E. Gacanja Kiarri 2019, interview, 24 Oct).

4.2.6 Legislation

Many of the existing regulations for agriculture in Kenya were developed in the early years of the country's independence in the 60s, and most regulations concern conventional farming rather than organic (E. Gacanja Kiarri 2019, interview, 24 Oct). Support and legislation of agricultural development has mainly been for production, supporting the producers and neglecting other aspects of the value chain such as transportation, marketing, trading and processing, which remain rather unregulated. Support services, mainly coming from public service providers, have in recent years declined due to issues in governance and capacity among leaders (MoALF, 2017). A low level of legal actions and enforcement of food safety measures are characteristics of the food supply chains within the large informal food sector (M. Kimani Njoroge 2019, interview, 23 Oct). Governmental action and legislation for this sector is torn between promoting any type of employment that can benefit the poor in rural areas, or enforcing the law (Africa Centre for People Institutions and Society, 2018). Consequently, the domestic food market remains overall rather unregulated regarding procedures in the food supply chain.

In 2013, the Crops Regulations Act was created with the objective to advance the growth and development of agriculture by enhancing productivity and incomes of farmers, improving the climate for investments in agribusiness and develop agricultural export crops (National Council for Law, 2013). As an attempt to make the food supply in Kenya more structured and regulated, it also took away the right for farmers to sell the major cash crops straight to the export market.

These crops (e.g. tea and coffee) are regulated by their own governmental authority and have individual tax rates (E. Gacanja Kiarii 2019, interview, 24 Oct). This has been seen to benefit larger producers and creating obstacles for small-scale farmers in rural areas (M. Kimani Njoroge 2019, interview, 23 Oct).

The market for agricultural inputs in Kenya relies heavily on imports and is dominated by large international companies. Conventional pesticides that, due to the harmful nature of the chemicals in them, are banned from usage in many developed economies, are sold to the Kenyan agricultural industry where the legislations are more tolerant (E. Gacanja Kiarii 2019, interview, 24 Oct). Currently in Kenya the only agricultural subsidies in place are those on conventional farming inputs, such as seeds and fertilisers, but there are no equivalents for the organic inputs, making them less accessible to small-scale farmers (E. Gacanja Kiarii 2019, interview, 24 Oct; D. Marigi 2019, interview, 28 Oct). Small changes are however seen in the legal landscape towards benefitting organic production, one example being that the Kenyan Bureau of Standards in recent years has developed standards for organic fertilisers (E. Gacanja Kiarii 2019, interview, 24 Oct).

4.2.7 PESTEL framework

The presented information from the analysis of the external environment in the case study is summarised according to the major environmental factors in the PESTEL framework in Table 5 below.

Table 5. Summary of the relevant factors in the external environment in the case study.

Study Areas	Environmental Factors
Politics	Decentralised power into 47 counties in new constitution Governmental and authority corruption Focus on increased agricultural productivity due to B4-plan Opposing political forces in agricultural policy
Economy	Declining contribution from agriculture to GDP Farmers moving from export crops to domestic crops High number of small-scale farmers hindering commercialisation of agriculture
Society & Culture	Culture influenced by segregated ethnic groups and lack of trust Persistent poverty and social inequalities The devolving status of farming among young people Awareness of food safety due to increased burden from non-communicable diseases
Technology	Broadly improved access to mobile services and ICT Large investments in technological innovations in agribusiness Poor infrastructure
Ecology & Climate	Only 20 percent of land with agricultural potential Volatile rainfalls and temperatures due to climate change Increased issues with pests and soil degradation Extensive use of harmful chemicals in agricultural sector

Legislation	<p>Little regulation of the food industry apart from production aspects</p> <p>Crops Regulation Act disfavour small-scale farmers</p> <p>Current policies favour conventional over organic farming</p>
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4.3 Internal environment for case study

4.3.1 Farmer perspective

Characteristics

In the Collection Center Project there are a total of 90 farmers who are equally distributed between Murang'a and Machakos, i.e. 45 in each county respectively. The farmers were recruited to the project based on some prerequisites. Firstly, all farms have to follow organic procedures, and the farmers must have undertaken training on organic farming. Secondly, the farmers need to have access to irrigation infrastructure, e.g. from rainwater harvesting dams. Lastly, KOAN sought so called market ready farmers, who aim to sell their products to the market rather than growing for personal use. Furthermore, KOAN aimed at having equal representation from both genders of which 20 percent should be youth, i.e. below 35 years old (Ndung'u, 2019a).

The farms in the project are small-scale with an average landhold size of around 2-3 acres although this size varies greatly between individual farms as well as between the two counties, where Machakos have generally larger farms. Most of the farms are run by men (the target of equal amount men and women was not achieved) with a mean age of around 50 years. Most of these farmers have completed secondary or even a college education, but still 39 percent of them have only completed primary school. The majority of the farmers individually own the land they are farming on where they are performing so called mixed farming, meaning they use it for both livestock and crops. This is a means of spreading risk, due to reduction of input costs where soil can be fertilised using manure from the animals for example, while also spreading the income from a diversified portfolio. The crops produced by the farmers are mainly fruits, vegetables and herbs, where the individual farmers grow an average of 3-6 types of different crops, although farmers in Machakos generally produce a bigger variety. In Murang'a, the farmers oftentimes use a part of their land for cultivating cash crops (i.e. coffee or tea), and the rest is used for vegetable and fruit production. The production at the farms varies with the seasons, where the farmers change their production according to the changing climate (Njoroge and Ndung'u, 2019). Due to the higher production of these cash crops in Murang'a, farmers there have over the years received better support and resources from the national government. As a consequence, the road infrastructure and access to services for farming is better in Murang'a than in Machakos. Farmers in Murang'a are also better trained and have longer experience in organic practices, which is supported by the county government through subsidies on organic inputs and extension officers who are trained on organic practices (E. Gacanja Kiarii 2019, interview, 24 Oct). The existence of the NGO called Organic Agriculture Center of Kenya (OACK) in Murang'a, which works closely with the community in building their capacity in organic farming procedures, further adds to the superior competence and knowledge of the organic farming among farmers in Murang'a (Njoroge and Ndung'u, 2019).

Detailed information about the farmers in the project in terms of household, land and production characteristics can be found in Appendix C.

Project perspective

Most farmers have joined the project in hopes of getting access to a more reliable market offering a higher price for their products. This has been, and still is, a major challenge for them

where most of them currently turn to the volatile and uncertain local market to sell their products. With the project, they hope that they will receive a more stable income and in turn better living conditions for them and their families. Many also state that they want to be front-runners in their community by participating in the project, hoping that the potential success of it will inspire other small-scale farmers in their areas to engage with the formal markets and join the cooperatives. The organised collaboration is also something that the farmers state as a benefit, where they can enjoy improved bargaining power towards the market and learn from each other and external organisations. See Table 6 for reference.

Table 6. Motives for farmers' participation in the project. Presented in descending order of frequency.

FARMER PROJECT MOTIVES		
Overarching Goals	Project Objectives	Main Challenges
Sustainable income	Access to a reliable market	Unreliable market
Develop farm	Better prices	
Benefit family	Improved living standards	
Reduce costs	Inspire community	
Interest in farming	Improved bargaining power	
Inspire community	Benefit from organised collaboration	
Improve product range	Share and gain knowledge	
	Health benefits	

In Table 7 below, the farmers' perspectives, in terms of challenges and suggested solutions, on the Inclusive Short Food Supply Chain in the project, as provided by them during interviews, are summarised according to the different functions and operations needed in the project supply chain.

Farmers state many challenges facing them in the supply chain from their farms to the markets. On the farm, climate change is one of the major concerns for the farmers. They state that the unreliable rainfalls and volatile temperatures affect their production a lot, especially since many of them rely on experience for knowing when to plant what, and this experience can no longer be trusted. When it comes to taking the products from the farm to the collection center the farmers are challenged by lacking infrastructure, in particular poor road quality. However the major issue for the transportation is the perishability of the products, making timing and quality maintenance critical. In relation to these challenges almost all farmers state the need for proper packaging that protects the products from damage during transport as well as cold storage in the collection centers. Currently none of the collection centers in the project have cold rooms, which means products can only be stored there for maximum a few days before spoiling.

Lack of resources needed for production is another obstacle for the farmers. The challenge of covering the different costs for producing organic products is brought up by most farmers in one way or another. One farmer witnesses that *"At times the money is very scarce. Right now I'm depending on the money from milk, but the price for milk has dropped. This also then affects how I can grow the cabbage"*. The costs farmers have to cover concern seeds, fertilisers, pesticides and in some instances labor, but also transportation costs. The burden of paying for non-chemical fertilisers and pesticides is higher for farmers in Machakos as the natural conditions for farming are less favourable there and they suffer more from pest attacks and diseases. When it comes to transportation costs, they are not just an issue when wanting to take the products to the collection center but also for the farmers' participation in the committee meetings and trainings that are part of the project. Covering these expenses is an issue as the current income for the farmers is quite unreliable and inconsistent which is related to the long production cycles and

the sales price fluctuations. Suggested solutions for how to overcome these challenges in the project are very different amongst the farmers, and although some agree that payment through the bank would be preferable, they are generally not agreed when it comes to payment process and time, pricing and who should pay what. When it comes to sales, farmers seem even more confounded about how to solve it, and mainly only state the challenges they face, which again concerns the unreliability of the market.

When it comes to collaboration in the project the farmers are, however, more synchronised. All farmers have expressed that contracts between them and the buyers are a necessity, in order to provide some security and insurance that what they produce will in fact be sold. As one farmer said it: *"What happens if a buyer pulls out?"*. Many feel that the project is lacking in the implementation and delivery according to promises. This is related to the Cilantro Incident (see section 4.1.2), which mainly affected the farmers negatively as they lost sales as a consequence of it. The incident seems to have hurt some of the farmers trust in KOAN and the buyers, which can explain their eagerness for contracts. One farmer, seemingly quite disheartened, said: *"The farmers are always on the losing side"* while another farmer witnesses that *"[The] KOAN guys are very good at talking, but what they do is different"*. Other than this, farmers express a challenge in the lack of processes and structures guiding the collaboration among the actors in the project. A few of the interviewed farmers also state that there is an issue with a lack of commitment to the project from other farmers and a low engagement in the cooperatives. Many farmers express a desire for more face-to-face interaction with buyers and a closer relationship among all actors in the project.

Table 7. The perspective of the farmers on the ISFSC in the project. Presented in descending order of frequency.

FARMER PERSPECTIVE		
Functions & Operations	Challenges	Suggested solutions
Product & Production	Climate change make for unreliable weather conditions Not enough land Lack of input resources Lack of water/irrigation Meeting quality requirements from buyers	Coordination of production among farmers Product range decided by buyers Standardised quality requirements Structured methods for recordkeeping at collection center
Distribution & Warehousing	Poor road infrastructure Timing in distribution Lack of storage space Lack of cold storage Maintaining quality during transport Need of high standards due to perishability of products	Use good packaging to maintain quality in transport Cold storage at collection center Sorting and grading at collection center Farmers transport individually to collection center Farmers responsible for sorting and grading Structured methods for recordkeeping at collection center Jointly owned truck by farmers cooperative Coordinator responsible for solving transport from collection center

		Hire employee for sorting and grading
Price & Payment	Input costs Sales price fluctuations Lack of financial resources Unreliable sales volumes Transportation costs Unreliable income	Farmers paid through bank account Farmers paid through cooperative Buyers cover cost of inputs
Sales & Marketing	Access to market channels Unreliable market conditions Lack of time for sales Lack of knowledge in marketing Communication with market	N/A
Collaboration & Trust	Lack of structures and processes Lack of implementation according to project plan Lack of trust in KOAN The Cilantro Incident Lack of commitment from other farmers to project Lack of communication in project	Contracts between farmers and buyers Face-to-face interaction between farmers and buyers Closer relationship between all stakeholders Stronger influence from farmers in collaboration Farmers should visit and learn from each other Systems for handling issues in project KOAN responsible for capacity building and market facilitation

4.3.2 Buyer perspective

As of now, there are five buyers recruited to the Collection Center Project, all of which have a long working relationship with KOAN through various projects and collaborations. These buyers all have varying characteristics in terms of business size, market channels, revenue streams and product requirements. For a detailed business description and summary of resources for the individual buyers, see Appendix D. The common denominator among the buyers is that they all seek to source certified organic produce from both Murang'a and Machakos counties which will be sold through their market channels in the city of Nairobi. They contribute to the supply chain network by providing a linkage to the market, thus "*Bridging the gap between producers and consumers*" as stated by one of the buyers. All buyers to a large extent share the overarching business goal which is to expand their business and become a market leader in organic. While some of the buyers have offered certified organic produce to their consumers for many years and others are new to the organic market, all of them seek to meet the increasing market demand for safe and healthy products on the market by providing organically certified products. Thus, by joining the Collection Center Project they seek to secure a reliable supply of organic produce and thereby solving the main challenge within their businesses. Their project specific objectives are to increase their certified organic supply both in terms of volumes and wanted product range.

Table 8 provides a summary of the buyers' motives for participating in the Inclusive Short Food Supply Chain in the project, as well as their overarching goals with their businesses.

Table 8. Motives for buyers' participation in the Collection Center Project. Presented in descending order of frequency.

BUYER PROJECT MOTIVES		
Overarching Goals	Project Objectives	Main Challenges
Expand market for organic Provide safe and healthy food Help farmers Become organic market leader Expand business	Secure reliable supply Organic certification Improved logistics Increase revenue Increase volumes Traceability Help farmers Benefit from organised collaboration Improved product range	Solving logistics Unreliable supply

In Table 9 below, challenges and suggested solutions for the different functions and operations in the Inclusive Short Food Supply Chain, as mentioned by the buyers during interviews, are summarised.

One of the biggest challenges stated by the buyers is lack of access to certified organic products in satisfactory volumes. They are aware that the unreliable weather conditions are partly to blame for this, which affect the reliability of product supply and also the product quality. The buyers wish for the product quality to be well communicated to the farmers in the project through farm visits, and that both product range and quality should be based on consumer demands, where the aesthetics of the produce is mentioned as an important quality factor by the majority of buyers.

The buyers furthermore see a significant challenge in how to handle logistics within their businesses. One of the buyers in the project, a family run vegetable grocer, has a highly developed and efficient logistics system that includes a central warehouse with cold storage and four trucks for distribution. Another buyer has managed to secure a very favourable deal with a large, international Logistics Service Provider who will use their distribution network to pick-up and deliver products in the project. These two buyers are however exceptions, as the remaining three buyers have less developed logistics assets and therefore experience challenges with lack of access to transportation and storage facilities as well as the timing of deliveries. The suggested solutions to these problems from the buyers are divergent concerning the responsibility of transportation from the collection centers to Nairobi, where some are willing to pick-up the goods themselves and others want the farmers or KOAN to deliver it to their doorstep. Yet, the buyers do agree that it is the farmers' responsibility to manage transport from farm to collection center, perform sorting and grading, as well as to arrange good packaging solutions during transportation.

Looking at cost and revenue for the buyers, they all see the challenge in purchase price fluctuations and price sensitive consumers. The perishability of products is also considered a challenge connected to the revenue in their business. Prices on the organic produce in the project should, according to the buyers, be based on the prices for the corresponding conventional product, adding only a small markup. For marketing activities, lack of finance is the main challenge and they wish for KOAN to help with marketing for certified organic produce

in the project. Access to the organic certification is one of the objectives for joining the supply chain and this should, according to them, be emphasised through their marketing activities.

The buyers have previously experienced breach of contracts, and several of the buyers lack trust in farmers to live up to agreements, why they do not want to enter contracts in this project either. Contracts are considered either unnecessary or, if used, something that would solely be used for giving a sense of security to the farmers. One buyer also expressed a lack of trust in governmental systems, saying that *“When the systems are not provided from the government, you have to build them yourself”*, thereby underlining the desire to stay away from contract agreements and paperwork in general. Many buyers maintain the stance that trust and commitment instead has to be achieved through face-to-face interaction with farmers and arrangement of farm visits within the project. A close relationship with farmers is however not something that can be built over night, underlined by the same buyer who said that *“relationships in this country take a long time to build, it demands mutual respect”*. Other than the question of contracts and building a functioning relationship with farmers, the buyers mention very few challenges concerning the collaboration.

Table 9. Buyer's challenges and solutions for the functions and operations in the ISFSC. Presented in descending order of frequency.

BUYER PERSPECTIVE		
Functions & Operations	Challenges	Suggested solutions
Product & Production	Lack of certified organic products Low volumes of supply Unreliable supply due to unreliable weather conditions Limited access to wanted product range Farmers in project need more training	Product quality based on aesthetics Buyers visit farms to communicate product requirements Product range based on consumer demands Product quality based on organic certification Training farmers to meet market demands
Distribution & Warehousing	Timing of deliveries Need of high standards due to perishability of products Remote location of farms makes for long distances Lack of transportation modes Lack of cold transportation Maintaining quality during transport Lack of storage space Lack of cold storage	Fixed schedule for deliveries Farmers responsible for transport from collection center Farmers responsible for packaging Farmers responsible for sorting and grading Buyers responsible for transport from collection center Use good packaging to maintain quality in transport Open to different distribution methods KOAN assist farmers with packaging solutions
Price & Payment	Purchase price fluctuations Price sensitivity of consumers Payment time to farmers Unreliable profit due to perishable products	Small price premium compared to conventional Flexible payment methods to farmers

	Handling waste is expensive	Fixed intervals of payment to farmers Pay for all products regardless of quality 14 days payment time
Sales & Marketing	Lack of financial resources for marketing	Marketing through organic certification Marketing through trust-based relationship with consumers Transparency and traceability throughout the supply chain KOAN assist in marketing activities
Collaboration & Trust	Lack of communication in project Lack of trust in farmers to live up to agreements Experience with breach of contracts	Closer relationship between farmers and buyers Face-to-face interaction between farmers and buyers Buyers visit farms to build relationships No contracts All communication between stakeholders through coordinator Start small to solve issues early in project

4.3.3 Partnership facilitator perspective

Characteristics

The partnership facilitating organisation for the Collection Center Project consists of KOAN and the two coordinators. As previously explained, when using the name KOAN, the authors solely refer to the organisation at large, and do not include the coordinators. On the contrary, when referring to both of them, the authors will use the term partnership facilitating organisation.

Apart from providing the organic certification of the produce through assisting the farmers in the PGS, KOAN currently handles the administrative and organisational tasks in the project, i.e. organising the farmers in officially recognised cooperatives, arranging and conducting trainings for the stakeholders, and arranging renovations for the collection centers. The objective is, however, for KOAN to leave the network and their part in the partnership facilitating organisation, once the project supply chain is self-sustained. The plan is for the necessary functions and operations that are currently handled by KOAN to be transferred to other actors in the supply chain. In contrast to the participation of KOAN, the coordinators will not leave their role in the project. KOAN's purpose with hiring coordinators to the Collection Center Project is to have a lasting link on the ground serving as the operational partnership facilitator between the different actors in the supply chain. *"Everything that falls under making the farmers and buyers happy"* is according to KOAN the responsibility of the coordinator, a description to which the coordinators agree. More practically, this means that the coordinator should be the unbiased mediator on the ground with the purpose of making sure that the product flow from farmers to buyers is functioning well for all involved actors throughout the whole course of the collaboration. Examples of tasks that fall under their responsibilities are; handling orders and record keeping; production planning; assisting in price negotiations; handling information flow between farmers and buyers; as well as administering the farmer's committees.

The prerequisites for the coordinator positions were, according to KOAN, a post-secondary education, previous experience in trading as well as experience and interest in farming. Furthermore, KOAN looked for candidates with a personal attachment to the community of the county where they would be based. The two coordinators that were hired for the project fulfill these requirements, and have consequently been hired on a full-time (40h per week) basis with a contract stretching from July until the end of December 2019. KOAN is at present responsible for payment of their salary and travel expenses, however the future plan is for the contract and cost for the coordinators to gradually be transferred to the farmer cooperatives in each county (M. Kimani Njoroge 2019, interview, 23 Oct). In order for this to happen, the coordinators need to make their contributions valuable to the other actors in the project, or as Martin Njoroge, Program Officer at KOAN, expressed it: *“They need to negotiate a position for themselves, create a need for their role within the whole system”*.

Detailed information about the two hired coordinators, including their individual contributions to, and their common responsibilities for, the Inclusive Short Food Supply Chain in the Collection Center Project is found in Appendix E. The information was collected during individual interviews with the two persons in question.

Project perspectives

The main purpose of the partnership facilitating organisation is to facilitate and provide resources for the collaboration between the buyers and the farmers. Therefore, it has a more limited involvement in the supply chain’s material and financial flows, why this section only focuses on the perspectives of the coordinators and KOAN on collaboration and trust within the supply chain and not on the other functions and operations in the project.

KOAN's mission as an organisation is to promote organic agriculture by performing lobbying and advocacy for policies, and to create market linkages for organic farmers to the market. This overall business goal is also their objective with the Collection Center Project. Furthermore, KOAN hopes that the organisation of the supply chain for this specific project can be replicable for other farmer networks in Kenya. The coordinators state that their participation in the project also presents the opportunity for personal benefits including learning new things, helping farmers and pursuing their interest in farming. In general their goals and objectives with the project are in line with the description of their role.

Table 10 provides a summary of the stakeholders in the partnership facilitating organisation’s motives for participating in the project’s Inclusive Short Food Supply Chain.

Table 10. Stakeholders in the partnership facilitating organisation’s motives for participating in the ISFSC. Presented in descending order of frequency.

PARTNERSHIP FACILITATOR PROJECT MOTIVES			
Stakeholder	Overarching Goals	Project Objectives	Main Challenges
KOAN	Promote organic agriculture Lobbying and advocacy for agricultural policy Create market linkages for farmers	Link organic farmers to markets Develop a replicable value chain	Stakeholder compliance Collaboration between stakeholders Solving logistics Governance of farmers
Coordinators	Share and gain knowledge Help farmers Interest in farming Inspire community	Link between farmers and markets Coordinate information flow Ensure products reach the market	Price negotiation Lack of cooperation from farmers Solving logistics

Table 11 lists the main challenges that the coordinators and KOAN experience in relation to the collaboration and trust in the Inclusive Short Food Supply Chain.

KOAN's main challenges when it comes to collaboration and trust in the project are currently mainly connected to the different stakeholders' compliance, commitment and collaboration in the project. For example they find the farmers willingness to cooperate and compromise to be low at times, which hinders the progression of the project. At the same time KOAN has experienced issues with the buyers not standing by their word, and making commitments they cannot fulfill. In general, balancing between catering to the requests and desires from both farmers and buyers presents a difficulty for KOAN. This is especially evident in the issues with finding a solution to the logistics that everyone can agree on. KOAN also state the Cilantro Incident as a challenge (see section 4.1.2), as they believe that this might have hurt their position in the project at that time. In general many of the challenges stated by KOAN are related to their perceived lack of commitment from both the participating farmers and buyers in the project as well as a lack of trust in each other. Many of the actions currently undertaken by the partnership facilitating organisation as a whole in the project are aimed at overcoming that lack of trust between the stakeholders.

This lack of commitment and trust among the participant stakeholders is further emphasised by the coordinators who experience the consequent challenges in their daily interaction with them. The coordinators' important role connected to collaboration and trust within the project thus make their challenges plentiful. The main challenge so far in the project concerns the price negotiations between farmers and buyers, where the two stakeholder groups have not been able to agree on a solution. The coordinators' responsibilities in coordinating information flow and ensuring that the products reach the market have furthermore been challenged by a lack of cooperation from farmers and the arrangement of the logistics. Apart from the perceived lack of commitment from all stakeholders, the coordinators have experienced administrative issues connected to their employment in the project, which they claim has been hindering their ability to fulfill their tasks in the project.

Table 11. Stakeholders in the partnership facilitating organisation's challenges and solutions for the functions and operations in the ISFSC.

PARTNERSHIP FACILITATOR PERSPECTIVE	
Stakeholder	Challenges in Collaboration & Trust
KOAN	Farmers make unreasonable requests The Cilantro Incident Opposing interests of stakeholders Buyers lack of commitment to the project Farmers lack of commitment to the project Buyers not delivering according to agreement Lack of trust between stakeholders Farmers dishonest about production capacity Authority corruption hindering administration
Coordinators	Insufficient project administration Coordinators lack of resources hindering ability to fulfill tasks Opposing interests of stakeholders

Farmers lack of commitment to the project
Communication issues with farmers
Buyers lack of commitment to the project
The Cilantro Incident
Farmers lack of experience in collaboration
Farmers lack of resources hinders ability to fulfill tasks
Farmers do not see their value gained from the project
Coordinators lack of ability to influence in project
Farmers make unreasonable requests
Farmers require cold room for storage
Stakeholders previous experiences with breach of contracts

5 Evaluation of the ISFSC in the Collection Center Project

This chapter covers the performed analysis of the collected data from the previous chapter, using the TOWS analysis tool. See Figure 8 for an illustration of the procedure. The first section presents the reasoning for opportunities and threats facing the supply chain based on the identified environmental factors from the PESTEL analysis in combination with the statements from the different stakeholders in the interviews and their experienced challenges. Thereafter the strengths and weaknesses hindering the successful implementation of the necessary functions and operations in the supply chain are discussed, based on the provided motives and experiences challenges from the stakeholders as well as the authors' own observations, in light of the reviewed theory.

5.1 External environment

5.1.1 Opportunities and threats for the project supply chain

A summary of the opportunities and threats for the ISFSC in the Collection Center Project can be seen in Table 12. These are explained more in-depth, including how they are affecting the individual stakeholders and the organisation of the supply chain, in the following section.

Table 12. Opportunities & Threats for the ISFSC in the Collection Center Project.

	Opportunities	Threats
Environmental factors affecting the Inclusive Short Food Supply Chain	Organic practices resistant to climate change Rising demand for organic products Access to ICT in the society Little regulation in domestic food sector	Climate change Poor infrastructure High average age among farmers Lack of resources and knowledge due to socio-economic inequalities Lack of trust in society at large

Climate change, causing volatility in rainfalls and temperatures, as well as an increased issue with pests and soil degradation, is seen to constitute a threat for the ISCSF in the Collection Center Project. Farmers have witnessed that it affects their ability to plan their production and produce accordingly, and many state that climate change disturbs their abilities to rely on knowledge and experience in production practices. Furthermore, the farmers lack both knowledge and resources for tackling these issues. The negative effects from climate change are particularly evident in Machakos county where the farmers have experienced an increased burden of pest attacks. Machakos county has also to a larger extent been affected by droughts and more unreliable rainfalls, which are hurting their production capacity as farmers rely on steady rainfalls for their irrigation infrastructure.

Although climate change constitutes a major threat for the farmers in the Collection Center Project, they can gain from the fact that organic practices are proven to be more resistant to climate change and the said ecological consequences thereof compared to conventional farming. This constitutes a competitive advantage for the participating farmers in the Collection Center Project compared to farmers practicing conventional methods. This is confirmed by the interviewed farmers, who state that their organic farming practices have been more resilient to

the volatility in temperature and rainfall they have experienced in Murang'a and Machakos counties the last few years, compared to other non-organic farmers in their regions. Also, the organic production is an opportunity for the project as it caters to the rising demand for healthy and safe food seen on the consumer market. All buyers mention that they experience a rising demand for certified organic products on their respective consumer market, and that organic food to a large extent is associated with healthy and safe production methods. The awareness of food safety due to increased burden from non-communicable diseases plays a large role in the increased demand for these products, and therefore poses an opportunity for the Collection Center Project. The buyers furthermore confirm that the organic labelling is an important aspect for the produce as certified organic produce provides a guarantee and traceability to the final consumer.

While the organic certification, which is provided and audited by KOAN, demand certain structures and procedures to be followed in the production and supply chain, other regulations in the Kenyan domestic food sector are weak. Although there is a rising demand for safe food on the consumer market, the domestic regulations on food safety have not adapted. According to theory, the structuring of a SFSC is easier when regulations are more lenient (EIP-AGRI, 2015), especially when the farmers are small-scale. Typically, government regulation on food safety creates a hinder for a SFSC where it demands much administrative work and dealing with resource and time consuming bureaucracy. The weak regulations in Kenya therefore offer the possibility for the creation of flexible and tailor made structures and processes within the ISFSC in the Collection Center Project.

The poor infrastructure in Kenya, mainly in terms of road and water, is seen to negatively affect the organising of the ISFSC. The effects are evident, particularly for the farmers, where the lack of good infrastructure in Murang'a and Machakos counties alike affect their production abilities, their access to service facilities, and access to market outlets. Farmers state that lack of good water infrastructure hinders their ability to plan their production. This further relates to the buyers lack of access to a reliable supply. Moreover, some farmers state that the road network causes damage to their products during transportation. In both counties there are issues such as badly maintained roads, and farmers complain about some roads that cannot be used during heavy rains. The poor road network therefore creates difficulties for timely and high quality transportation both to the collection centers and further from the collection centers to the buyers in Nairobi.

Compared to the poor and insufficient road and water infrastructure in Kenya, the country has seen a broadly improved access to mobile services and ICT, in both urban and rural regions. This is also seen amongst the stakeholders in the Collection Center Project, where both farmers and buyers have good access to communication technologies such as cellphones. This widespread use of cellphones is an opportunity for the organisation, as it benefits the stakeholders in several aspects. Cellphones enable access to services such as M-Pesa, which facilitates the payment flows between the stakeholders, and requires little knowledge and logistics to handle. Furthermore, the use of WhatsApp facilitates the information flow between individuals as well as within groups such as the farmer clusters. Almost all interviewees state that communication is easy and that they currently face no challenges in this regard.

Hindering this opportunity however, is the devolving status of farming among young people in the Kenyan society. This is evident when looking at the participant farmers in the project where the average age of the farmers is high, which could affect their ability to make use of new innovations and technologies, something that is stated as a concern by one of the interviewed farmers. This threatens the project as it could hinder the adoption of new technologies in the agriculture sector, technologies that would facilitate their participation in the project as well as develop their production.

Related to the issue of the farmers old age is the Kenyan society's struggle with persistent poverty and social inequalities. All farmers in the project would benefit from more support and access to knowledge and capital to boost their position in the supply chain as well as to develop their production capacities. The insufficient access to resources and knowledge due to socio-economical inequalities in the Kenyan society is creating a hinder to their current production capacities and future development of their farms. Furthermore, as a result of the insufficient access to basic healthcare that permeates the lower income levels of the Kenyan society, the farmers suffer from the increased issue of non-communicable diseases which lead to severe health consequences and sometimes deaths.

An overarching issue in the Kenyan society, which to a large extent is affecting both small-scale and larger scale actors, is the lack of trust. According to the PESTEL analysis, this lack of trust is related to the widespread and acknowledged authority corruption as well as the divides between the segregated ethnic groups. This aspect of the Kenyan society was proven to affect all stakeholders in the project. All interviewees mentioned that trust is an essential component in any form of agreement between two parties. However corruption and previous experiences in breach of contracts hinder their creation of trust-based relationships, and therefore also the relationship between the stakeholders in the project. This is seen to threaten the ISFSC, as the stakeholders are unwilling to make promises and agreements with one another.

5.2 Internal environment

5.2.1 Summary of strengths and weaknesses in the project supply chain

A summary of the strengths and weaknesses for the Collection Center Project can be seen in Table 13. These are explained more in-depth, including how they are affecting the organisation of the different functions and operations in the ISFSC, in the sections that follow.

Table 13. Strengths & Weaknesses for the ISFSC in the Collection Center Project. Presented in no particular order.

	Strengths	Weaknesses
Internal factors affecting the Inclusive Short Food Supply Chain	<ul style="list-style-type: none"> Well-aligned goals and objectives Useful experience in organic production among farmers Distribution and warehousing assets Credible organic certification Proper organisation of farmer collaboration Dedicated coordinators KOAN's valuable network and experience 	<ul style="list-style-type: none"> Core issues overlooked in project implementation Underdeveloped processes for production planning Deficient current logistics system Poor execution and management of pricing strategy Lack of insight into production costs Poor understanding of project value Insufficient incorporation of customer demand Lack of quantitative estimations in sales Contradicting planning horizons Insufficient partnership facilitation Lack of trust and commitment

5.2.2 Project motives

Well-aligned goals and objectives

The main objective of the project, as stated by KOAN, is to link small-scale farmers with the markets in Nairobi. This objective is clearly related to the main challenges stated by farmers and traders, i.e. accessing a reliable market and securing reliable supply respectively. Thus, the objective of the project addresses some of the core issues for the involved stakeholders. Looking at the overarching goals stated by the farmers and buyers, it is clear that they agree on many aspects. Both groups have a focus and passion for organic products and production, including the health benefits they provide, as well as a will to spread this awareness to a larger mass. This is also what the stakeholders in the partnership facilitating organisation, i.e. the coordinators and KOAN, state that they want. When it comes to the project specific objectives, they complement each other on many points, e.g. where farmers want a more reliable market, the buyers want more reliable supply. The buyers also express goals related to contributing to society and CSR, which aligns with the need for more reliable income and a better living standard expressed by the farmers. How much this is actually manifested in the actions of the buyers could on the other hand be debated. Either way, having aligned goals is a foundational building block of a good collaboration (Matopoulos et. al., 2007). Furthermore, the literature review on SFSC found that common goals and objectives is even more important for the success of collaboration in these types of supply chains and that these goals often do, and should, go beyond those of economic gain (Berti and Mulligan, 2016; Nakandala and Lau, 2019). That these aspects are present in this project is therefore regarded as a strength for the project supply chain.

Core issues overlooked in project implementation

Although the goals and objectives are aligned between the actors and focus on their core challenges, there are some shortcomings when it comes to the actual implementation of them. It seems that all stakeholders have exercised a short-sightedness in their actions where everyone is focused on solving short-term, operational issues. This is of course natural in the implementation phase of a project, where the structures for the operations have to be put in place. However, this should not be at the expense of reaching the main objective of the project. None of the stakeholders have provided suggested solutions that directly address their main challenges - securing reliable markets/supply. Many of the farmers and buyers state challenges related to uncertainty in production, to a large extent caused by climate change and irregular weather patterns, which in turn leads to volatile volumes and prices. In spite of this, none of the stakeholders provide potential solutions in the project for how to overcome this. These issues are constant, and present outside of the project as well, for both farmers and buyers. The suggested solutions from all interviewed stakeholders fall short of addressing these more long-term issues which should be at the core of the project. The authors therefore find this a weakness for the project supply chain, hindering the long-term sustainability of the project.

5.2.3 Product & production

Underdeveloped processes for production planning

Producing food through agricultural practices is connected to ever-present challenges such as the exposure to and dependence on weather, and long production cycles. The long production cycles mean that farmers have to buy seeds and sow without knowing the demand some months into the future, leaving the sales volumes and prices in an uncertain state at the time of production. The farmers state this as a challenge for them, not knowing if what they grow, and thus invest in, will actually be sold and give a financial return. This leads to farmers seeking to have a product range that require little investment and shorter harvesting cycles in order to

reduce the incurred risk. Seeing as the farmers also have little financial support in the project, they currently have few incentives to produce high risk products, although this might be what is demanded by the market.

Currently the production is run as a push system as defined in theory, but they are lacking calculations and predictions of demand, and are instead solely relying on gut-feeling and production capacity. Although there was an attempt at the very beginning of the project to coordinate the farmers' production through a planting calendar, the production procedures have remained unstructured and underdeveloped. First of all, the farmers did not follow this calendar, both in terms of which products to grow, the amount of it and especially in when to grow it. Since the needed volumes for the buyers are supposed to be built through cooperation between farmers and the aggregation of volumes, synchronising the production is crucial for the success of the supply chain and something buyers require. Secondly, the lack of structured procedures for production are especially insidious to the supply chain in this project, as it deals with small-scale farmers in poor, rural areas in a developing economy. These farmers are especially vulnerable to climate change and the irregular weather patterns, as many of them rely on rain for irrigation but more importantly because they have very limited resources to spare to mitigate the risks connected to agricultural production. This is evidently a problem, as the lack of resources among farmers was stated as one of the reasons they could not follow the planting calendar. The exposure to weather and the climate in the area of production of course also dictates what is possible to grow, which has to be considered when planning the production. Generally, the challenging production conditions and the objective of creating more reliability in the food supply, means coordination and the development of production procedures are needed. The current lack of just that in the project, is therefore considered a weakness for the Collection Center Project.

Useful experience in organic production among farmers

Although the production lacks structured procedures, it should be noted that many of the farmers, especially those in the county of Murang'a, have a very long experience in farming, and in particular organic farming. Some farmers have been organic for 10 or 20 years, and have accumulated a great knowledge in, and passion for the field. Many of the farmers also state a desire to inspire their community as well as to gain and share knowledge with other farmers, and some also wanted more exchange between the two counties. Having the farmers with a lot of experience and knowledge in organic production, and a spirit of sharing and learning from each other, is promising for the future development of the project. Therefore this is seen as a strength for the project supply chain.

5.2.4 Distribution & warehousing

Deficient current logistics system

The structure of the distribution system is still a work in progress in the project. As previously described, six collection centers have been chosen for renting, each located based on the locations of the different farmers' clusters in the two counties, but the transportation to and from them remains unsolved. For now the coordinators have been the ones responsible for delivering the samples, typically using the public buses. The choice of transportation is closely connected to the maintenance of the quality of the products, especially given the poor road infrastructure that is prevalent in Kenya, and the selection of transport mode is therefore an important aspect in the project implementation. This is where the first issue of the distribution system occurs.

There are also a number of issues related to the location and function of the collection centers. The purpose of them is to aggregate volumes from multiple farmers in order to meet the

demands from the buyers. KOAN has for now been the ones paying the rent for the collection centers, but the selection of them were made by the farmers themselves. The farmers, who have little knowledge in logistics, aside from their own personal experiences, selected the collection centers largely based on what was available in their villages, why little strategic reasoning was put into this choice. Normally in supply chain management the choice of location for a warehouse is a highly strategic choice, taking into account multiple factors and trying to optimise the system, by balancing transportation costs against storage costs (Bjørnland et. al., 2003, pp. 90-99). During the field visits to the farms, the authors observed that the farmers in the project have in some cases selected warehouses up in the hills, which can only be accessed by dirt-road which runs the risk of flooding during heavy rains, and with buildings that are not properly suitable for storage and warehousing operations. Furthermore, having three collection centers in each county, in different geographic locations, is convenient for the farmers, as it reduces the distance they have to travel, but not very suitable for the pick-ups made from them to the buyers in Nairobi. In the case of the buyers coming to the collection centers to pick-up their goods, the travel distances will be long, and the system more intricate, requiring better route planning, as they would potentially need to visit all three centers to get their full orders. During interviews, one buyer also expressed their opposition to having several pick-up spots in each county, meaning it will be too cumbersome and expensive to pick from more than one collection center. Operating a warehouse is of course also connected to a number of fixed costs, e.g. rent, equipment and operations, and most often, these costs exceed the saved cost for transport that an increased number of storage locations provides, meaning it is from a total cost perspective not beneficial to have a large number of warehouses (Bjørnland et. al., 2003, pp.97-99).

Further adding complication to this is the fact that the products in the system are perishable, making timing a critical aspect in the distribution. In order not to spoil the products the delivery from the farmers has to be made directly upon harvesting, and then closely synchronised with the buyers to make sure they are ready to receive the orders in the following days. This time sensitivity is to a large extent attributed to the lack of cold storage in the current supply chain, where some products can only be stored there for 1-2 days before they spoil. If KOAN's plan to install cold storage in one collection center per county is later put into action it likely means that only two collection centers will be used in practice, making the rest redundant.

Given the uncertainty in the transportation solutions, the poorly located collection centers and the lack of cold storage in the supply chain, it is concluded that the logistics system is deficient and this is considered a major weakness for the project supply chain.

Distribution and warehousing assets

Although the system for the distribution in the project is deficit, there is still a valuable resource in the access to warehousing facilities and equipments, such as crates for packaging, that KOAN provides as well as the transportation assets that the buyers possess. One buyer, for example, has a very favourable contract with a large LSP offering to distribute goods from farmers to the buyer's shop at an unusually low rate. Another buyer has a well-developed logistics network in-house, including trucks and a central warehouse with cold storage. Furthermore, many buyers have access to cold storage within the shops, meaning products can be stored there for some time and still maintain quality. Regardless of how and if these resources are used for the logistics activities, they provide a competitive advantage for the project and are therefore considered a strength for the project supply chain.

5.2.5 Price & payment

Poor execution and management of pricing strategy

One of the most prominent challenges in the project, introduced by more or less all interviewed stakeholders, is that of the pricing of the products. Farmers want a much higher price than what they would get at the local, informal market, and the buyers want to buy at a low price in order to be able to have a competitive price towards end-consumers. Historically the price for certified organic products have been very high in Kenya, somewhere between 50-100 percent higher than that of conventional products. In the project, however, many of the buyers sell to middle-income consumers and state that they want to democratise organic food, and make it available to everyone, not just high-income households, which has normally been the case. This is because organic food is closely associated with food safety in Kenya, in contrast to conventional food which often contains harmful chemicals, and the buyers thus see a demand and use for non-harmful food products among all socio-economic layers of society. This puts an ethical dimension to the price level of the products.

To further complicate the issue of pricing, the farmers were taken to some of the shops of the buyers at the beginning of the project, as a goodwill attempt from KOAN to create transparency in the project, which led to the farmers getting unrealistic expectations upon seeing the retail prices. This is because they do not have a complete understanding of all the costs incurred in retail from transport, storage, rent, salaries etc, as described in the Total Cost of Ownership model, according to Martin Njoroge at KOAN. The current price negotiation process is further hindered by the fact that all communication goes through the coordinators, which becomes time-consuming and inefficient. This also undermines the opportunity for the farmers and buyers to engage in face-to-face dialogue and create understanding for each other, making it potentially harder to reach an agreement.

The current price negotiations have, furthermore, been made in reference to the current market price for conventional products with the addition of a premium for the organic quality. Using the price on the local and informal markets as a benchmark is natural for the farmers as it is their commonly used place for sales. Even so, it creates a number of issues for the negotiations. First and foremost, the price on the local market is very volatile, as stated in earlier sections of this report, changing daily based on available supply and demand. This is because the prices on these local markets are completely market driven, i.e. using a market-based pricing strategy. Thus, prices have to be renegotiated frequently between farmers and buyers in order to adjust for the current market price at the time of order. The premium that is then added by the buyer to the products is more or less based on gut-feeling, and no formalised system has been agreed upon in the project. This means that predicting profits for farmers becomes very hard.

Taking all of the above mentioned issues into account, it is concluded that the unwillingness to compromise, the unrealistic expectations of the price levels and the poorly executed market-based pricing strategy constitutes a weakness of the project supply chain.

Lack of insight into production costs

During the author's participation in a committee meeting for the farmers, it became evident that the farmers lack the knowledge of how to calculate their production costs per unit. In practice, no one in the project actually knows what the cost of producing, for example, one mango is. This makes it harder to judge the fairness of a price and forces the farmers to rely on gut-feeling to know what is a break-even price. This inability constitutes a weakness not only for the individual farmers, who are unable to predict their future profit and revenue, but also for the project supply chain as a whole, as it creates a hinder to the collaboration and obstruct the long-term economic viability.

Poor understanding of project value

Looking at the price negotiation issue at a wider angle it is evident that no one in the project seems aware of the value they offer to others. The value proposition is a central component of a product offer or service, as seen in theory on Business Models. Having a unique value proposition is what constitutes the competitive advantage towards other organisations. Knowing the value one offers, and being able to formulate it in a clear way, also makes settling on a price easier. The price can then be judged in relation to its perceived value, rather than in relation to what the current market price for similar products is. Looking at the motives for the farmers to engage in the Collection Center Project, it is evident that they find value in the participation, where they see a chance at reaching the formal markets where prices are higher and more stable, and to engage in a formalised cooperation to get support. The more tricky part is the value proposition the project offers to the buyers, which remains rather diffuse. This can also be seen in the weak commitment and willingness to compromise that the buyers demonstrate. The problem is not that value does not exist, but rather that a proposition has not been properly formulated and used in the communication with stakeholders. At the general level the project offers the buyers certified organic products that are safe and healthy to eat and available through an organised distribution system. The alternative would be for buyers to buy from individual farmers directly which would be more complicated and time-consuming. The project thus offers something unique compared to other similar projects such as, for example, Twiga Foods, seen as more or less none of these deal with certified organic products in particular. Therefore, the project should not be valued the same way as going to the local market and buying a product there. The sustainability of the project depends on the commitment from the stakeholders, and thus their perceived value gained from the collaboration. This would both facilitate the agreement on a price and furthermore benefit the project's long-term survival. The current lack of insight into the proposed value of the products and services in the project is thus considered a weakness for the project supply chain.

5.2.6 Sales & marketing

Credible organic certification

One of the most promising aspects of the project is the inclusion of the only certifying body for organic farming recognised by the authorities in Kenya, i.e. KOAN. Their involvement in the project, where they offer advice, development and implementation of the PGS system for organic production for the farmers constitute a major strength for the project. This creates a transparency and traceability towards the buyers, who can be sure that what they buy and sell is actually organic. The theory on both SFSCs and IBMs highlight the importance of labelling and certification schemes as a means of creating trust and transparency towards end-consumers when there is no face-to-face interaction between them and the farmers. It is thus an important tool in both sales and marketing, and offers a competitive advantage. Considering that KOAN is not just providing certification but also taking an active role in the project, the organic certification is seen as a strength for the project supply chain.

Insufficient incorporation of customer demand

The current product range, although with input from the coordinators, was largely based on what the farmers already knew how to grow and what they wanted. Many farmers express that they prefer products that have shorter production cycles, which can thus be sold quicker and require less input resources. These products might not necessarily be what the market wants, and it becomes an obstacle to the sales if all farmers decide to follow this logic and thus produce the same goods. Being able to decide the product range themselves is of course convenient for the farmers, and give them a sense of autonomy, but that advantage runs the risk of being overshadowed by the mentioned negative effects in the long run. Seeing as the buyers are the

ones who know the market and the consumer demands, their knowledge should be incorporated in the production planning when settling on a product range in order to make sure a demand exists. The insufficient knowledge of the market demands among the farmers does not just affect the product range but also the quality of the produce. The farmers indicate that the insufficient knowledge in the quality requirements, and how they are measured, is a challenge for them. Thus, incorporating customer demand in the planning of activities in the organisation would increase the chances of getting the farmers products sold. Therefore, the current inability to incorporate the buyers in production planning is considered a weakness in the project.

Lack of quantitative estimations in sales

A central aspect of production and logistics management is forecasting of future demand. Forecasting does not just entail estimating how much the organisation will be able to sell, but also quantifying the production capacity for the period given the available resources. These kinds of estimations help the organisation understand how much is needed to produce and sell in order to cover the incurred costs, i.e. the break-even volumes (Bjørnland et. al., 2003, pp.186-192). In the project, neither farmers nor buyers seem to have any perception of the size or growth of the demand from consumers. Furthermore, no one in the project has made calculations on the necessary volumes needed to cover costs for transportation, storage and salaries. Instead everyone dismisses the option of paying for, for example, transportation due to the volumes being too low, but only based on rough estimations in the heads of individuals. Granted, it is impossible to make calculations on break-even volumes if the selling price hasn't been settled yet (see section "5.2.5 Price & Payment"). Either way, the lack of estimations of costs and volumes hinder the planning and possibility for agreements between the stakeholders. This is considered a weakness for the project supply chain.

Contradicting planning horizons

The lack of planning ahead of time and quantifying seems to be, at least partly, a consequence of the uncertain business landscape in Kenya. Buyers want to order only a few days before delivery, planning at most a week into the future, in order to stay flexible. The behaviour of staying flexible and only planning for short time-horizons are the characteristics of agile organisations, who typically operate in volatile and competitive environments (Christopher and Towill, 2001). It is understandable that the buyers don't want to commit in the long-term, but it creates complications when trying to reach agreements with farmers. The farmers, on the other hand, have a planning horizon of a couple of months, due to the production cycle from sowing to harvest, and thus need to know the demand they will face much longer than a week in advance. The longer perspective in the planning is important for farmers in order to secure their income, and this discrepancy in planning horizons between farmers and buyers becomes highly connected to the issue of contractual agreements and the distribution of risk in the supply chain. With the current system the risk falls completely to the farmers, who have to produce blindly and hope the buyer will agree to buy in the future.

All in all the short planning horizons hinder the ability for the stakeholders to reach agreements and the supply chain to become successful and sustainable, why it is considered a weakness for the project supply chain.

5.2.7 Collaboration & trust

Proper organisation of farmer collaboration

One crucial success factor stated in the theory on IBMs is the organisation of farmers in formalised collaborative structures. These structures could take the form of cooperatives which help the farmers improve their bargaining power, share and gain knowledge, as well as meeting

the demands from the market (Vorley et. al., 2008). The farmers have much to gain from engaging in formalised collaboration, even after the project has come to an end, as they gain knowledge and experience which develops their competitive advantage on the market (Matopoulos et. al., 2007). The case study showed that the farmers seem to recognise the value in the farmers clusters, where they have an active communication through WhatsApp as well as frequent face-to-face meetings. Seeing as the farmers in the project already have a strong collaboration through the clusters and committees and are in the process of becoming officially recognised cooperatives, the project supply chain is well on its way of preparing the farmers for engagement in the formal markets, and this is considered a strength.

Dedicated coordinators

The project experiences a great asset in the close collaboration the two coordinators have established with the other stakeholders, especially the farmers. It is clear that both the farmers and the buyers have a high level of trust in the coordinators and that their work is appreciated by both groups alike. Gaining this trust is necessary in their role as an important part of the partnership facilitating organisation, which entails facilitating communication and negotiations between the groups. These coordinators also have a strong passion and engagement in the project and want to see it succeed. Therefore the coordinators constitute a strength for the project supply chain.

Insufficient partnership facilitation

An active and engaged partnership facilitator is something that is stated an important success factor in the literature on IBMs and SFSCs alike. The facilitator is needed to create that desired bridge between the farmers and the buyers, and to bring in knowledge, resources and structures in the collaboration (Vorley et. al., 2008; Berdeguè et. al., 2008). Looking at the theory on Food Hubs, the role of the facilitator is even more precisely defined based on six different areas needed to create a functioning SFSC: logistics, marketing, product services, producers consultancy services, community engagement, and web of practices (Berti and Mulligan, 2016). In the Collection Center Project the role of the partnership facilitator is shared between KOAN and the coordinators, but it is clear that the range of responsibilities currently taken by the facilitator organisation is not as large as described in the literature on FHs. It should here be emphasised that the coordinators do pull a heavy load when it comes to the coordination in the project and facilitating the flow of goods between the farmers and the buyers, and that KOAN is an NGO with limited resources, both in terms of human and financial capital, and a range of other commitments outside of the project. Thus the problem is not *how much* is done, but rather *what* is done, and *by whom*.

KOAN has, as previously stated, adopted a strategy where they want to gradually decrease their involvement in the project in order to build a system that can survive even after they have withdrawn their funding. This strategy is reasonable on paper, however it goes without saying that the withdrawal should not be initiated before the project has actually proven functioning. KOAN, in its current important role in the partnership facilitating organisation, needs to take an active role to establish structures and processes guiding the collaboration between farmers and buyers that enable future growth of the project. They are the ones who can act on behalf of all the stakeholders' interests as well as prepare them in the best way and build their capacity to engage in trade with each other. This is also something that especially farmers have requested, saying that they lack processes and structures for the collaboration and that they feel like KOAN could take a bigger responsibility in this.

There is another issue related to this, stemming from the current workload put on the coordinators. The coordinators are, as previously mentioned, responsible for "*Everything that falls under making the farmers and buyers happy*", which basically means there are no ends to what can be considered their task to solve. This has also been the case in practice, where the

coordinators are responsible for everything from arranging committee meetings for farmers and acting as the mouthpiece for both farmers and buyers in price negotiations, to personally delivering products from the collection centers. Although the coordinators expressed dissatisfaction over the financial compensation for their work, they seem to not find the workload too overwhelming due to their personal investment in the project and passion for it. However, their current workload presents a significant obstacle to the sustainability and growth opportunity of the project. Right now the solution to problems often rely on the personal presence or trust in the coordinators, rather than the presence of and trust in the organisation. This means that the coordinators are not interchangeable, as the trust that stakeholders have in them is built up by personal interactions that take time to build. Thus, by making the project completely dependent on their presence and involvement, the system becomes vulnerable to change and it creates unsustainable working conditions for the two individuals behind the role.

All in all, the lack of structures and processes guiding the collaboration, the insufficient range of responsibilities covered by the partnership facilitating organisation as a whole, and the high dependency on the two individuals in the roles of the coordinators constitute a major weakness for the project supply chain.

Lack of trust and commitment

Creating an environment supporting the formation of trust-based relationships among stakeholders was found in the literature review to be one of the key aspects for both IBMs and SFSCs. Having the stakeholders trust each other is imperative to enabling dialogue and commitment to the supply chain, and has been proven to foster a more successful and competitive supply chain (Nakandala and Lau, 2019). Looking at the collaboration between the stakeholders in the project in particular, it becomes clear that the level of trust is feeble and a cause of stalling progression in the implementation. This is manifested in a number of different incidents as well as behaviours and attitudes among the stakeholders. First and foremost the fact that the main challenges for both KOAN and the coordinators are related to lack of commitment and collaboration from the other stakeholders, is rather revealing. They both experience that the unwillingness to compromise and make commitments from both farmers and buyers is the main hinder to the progression of the project. This is also confirmed by some

“ People [in Kenya] have commitment phobia. They see contract agreements as hostile. ”

- From interview with one buyer

of the farmers who witness that a lack of engagement and commitment to the cooperatives from other farmers is a challenge for the project. Secondly, the disagreement over the potential introduction of contractual agreements between farmers and buyers, are a clear-cut example. As previously mentioned, farmers want contracts in order to have a guarantee

that they will get their products sold at a decent price and that the buyers are obliged to purchase them. They motivate this by saying that they don't trust that the buyers will actually follow-through without contracts that more or less force them to purchase. Buyers on the other hand are opposed to contracts for the exact same reason - they don't trust that farmers will deliver even with contracts and thus don't see they point of them. The buyers' unwillingness to commit is likely also connected to their agile way of operating, with short order cycles and flexibility at the center. The third manifestation of the lack of trust and commitment, which is also partly to blame for the first issue mentioned, is the Cilantro Incident. The Cilantro Incident (see section 4.1.2 Current state of the supply chain) seems to have hurt the working relationship farmers and buyers had started to build up, as well as impaired the farmers' trust in KOAN, who express that they felt let down and overlooked by KOAN. This can partly further explain the farmers' eagerness for contractual agreements. KOAN also express that they felt crossed by the buyers in the Cilantro Incident, as they abruptly abandoned their previous commitment to purchase the cilantro the farmers had produced. Both the issue of contractual agreements and

the Cilantro Incident generally boil down to lack of trust, both in each other and the system, which could partly be a consequence of the general lack of trust that characterises the Kenyan society and culture, and causes people to avoid bureaucracy and paperwork.

This experienced lack of trust, between all stakeholders, is hindering the progress of the project and if not overcome, could seriously hurt the possible sustainability of it. Therefore it is considered a major weakness for the project supply chain.

KOAN's valuable network and experience

As stated in earlier sections of this report, KOAN has a large network of organisations, government affiliates, and businesses in addition to 200 000 certified organic farmers and exporters, all bringing unique knowledge and experience to the table. These associates can contribute to the project through providing trainings and resources for different aspects, as well as provide a pool from where to grow the supply chain. Furthermore, KOAN has many years of experience in project management, capacity building of small-scale farmers and marketing of organic produce. They have operated for many years in the Kenyan business landscape and therefore hold much knowledge in the external environment affecting such an organisation as the supply chain in the Collection Center Project. Hence, KOAN provide a valuable asset for the project and their significant network and previous experience in project management in Kenya is considered a strength for the project supply chain.

6 Achieving a successful ISFSC in the Collection Center Project

Tailored proposals for the arrangement of the ISFSC in the project were made based on the opportunities, threats, strengths and weaknesses from the case analysis in combination with the identified success factors from the Literature Review, while also taking into consideration the feasibility of the recommendations for the partnership facilitating organisation. These proposed actions for improvement are presented and explained in this chapter, under section 7.1. The recommendations were presented and discussed with representatives from KOAN and the coordinators during a workshop in Nairobi, Kenya. The workshop aimed to verify the credibility of the results from the case study, as well as to discuss the recommendations. The participants' thoughts and feedback from the workshop, as well as the authors' reflections upon them, are presented in section 7.2.

6.1 Recommendations for the Collection Center Project

6.1.1 TOWS matrix

The following recommendations, presented in Figure 27, are made for the partnership facilitating organisation, as an aid in creating a successful implementation of the ISFSC in the Collection Center Project. The recommendations are based on the opportunities and threats in the external environment that are affecting the project supply chain, as well as the strengths and weaknesses within the project organisation. The authors believe that these recommendations will steer the project in the right direction, and are confident that KOAN have a good chance at facilitating the creation of a successful ISFSC in the Collection Center Project. Yet, the authors leave the decision on how to, in practice, follow these recommendations to KOAN in collaboration with the other stakeholders in the project.

TOWS ANALYSIS		STRENGTHS	WEAKNESSES
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> Organic practices resistant to climate change Rising demand for organic products Access to ICT in the society Little regulation in domestic food sector 	<ul style="list-style-type: none"> Well-aligned goals and objectives Useful experience in organic production among farmers Distribution and warehousing assets Credible organic certification Proper organisation of farmer collaboration Dedicated coordinators KOANs valuable network and experience 	<ul style="list-style-type: none"> Core issues overlooked in project implementation Underdeveloped processes for production planning Deficient current logistics system Poor execution and management of pricing strategy Lack of insight into production costs Lack of trust and commitment 	<ul style="list-style-type: none"> Poor understanding of project value Insufficient incorporation of customer demand Lack of quantitative estimations in sales Contradicting planning horizons Insufficient partnership facilitation
<p>THREATS</p> <ul style="list-style-type: none"> Climate change Poor infrastructure High average age among farmers Lack of resources and knowledge due to socio-economic inequalities Lack of trust in society at large 	<p>4. Leverage organic to grow the network</p>	<p>5. Develop a value proposition for the project</p> <p>6. Integrate buyers in production planning</p>	<p>8. Transfer risk in business partnership to KOAN</p> <p>9. Trainings for farmers in financial aspects</p> <p>10. Install cold storage at two collection centers</p> <p>11. Incorporate a long-term perspective in project implementation</p>
	<p>1. More active role of KOAN in partnership facilitating organisation</p> <p>2. Create a feasible workload for the coordinators</p> <p>3. Arrange face-to-face meetings for strong collaboration</p>	<p>7. Chose strategic locations for collection centers</p>	

Figure 27. The TOWS matrix indicating strategic actions needed for improvement of the ISFSC in the Collection Center Project.

6.1.2 Overarching recommendations

The following three recommendations are overarching in their nature as they address both external threats and opportunities as well as internal strengths and weaknesses that are affecting the project supply chain. These recommendations aim to improve the collaboration and structure within the project organisation, which is seen to be of high relevance for the future success of the project supply chain.

1. *More active role of KOAN in partnership facilitating organisation*

The partnership facilitating organisation's role is important for the success of the food supply chain, in order to bridge the gap in knowledge and power between the farmers and buyers in the business model, as well as to create structures for the involved stakeholders. Furthermore, the partnership facilitating organisation should be responsible for activities such as logistics, marketing, as well as capacity building and financial support. The case analysis showed a weakness in the partnership facilitating organisation's management of these necessary activities in the project, where most of these activities are carried by the coordinators, while others are lacking in the project. The recommendation is, therefore, for KOAN to make use of its good network and previous experience in project management when creating useful structures and processes for the necessary functions and operations in the project supply chain.

2. *Create a feasible workload for the coordinators*

The partnership facilitating organisation currently consists of KOAN, who carries the main administrative responsibilities, and the two coordinators, who are responsible for operational activities in the project. The case study put light on the considerable workload carried by the coordinators which is considered a weakness for the ISFSC. Although the coordinators passion and commitment to the project is considered one of the strengths, their current work situation where their resources are limited while their tasks are plentiful, creates a hinder to the future upscaling of the project. Therefore, some of the partnership facilitating responsibilities that are now dealt with by the two coordinators are recommended to be transferred to KOAN.

3. *Arrange face-to-face meetings for strong collaboration*

According to the theory on IBMs and SFSCs, strong relationships between the actors are imperative for a successful collaboration and hence the success of the ISFSC in the project. It is, therefore, crucial for the stakeholders to overcome the lack of trust in each other in order to create a sustainable project and a mutually beneficial collaboration. The lack of trust in the Kenyan society at large, which is also seen to affect the organisation of the project, should be overcome by conducting meetings between the stakeholders where they can interact and exchange knowledge and experiences in person. Face-to-face meetings are expected to facilitate negotiations and decision-making between the stakeholders in the project, and possibly make them more willing to commit to the project in the long-term.

6.1.3 Opportunities & Strengths

The following recommendations aim to make use of the strengths within the project supply chain to take advantage of the opportunities identified in the external environment.

4. *Leverage organic to grow the network*

In order to make use of the opportunity identified in organic farming procedures' resilience to climate change and the growing demand for organic products among consumers, the project must leverage their expertise knowledge in this field. Also, the organic quality of the produce in the project supply chain constitutes part of its competitive advantage to the buyers. The farmers in the project have good knowledge of organic practices, especially in Murang'a county. By

spreading the awareness of the benefits with organic farming to other farmers in their communities and making use of the participating farmers' expertise knowledge in organic practices there is a good possibility of growing the network in the project. This is also something many of the interviewed farmers have expressed as a goal - to inspire their communities and spread good farming practices to more producers.

6.1.4 Opportunities & Weaknesses

The following recommendations aim to seize opportunities in the external environment by overcoming weaknesses in the ISFSC.

5. Develop a value proposition for the project

The value proposition is a central component to any type of business, why knowledge of the value created through the actors' individual and joint activities is essential. Also, a good understanding of the value proposition is important when choosing a price strategy and during price negotiations. As of now, neither farmers nor buyers are aware of the value of organic produce compared to conventional food products. The stakeholders in the project need to understand the value the consumer sees in organic produce in order to fully seize the opportunity from the rising demand for organic produce experienced by the buyers. Thus, a clear and competitive value proposition must be developed in the project in order for the network to create and capture business value and become sustainable in the long-term.

6. Integrate buyers in production planning

The buyers should be incorporated in the management and planning of the product range and planting calendars. As of now, this is solely left to the farmers with some assistance from coordinators, why the buyers', and thus also the consumers' demands, are forgotten in the process. The decision for the product range should be based on the farmers capacity and resources in combination with the buyers' knowledge in market requirements. This is crucial in order to make sure that the project is delivering value to the final consumer through the supply chain. Also, this would help improve the farmers' currently underdeveloped production procedures, by allowing them to plan more efficiently and raise their knowledge in the market demands. Incorporating the buyers would also open up for basic quantifications of sales volumes which could help the project in reaching financial sustainability. Furthermore, by letting the buyers influence what is being produced in the project it is more likely that they are willing to commit to longer ordering cycles and it could, in the long run, facilitate their commitment to the project. Also, integrating the buyers more in the management of the production planning is likely to foster a better relationship between farmers and buyers and create a stronger collaboration in the project.

6.1.5 Threats & Strengths

The following recommendations aim to overcome threats identified in the external environment by using strengths in the ISFSC.

7. Chose strategic locations for collection centers

The locations of the collection centers in the project should be carefully decided and calculated based on where it is most strategically suitable for all involved stakeholders. Aspects related to the road infrastructure must also be incorporated in the decision, as the poor road network constitutes a threat to a high quality distribution in the project. Travel distances both to and from the collection center must be taken into consideration, why the positioning of collection centers is a question of minimising the accumulated travel distances for all involved parties. A well thought-over choice of location for the collection centers is seen to benefit the project

through facilitating for efficient distribution and storage activities, while minimising the cost for logistics for all involved stakeholders.

6.1.6 Threats & Weaknesses

The following recommendations aim to avoid threats facing the project organisation from the external environment while minimising weaknesses in the ISFSC.

8. *Transfer risk in the business partnership to KOAN*

None of the main stakeholders in the project trust each other, and none wants to carry the risk in the sales exchange. The authors, enforced by the PESTEL analysis as well as interviews with stakeholders, believe that the inability to agree on contracts will be difficult to overcome in such a society as Kenya, where contracts are seen as hostile and most agreements instead rely on trust and personal relationships. Therefore, it is important to focus on other ways of minimising the risk for the stakeholders, and the farmers in specific, while waiting for such a trust-based relationship grow.

Integrating liquidity into an ISFSC is, furthermore, stated as an imperative success factor in theory, as it can help the small-scale farmers make larger investments in their production and farming practices with less risk. With these aspects in mind, the recommendation is for the partnership facilitating organisation to carry the risk in the business partnership, and thereby lighten the burden that is currently carried by the resource scarce farmers. More specifically, the risk should be transferred to KOAN, as their administrative position in the project and their internal as well as external resources make them most suitable for this task.

One could also imagine at a later stage of the project that the risk should instead be carried by the farmer cooperatives, seeing as they too are organisations, where contracts are set up between buyers and the cooperatives. However, at the time of the study the cooperatives were still in the process of being formalised and there was a dire need for measures to overcome the lack of trust and risk-averting behaviour among the stakeholders. This meant that the cooperatives could not be used in the solution at this phase of the project implementation.

9. *Trainings for farmers in financial aspects*

From the case analysis it was evident that the farmers in the Collection Center Project are lacking adequate skills in marketing and finance. This is further aggravated by the insufficient access to resources and knowledge in their external environment in Murang'a and Machakos county. Theory emphasises the importance of empowering the farmers to overcome this common issue in IBMs and SFSCs, why the recommendation for the project is to strengthen the farmers by training them in the financial aspects of their individual farming businesses as well as aspects connected to their participation in the downstream supply chain in the project. A better knowledge in how to perform cost calculations, keep basic financial records as well as an understanding for the market value of their products is seen to benefit their participation in price negotiations and empower their position in the project.

10. *Install cold storage at two collection centers*

Installation of cold storage at two collection centers in the project, one in each of the counties, is highly recommended by the authors. The quality of the service provided by the logistics activities depend in part on the delivery reliability and flexibility, two aspects that would be helped by cold storage facilities at the collection centers. It would furthermore make the logistics and distribution system less fragile to disturbances caused by external threats such as the identified poor road infrastructure. Also, dealing with perishable products in the project puts high pressure on developing an efficient distribution system, with little waste, few storage points and short lead times, to ensure the right quality of the products. Cold storage enables

perishable products to be stored for a longer time which in turn makes for a more flexible and durable supply chain from farm to store. With a limited amount of resources in the project, the recommendation is bounded to installing cold storage at only one collection center per county. The cause for having fewer collection centers is also supported by theory on logistics, which shows that it is from a distribution cost perspective almost always more profitable to have fewer warehousing locations (Bjornland et. al., 2003, pp.97-99). So in this case, although the travel distances would become longer for the farmers, the advantages of a simplified and aggregated distribution system with cold storage at only two collection centers, outweighs this negative for the supply chain as a whole.

11. Incorporate a long-term perspective in project implementation

Adopting a long-term perspective among the stakeholders would help solve the overarching issues that are currently overlooked in the project implementation - securing reliable market/supply in the long-term. The project organisation is currently solving problems in a temporary and ad-hoc manner, which is hindering the creation of a long-term plan for the organisation of the supply chain. A better focus on the stakeholders' shared goals and objectives would nourish a long-term sustainable collaboration and help them see the long-term gains from the project.

6.2 Workshop with KOAN

As previously stated, one of the main objectives with the workshop was to strengthen the reliability of the results of the study by opening up a dialogue around the presented findings with KOAN and one of the coordinators. The objectives with the workshop were successfully fulfilled, where the discussions during the workshop provided valuable insight to the authors ongoing analysis of the case results to the master thesis, as well as gave KOAN a new angle on how to organise and configure the project supply chain to become successful.

6.2.1 Responses from KOAN to recommendations

Three employees at KOAN, who all have responsibilities for the Collection Center Project, participated in the workshop, as well as one of the coordinators. While some of the results from the case study were previously known to the workshop participants, other information was new to them. The recommendations that KOAN and the coordinator found most valuable for their future management of the project revolved around the following aspects; creating a value proposition for the project; implementing a long-term perspective in the project; arranging face-to-face meetings for the stakeholders; as well as arranging trainings in financial aspects for the farmers.

It was revealed during the workshop that the costs for installation of proper cold rooms by a professional contractor at the collection centers is currently too high to be covered by KOAN in the project. Although cold storage at the collection centers is something that they initially had planned for in the project, it was expressed by KOAN that they do not fully see that the high costs of installation at the collection centers can be offset by the benefits that they bring to the supply chain management in their opinion. Moreover, KOAN expressed difficulties in choosing a strategic location for the collection centers at this phase of the project, as the stakeholders have yet to agree on how to solve distribution from collection centers to buyers in Nairobi.

Capacity building for farmers in terms of trainings in cost calculations and marketing is something that KOAN will attempt to arrange. They were glad to hear that the farmers are most willing to share knowledge and experience between the clusters, and will therefore arrange meetings between the farmers in the counties for knowledge sharing. KOAN states that they have, as of now, not focused on creating a price strategy and value proposition in the project,

which they furthermore said might explain the difficulties in settling on a price for the products in the project. They will, after being reminded about the connection between this inability to agree on a price, and the value offered in the business model, investigate what price strategy is most suitable for the project, and also work to clarify the value proposition in the project.

The relevance of trust-based relationships between the stakeholders was emphasised during the workshop, and both KOAN and the coordinator were pleasantly surprised to hear that the case study showed that farmers and buyers alike proposed to have more personal meetings in the project. Based on their vast experience in project management, KOAN explained that the best way to create a sustainable business in Kenya is through focusing on shaping a trust-based relationship between the stakeholders at the early phase in a project. They therefore strongly agreed to the recommendation to conduct more face-to-face meetings between the stakeholders. Contracts and similar rigid agreements should, in their opinion, not be forced upon the stakeholders too early, as it would scare them away from the collaboration and create a hinder to the project development. Therefore, KOAN has not intended to push for contractual agreements at this phase of the project. They will rather wait and see whether the stakeholders are more willing to commit to written agreements at later stages of the collaboration.

Also related to trust is the recommendation for the partnership facilitator to carry more of the risk in the business partnership. Although KOAN agreed to the benefits of transferring the risk from the farmers to the partnership facilitating organisation, they underlined that they are hindered by their limited access to resources, both in terms of human and financial capital. KOAN's lack of resources was also their explanation to the heavy workload for the coordinators, and explained that the initial plan with the project was to hire more coordinators who would share the responsibilities that are today dealt with by the two individual coordinators.

Furthermore, KOAN explained that they have chosen to take a passive role in the project in order to avoid the project becoming reliant on their presence, in response to the recommendation regarding their more active participation in the partnership facilitating organisation. Nevertheless, KOAN agreed to the importance of having a more active role in the creation of clear structures and processes for the project at this initial phase of the project. They are currently considering implementing technological systems for communication such as bulk-texts in the project, and stated that they will continue with exploring what systems for record keeping could be used by the stakeholders.

6.2.2 Authors' reflections

Seeing as KOAN's experience mainly lies within organic certification procedures, capacity building and general project management, and not within logistics, the authors understand that they found the recommendations related to value proposition, trainings and collaboration more approachable. KOAN's and the coordinator's lack of experience in logistical arrangement within the supply chain became evident to the authors during the workshop, especially during the discussion around the collection centers. The lack of optimising the location for all parties as well as considering aspects such as the road infrastructure and distance to the buyers in Nairobi still conducts one of the main issues for the development of the project supply chain. During the workshop the authors were strengthened in their finding that all stakeholders in the project, including KOAN, seem to lack an understanding of the benefits of a high quality logistics system in a food supply chain, which can explain why this aspect so far and to a large extent, has been overlooked.

The positive response from the participants in the workshop on the recommendations related to value proposition, financial training for farmers and development of price strategies, strengthened the authors in the belief that these actions could make a real impact for the project. It also became evident that these particular recommendations seem approachable and

realistic to implement for the partnership facilitating organisation. Furthermore, KOAN's firm stance on the impossibility of using contracts at this stage of the project and their shared personal experience of difficulties in using contractual agreements in Kenya at large, strengthened the authors in the conclusion that contracts are not option.

Regarding the discussion around KOAN's role in the project and the high workload put on the coordinators the authors find that although KOAN's resources are limited, they could use them in a more efficient way to overcome these shortcomings in the project management. All of the recommendations from the authors focus on the core issues that need to be solved in the project to enable its progression, and leave the practical implementation to be solved jointly by the stakeholders in the project. For KOAN in particular, they should, based on their large network and expertise knowledge in project management and organic farming, decide themselves how to best make use of their resources to overcome the identified weaknesses that concern their role in the project. The authors believe that KOAN has, unknowingly, exploited the coordinators vulnerable and dependent position towards them in the project. KOAN seem to be unaware of the extent of the current workload for the two individual coordinators, and the modest compensation they get for their work.

In conclusion, the workshop succeeded in both validating the results of the case study and providing an explanation to them. Specifically, the workshop showed that those weaknesses in the project implementation that are connected to KOAN's participation and role to a large extent can be explained by their lack of resources, due to the fact that they are an NGO that rely on external funding. This hinders their abilities to perform according to their desires. Also, seeing as KOAN is new to the role as partnership facilitator in an Inclusive Short Food Supply Chain and therefore must learn by doing. Nonetheless, the workshop made the authors strengthened in the belief that KOAN and the coordinators can manage to create a successful ISFSC in the Collection Center Project. Their desire to overcome the challenges in the project, their openness to new perspectives and evident passion for organic farming as well as their many strengths at hand, make them suitable for the crucial role as partnership facilitating organisation in this project supply chain.

7 Success factors for the implementation of an ISFSC in a developing economy

This chapter discusses the differences and similarities in findings from the Literature Review in relation to the performed case study of the Collection Center Project. The discussion focuses on the identified success factors, leading to the formation of 10 necessary building blocks for a successful implementation of an ISFSC.

7.1 The necessary building blocks

The result of the literature review in this thesis was the introduction of a new concept called Inclusive Short Food Supply Chains, defined as a food supply chain with few intermediary steps which creates a mutually beneficial linkage between small-scale farmers and local business sectors in a developing economy. This concept, which is built on the combination of SFSCs and IBMs, aligns well with the purpose of this study - *exploring how to successfully link small-scale farmers to the local business sector in a developing economy by applying the concepts of IBMs and SFSCs*. A number of critical success factors were identified in theory for SFSCs and IBMs individually, and the combination of these built an initial basis for what an ISFSC should look like, as illustrated in Figure 13 (see section 2.5.1).

Through the case study of the Collection Center project, these success factors could be applied, verified and developed. Combining the result of the evaluation of the performance in the Collection Center Project and the insights from the workshop with the findings from the literature review, the authors have found that the success of the implementation of an Inclusive Short Food Supply Chain depends on 10 aspects. These aspects can be seen as building blocks for an ISFSCs, and can be divided into two categories; *Foundational aspects* which were already found in theory and are absolutely necessary for the implementation; and *Differentiating aspects* which are seen to provide the competitive advantage needed to reach success in the implementation. All building blocks, of which five are Foundational and the remaining five are Differentiating in nature, are illustrated in Figure 28. The following paragraphs treat the reasoning behind these building blocks, and clarify how the authors have derived the 10 blocks from the results of the case and the theory.

The building blocks of an **INCLUSIVE SHORT FOOD SUPPLY CHAIN**

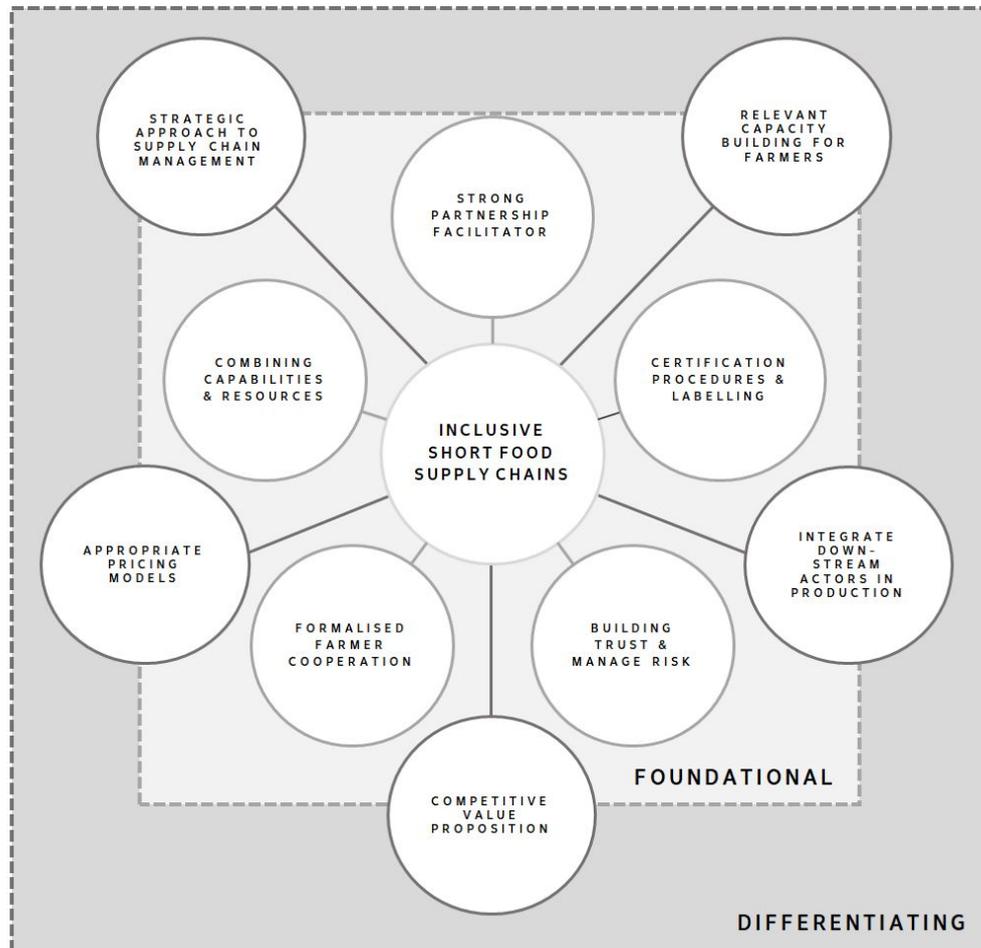


Figure 28. The foundational and differentiating building blocks for a successful implementation of an ISFSC.

Strong partnership facilitating organisation

One central success factor found in the literature was the role of the external environment. This proved to be critical in the case as well, where it was found that the environment's different characteristics affect the implementation in several ways, and the issues that are a consequence of it must be conquered by a strong partnership facilitating organisation. The volatile market and lack of regulations and structures typically experienced in the environment of developing economies demand high flexibility and agile systems. This volatile and unstructured environment can act as both an enabler and hinder to the creation of a successful ISFSC. Specifically in Kenya, the lack of regulations enabled the systems and structures to be tailored according to the actors' specific needs in the supply chain. As expressed by one buyer "When the systems are not provided from the government, you have to build them yourself". However, the inability to rely on established systems demands knowledge and skills in project management - being agile and successful is a science in its own - and it was evident that establishing clear structures takes a long time which can slow down the progression of the implementation. It became clear during the study that both farmers and buyers desire assistance from the partnership facilitating organisation in this matter. Having an intermediary organisation with a coordinating function was highlighted in theory on both SFSCs and IBMs as an important success factor (Berdeguè et. al., 2008; Berti and Mulligan, 2016; Nakandala and Lau, 2019; Vorley et al., 2008), but this proved even more important in the context experienced in the case. Here, the partnership facilitating organisation must make up for what is lacking in the environment, for example, by providing capacity building and expertise knowledge to make up for the lack of knowledge and experience farmers have in business. In the case of KOAN, their

large network with many competent partnership organisations and connections to support services were important for the progression of the project, as it compensated for the lack of policies and support services provided by the Kenyan society.

The theory specifically states that a facilitating public sector is important for the success of an IBM (Berdeguè et. al., 2008). Although this thesis has illuminated and validated the influence from the external environment on the food supply chain, the authors find that the single case study that constituted the main data collection for this master thesis, does not sufficiently strengthen nor reject the importance of the public sector and its policies in specific. This is therefore something that should be further studied in the topic of ISFSCs. The findings from the case study of the Collection Center Project however indicate that a strong partnership facilitating organisation can offset the potential issues that are a consequence of the public sector.

Building trust & Manage risk

The importance of trust in the collaboration was clearly validated in the case study, where a lack thereof between the stakeholders created a reluctance to commit to the project in the long-term. This resulted in weak short-term agreements and an unwillingness to commit to contracts. Contracts can, according to the theory, be used to reduce the risk for the farmers and create security in their businesses (Vorley et. al., 2008). The theory exemplifies this with Contract Farming, which enables for small-scale farmers to be more integrated into the value chain and get a reliable access to capital (Devaux et. al., 2018). However, in this context where the lack of trust in the Kenyan society in general lead to the stakeholders' inability to agree to contractual agreements, Contract Farming is not an option. Theory provides little guidance in how to create the same commitment and stability within a supply chain in the absence of written agreements. How to solve this issue in an ISFSC is something that could be further studied in future research on the topic.

Further illuminated in the case study, and highly related to the lack of trust, was the role of business risk on the relationship between stakeholders and the progression of the project. Seeing as none of the actors in the project wanted to carry the risk in the transaction, i.e. the risk of losing money, and contracts were ruled out mainly due to contextual factors, the need for strong interpersonal relationships became more prominent. Many interviewed stakeholders expressed their desire for open dialogue and face-to-face meetings. This appears even more important in a developing context where one cannot trust the systems. The authors, furthermore, found that one possible solution to the buyers' unwillingness and inability to commit to carrying the risk in the business partnership would be to transfer some of the risk to the partnership facilitator. This responsibility would be carried by the partnership facilitator at the current state of the project implementation, and could possibly be transferred to the buyers and/or the farmers cooperatives later on, once a trust-based relationship has had time to grow between the stakeholders.

Certification procedures and labelling

The certification procedures and labelling turned out to play a significant role in the case study, where the organic certification provided a multitude of advantages in the implementation of the ISFSC. Firstly, it catered to the growing demand for organic products in the market. Secondly, the certification gave the project a competitive advantage compared to other similar arrangements for linking small-scale farmers to the market such as Twiga Foods. Thirdly, it was seen that the farmers previous experience with collaborating and engaging in the PGS used for the organic label facilitated the creation of clusters and cooperatives in the project.

One important aspect found by the authors is, however, that the certification did not necessarily affect the actors trust in each other. Granted, the certification provides trustworthiness of the

procedures used in the supply chain and more specifically in the production process, however, the trust mainly lies in the certification and label itself, and not in the other actors. The organic label constitutes a meaningful tool in such a project where the lack of trust is palpable and hinders the development of the supply chain. Although the buyers and farmers showed a lack of trust in each other and KOAN, and their commitment and management in the project, this did not obstruct their trust in the certification and its reliability. Nevertheless, the certification cannot in itself overcome the fact that these interpersonal trust-based relationships needs to be shaped over time in order for the project to become successful.

Formalised farmer cooperation & Combining capabilities and resources

The necessity of collaboration amongst the small-scale producers for the successful implementation of an ISFSC was confirmed in the case study. It became clear that buyers prefer sourcing large volumes and want to have access to a large variety of products through, if possible, a single point of contact, which was already known in the theory (Devaux et al., 2018; Vorley et. al., 2008). By coming together in formalised cooperation the farmers are able to jointly meet the buyers demands in terms of product range and volumes. The case also highlighted the positive effects of these cooperatives for both the farmers and the communities around them. Through these structures the farmers can share useful information and knowledge with each other, as exemplified by one farmer who had valuable experience in logistics and knew how to perform cost calculations, and expressed a will to help other farmers with this in the project. Thus, it is evident that although not all farmers have all needed capabilities and resources themselves, which often causes issues for them as highlighted both in the theory and in the case, it is not necessary to put resources and time into training everyone in everything. Instead, the strong collaboration enables the farmers to combine their capabilities and resources, thus complementing each other in the cooperatives.

The value from these types of exchanges is further emphasised in the growing demand in agriculture for messaging platforms such as WeFarm. Similarly, the case study showed a widespread use of WhatsApp, where the farmers used the messaging app to share problems, knowledge and innovations in the network. This formalised collaboration between the farmers constitutes an advantage compared to competing business models such as Twiga Foods. Although the business model of Twiga Foods manages to meet the market demand while sourcing from many small-scale farmers by using an efficient logistics system, it lacks in strengthening the farmers in their individual businesses and, therefore, fail in creating inclusiveness. Specifically, Twiga Foods' business model lacks in providing the benefits of knowledge sharing and increased negotiation power which can only be gained from collaboration. Another important benefit with farmer collaboration, that can not be provided by Twiga Foods but was identified in the case study, were the personal gains for the farmers, where their interest and passion for farming was fueled by the meetings and collaboration within the farmer clusters. Furthermore, theory suggests that cooperatives for farmers are a useful way of scaling-up the business, as the structures are permanent and simplifies the recruitment of new farmers to the network, which was also the plan from KOAN in the case.

Appropriate pricing model & Proper value proposition

A central aspect in the case was the challenge in settling on a price between the farmers and the buyers, an issue that halted the whole progression of the project. This specific issue has previously not been discussed thoroughly in the theory on neither SFSCs nor IBMs and is thus a relatively undiscovered territory. What the theory on SFSCs says is that consumers in a European context often are prepared to pay a price premium in a SFSC, compared to food supplied in the conventional way (EIP-AGRI, 2015; Kneafsey et. al., 2013). This because they see a higher value in the transparency, traceability, health aspects, local production and farmer support that SFSCs offer. It thus seems that the pricing model is often based on some sort of

value-based pricing strategy. In the case however, a market-based pricing strategy was used, where the price was based on the volatile market price for conventional products instead of the value for the consumers. Selecting an appropriate pricing model and strategy is, furthermore, a core aspects of both BMs and Supply Chain Management, and the unfounded decision of using a market-based strategy in the case study highlighted the importance of putting more effort and strategic thinking into the pricing in an ISFSC.

It became evident in the case study that there was a general lack of understanding of the value offered by the stakeholders through their activities, and lack of a joint value proposition in the network, which probably played a role in the choice of a market-based pricing strategy. The authors found that this unawareness of value was a hinder to the project success at large. Furthermore, the theory emphasises the importance of having shared goals and objectives which are translated into a viable business model, where the activities directly contribute to the value proposition, in order to be competitive in the market (Morris et. al., 2005; Osterwalder and Pigneur, 2010). By neglecting the value proposition in the project the actors overlook the critical aspect of creating a viable business case, a vital cornerstone in any sustainable business. The value proposition should be based on the value that the business creates for its internal stakeholders and final consumers. Therefore, it is vital that the actors understand their shared direction, hence the value proposition from their shared activities. Creating a proper value proposition would help the stakeholders in the supply chain see how their individual activities interrelate and provide shared value, while also facilitating the possibility for agreeing on a price model.

Relevant capacity building for farmers

Another important finding from the case study was the farmers' lack of necessary skills and knowledge in specifically financial aspects, which hindered their understanding of the business model and hampered their participation in the project. It became clear that the farmers were incapable of calculating their per-unit cost of the produced goods, and only relied on gut-feeling to judge if a price would cover their production costs. What more is that they did very little book- and recordkeeping to keep track of their costs. This showed to impair the ability to agree on prices in the project, and weakened the farmers individual business outlooks. Previous literature on the topics of SFSCs and IBMs have highlighted the need for relevant capacity building and trainings for farmers, but primarily in logistics and marketing (Berdeguè et. al., 2008; EIP-AGRI, 2015; Nakandala and Lau, 2019; Todorovic et al., 2018; UNDP, 2008; Vorley et al., 2008). This study will instead accentuate the need for financial and business training of the farmers, in order to overcome the above-mentioned issues. Also, the study showed that a strong collaboration within the network can help the supply chain overcome any lack of skills and resources in individuals, such as individual farmers lack of experience in finance and cost calculations. Here, the stakeholders should leverage their specific expertise knowledge in order to complement each other in the project supply chain.

Integrating down-stream actors in production

The specifics of how to manage and operate the supply chain has not been too clear in previous literature. Nevertheless, the theory on SFSCs highlight vertical integration as a success factor and highlights the importance of allowing consumers to influence the chain (Berti and Mulligan, 2016; Nakandala and Lau, 2019). The case study, which focused on the specific functions and operations in the supply chain, verified the importance of integrating down-stream actors in production decisions. These down-stream actors could be both buyers, as in the performed case study, and end-consumers. In order for the small-scale farmers to successfully meet the demands on the market, they need assistance from the buyers who hold knowledge and experience in the market characteristics. The linkage between the actors should therefore entail incorporating the buyers in the production, which would help connect the production with the

market demand, thus making the supply chain more consumer-oriented. Furthermore, increasing the buyers influence in the production could help with their commitment to the project and willingness to carry risk, why it is seen as an important enabler to a successful ISFSC.

Strategic approach to supply chain management

The theory on the historical development of logistics states that the theoretical field has evolved throughout the years. During the initial phase, the focus was mainly on the individual steps in the supply chain in isolation, with a short planning horizon and a reactive approach (Stevens, 1989). In today's developed economies, the field has evolved towards looking at the entire supply chain, focusing on functional integration, customer service and differentiation (Stevens and Johnson, 2016). During the case study of this master thesis it was found that the actors in the food supply chain still see the different steps for distribution and warehousing in isolation, and solely focus on cost aspects, thus neglect to see the entire supply chain. Furthermore, they all had a weak understanding of the importance of logistics for good customer service and internal efficiency. A more strategic approach to supply chain management, and more specifically to the distribution and warehousing activities, would help the stakeholders create a more time and resource efficient supply chain as well as provide value towards the buyers and become competitive. This would enable the activities in the supply chain to be managed holistically and strategically and not looked at as separate entities.

7.2 Recommendations to practitioners

The study of the Collection Center Project has provided insights that could provide useful guidelines for practitioners working on similar projects, where the aim is to link small-scale farmers to the local business sector in developing countries. The model that is the result of this study, can serve as an inspiration and checklist of some sort for any practitioner who wants to organise the linking of small-scale farmers to the local business sectors. The nature of the building blocks is rather general, thus allowing for adaptations to specific situations and contexts. It is the belief of the authors that these building blocks could be relevant in other sectors than just the food industry as well as, since many of them are based on the business context in a developing economy at large.

To succeed in properly bridging the gap in knowledge and power between small-scale farmers and buyers in developing countries, it is necessary to make sure that all the required competencies, related to aspects such as overall project management, trainings, business modelling, and logistics among others, are available and structures for the operation of them are well developed. Furthermore, helping the poor in developing economies, which is oftentimes the main goal with these types of projects, is the central aspect in Inclusive Business Models upon which this study is built on. Nevertheless, it is crucial for practitioners to not overlook aspects of neither business strategy nor strategic logistics management during the implementation of these types of projects. In order for the food supply chain to succeed in the long-term, and thus provide sustainable benefits for the stakeholders acting in it, the business model must be competitive and cater to the market demand.

Seeing as logistics and supply chain management is an intricate aspect of all food supply chains, and even more so in developing economies where the infrastructure is often impaired, the knowledge and efforts put into creating an efficient supply chain cannot be overlooked. Therefore, the authors strongly recommend any practitioner who seek to create this type of food supply chain to not underestimate the importance of strategic logistics where one adopts a holistic view on the supply chain instead of solely seeing it as a cost driver. This, strengthened by the study of the Collection Center Project, is by the authors believed to constitute a potential

competitive advantage in the market in addition to creating value for the different stakeholders in the supply chain. Therefore, the success of the ISFSCs lie in the correct combination and balance of logistics and business components, in addition to the social mission that is at the core of the concept.

8 Conclusions

This chapter begins with answering the posed research questions for the master thesis. This is followed by a section explaining the study's contribution to theory. The chapter concludes with describing what further research is needed in order to create a wider understanding of the concept of ISFSCs.

8.1 Answer to research questions

What factors in the external environment hinder or enable the successful linking of small-scale farmers to the actors in the local business sector in a developing economy?

The study found that the external environment has a profound impact on the implementation and configuration of linking small-scale farmers to the local markets, when operating in a developing economy. The developing economy is largely characterised by instability and uncertainty, which hinders the effective implementation of processes and structures in the linking. The Kenyan social and political climate is also burdened by a lack of trust in systems and between individuals. Seeing as this, to a large extent, can be derived to the extensive corruption in the government, which is a common problem in many developing economies, it is fair to assume that the issue of lack of trust is a general problem in these types of contexts. This lack of trust, furthermore, makes contracts virtually impossible to use, meaning the risks in the business partnerships have to be overcome through other means.

A consequence from the unstable governance that is actually working in favour of the implementation is the low level of regulation of the food market, meaning actors in the food supply chain are rather free to operate according to their own accord. However, this is impaired by the lack of resources and knowledge that is an effect of poverty and social inequalities in the developing context. This hinders the implementation of the linkage, as it makes especially farmers poorly equipped to deal with risks and challenges in production. This was particularly evident in the farmers' persistent struggle to handle the unreliable weather conditions due to climate change.

What internal capabilities and resources are needed for the successful linking of small-scale farmers to the local business sector in a developing economy?

The performed case study found a number of knowledge gaps among involved actors in the linking of small-scale farmers to the local markets. The gaps were different in characteristics and importance for the different stakeholder groups, nevertheless, they all showed a lack of insight into, and awareness of, the value created and offered through the business model. Having a viable value offer is central in any competitive business context and thus necessary for the survival of the link between farmers and buyers. In the studied case, the access to trustworthy certification for organic production constituted a core piece of the value proposition towards buyers, and thus an important resource. Even though the organic labelling was not a central area of focus in the study, and thus not a critical aspect of the link between farmers and buyers at a general level, the value of trustworthy certification procedures became evident through it.

The knowledge gap in the system was especially evident among farmers where, aside from lack of knowledge in logistics and marketing which was mentioned in theory, a general lack of business orientation was found to hinder their participation in the system. Therefore, the authors found that basic business knowledge and capability in mainly bookkeeping and production cost calculations, could be pivotal for the farmers' potential success. Farmers are

always hindered by their lack of financial resources, a problem that was already known in the theory about SFSCs and IBMs. In the case study the lack of capital affected the farmers ability to produce according to agreement and to participate in the collaboration. Thus, liquidity is another crucial resource for the linking, and schemes to provide farmers with resources in advance of sales might be necessary. Furthermore, the system as a whole needs competence in supply chain management in addition to valuable logistics resources, such as cold storage, in order to function effectively and efficiently. In the performed case study the lack of logistics competence led to the implementation of an inefficient and flawed distribution system, highlighting the importance of such knowledge.

How can success be achieved when linking small-scale farmers to the actors in the local business sector in a developing economy?

How to achieve success when linking small scale farmers to the local business sector in a developing economy is concretised in the 10 building blocks this thesis has developed, presented in the previous chapter. Besides the necessary capabilities and resources that are necessary for the linking, the most important of the findings of the study were that the generally unstable and uncertain environment, and the lack of adequate resources and knowledge as a consequence of it, demands a strong intermediary organisation, that facilitates the link between the farmers and buyers and supports the actors. The facilitating organisation has to fill in the gaps in the supply chain, that neither farmers nor buyers have the means or will to handle, thus covering up for both external and internal flaws in the system. This role has, through the study, been found to be even more crucial than previously stated in the theory, due to operating in a developing context. Furthermore, it was found that developing measures to facilitate a trusting and healthy relationship between the actors in the chain is absolutely necessary, and that this is heavily related to managing the risk in the business transactions. Without trust, the formation of a sustainable business partnership between the farmers and the buyers becomes difficult, as no one is willing to carry the risk or commit without insurance. This is once again seen to be a consequence of the uncertain environment in the developing economy. In addition to the intermediary organisation and the handling of risk and trust in the collaboration, the study found that more focus has to be put into becoming financially viable and competitive on the market, if wanting to maintain success. This should be manifested by the development of a proper value proposition for the supply chain and better integration of consumer demand in the processes.

8.2 Contribution to theory

This thesis has introduced a new concept, the Inclusive Short Food Supply Chain, which combines central ideas from theory on SFSCs and IBMs, and builds on the practical findings from the performed case study. This concept emphasises the importance of logistics and supply chain management when shaping a sustainable Inclusive Business Model within the food industry, and can be applied and further evaluated in future research. Furthermore, the thesis has contributed to the theory on SFSCs by applying the concept in a developing economy, something that has previously been scarce in the literature. For IBMs, the thesis has given validity to the previously put forth success factors. For both concepts the performance from a business and logistics perspective of central aspects and ideas in the concepts has been evaluated in a real, developing context.

8.3 Future research

Seeing as the study introduced a new concept for linking small-scale farmers to their local business sector in a developing economy, namely ISFSCs, a number of studies continuing and

developing that concept could be conducted. The study found two crucial issues hindering the successful implementation of an ISFSC in the difficulties in settling on a price and the lack of trust and commitment between the stakeholders. In light of this, the authors see a need for studies on what pricing models would be suitable in a B2B context in an ISFSC, as well as research on how to overcome the risks in the business relationship between the farmers and the buyer without using contracts would be relevant. Here, the viability of the proposed solution for KOAN can be examined and compared to other solutions, such as ones where the cooperatives carry more of the risk in the collaboration. This could be built on theory by William G. Ouchi, which illuminates how to best manage the internal activities in such projects in order to obtain the wanted objective with the collaboration (Read *Markets, Bureaucracies and Clans* by William G. Ouchi published in *Administrative Science Quarterly*, Vol. 25. No. 1 (1980)). Also, research based on theory on *Incentive Alignment* (Read *Supply Chain Incentive Alignment: The Gap Between Perceived Importance and Actual Practice* by Andreas Norrman and Dag Naslund published in *Operations And Supply Chain Management*. Vol. 12, No 3 (2019)) would illuminate the effects stemming from the stakeholders aligned objectives and actions within the ISFSC, and more specifically, how these incentives affect the risk and reward sharing between the stakeholders. Furthermore, this study left the consumers completely out of the scope, thus future studies should focus on how to integrate them in the ISFSC in addition to examining their perspectives, preferences and behaviours for SFSCs in a developing economy. More studies should also be conducted where the later phases after the implementation of an ISFSC are evaluated, to understand how the concept sustains over time. Finally, the performed case study did not provide enough insight into the effects and influence of the public sector, and thus public policy, on the implementation of ISFSCs, why this is something that future research should investigate further.

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Appendix A - Interview guide

The following questions were used to guide the researchers during the semi-structured interviews which constituted the main source of data collection in the case study. The interview guide is structured according to an earlier version of the identified functions and operation but still covers all the relevant areas of interest to the study. The answers were categorised into the current functions and operations during coding, so no information has been lost, solely restructured.

Introduction

Table A1. Contact information to the interviewers.

Name	Contact information
Gerda Sidwall Thygesen	<i>Email: gerda.sidwall@gmail.com Kenyan telephone nr: +254 (0)729 57 24 73 Swedish telephone nr: +46 (0)73 760 76 86</i>
Gabriella Ljunggren	<i>Email: gabriella.ljunggren@gmail.com Kenyan telephone nr: +254 (0)746 00 58 08 Swedish telephone nr: +46 (0)76 834 06 18</i>

We are two Swedish engineering students who are doing our master thesis study within logistics and business management. We are in Kenya for two months to undertake a case study. Our expertise and knowledge lies within supply chains and business models. Furthermore, we are both interested in agricultural development and organic farming, why we have chosen to study this particular research area.

Background to the project

We are investigating the logistics and business models connected to the collection centers founded by KOAN. With our research, we aim to understand how short food supply chains in this specific context should best be organised in order to create mutual beneficial collaborations within the business model. With a theoretical background together with a case study, we wish to identify potential solutions that enable long-term sustainability for the individual stakeholders as well as the network. We hope to contribute to a more reliable food production and source of income for the participating smallholder farmers, while also creating a stronger foundation for improving the market for sustainable produced foods in Kenya and surrounding areas.

Information on how the data will be shared and reported

If interested, we will share the summarised version of our interview script with the interviewee. Also, we will share our concluded recommendations from the research with the employees at KOAN and the coordinators of the project in a report and a supplementary presentation at KOAN's office in Nairobi. The presentation will be scheduled at the end of our stay in Kenya. For traders and farmers a summarised report or a visual presentation of our research findings can be shared upon request. In that case, the information will be shared with the interviewee at the end of our stay in Kenya, and will be communicated to the farmers through the coordinators.

Agreement on confidentiality, privacy and other ethical aspects

We ask for consent from the participants to collect data through interviews, audio recordings and photography. This consent will be through oral agreement between the researchers and the participating interviewee. We will anonymise all interviewees, and promise to insure privacy and

confidentiality. No other person except for us researchers will have access to any written, recorded or photographed documentation that is collected during the interviews.

Introduction to production/business

- Can you tell us about your business?
 - What do you sell?
 - Where do you sell your products (Markets/Traders/Supermarket/Cornershop/Restaurants)?
 - Who are your customers/Who buys your products/From whom do you get your payments?
 - Who are your suppliers/From where do you get your products?
 - Do you only sell organic products?
 - What is unique with your business compared to other competitors?
- What are your main goals for your business?

Objectives

- Why did you join this project? (Opportunity)
- What do you hope to achieve by joining this network/supply chain?
- What do you feel that your business can contribute with for this project?

Explain division of questions: four topics, for every topic we start with how you currently run your business, and then more project specific questions.

Distribution & Warehousing

Current situation:

- Can you take us through the steps from your supplier to your final customer?
 - Storage
 - Transportation
 - Who does what?
 - Numbers on volumes/frequency
- How are decisions made on transport and storage in your supply chain?
- What are currently the biggest challenges for you connected to distribution?
- What are currently the biggest challenges for you connected to storage of produce?

Project specific:

- How will your distribution and storage process be changed/adapted to the collection center project?
 - *What will be your main responsibilities/tasks connected to distribution within the network?*
- In terms of distribution and storage, what do you feel that your business can contribute to within this project?
- Ideally, how would you like the distribution and storage of produce to be done in the project?

Cost & Revenue

Current situation:

- Can you take us through the steps of you payment process?
 - Amount
 - Time
 - From/To whom

- Contracts
- M-Pesa/Cash/Bank-transfer
- How and by whom is the price decided?
- What are your biggest costs?
- How do you generate revenue?
 - From where does the biggest revenue come from?
 - Do you have products that don't generate a profit?
- What are currently the biggest challenges for you to generate profit?
 - Lowering prices?
 - Higher costs for transport/storage etc... ?
- What are currently the biggest challenges for you connected to payment process?

Project specific:

- How will your payment process be changed/adapted to the collection center project?
 - *What will be your main responsibilities/tasks connected to payment within the network?*
 - Do you expect to make a profit in this project?
- In terms of payment and cash flow within the project, what do you feel that your business can contribute to?
- Ideally, how would you like the payment process and cash flow streams to be done in the project?

Sales, Marketing & Product

Current situation:

- How do you currently do marketing for you business?
 - Channels
 - Frequency
 - What do you focus on (organic, quality, price, small-scale farmers etc.)
 - Target segment
 - Payment/Budget share
- What are currently the biggest challenges for you connected to marketing?
- What products do you sell/use in your business?
 - Quality
 - Range
 - Volumes
- What requirements do you have for the products you buy?
 - Who decides on the requirements?
 - Based on what?
- What are currently the biggest challenges for you connected to the products you sell?

Project specific:

- How will your product portfolio/product range be changed/adapted when you join this project?
- In terms of product portfolio and meeting the product requirements, what do you feel that your business can contribute to for this project?
- Ideally, how would you like the product portfolio to be managed in the project?
- What products would you ideally sell through your business?
 - Quality
 - Range
 - Volumes

Collaboration & Trust

Current situation:

- How do you currently communicate with your suppliers and customers?
 - Channels
 - Frequency
 - Roles (who)
- How do you collaborate with other actors/service providers for your business?
 - Which actors?
 - On what?
- Do you participate in any other projects and how is communication done there?
- What are currently the biggest challenges connected to gaining and sharing information for your business?
- What are currently the biggest challenges connected to the collaboration within your business?

Project specific:

- Whom within this project have you met so far?
 - Farmers
 - Coordinators
 - KOAN
 - Traders
 - Etc.
- How do you communicate with the different stakeholders (Coordinators, KOAN, Farmers, BS, NGOs, Traders) within this project?
 - Channels
 - Frequency
 - Roles (who)
- Can you describe the process for sharing information within the project so far?
 - From whom do you get information?
 - To whom do you share information?
- With whom, and on what will you collaborate within the project?
 - Who do you depend the most on?
 - Who depends the most on you?
- In terms of communication and collaboration, what do you feel that your business can contribute to for this project?
- Ideally, how would you like information sharing to be done in the network?
- Ideally, how would you like collaboration to be done in the network?

Trust:

- With whom within the network do you talk if you have a problem/issue in your operation/business?
- Do you feel that your needs are attended to in the project?
- Do you feel that you have a mandate in influencing decision-making?
- What procedures do you have for handling problems in the project?
- How do you find that the other stakeholders within the network (KOAN, business sector, traders, coordinators) are delivering compared to your expectations?

Final questions

- What are your overall thoughts on the project?
- Any other information you wish to share with us connected to this project?

Appendix B - Contact details to case collaborators

The contact details to the collaborators at SSNC and KOAN can be found in Table B1.

Table B1. Contact information to people at the collaborating organisations involved in the case study.

Name and position	Contact information
<p>Gunilla Eitrem Senior Policy Advisor, SSNC</p>	<p><i>Email: gunilla.eitrem@naturskyddsforeningen.se</i> <i>Telephone nr: (+46) 706 60 22 49</i></p>
<p>Malin Stråhle Programme Manager, SSNC</p>	<p><i>Email: malin.strahle@naturskyddsforeningen.se</i></p>
<p>Eustace Gacanja Kiarri CEO, KOAN</p>	<p><i>Email: ekiarii@koan.co.ke</i> <i>Telephone nr: (+254) 707 02 77 28</i></p>

Appendix C - Farmer characteristics

Table C1. County specific information about the Collection Center Project.

	Murang'a	Machakos
Description		
Number of farmers	45	45
Number of clusters	3	4
Number of collection centers	3	3
Household characteristics		
Socioeconomic characteristics	Mean age: 51 years Female headed households: 6% Average household size: 4.6 people	
Educational level	No education: 1% Primary school: 39% Secondary school: 45% College: 11% Undergraduate and Post-Graduate: 4%	
Land characteristics		
Land-hold size	Average: 2.2 acres	Average: 2.9 acres
Land ownership	Own it individually: 58.2 % Own it jointly with spouse: 15.6% Own it jointly with someone other than spouse: 1.6% Do not own land: 24.6%	
Access to infrastructure and service resources	Average travelling time: 39.3 min Average travelling distance: 4.7 km	Average travelling time: 99.8 min Average travelling distance: 7.0 km
Access to water	Most used sources of water; <i>Piped and metered water connections</i>	Most used sources of water; <i>Rivers, wells and rainwater catchment</i>
Production characteristics		
Cropping diversity	Average number of different crops per farmer: 3.4	Average number of different crops per farmer: 5.8
Livestock Ownership	Average number of livestock per farmer: 10.94	Average number of livestock per farmer: 12.3

Appendix D - Buyer characteristics

Table D1. Business description and summary of resources for the 5 buyers that are involved in the Collection Center project. Material was gathered through interviews with the individual stakeholders.

	Buyer 1	Buyer 2	Buyer 3	Buyer 4	Buyer 5
	<i>The family-run vegetable grocer</i>	<i>The healthy restaurant</i>	<i>The supermarket pilot project</i>	<i>The small-scale organic trader</i>	<i>The farmer-run vegetable shop</i>
Description					
Type	Vegetable grocer	Restaurant	Trader to nation-wide supermarket chain	Trader to international supermarket chain	Direct farm-to-consumer sales
Ownership	Family run	Small corporate business	Created and partly owned by the supermarket chain	Private company owned by 2 directors/shareholders	Privately owned by founding farmer
Time in business	30 years	13 years	1 year	4 years	3 years
Value proposition	Each store's product range and price targets different ethnic groups	Offers healthy, safe and organic food	Offer safe and healthy food at an affordable price	Offer pesticide and drug free food	Offer fresh and chemical free food at the same price as conventional
Market channels	2 individual stores, 8 supermarkets	2 restaurants, mini-store in restaurant, Basket service, Food Apps	1 pilot store, Local markets, Local service sector (Schools, restaurants, hotels etc)	7 supermarket stores in Nairobi, Basket service, Restaurants	Basket service, Small vegetable shop, WhatsApp, Website
Products	Vegetables, fruits, imported berries+fruits	Vegetables, fruits, fish, chicken, health products/dried goods	40% leafy greens, 60% non-leafy greens, meat, dairy	Vegetables, fruits	Vegetables, fruit, herbs
Organic	None	Everything	Partly (Organic or non-chemical)	Everything	Everything
Labor	90 employees in stores and warehouse	36 employees including management	15 employees	3 employees	8 employees (2 in store and 6 at farm)
Resources					
Marketing channels	Personal relationship with customers, Word-of-mouth, In-store promotion	Social media, WhatsApp, Personal relationship with customers, Food Apps.	Social media, Text, In-store promotion	In-store promotions, Farmer's markets, Word-of-mouth	Social media, WhatsApp, Website
Transport	3 larger and 1	1 van	1 truck	1 truck	Cheap deal with

	smaller truck				3PL
Storage	1 central warehouse with cold storage	None	In-store with cold room	In-store with cold room	None
Packaging	New color coded crates	None	None	None	None
Misc.	<p>Owner has knowledge and experience in logistics</p> <p>Implemented efficient logistics network</p> <p>Manager and team operating warehouse</p> <p>Incorporate Lean practices in their logistics operations</p> <p>Make long-term investments in promising suppliers</p> <p>Base profit on high sales volumes</p> <p>Prepared for zero margins during the initial phase of the project</p>	<p>Adapt sales based on what is in season</p> <p>One employee responsible for marketing</p> <p>Organise a membership club to promote healthy lifestyles</p> <p>Nurtures a personal relationship with the customers</p> <p>Collaborate with PELUM for organic farming</p> <p>Would like to have a personal relationship with the farmers</p>	<p>Have a marketing team</p> <p>Large customer base through supermarket's network (60 stores nationally)</p> <p>Owns trademark for marketing fresh and natural products</p> <p>Agronomist team to audit and train farmers in good production methods</p> <p>Support small-scale farmers to become more organised and business oriented</p> <p>Values personal relationships and meetings with farmers</p> <p>Manager has much experience and knowledge in collaboration</p> <p>Base profit on high sales volumes</p>	<p>Medium customer base through international supermarket's network (7 stores in Nairobi)</p> <p>Willing to adapt the payment method to the farmers</p> <p>Value personal relationships and meetings with farmers</p>	<p>3PL has large distribution network including locations in Murang'a and Machakos.</p> <p>Founder owns and operates a farm, used for supplying products</p> <p>Experience with teaching organic farming</p> <p>Wants to benefit both farmers and customers by lowering price margins.</p> <p>Base profit on high sales volumes</p> <p>Mutually beneficial collaboration with neighbouring businesses for sales and marketing</p> <p>Use close network of friends and business relations for sales and marketing</p> <p>Educate consumers in safety and nutrient aspects of organic produce</p>

9 Appendix E - Coordinator characteristics

Table E1. Description, resources and responsibilities of the two coordinators in the Collection Center Project.

Coordinators	Description	Responsibilities
Murang'a	<p><i>Age: 24</i></p> <p><i>Education: Diploma in Purchasing and Supply at Jomo Kenyatta University</i></p> <p><i>Recruitment: Previous experience in auditing for organic compliance for KOAN</i></p> <p><i>Miscellaneous: Family farm in Kirinyaga (neighbour county to Murang'a)</i></p>	<p><i>Administrate the farmer's committees</i></p> <p><i>Source and handle equipment</i></p> <p><i>Handle orders and record keeping</i></p> <p><i>Production planning</i></p> <p><i>Ensure product quality</i></p> <p><i>Find new markets</i></p> <p><i>Ensure adequate deliveries</i></p>
Machakos	<p><i>Age: 28</i></p> <p><i>Education: Bachelor in Business Information Technology at Daystar University</i></p> <p><i>Recruitment: Was initially one of the farmers in the project</i></p> <p><i>Miscellaneous: Has an organic farm in Machakos.</i></p>	<p><i>Prepare orders for delivery</i></p> <p><i>Handle organic labelling</i></p> <p><i>Handle payments</i></p> <p><i>Assist in price negotiations</i></p> <p><i>Handle information flow between farmers and buyers</i></p> <p><i>Find external partners for capacity building of farmers</i></p>