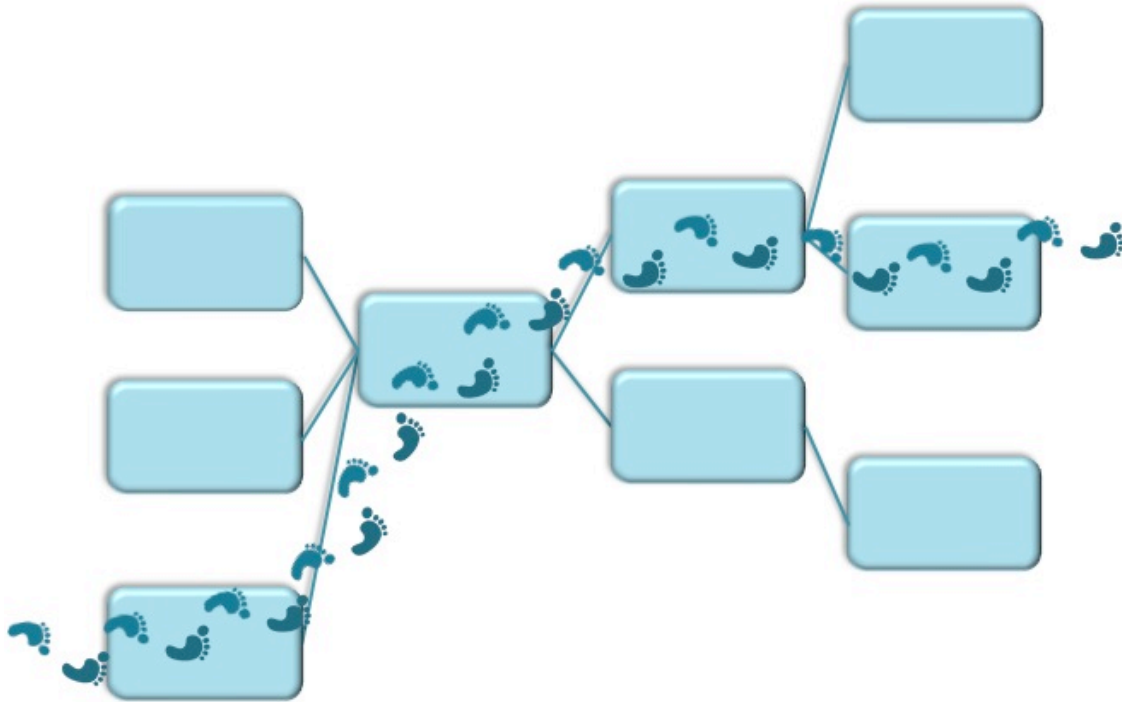




CHALMERS
UNIVERSITY OF TECHNOLOGY



Traceability in Food Supply Chains

A Multiple Case Study of Chocolate Producers Using Origin Labelling

Master's Thesis in the Master Degree Programme Industrial Ecology

SANDRA GRANBERG
ANNA HÖGBERG

Department of Energy and Environment
Division of Environmental System Analysis
CHALMERS UNIVERSITY OF TECHNOLOGY
Gothenburg, Sweden, June 2015
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Tutors: Henrikke Baumann, Anna Nyström Claesson and Hanna Nilsson-Lindén
Examiner: Anna Nyström Claesson

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Report no 2015:10
Department of Energy and Environment
Division of Environmental System Analysis
Chalmers University of Technology
SE-412 96 Gothenburg
Sweden
Telephone + 46 (0)31-772 1000

Cover: Conceptual model of traceability in a supply chain. The boxes represent supply chain actors, for instance suppliers, manufacturers and customers and the footprints represent the ability to follow materials through the supply chain. The concepts of supply chain and traceability are further explained in Chapter 1 – Introduction.

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”To check whether a company is sustainable or not, just ask an easy question: which farmers are you buying from and how much are you paying them?”

- Andres Guzman, Victoria Cocoa

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Abstract

Over the past decades, environmental and social issues have become an increasingly growing global concern and simultaneously the environment in which companies operate has changed. Today, it is not enough for companies to take responsibility for their own in-house activities. Rather, they are held responsible for the social and environmental impact of their entire supply chain. Therefore, companies need to work with sustainability throughout their supply chain. However, this is easier said than done, since there is often little traceability in today's complex multinational supply chains.

Still, there are companies that are able to trace components back to their origin, and thus have insight in the structure of their supply chains. Two such companies are the chocolate producers Domori and Belyzium. They label their products with the origin of the cocoa that their chocolate contains. By studying the supply chains of Domori and Belyzium, this study intends to provide an increased understanding of supply chains in which there is traceability. Specifically, this study aims at analysing the objectives for why there is traceability in Domori and Belyzium's supply chains and to determine the key organisational characteristics of these chains. The study uses a qualitative research strategy and a multiple case study research design. Its purpose is to explore and it aims at creating new theory from the collected data. Data was primarily collected from interviews, observations and documents.

The study concludes that the most important objective for why there is traceability in the studied chains is to allow Domori and Belyzium to take quality improvement measures at their cocoa suppliers. Additionally, several key organisational characteristics of the supply chains were identified. Domori and Belyzium purchase cocoa directly from cocoa producers, without going through traders or cocoa processors. By doing so, they have control over processes that affect the quality of the final product and are able to exchange information with cocoa producers. Furthermore, Domori and Belyzium's supply chains are characterized by high supply chain transparency, partnerships relationships between chocolate producers and cocoa suppliers and defect preventive approaches to quality – all which are positively related to achieving sustainability in supply chains. Hence, this study has shown that the quest for achieving excellent quality has made the studied supply chains develop characteristics that are positively related to sustainability in supply chains.

Keywords: Food Traceability, Cocoa, Chocolate, Origin Labelling, Quality Management, Supply Chain Management, Food Supply Chain, Sustainability Management, Environmental Management.

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List of Abbreviations

B2B	Business-to-business
B2C	Business-to-consumer
Co-op	Co-operative
FT	Fairtrade
MMC	Maya Mountain Cacao
QM	Quality Management
RA	Rainforest Alliance
SC	Supply Chain
SCM	Supply Chain Management
SCS	Sustainability Certification Scheme
UNODC	United Nations Office on Drugs and Crime
UTZ	UTZ Certified

I Introduction

Over the past decades, environmental and social issues have become an increasingly growing global concern. Naturally, this trend has changed the environment in which companies operate in, and as a result, a company's impact on society and the environment has become increasingly important parameters to the competitiveness of the company (European Commission, 2011). A company affects society and the environment directly, through its own activities, but also indirectly, through the activities of other actors included in the company's supply chain (SC). Today, it is not enough for firms to take responsibility for their direct environmental and social impact. Instead, they may be held responsible for the sustainability performance of their entire SC. Consequently, companies must work with sustainability throughout the SC rather than merely within its own company borders. However, doing so is easier said than done. Working with sustainability in the SC requires insight in the structure and organisation of the SC and since today's SCs often are complex and multinational, companies commonly do not know where their materials originate or end up (Welford, 2003).

Within the food industry, we have in recent years witnessed companies' lack of knowledge about where the materials they purchase originate. Not many would have missed the so-called horsemeat adulteration scandal in Europe in 2013, when semi-prepared and ready-cooked food advertised as containing beef was found to contain up to 100 per cent undeclared horsemeat. The scandal revealed a major breakdown in the traceability in the food SC and created headlines such as "The complex food supply chain that led to the horsemeat scandal" (Lawrence et al., 2013) and "Horsemeat scandal: where did the 29% horse in your Tesco burger come from?" (Lawrence, 2013), in major newspapers such as The Guardian.

However, not all food companies are unaware of where the ingredients in their products come from. On the contrary, it is possible to find many food products that are labelled with the geographical origin, here, simply referred to as origin, of a raw material or some ingredient. Such labelling may be more or less formal. The more formal include the European Union's schemes Protected Designation of Origin and Protected Geographical Indication, which, although slightly different, both link the labelled food to a specific geographical area. Champagne, Roquefort cheese and Parma ham are well-known designations protected by one of these two schemes (Europeiska Kommissionen, 2015). Less formally, companies may simply state the origin of their product on its package without being included in any scheme. The reasons for doing so may be many but it is commonly out of a marketing purpose (Golan et al., 2004).

1.1 Two Companies in Focus: Domori and Belyzium

Domori and Belyzium are two food companies that use an informal origin labelling. Both companies produce chocolate and both state the origin of the cocoa that their chocolate contains on packages and company websites. Domori is an Italian company based outside Turin. The company was founded in 1997 and is nowadays part of the Illy SpA Group, a family-owned Italian holding company focusing on companies within food industries such as coffee, chocolate and wine. Domori has about 50 employees and produce numerous different dark chocolate products (chocolate with higher cocoa content than 43 per cent (Baresani, 2012)) out of cocoa originating from several geographical areas including Venezuela, Ecuador and Colombia (Franzoni, 2015). Founded in 2014 and with three employees, Belyzium is younger and smaller than Domori. The company is based in Berlin, Germany, where they produce a range of dark chocolate products. All the cocoa in their products originates from one single country: Belize (Shibkov, 2015).

1.2 Central Concepts

Chopra (2014) describes a SC as consisting of all parties, directly or indirectly, involved in fulfilling a customer's needs. The SC does not only include the manufacturer and its suppliers but also warehouses, retailers, transporters and even the customer itself. The term SC may imply that only one actor is involved in each stage – since a chain is often thought of as linear – but in reality a manufacturer may purchase materials from several suppliers and then supply many distributors. Thus, it might be more accurate to use the term supply network (Chopra, 2014). Here, the term SC refers to the network of actors that are involved in bringing products of a company to its customers, meaning that one company has one SC.

The ability to follow materials or products through the SC is often referred to as traceability. More formally, traceability in SCs is defined by Moe (1998, p. 211) as “the ability to track a product batch and its history through the whole, or part, of a production chain from harvest through transport, storage, processing, distribution and sales”. Traceability is commonly described using the terms tracking and tracing. From a company perspective, tracking is the ability to follow the downstream path of a particular unit in the SC – thus, taking a top-down approach. Tracing is the ability to follow the upstream path of that particular unit – thus, taking a bottom-up approach (Storøy et al., 2012).

1.3 Aim and Research Questions

As seen, a company's insight in their SC is an important parameter for how well the company can manage their indirect environmental and social impact. A prerequisite for a company to have such insight is that they are able to follow materials included in their products from suppliers, through any intermediaries all the way back to the origin of the materials. This study intends to provide an increased understanding of

traceability in SCs by studying SCs in which there is traceability. Specifically, the aim of this study is to analyse the objectives for why there is traceability in Domori and Belyzium's SCs and to determine the key organisational characteristics of these SCs.

The following research questions have guided the collection and analysis of data:

1. What is the main objective for why there is traceability in Domori and Belyzium's supply chains?
2. Which are the key organisational characteristics of Domori and Belyzium's supply chains?

1.4 Delimitations

The study has been delimited to concentrate on information and material flows within the two SCs. It focuses on the flow of cocoa and therefore does not consider actors involved in bringing forward other ingredients that go into chocolate, such as sugar and milk. The logic behind doing such choice is simple; it is the origin of the cocoa that Domori and Belyzium use in their products that is publicly revealed. Moreover, the study concentrates on actors that are involved in the purchasing and sales of cocoa and chocolate, i.e. companies responsible for processes such as transportation and warehousing are not considered.

1.5 Compositional Structure of the Thesis

This study uses a so-called case study research design, which is further explained in Section 3.3 - Research Design. According to Yin (2009), the case study report does not follow any stereotypic form, such as for instance a scientific journal article. Hence, the composition of a case study report varies with each case study. This thesis is organised into 10 chapters, where each chapter has its own area of attention. The compositional structure of the thesis, together with a brief description of every chapter, is presented in Table 1.

Table 1. Compositional structure of the thesis.

Chapter	Content
Chapter 1: Introduction	The first part of the chapter includes an introduction to origin labelling and its connection to sustainability, the two companies and the concepts of supply chain and traceability. The second part outlines the aim and scope of the study.
Chapter 2: Theoretical Framework	This chapter contains the theoretical framework used to interpret the findings. Amongst others, it includes theory on quality management, supply chain management and sustainability management.
Chapter 3: Method	In this chapter the method used to conduct the study is explained. The chapter includes research strategy, research purpose, research design, research structure, research methods, processing of data and analysis strategy.
Chapter 4: The Cocoa and Chocolate Industry	The chapter first explains cocoa growing, chocolate production and different types of cocoa. It continues with a description of the cocoa market, its main sustainability impacts and its most common sustainability certification schemes.
Chapter 5: Empirical Findings	The chapter presents all the relevant findings.
Chapter 6: Analysis	In this chapter, the findings are interpreted with the help of the theoretical framework.
Chapter 7: Discussion	The chapter discusses various aspects of this study and places the studied supply chains in relation to supply chains that produce larger volumes, sustainability certification schemes and the general cocoa and chocolate industry. Also discussed are implications of methodological choices.
Chapter 8: Conclusions	The chapter presents the conclusions of the study, i.e. it gives short answers to the aim of the study.
Chapter 9: Directions for Further Research	This chapter presents recommendations for further research.
Chapter 10: Bibliography	The chapter lists all references used in the study.

2 Theoretical Framework

This chapter presents theory that has helped answering the thesis' research questions. It covers literature on traceability, quality management, supply chain management, buyer-supplier relationships and sustainability.

2.1 Objectives for Food Companies to have Traceability in Supply Chains

It is important to recognize that traceability is not a goal in itself (Golan et al., 2004). Simply knowing where a product is in the SC does not alone provide societal or business benefits. Hence, a traceability system has to be paired with other management tools for a firm to achieve its objectives. There are several objectives for food companies to have traceability in their SCs. One such objective has already been touched upon: to improve the sustainability performance of the SC (Ringsberg, 2014; Welford, 2003). As previously described, companies may nowadays be held accountable for their indirect social and environmental impact, wherefore they need to work with sustainability in their SC. According to Golan et al. (2004), there are three additional objectives for food companies to have traceability: to facilitate tracing for food safety and quality, to improve Supply Chain Management (SCM), and to differentiate and market foods with subtle quality attributes, such as corn, wheat and soybeans. In every of these cases the benefits of traceability translate into increased net revenues for the company (Golan et al., 2004).

Traceability for Safety and Quality Control

The traceability system helps the company identify sources of food safety and quality problems so that measures can be taken to eliminate such issues. This helps reduce the production and distribution of products that do not comply with specifications (Golan et al., 2004).

Traceability to Improve Supply Chain Management

According to Golan et al (2004), the traceability system is key to developing the most effective way to manage supply-related activities, including production, assembly, warehousing and distribution of products. Companies spend huge amounts of money on supply-related activities, including movement and storage of products across the SC, wherefore a firm's ability to reduce such costs is crucial for business success and an important area for competition (Golan et al., 2004).

Traceability to Market and Differentiate Foods

Traceability is an essential part of highlighting so-called process attributes of a product (Golan et al., 2004). Process attributes, in contrast to content attributes, are characteristics that do not affect the final content of the product but refer to characteristics of the production process. Process attributes include country of origin, free-range and fair trade. Content attributes are those that affect the physical

properties of a product, including for example nutritional values and flavour (Golan et al., 2004).

2.2 Quality Management

The concept of quality is a concept that, depending on who defines it and in what context it is used, can mean many different things. However, most definitions derive from one of four broad views of what quality is (Reeves & Bednar, 1994):

- Quality can be viewed as *value*, meaning the benefits a consumer gets from a certain product or service in relation to the price of that particular product or service. According to this point of view, good quality is equal to a good bargain.
- Quality can be viewed as *conformance to specifications*, or the degree to which the product or service was produced correctly. In contrast to the definitions viewing quality as value, quality as conformance to specifications is not from a consumer's perspective but from a producer's.
- Quality can be viewed as *meeting and/or exceeding customers' expectations*. Clearly, this point of view evaluates from the customer's perspective.
- Quality can be viewed as *excellence*. What is meant by excellence varies by its context; for a race car it might speed, for a food it may be flavour and for a person it might be the combination of several attributes. Definitions that imply that quality is excellence see quality as absolute rather than relative to something and suggest that there exist an objective "the best".

To make the concept of quality more explicit and easier to understand Sandholm (2000) means that quality can be broken down into basic elements, so-called quality parameters. Which parameters that are included in the concept of quality depend on the nature of the product (Sandholm, 2000). Quality parameters may include physical and performance attributes of the product, technical assistance provided by seller, training, maintenance and benefits that the customer get from the reputation of the seller (Hutt & Speh, 2004).

2.2.1 Defect Detection versus Defect Prevention

Quality Management (QM) can be described as the form of work that involves the guidance of a group of people towards organisational quality objectives or requirements (Mauch, 2009). It includes all the quality functions, such as the procedures, methods, techniques, plans, controls, reviews and audits (Lester, 2014). There are two basic approaches to quality that the QM strategy of a company can take: a defect detection approach to quality or a defect prevention approach to quality. According to Oakland (2003), the former has traditionally been the dominant approach to working with quality in a business context. It includes methods such as checking, testing and inspecting products so that they conform to specifications, i.e. it focuses on detecting defects, and solves quality related issues by employing more inspections and developing repair teams (Oakland, 2003).

Today, most companies aim at developing methods of defect prevention rather than defect detection (Oakland, 2003). Defect prevention focuses on not letting quality issues arise in the first place, a strategy that, if successful, has proved to reduce costs of quality (Saunders, 1997). The costs of quality are those related to having poor quality. They can stem from a number of activities: the processing of defective products before the defects are discovered, the activity of inspecting goods and the work required to put problems right again are just a few such activities (Saunders, 1997).

Defect Prevention in Purchasing

In its essence, the defect prevention approach implies that companies place responsibility on their suppliers to take preventive and inspective quality measures, rather than checking so that purchased products conform to specifications. The guiding principle for implementing a defect prevention strategy in purchasing is to establish quality programmes with suppliers that build in quality at the source (Saunders, 1997). For the outcome of this process to be successful it is important for the purchaser to have a close cooperation and intensive interaction with its suppliers. Close cooperation can increase the speed of learning processes and create a basis for the transfer of ideas while continuous contact and long-term relationship between buyer and supplier develop mechanisms that ensure that the purchaser's requirements are being met (Saunders, 1997).

According to Saunders (1997), the benefits of successfully building in quality at the source are that the company can improve standards of quality and reduce costs simultaneously. Generally, the costs of poor quality increases exponentially the further down the SC the defected product travels before the defect is detected. The highest costs of quality arise when a defective product, where the defect cannot be easily remedied and the product has to be remanufactured, reaches the final customer. In that case, all value-adding activities through the SC have been wasteful (Saunders, 1997).

2.3 Supply Chain Management

Supply Chain Management (SCM) as a philosophy emphasises the view of the SC as a single unit rather than several individual units performing on their own (Mentzer et al., 2011). Working with SCM implies managing the entire SC, from products' origins until they reach the final customer. McKeller (2014) defines SCM as "the collaborative governance of all the elements in a system used to provide products and services to customers". Thus, SCM includes internal processes across business functions as well as external processes with suppliers and customers. Over the last two to three decades, SCM has become a well-known and commonly used concept. This development has been driven by an increased globalization of SCs, which has created a need to find effective ways to manage the flows coming in and out of companies. Also, the increased competitive nature of SCs has contributed to the increased interest for SCM (McKeller, 2014).

2.3.1 Supply Chain Management Decisions

Successful SCM requires many decisions related to the flow of products, information and cash. Chopra (2014) divides SCM decisions into three categories: SC strategy or design, SC planning and SC operation. Decisions of the latter two have time frames of a few months to a year and of a day to a week, respectively. Planning involves for instance decisions about which markets that should be supplied by which production facility and decisions of the operational type include for example decisions about individual customer orders. During the strategy or design phase the company makes decisions about how to structure the SC over the next several years. Here, it is decided which processes that should be performed at each stage of the SC (Chopra, 2014).

According to Chopra (2014), a strategically important decision made in the strategy or design phase is whether to outsource or perform a SC process in-house. One of the benefits of outsourcing, which is illustrated in Figure 1 below, is that by outsourcing processes a firm reduces the number of relationships that has to be managed, from previously managing all second-tier suppliers to instead just managing the link with the first-tier supplier (Saunders, 1997). However, outsourcing inevitably leads to the loss of direct contact between the producers and the suppliers that prior to outsourcing were first-tier suppliers and after outsourcing are second-tier suppliers (Butterworth, 1995). Additionally, Morehouse and Cardoso (2011) explain that the increased outsourcing of functions such as manufacturing, logistics and purchasing has given companies less control over key processes, thereby making it much harder for companies to control what goes into a product and where that input has been sourced from. For food companies, Ringsberg (2014) means that outsourcing of food production increases the challenges of complying with traceability requirements.

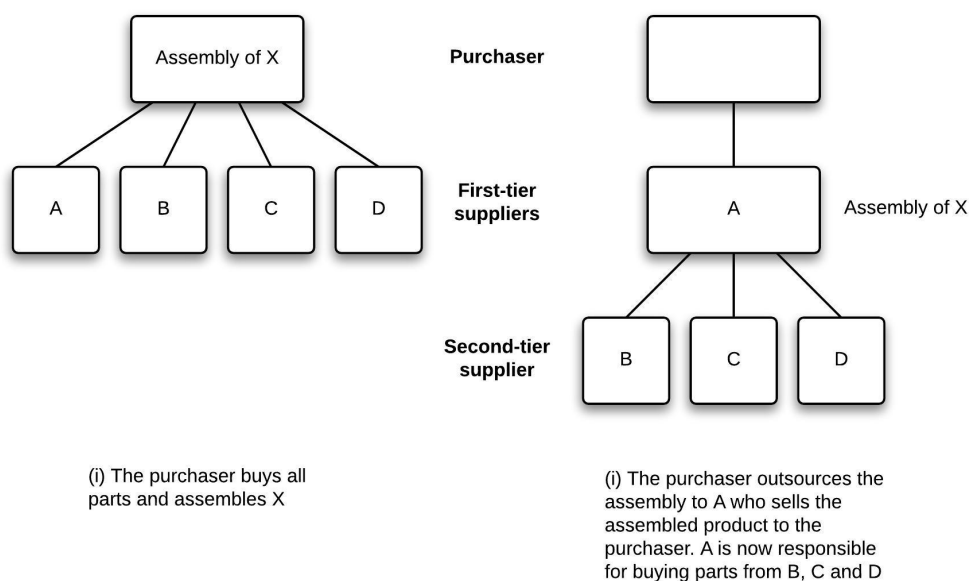


Figure 1. The effects of outsourcing on the number of buyer-supplier links. Figure from Saunders (1997).

2.3.2 Supply Chain Stakeholders

A company's SC generally involves several stakeholders. By understanding the interest and potential impact of each group of stakeholders on the SC, a company can decide which group that requires the most attention (Cetinkaya, 2011). Cetinkaya (2011) distinguishes between two types of SC stakeholders: primary and secondary. Primary stakeholders are those directly involved in the SC activities and include suppliers, customers and service providers. Secondary stakeholders include for instance competitors, NGOs and society at large. Cetinkaya (2011) also provides a framework for assessing the importance of primary SC stakeholders. According to the framework there are four attributes that determine the importance of a stakeholder:

- *Its access to SC knowledge and information.* Sharing information along the SC is one of the fundamental axioms in SCM theory. A key area of knowledge is that of customer requirements. Since the final customer is financing all SC activities, a stakeholder who has good knowledge about the customer requirements and is more flexible to respond to those becomes more important than a stakeholder who has less knowledge.
- *Its substitutability.* Substitutability refers to whether it is possible to replace a certain stakeholder with another who can provide the same products or services to the same quality and price. The less substitutable a stakeholder is the higher is its importance in the SC.
- *Its access to infrastructure and network.* The basic rule for transport and logistics efficiency is: the larger the transport networks and volumes the lower the costs per transported unit. Thus, a SC stakeholder who has access to a large network and can transport large volumes is more important than one who does not have such access and cannot transport such volumes.
- *Its value contribution.* Each SC stakeholder's value contribution to the final product varies depending on what type of material and service the stakeholder produce or provide. The greater a stakeholder's value contribution the greater is its importance.

2.4 Buyer-Supplier Relationships

Saunders (1997) means that analysing and understanding buyer-supplier relationships is a complex task. There are multiple dimensions of such relationships and a plethora of variables that can be used to describe them. Nevertheless, the strategic management of this interface is an important part of the overall SC performance, since supplier performance is affected by the way the buyer treats its suppliers and the expectations the buyer has on them.

2.4.1 Models for Buyer-Supplier Relationships

A range of models and frameworks are available for analysing buyer-supplier relationships (Saunders, 1997). Commonly used is the partnership model and its contrast, the adversarial model. An adversarial relationship is characterised by being

of “an arm’s length nature”, relying on formal paperwork rather than on personal contact. Furthermore, an adversarial relationship is commonly short-term and the sourcing is of a competitive nature, which leads to frequent switches of suppliers. An adversarial relationship tends to result in a “win-lose” situation. A partnership relationship on the other hand has the possibility of resulting in a “win-win” outcome, since it is characterised by a problem-solving approach in case difficulties in the relationship occur. Further, the foundation of a partnership relationship implies that there is equality of power between the parties (Saunders, 1997). A comparison between the two models of buyer-supplier relationships is outlined in Table 2 below.

Table 2. Comparison between the partnership and adversarial model of buyer-supplier relationships (Saunders, 1997).

	Partnership model	Adversarial model
1	High frequency of both formal and informal communications	Arm’s length, formal communication
2	Co-operative attitude	Adversarial attitude
3	Relationship built on trust	Lack of trust in relationship
4	“Win-win” negotiation style with problem-solving approach. Emphasis is on managing total costs	Aggressive, “win-lose” negotiation style. Focus on price of purchased product
5	Long-term business agreements	Short-term business contracts, emphasis on individual transactions
6	–	Little direct contact and involvement in design activities
7	Open sharing of information	Reluctant to sharing information
8	Defect prevention	Defect rectification

Characterising relationships according to either partnership or adversarial relationships is an oversimplification of the range of possible buyer-supplier relationships. The models should solely be regarded as extremes in opposite ends of a broad spectrum of relationship types. Nonetheless, they can still help to increase the understanding of the nature of a buyer-supplier relationship (Saunders, 1997).

Trust

According to Saunders (1997), it is possible to distinguish between three types of trust in buyer-supplier relationships:

- *Contractual trust.* Both parties keep their promises.
- *Competence trust.* Both partners can perform their role competently.
- *Goodwill trust.* Mutual expectation of open commitment to each other or the willingness to do more than what is formally expected.

It is argued that an adversarial relationship is characterised by the presence of the first two types of trust whilst a partnership relationship incorporates all three, including goodwill trust (Saunders, 1997).

Barriers to Developing Partnership Relationships

Dale and Lascelles (2003) and Saunders (1997) suggest that both buyer and supplier can gain greater benefits by having a partnership relationship than by having an adversarial. Benefits include the possibility to coordinate flows, which in turn reduces the costs related to warehousing and the possibility to improve product quality by continuously providing feedback and adapting processes accordingly. The development of a partnership relationship requires efforts from both buyer and supplier. Buyers have to put resources into developing procedures and plans for working with suppliers and suppliers have to be prepared to take responsibility for the quality of their product (Dave & Lascelles, 2003).

Dale and Lascelles (2003) show that there are certain aspects of the buyer-supplier relationship that can act as barriers to the development of a partnership relationship, namely:

- *Poor communication and feedback.* Buyers and suppliers ability to communicate is poor and little feedback is provided. If feedback is given it is not taken seriously or ignored.
- *Supplier reactivity.* Suppliers do not proactively seek feedback on their quality from buyers. Instead they see customer satisfaction as simply “If the product is not returned or if we do not get complains, then our product is satisfactory”.
- *Misguided supplier improvement objectives.* The buyer is not sure what it wants to achieve by improving the supplier’s activities. Also, the buyer is not involved in helping its supplier with solving quality problems.
- *Lack of customer credibility.* The supplier is not convinced that the buyer is serious about continuous improvement since the buyer does not behave accordingly. The buyer may show behaviours such as frequent switch of suppliers and last minute schedule changes.
- *Misconceptions regarding purchasing power.* The buyer is lacking purchasing power and thus also power to influence the supplier.

2.4.2 Managing Customer Relationships

According to Buttle and Maklan (2015), the fundamental reason for why companies want to build relationships with their customers is economic – by identifying, acquiring and retaining customers, companies generate better results. The generation of better results are based on two key benefits that an intelligent management of customer relations brings: reduced marketing costs and better customer insight. Increased customer retention reduces marketing costs since more resources generally need to be spent on the acquisition of a new customer than on the retention of an existing. A supplier who has insight in its customers’ needs is better placed to satisfy them, wherefore the supplier can sell more products and services to a retained

customer than to a newly acquisitioned. Additionally, a customer is more likely to talk positively of a supplier who has continuously proven its competence than one who has not. Such word-to-mouth advertising may gain the supplier new customers (Buttle & Malkan, 2015).

There are several strategies for retaining customers, including going beyond what usually satisfy customers, building customer engagement and creating social and structural bonds (Buttle & Maklan, 2015). According to Buttle and Maklan (2015), creating bonds is an effective strategy for retaining business-to-business (B2B) customers. Social bonds are found in positive interpersonal relationships between people. They are characterised by high level of trust and commitment and are present between individuals in different companies. Structural bonds are created when companies commit resources to each other and are characterised by one or both parties investing in the other. Many different types of structural bonds can be identified (Buttle & Maklan, 2015), such as:

- *Knowledge-based bonds.* Each party invest to understand the other's processes and structure.
- *Process bonds.* Processes of the two companies are aligned, i.e. the design of one company's processes depends on the design of the other company's processes.
- *Legal bonds.* There is a legal contract linking the two parties, e.g. a common ownership.

Customer Acquisition

As shown, there are large benefits associated with the retention of customers. However, before customers can be retained they need to be acquired. Customer acquisition is hugely important in a number of circumstances, for instance when a business is in its start-up phase or when entering a new market segment. Also, when a market show growth potential it is strategically important to retain market shares, which is achieved by acquiring new customers. Customer acquisition is also important since it is seldom possible to retain all acquired customers. Hence, to not successively reduce sales, new customers have to be attracted (Buttle & Ang, 2006).

2.5 Sustainability in a Societal and Corporate Context

The term sustainability or sustainable development has been part of local, national and international discussions for almost three decades. First introduced in the report Our common future in 1987, sustainable development was defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations, 1987). Today, there are many varieties of how sustainability is defined and implemented (Doppelt, 2003). However, the definition of sustainability usually includes a combination of three dimensions: economic, social and environmental (Epstein, 2008). For instance, Cavagnaro and Curiel (2012) mean that sustainable development is to pursue a responsible economic growth, an equitable social progress and an effective environmental protection.

The three dimensions describe sustainability on a societal level. However, to reach sustainability on a societal level the involvement of companies and organisations is needed (Cavagnaro & Curiel, 2012). Sustainability on an organisational level is often described using a concept known as Triple Bottom Line. When first introduced, Triple Bottom Line added social dimensions to the already established financial and environmental dimensions of business performance. Since then it has become a well-known concept and is used by both companies and organisations (Elkington, 2013). However, as with sustainability, there is no single definition of what is included in Triple Bottom Line. Rather, it depends on the context in which the company operate (Von Marrewijk, 2003).

According to Epstein (2008), the context in which a company operates does not only affect how sustainability is defined. Also, which aspects of sustainability a company decides to focus its efforts on is dependent on its context. Important parameters of the context include local and global regulations, the industry sector of the company as well as characteristics of customers and products. For example, a mining company may focus on environmental and health issues while an apparel company may focus on social issues such as labour rights (Epstein, 2008).

2.5.1 Involving the Supply Chain in Sustainability Management

As explained already in Chapter 1, companies need to involve their SC in their sustainability management system (Welford, 2003). An important step towards doing so is to integrate sustainability requirements into procurement practices. According to Epstein (2008), there are several methods of instituting sustainable purchasing initiatives into the company's systems, including:

- *Written policies and communication.* Companies can establish a written social and environmental code of conduct that their suppliers must follow.
- *Questionnaires and audits.* Companies can use questionnaires to screen new suppliers or to question existing. They can also conduct sustainability audits to check that suppliers comply with their requirements.
- *Supplier meetings.* Companies can hold meetings to communicate expectations to suppliers and to share information with them.
- *Training and technical assistance.* Companies can provide training and technical assistance to help suppliers improve their sustainability management practices.
- *Collaborative research and development.* Companies can involve suppliers in product design to develop more innovative and sustainable products.

2.6 Transparency

The meaning of the term transparency depends on the context in which it is used. Physically, transparency often refers to the property of allowing light to be transmitted through a material. Transparency in a SC as defined by Lamming et al. (2001, p. 4) is “the two-way exchange of information and knowledge between customer and supplier”. The existence of transparency in a SC is positively related to

traceability. In food SCs, transparency is affected by for instance companies' willingness to share information, the existence of mutual trust between companies and power (Ringsberg, 2014). In the context of corporate sustainability, transparency is about the disclosure of information – a company proving openness to its stakeholders. It is increasingly seen as an important means for achieving sustainability since it provides stakeholders with the ability of holding companies accountable for their actions (Gupta, 2013).

3 Method

The chapter describes methodological choices that were made throughout the study. It first presents the research strategy, purpose, structure, design and methods used in the study and finishes with explaining how the processing and analysis of data was carried out.

3.1 Research Strategy

According to Bryman and Bell (2003), a research strategy is a general orientation to the conduct of research. There exist two basic types of research strategies: quantitative and qualitative. While a quantitative research strategy emphasises quantification in the collection and analysis of data, a qualitative research strategy usually accentuates words rather than quantification in the collection and analysis of data. The role of theory commonly differs between the two research strategies. Quantitative studies usually have a deductive approach on research, meaning that they are concerned with testing existing theory. On contrast, qualitative research is often aiming at generating new theory emerging from the data, having a so-called inductive approach on research (Bryman and Bell, 2003). This study is a qualitative study that takes an inductive approach on research since it focuses on generating in-depth understanding of the meaning of words and aim at generating new theory.

3.2 Research Purpose

There are basically three main purposes for why research is carried out: to explore, to describe and to explain (Yin, 2009). As the name suggests, exploratory research aims to explore. It is commonly used in contexts where little or no research has previously been done and sets the groundwork for further research by identifying key issues or key variables. For those reasons, exploratory research is often broad in focus and rarely draws definite conclusions (Yin, 2009). Descriptive research, on the other hand, is looking for answers to a more clearly defined problem. It seeks to provide an accurate and systematic description of a specific phenomenon (Dunlock, 1993). Explanatory research aims at explaining why a phenomenon occurs, i.e. it investigates cause-effect relationships. It is commonly connected to quantitative research and hypothesis testing (De Vaus, 2001). According to Zikmund (1984) the research purpose is determined by the degree of uncertainty about the research problem, as shown in Table 3 below.

Table 3. The research purpose in relation to the degree of problem definition (Zikmund, 1984).

	Exploratory research	Descriptive research	Explanatory research
Degree of problem definition	Key variables not defined	Key variables defined	Key variables and key relationships defined

The research types are not mutually exclusive; it is rather that the emphasis of a research study is on one of the three purposes (Zikmund, 1984). Little is known about SC of companies that use origin labelling and key variables within this field are not defined, wherefore the dominant purpose of this study is to explore.

3.3 Research Design

A research design provides a framework for the collection and analysis of data (Bryman & Bell, 2003) where its function is to ensure that the evidence obtained enables the researcher to answer the initial question as precisely as possible (De Vaus, 2001). A research design should not be confused with a work plan, a work plan deals with a logistical problem while a research design deals with a logical problem (De Vaus, 2001). Bryman and Bell (2003) describe five different research designs for business research: experimental design, cross-sectional design, longitudinal design, case study design and comparative design. Which of these designs that is appropriate to use for a particular study depends on the character and context of the unit that is being studied as well as the characteristics of the research question(s). Choosing one design over another design implies making trade-offs between different dimensions of the research, for example between the depth of the study and the possibility to generalise the findings (Bryman and Bell, 2003).

This study seeks to provide an in-depth understanding of the SCs of Domori and Belyzium. In such studies, i.e. studies that call for thorough analysis of a single case, it is appropriate to use a case study design (Bryman & Bell, 2003). Case study research is concerned with the complexity and particular nature of the case in question - where a case (or a unit of analysis) may be an organization, a location, a person or an event - and is characterised by attempting to show the unique features of the case rather than generating statements that apply regardless of time and place (Bryman & Bell, 2003). This study has its focus on two SCs, thus not on a single case but on multiple cases, wherefore a so-called multiple-case study design has been used in this study. A multiple-case study occurs whenever the number of cases under investigation exceeds one and is a relatively common research design in business and management studies (Bryman & Bell, 2003).

3.4 Research Structure

The complete study can be viewed as consisting of three smaller sub-studies: a context study, a literature study and a study of the cases. The division is merely based on the topic of interest and is not related to at which point in time things were carried out, i.e. it is *not* that one sub-study was conducted first, then a second and lastly a third, but rather that they were conducted simultaneously. Each sub-study and its purpose is described below. How data was collected to carry out the study is described in Section 3.5 - Research methods.

3.4.1 Context Study

The cocoa and chocolate industry as well as how chocolate is produced were studied to enable an understanding of the context in which the cases occur. According to Baxter and Jack (2008), a case cannot be considered without a context; because a phenomena is influenced by the context within which it is situated it is impossible to get a true picture of a phenomena without considering its context.

3.4.2 Literature Study

First, it is important to note that what is here meant by literature study is not the same as a literature review, i.e. an account of what has been published on a topic by scholars and researchers. Here, the literature study consisted of understanding different research fields related to the findings as well as understanding concepts that are central to the study. The purpose of carrying out the literature study was to create the theoretical framework that was used to interpret the findings.

3.4.3 Study of the Cases

As the name suggest, the study of the cases consisted of in-depth studies of the SCs that this study concerns. This sub-study included an examination of the SCs in relation to the raised research questions. The three sub-studies, context study, literature study and the study of the cases, are interrelated in the sense that the content of one is dependent on the content of the other two. Ultimately, their content is determined by the aim of the study and the raised research questions. Figure 2 below visualises how the sub-studies relate to each other. The context study is surrounding the study of the cases, providing a scene in which the cases set. The literature study can be seen as a transparent filter through which the other two studies are viewed.

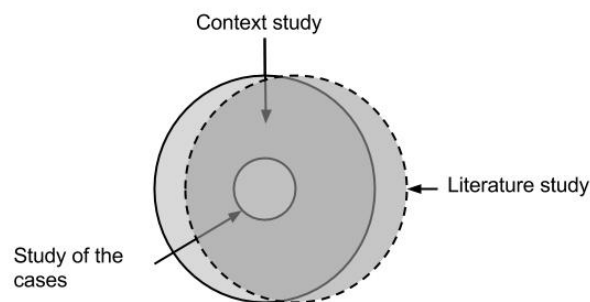


Figure 2. A conceptual model of the relations between the context study, the study of the cases and the literature study.

3.5 Research Methods

According to Bryman and Bell (2003), a research method is simply a technique for collecting data. Different research methods are often associated with different kinds of research design, two terms that are often confused. As described in Section 3.3 –

Research Design, the latter represents a structure that guides the execution of a research method and the analysis of data. Hence, simply selecting a research design is not enough since it will not provide any data (Bryman & Bell, 2003). Yin (2009) lists six commonly used research methods when doing case studies: interviews, direct observations, documents, archival records, participant-observations and physical artefacts. Further, he states that a good case study should use several research methods, since various research methods are highly complementary. In this study, four research methods have been used: interviews, direct observations, documents and literature. Each of these research methods and their use are described below.

3.5.1 Interviews

According to Yin (2009), one of the most important sources of case study data is the interview. Although an interview can take many forms, there are basically two major types of interviews for qualitative research: unstructured, and semi-structured interviews (Bryman & Bell, 2003). When holding unstructured interviews the researcher tries to keep the interview as open as possible, where the questions are based on the interviewees' narration. An unstructured interview is commonly just loosely guided by a list of topics that might be covered in the interview (Zhang & Wildemuth, 2009). Unstructured interviews are especially useful when doing exploratory research since the outline of the study is not clearly defined in such research (Krishnaswami & Satyaprasad, 2010). For semi-structured interviews, the researcher uses a list of predefined questions to guide the interview, but the interviewee still has a quite large amount of freedom in how to reply. The questions might not follow exactly as outlined prior to the interview and the interviewer may add questions that arise during the interview (Bryman & Bell, 2003). All interviews that were carried out to collect data in this study are listed in Table 4 on page 21. As the table shows, interviews of both the unstructured and the semi-structured type have been used.

In qualitative research, the interview is usually recorded and transcribed whenever possible (Bryman & Bell, 2003). All face-to-face and video call interviews included in this study were first recorded and later also transcribed. Bryman and Bell (2003) list several advantages with recording and transcribing interviews when doing qualitative research. By recording interviews, the researcher is able to return to the data an unlimited number of times and examine not just *what* is said but also *in the way* it is said. Also, during the interview, the interviewer ought to be highly alert to what is said so that for example follow-up questions can be made on suitable occasions. It is therefore best if the interviewer is not distracted by having to take notes on what is said. There are however also drawbacks with recording and transcribing interviews. The interviewees might become self-conscious and alarmed by knowing that their words will be preserved and thereby their answers may be altered (Bryman and Bell, 2003). The choice to record and transcribe all interviews in this study was seen as necessity since many interviews were unstructured, and thereby required the full attention of the interviewer. Also, most of the interviews were neither held in the

interviewees' nor the interviewers' native language. Hence, to ensure that what was said was fully understood it was considered beneficial to be able to return to the original data.

Interviewees

Interviews were held with representatives of actors included in Domori and Belyzium's SCs. The characteristics of the interviews are summarized in Table 4 on page 21 and the interviewees are presented below.

Gianluca Franzoni, Domori

Gianluca Franzoni is the founder of Domori and currently he is the president of Domori's board of directors. His responsibilities include representing Domori at marketing events and handling communication with media. In addition, he is responsible for the final quality of the products as well as for determining from where Domori should source cocoa (Franzoni, 2015).

Andres Guzman, Victoria Cocoa

Andres Guzman is the executive director of one of Domori's cocoa suppliers, Victoria Cocoa. Victoria Cocoa owns a cocoa plantation called Hacienda Victoria in Ecuador, South America. Victoria Cocoa was established in 2006 and is a family owned company with 200 employees and a yearly production of 500 tonnes of cocoa. The plantation is 500 hectares large of which 450 hectares produce conventionally grown cocoa while the remaining 50 hectares are cultivated using organic farming methods (Guzman, 2015).

Felipe Rojas and Andres Rojas, United Nations Office on Drugs and Crime

Felipe Rojas and Andres Rojas are trade consultants at the United Nations Office on Drugs and Crime (UNODC). The UNODC assists Colombian farmers in shifting from cultivating coca plants – plants predominantly used to produce cocaine – to cultivating crops such as cocoa, bananas, nuts and berries. They initialise contacts between cocoa producers and chocolate producers and help farmers improve cultivation practices in order to increase yields and improve the quality of the cocoa. The UNODC is not a trader, since they neither purchase nor sell cocoa. In addition, they do not take any commission for their services. The UNODC aims at eventually removing their support so that the cocoa producers can manage themselves (Rojas & Rojas, 2015). Rojas and Rojas initialised a contact between Domori and two Colombian cocoa co-operatives (co-ops), Asoprolan and Aprucasur, both of which Domori currently purchases cocoa from.

Claes Engberg, Berzelii Chocolate

Claes Engberg is the founder of Berzelii Chocolate, here referred to as simply Berzelii, a Swedish chocolate processing company that purchases chocolate from Domori. Berzelii produces chocolate deserts for restaurants as well as pralines for consumers. They are currently processing around five to six tonnes of chocolate every year but are expecting a significant increase in production (Engberg, 2015).

Andrei Shibkov & Klaus Boesl, Belyzium

Andrei Shibkov is the founder and the Chief Executive Director of Belyzium. Amongst others, he is responsible for managing Belyzium's suppliers. Klaus Boesl is responsible for Belyzium's sales as well as the marketing of the company. He works with acquiring new customers and with developing Belyzium's sale strategy (Shibkov, 2015; Boesl, 2015).

Laure Berment, Food Assembly

Laure Berment works for an organisation called Food Assembly in Germany. Food Assembly is a web-based platform that connects food producers and food consumers to each other, enabling the two to meet in person. Hence, it is a variant of a traditional farmer's market. Laure Berment is responsible for the development of new assemblies in Germany. Belyzium uses Food Assembly to distribute their products (Berment, 2015).

Emily Stone, Maya Mountain Cacao

Emily Stone is the global director of a Belizean company called Maya Mountain Cacao (MMC). MMC purchases cocoa beans from smallholder farmers. They then process the beans and sell them to chocolate producing companies. MMC are active in the same area in Belize as Belyzium (Emily Stone, 2015). Stone was interviewed to provide a deeper understanding of Belyzium's supplier side.

Table 4. Compilation of the interviewees and the characteristics of each interview.

Interviewee	Organization	Function of organisation	Location of organisation	Position/responsibilities of interviewee	Interview structure	Type of contact	Data documentation
Gianluca Franzoni	Domori	Chocolate producer	Turin, Italy	Founder, Chairman of the Board of Directors	Unstructured	Face-to-face	Recording, notes
Andrei Shibkov	Belyzium	Chocolate producer	Berlin, Germany	Founder, Chief Executive Director	Unstructured	Face-to-face	Recording, notes
Klaus Boesl	Belyzium	Chocolate producer	Berlin, Germany	Responsible for marketing and sales	Unstructured	Face-to-face	Recording, notes
Claes Engberg	Berzelli Chocolate	Chocolate processor	Gothenburg, Sweden	Founder	Unstructured	Face-to-face	Recording, notes
Andres Guzman	Victoria Cocoa	Cocoa producer	Mid-West Ecuador	Executive Director	Semi-structured	Video	Recording, notes
Felipe Rojas	UNODC	Intergovernmental organisation	Bogotá, Colombia	Trade consultant	Semi-structured	Video	Recording, notes
Andres Rojas	UNODC	Intergovernmental organisation	Bogotá, Colombia	Trade consultant	Semi-structured	Video	Recording, notes
Laure Berment	Food Assembly	Platform that connects food producers and consumers	Europe	Responsible for the development of new assemblies in Germany	Structured	E-mail	-
Emily Stone	Maya Mountain Cacao	Cocoa processor	Belize	Global director	Semi-structured	Video	Recording, notes

3.5.2 Direct observations

In case study research, observations serve as another important source of information. The observations can range from formal to casual data collection activities. Most formally may be that the fieldworker look for the occurrence of certain behaviours during certain periods of time. Less formally, direct observations may be made during field visits, at the same occasion as data from other sources is being collected. For instance, the furniture in an office may indicate something about the status of an employee (Yin, 2009). The observations that were made to collect data for this study are of the less formal type. Observations were done during field visits to the two chocolate producers Domori and Belyzium as well as Domori's customer Berzelii. Table 5 below show what was observed at each of the three field visits.

Table 5. Objects of observations during visits to Domori, Belyzium and Berzelii.

Company	Domori	Belyzium	Berzelii
Object of observation	Production facility Production process R&D laboratory Quality control laboratory Offices Meeting room	Shop Production facility Production process	Production facility Office

3.5.3 Documents

According to Yin (2009), documentary information is one of the most commonly used sources of information when doing case studies. This type of information can take many forms, including e-mail correspondence, newspaper articles, internal records and many more. Documents are useful in a number of ways; they can for instance be used to verify the correct spelling of names and technical terms that have been mentioned in interviews or to prepare for a field visit. In this study, various documents were used for a number of purposes. Websites, newspaper articles and blogs provided information on the cocoa and chocolate industry as well as information about the organisations that the study concerns. Such documents were also used to prepare for field visits and interviews by providing information on interviewees and the organisations they represent. During field visits, documents such as packages, customer information sheets and advertisement material were collected.

3.5.4 Literature

Literature is not one of the most common sources of information used in case studies (Yin, 2009) and indeed, literature has not been used to collect data on the actual cases this study concerns. However, literature has been used to complete the context study as well as to create the theoretical framework of the study. Data was collected from scientific articles, reports and textbooks.

3.6 Processing Interview Data

Before analysing the data collected from interviews it needed to be processed into a manageable form. The process of doing so followed a strategy recommended by Sandelowski (1995), visualised in Figure 3 below. As described in section 3.5 - Research Methods, prior to starting processing data, all recordings were transcribed. Each transcription was then compared to its recording in order to ensure that they matched each other – a process Sandelowski (1995) calls proofing.

The first step of the data processing was to develop an understanding of each interview as a whole. Focus was then on one interview at a time. First, the transcription was read through without making any comments or underlining. Then the transcription was read through a second time but this time key sentences were underlined and comments were made in the margins. Finally, all key sentences and comments from the interview were extracted and sorted into categories. These categories were not predefined but rather they emerged from the data. This process was repeated for each interview. When all the interviews were understood they were cross-analysed, meaning that patterns that spanned over all data were searched for. The outcome of this process is presented in Chapter 5 – Empirical Findings.

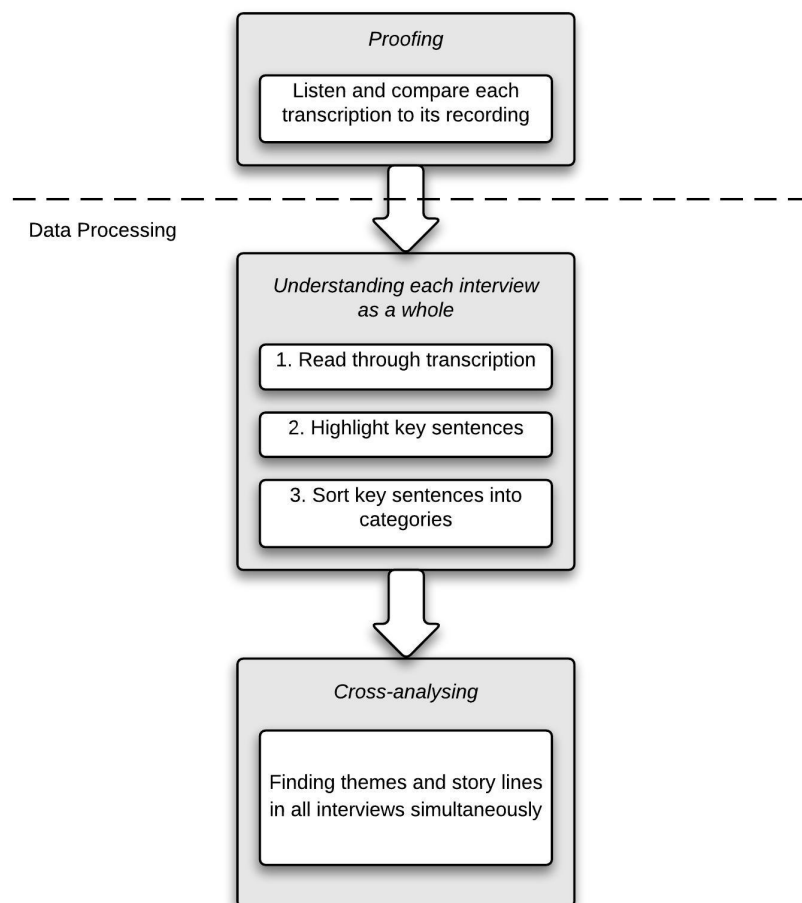


Figure 3. The process of structuring and organising collected data into a form possible to analyse.

3.7 Analysis Strategy

Unlike the analysis of quantitative data, there are no clear-cut rules for how the analysis of qualitative data should be carried out. What do exist are broad guidelines on how to analyse qualitative data (Bryman & Bell, 2007). Bryman and Bell (2007) outline two general strategies of analysis: analytic induction and grounded theory. What is meant by a general strategy is simply a framework that guides the analysis of data. If using the strategy of analytic induction, the researcher seeks universal explanations to a phenomenon by continuing to collect data until no cases that are inconsistent with the hypothetical explanation are found. Grounded theory takes a more bottom-up approach; it is concerned with developing theory out of data and the process of getting there is iterative, meaning that data collection and analysis proceed simultaneously (Bryman & Bell, 2007). The overall analysis strategy used in this study has been the grounded theory strategy. As this study, grounded theory takes an iterative approach and it is suitable for studies where the phenomenon to be investigated has not been previously explored (Bryman & Bell, 2007).

4 The Cocoa and Chocolate Industry

The chapter provides background information about the cocoa and chocolate industry. It first describes the cultivation and processing of cocoa and the production of chocolate. It continues by describing different varieties of cocoa and the cocoa and chocolate market. Finally, the chapter explains environmental and social aspects of cocoa growing and chocolate production as well as the most common sustainability certification schemes in the cocoa and chocolate industry.

4.1 Cocoa Growing and Processing

Chocolate is commonly the name given to food that is prepared from the seeds of the plant *Theobroma Cacao* (the cocoa tree), seeds commonly known as cocoa beans. Cocoa trees grow in a belt between 15 degrees north and 15 degrees south of the Equator (Queensland Government, 2010) and produce fruits, cocoa pods, in which the cocoa beans are found (ICCO, 2013a). The cocoa is harvested once or twice a year and the harvest is spread over several months, depending on the climate and the variety of cocoa, and is performed manually, using a machete or knife (ICCO, 2012a). All pods on a single tree do not ripen simultaneously and the time to harvest a certain pod is decided based on the colour of that particular pod. Unripe pods can have a variety of colours but are most often green, red or purple and when they have ripened they have commonly turned to yellow or orange. After harvest, the pod is manually cut open within a week up to 10 days and the wet beans inside it are extracted by scooping them out by hand (ICCO, 2012a; Queensland Government, 2010).

4.1.1 *Fermentation and Drying*

After the beans have been extracted from the pod, they undergo a fermentation and a drying process before being bagged (ICCO, 2012). These processes are either carried out on-farm by the farmer or off-farm but in the local area by an external organisation (Shibkov, 2015). Fermentation is a chemical process that allows the beans to develop the flavour and colour that are characteristic to chocolate. If poorly executed the fermentation process may lead to off-flavours such as acidity and bitterness (ICCO, 1998a). The process may take place in specially constructed wooden boxes, in heaps covered with banana leaves or in baskets. How long time the fermentation takes depends on the bean that is being processed, but usually somewhere between two to seven days (ICCO, 2012a; Queensland Government, 2010).

Fermented beans are then dried in the sun or artificially so that the moisture content is reduced from about 60 per cent to around six to eight per cent (ICCO, 2012a; Shibkov, 2015). The drying process is critical for the development of the flavour of the beans. If the drying is completed too fast some of the chemical processes that began during the fermentation process are not allowed to be completed and the

result is acidic and bitter beans. If, instead, the beans are dried too slowly moulds and off-flavour may develop (ICCO, 2012a). Lastly, before the dry beans are packed in jute bags for delivery, deficit and defect beans are removed either by hand sorting or by mechanical sieving (Queensland Government, 2010).

4.1.2 Cocoa Processing

The dry cocoa beans can be processed in two ways, either into cocoa liquor or into cocoa butter and cocoa powder, where the last two are products obtained by separation of the fat part of the bean from the solid part of the bean. It is a fully automated process that consists of several individual processes. Although the production process differs slightly between different cocoa products, the first part of the process is the same. The steps involved in the processing of cocoa are visualised in Figure 4. The first process, which is a cleaning process, may or may not be carried out; it depends on the facilities of the organisation that is processing the cocoa. If it is performed, residues such as dust and pebbles are removed. After that the beans are roasted in order to bring out flavour. Next, the beans undergo winnowing, a process that removes the shell of the beans so that only the inner part, the cocoa nib, is left. Cocoa nibs are then grinded and friction causes them to liquefy into a product called cocoa liquor – i.e. pure cocoa mass in liquid form. Cocoa liquor is solid in room temperature but commercially it goes under the designation cocoa liquor (Franzoni, 2015; ICCO, 2013b).

Depending on the preferences and facilities of the cocoa-processing firm, the cocoa liquor may be sold on the market for use in the production of chocolate or chocolate related products, it may further be processed into cocoa powder and cocoa butter or it could be used for in-house chocolate production. If cocoa powder and butter is produced, the cocoa liquor, which consists of about 50 per cent fat, undergoes pressing, a process in which the cocoa butter is extracted from the cocoa liquor. This turns the cocoa liquor into a dry cake, which is later pulverised into cocoa powder. Cocoa butter is often added to the production of chocolate to give it a smooth texture, but can also be used in hygiene products such as body lotion or soap. Cocoa powder is commonly used in cocoa products such as ice cream, cakes and drinking chocolate (Franzoni, 2015; ICCO, 2013b).

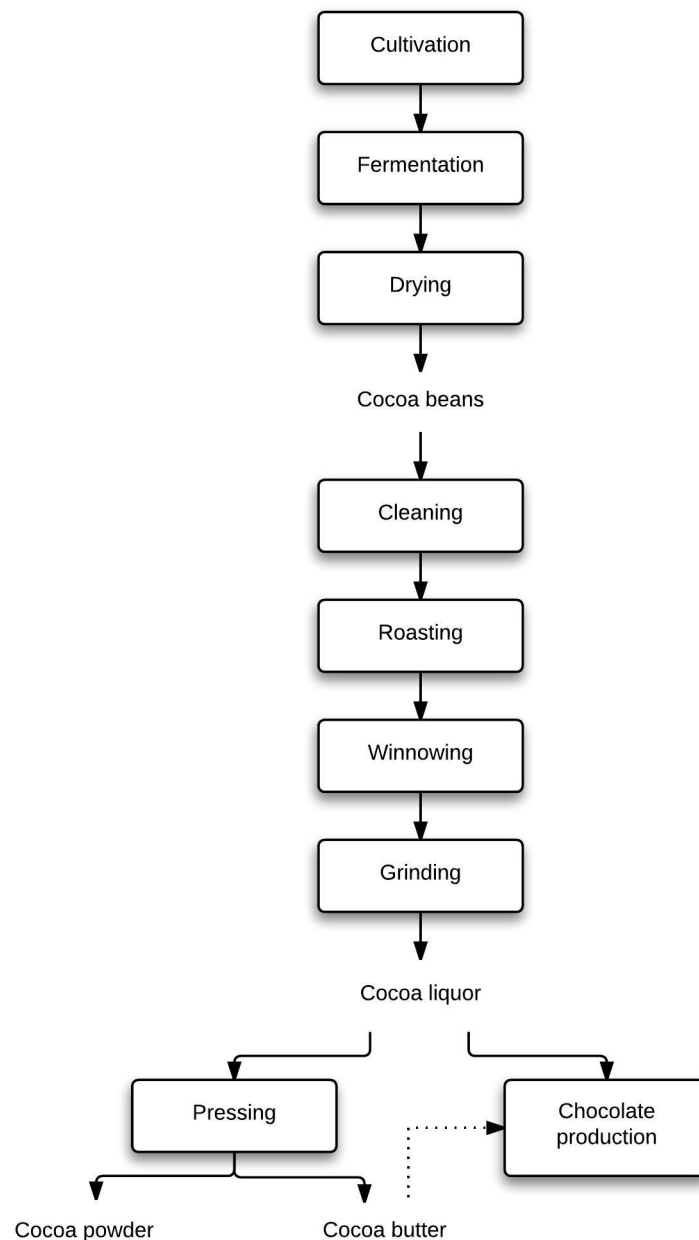


Figure 4. Flow chart over the processing of cocoa. Figure constructed from Franzoni (2015), Shibkov (2015), ICCO (2012a) and ICCO (2013b).

4.2 Chocolate Production

As shown in Figure 5, chocolate production starts with the blending of cocoa liquor and other ingredients. Which other ingredients that are added depend on what chocolate product that is being produced as well as on the preferences of the producer. In the production of dark chocolate, sugar and cocoa butter is generally added. To improve the flavour of dark chocolate it is also common that vanilla is added to the blend. Further, an emulsifying agent, such as soy lecithin, is often part of the formula to give smoothness. The blended mix of cocoa liquor and other ingredients is grainy and uneven and to make it smoother it undergoes a process

called conching. This process reduces the particle size of the blend to less than what the tongue can detect. Lastly, before the mixture can be poured into moulds to solidify, it undergoes a process called tempering. During tempering, the physical properties of the chocolate changes. The process allows the chocolate to get the right texture and increases its melting temperature so that it remains stable in room temperature. Depending on what type of chocolate that has been produced, the finished chocolate is either consumed or processed further (ICCO, 2013b; Baresani, 2012). If processed, the chocolate might for example be melted, mixed with additional ingredients and then formed into chocolate pralines (Engberg, 2013).

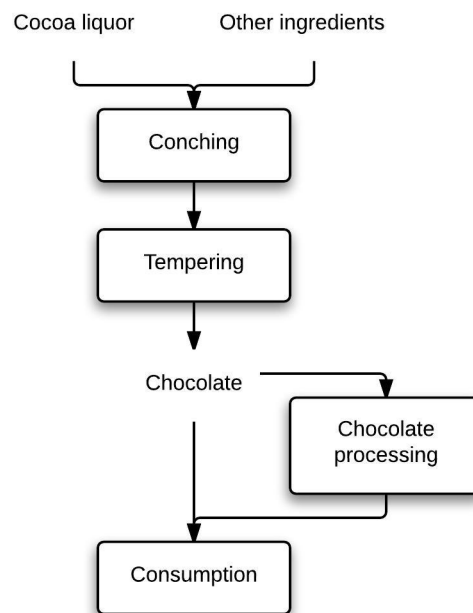


Figure 5. Flow chart over the production and processing of chocolate. Figure constructed from ICCO (2013b) and Baresani (2012).

4.3 Different Varieties of Cocoa

The number of varieties of the cocoa tree are countless but they are usually divided into three broad types: Forastero, Criollo and Trinitario. The three types mainly differ in flavour, pest and disease resistance and productivity. The Forastero varieties are highly productive and pest and disease resistant and are therefore the most cultivated varieties of cocoa. However, of the three types of cocoa, it is the one considered to be of lowest quality taste wise. At the other end of the spectrum are the Criollo varieties. Compared to the Forastero varieties, the Criollo varieties give low yields and are much less resistant to pests and diseases. They represent a very small share of the world cocoa production and are mainly cultivated for their flavour, as they are considered to be the best tasting cocoa varieties. The varieties belonging to the third type, the Trinitario varieties are hybrids between Forastero and Criollo varieties. While they have higher productivity and are more resistant to pests and diseases than the Criollo varieties, they are considered to be of better flavour quality than the Forastero varieties (ICCO, 2013a; Franzoni, 2015; Baresani, 2012).

There exist no official figures on the percentage of the global cocoa production that each cocoa type represents. A rough figure is that Forastero varieties represent 90-95 per cent of the world cocoa production while Criollo and Trinitario varieties together represent five to ten per cent. Among these five to ten per cent, the ratio between Criollo and Trinitario varieties is debatable. Some argue that hardly any Criollo varieties are cultivated, while others claim that Criollo varieties represent one or a few per cent of the global cocoa production (ICCO, 2013a; Baresani, 2012).

4.3.1 Flavour Cocoa and Bulk Cocoa

The world cocoa market distinguishes between two categories of cocoa beans: flavour cocoa beans and bulk cocoa beans. Generally, cocoa beans from Criollo and Trinitario cocoa tree varieties are classified as flavour while beans from Forastero cocoa tree varieties are classified as bulk. The assessment of the quality of the beans is usually based on a number of criteria, including for instance genetic origin of planting material, flavour and colour characteristics of the cocoa beans produced as well as degree of fermentation, drying and off-flavours. While some of these criteria can be objectively measured others are measured subjectively. Hence, there is no objective establishment whether a cocoa is flavour or bulk (ICCO, 2015b).

Over the last century the share of flavour cocoa has dropped rapidly, from 40 to 50 per cent in the beginning of the 20th century to currently being just around five to ten per cent. The decrease is the result of a general shift in consumer demand, from products with a higher cocoa content to products with a lower cocoa content, in which ingredients such as nuts, almonds or cream constitute the main flavour ingredients. However, very recently the trend has shifted and over the last five years the demand for flavour cocoa has increased rapidly, driven mainly by an increase in demand for dark chocolate in Western Europe, North America and Japan (*The Cocoa Industry in CARIFORUM*, 2015).

4.4 The Cocoa and Chocolate Industry: a Snapshot

The cocoa and chocolate industry is presented in three parts: Cocoa Production, The Cocoa Market and Cocoa Consumption. Each of these areas is described below.

4.4.1 Cocoa Production

Valued at around 5 billion US dollars, the cocoa industry is an important part of the world economy (*The Cocoa Industry in CARIFORUM*, 2015). During the cocoa year 2013/2014, the global production reached approximately 4.4 million tonnes (ICCO, 2015e), a figure that can be compared to the 8.8 million tonnes of coffee beans produced globally that same year (ICO, 2015). As Figure 6 shows, Africa accounts for the largest share of the global cocoa production. The world's top three producing countries are, in descending order, Ivory Coast (40 per cent of global production), Ghana (21 per cent of global production) and Indonesia (9 per cent of global production) (ICCO, 2012a).

Production of cocoa beans by continent

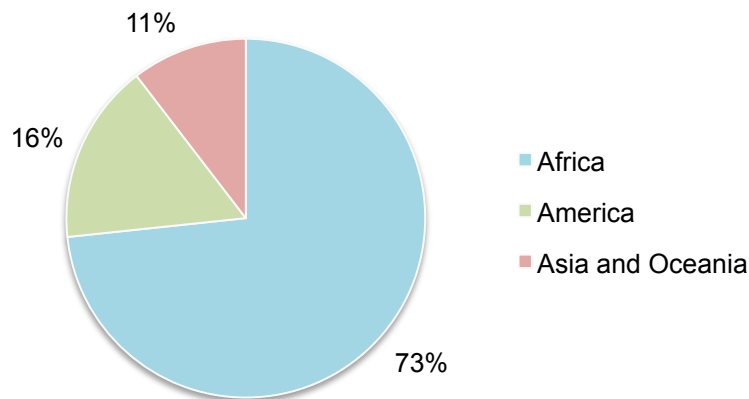


Figure 6. The distribution of the global production of cocoa beans by continent (ICCO, 2015e).

The majority of the world's cocoa supply comes from smallholder farmers, where a smallholding farm is defined as a farm holding less than ten hectares. The International Cocoa Organization (2012c) estimates that 90 per cent of the global cocoa production comes from smallholding farms of less than five hectares and that there are roughly three million smallholding farms worldwide. Farmers' dependence on the income from cocoa varies from region to region. Some farmers are completely dependent on that income for survival while other farmers are more or less self-sufficient on food and are therefore less dependent (Shibkov, 2015). For instance, in Belize many farmers cultivate their own food and the dependence on cocoa is therefore rather low. Many of the Belizean farmers produce no more than 40 kilograms of cocoa every year (Shibkov, 2015).

4.4.2 The Cocoa Market

Cocoa contracts are traded on the international London and New York markets, where the London price of future contracts¹ for long has been used as the benchmark for pricing of cocoa. Unlike the coffee commodity market, which provides separate contracts for the two flavour quality categories Robusta and Arabica, there only exist contracts for one type of cocoa. Hence, the market price for cocoa represents the price of bulk cocoa (Intercontinental Exchange, 2015). For indicative purposes, in 2014 the market price for cocoa stayed around 3000 US dollars per tonne (ICCO, 2015c). Flavour cocoa is traded on a separate market and has its own supply and demand. The price of flavour cocoa varies significantly. However, it commonly gets a premium over bulk cocoa (*The Cocoa Industry in CARIFORUM*, 2015).

¹ A cocoa future contract is a commitment to make or take a delivery of a certain quantity and quality of cocoa beans at a prearranged place and time in the future (ICCO, 2015a).

4.4.3 Cocoa Consumption

World cocoa consumption is by the industry measured by grindings of cocoa beans – i.e. the amount of cocoa beans processed into cocoa liquor (ICCO, 2012b). The market for processed cocoa (cocoa liquor, cocoa butter and cocoa powder) is valued to 16 billion US dollars (*The Cocoa Industry in CARIFORUM*, 2015). Figure 7 below shows the share of cocoa beans grinded in each continent. As seen, the largest part of the cocoa is grinded in Europe. The trend over the last years has been an increase in grindings at origins, i.e. the beans are ground in the same country as they have been cultivated. The reason is that exporting countries have recognised the financial benefits of exporting value-added semi-finished products rather than raw cocoa beans. Consequently, the share of cocoa grinded in Europe has dropped over the last years (ICCO, 2012b).

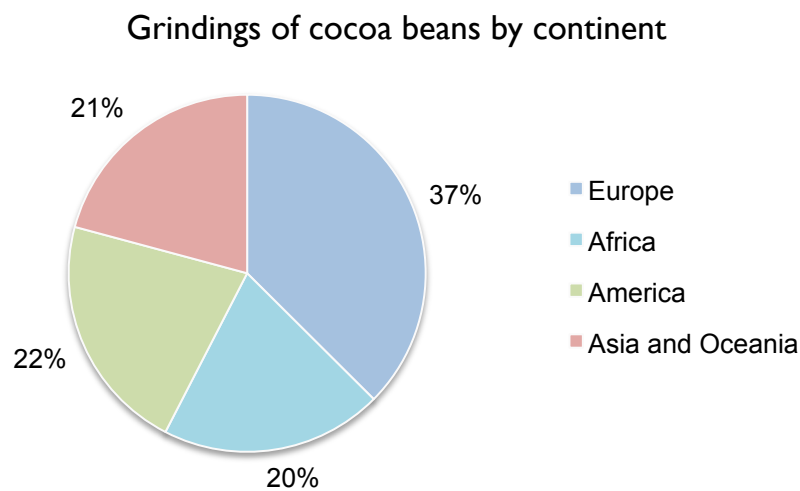


Figure 7. The distribution of the global grindings of cocoa beans by continent (ICCO, 2015d).

Although total world grindings reflect global cocoa demand, the measure does not capture the geographical location of the production of the final cocoa product. Nor does it capture the country in which the cocoa is finally consumed. This is due to the significant international trade in processed cocoa and chocolate products. A more accurate measure of domestic cocoa consumption is gained by calculating total domestic grinding plus net imports of cocoa and chocolate products, in bean equivalents. By using this formula for calculating cocoa consumption one gets a completely different distribution among the continents. From Figure 8 below it can be seen that the European countries by far are the largest cocoa consumers, consuming 49 per cent of all cocoa produced (ICCO, 2012b).

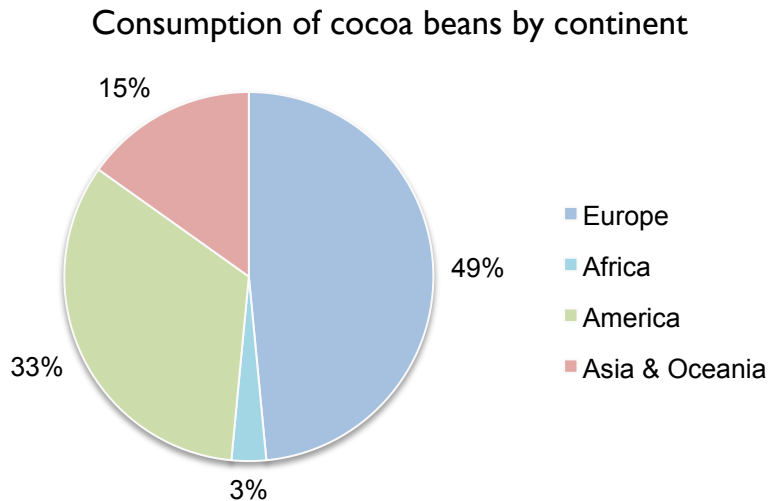


Figure 8. The distribution of the global consumption of cocoa beans by continent (ICCO, 2012b).

Over the last decade the demand for cocoa has grown by about 25 per cent (ICCO, 2012b; ICCO, 2015d) and it is expected to continue to grow. While the chocolate market is still dominated by consumers in Western Europe and Northern America, the 110 billion US dollar industry is undergoing change. Driven by the increasing demand for dark chocolate, the saturated markets in Europe and America are increasing its cocoa consumption without increasing its chocolate consumption. Meanwhile, the heavily populated BRIC countries (Brazil, Russia, India and China) are driving a growth in chocolate consumption. By 2016, the Asian market including India and China is expected to hold a 20 per cent share of the global cocoa consumption (ICCO, 2012b).

4.5 Environmental and Social Aspects of Chocolate Production

As every industry today, the chocolate industry has several social and environmental challenges to tackle. The largest social issues are present at the cocoa farms in the large cocoa producing countries in Western Africa. In these countries, child labour and forced labour are known to be present. Underpayment has long been an issue within the cocoa industry and cocoa farmers all over the world are struggling to live off very low incomes (Griek *et al.*, 2010). Further, in the cultivation of cocoa, the cocoa trees are sprayed with pesticides, often by workers not wearing any protective gear. Some of these chemicals can give rashes and eye injuries and might also attack the lungs, with deadly consequences (Swedwatch, 2006; Grahn & Uusijärvi, 2009).

Naturally, every stage of the chocolate life cycle gives rise to environmental impacts. However, some more than others. As with the social issues, a large part of the environmental issues related to chocolate production stems from the cocoa cultivation (Ntiamoah & Afrane, 2009). As previously mentioned, cocoa is grown in a belt near the Equator, an area where much of the world's rainforest is found. The expansion of cocoa farming in Western Africa has driven clearing of rainforest, resulting in large biodiversity losses and carbon emissions (Kovacevic, 2011).

Further, intensive large-scale cultivation can lead to reduced soil fertility and increased soil erosion (ICCO, 1998 b) and the use of pesticides and synthetic fertilisers influences eco-toxicity and global warming (Ntiamoah & Afrane, 2009). However, with low world cocoa prices many farmers cannot afford chemical inputs, meaning that much cocoa is produced in a more or less organic fashion (ICCO, 1998 b).

4.6 Sustainability Certification Schemes in the Cocoa and Chocolate Industry

Certification is one of the available tools in the market to ensure that cocoa has been produced in accordance with certain social and/or environmental standards (KPMG, 2012). Currently, there are four sustainability certification schemes (SCS) that are important within the cocoa and chocolate industry: Fairtrade (FT), UTZ Certified (UTZ), Rainforest Alliance (RA) and Organic (Griek *et al.*, 2010). Overall, these schemes seek to improve farmers' livelihoods, develop good agricultural practices and build capacity. However, their focus and strategy differ slightly. FT focuses on achieving more just trade relations by for instance paying a premium on top of the market price. UTZ and RA both concentrate on increasing farmers' income by increasing their productivity. The focus of the organic certification scheme is on increasing the amount of agricultural practices that has a lower environmental impact (KPMG, 2012).

The requirements differ between the certification schemes. The organic certification scheme has a broad variety of sub-schemes (KPMG, 2012), wherefore it will not be further compared to the other three certification schemes. Differences between FT, RA and UTZ are highlighted in Table 6.

Table 6. Comparison between the FT, RA and UTZ certification schemes (KPMG, 2012).

	Fairtrade	Rainforest Alliance	UTZ Certified
Payment to scheme	Entry and annual fee paid by producer group (co-operative or farmer). Licence fee paid by all traders and manufacturers.	Fee paid per volume cocoa by farmer, co-operative or first buyer/exporter.	Fixed entry fee and variable fee paid by first buyer, annual fees paid throughout the product chain.
Premium received by farmer/co-operative	Fixed premium of USD 200/tonne cocoa, guarantee minimum price of USD 2000/tonne cocoa. Additional premium for organic certified cocoa ² . Premium paid to co-operative.	Value of premium decided by the market. Premium paid to co-operative.	Value of premium decided by the market. Premium paid to certificate holder.
Certified cocoa content required in final product	100% ³	30%	90%

The total production of certified cocoa has grown substantially over the last years (KPMG, 2012). As Figure 9 shows, from 2010 to 2013 the volume of UTZ certified cocoa grew from roughly 70 000 metric tonnes to 700 000 – a tenfold increase (UTZ Certified, 2012; UTZ Certified, 2013b). During that same time period the volume of FT certified cocoa increased by 50 per cent, from 35 000 metric tonnes in 2010 (Fairtrade International, 2012) to 54 000 metric tonnes in 2013 (Fairtrade International, 2014), while the amount of RA certified cocoa went up by 500 per cent (Convey, 2015).

Amount of certified cocoa

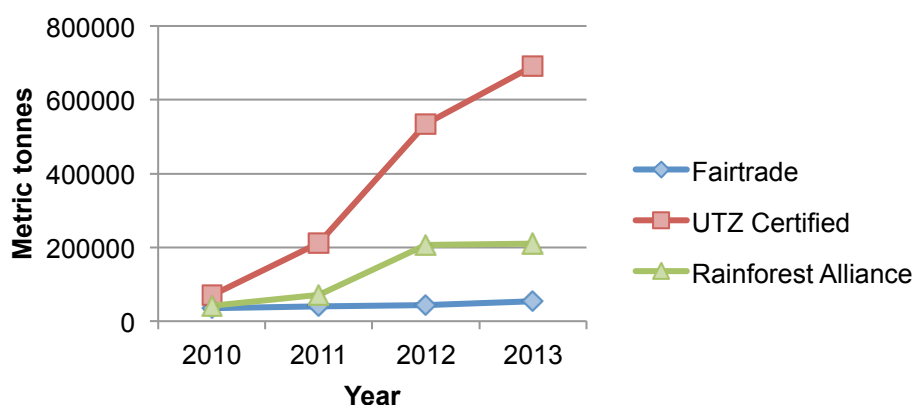


Figure 9. The amount of cocoa certified by FT, UTZ and RA each year between 2010 and 2013. The amount of cocoa that was certified increased for each year over the time period (Fairtrade International, 2012; Fairtrade International, 2014; UTZ Certified, 2012; UTZ Certified, 2013a, UTZ Certified, 2013b; Convey, 2015).

² Reference: Fairtrade International (2011)

³ Reference: UTZ Certified (2013a)

While demand for certified cocoa is growing, there seems to be no consensus on the net-benefits that certifications offer farmers. Some consider certifications as a means to achieve social and economic improvements within the cocoa industry. Others point out that many farmers do not possess the financial ability or the incentives to implement what is required by the certification scheme (KPMG, 2012). However, according to Potts et al. (2010), SCSs contribute to transparency in international SCs by attaining information related to the production and trading practices throughout various stages of the chains. Also, SCSs commonly include traceability systems, constructed to assure the origin of the cocoa (Potts, van der Meer, & Daitchman, 2010).

5 Empirical Findings

In this chapter, the relevant data collected to answer to the research questions is presented. The findings are based on data from interviews, documents and observations. The chapter is divided into 12 subchapters. The first four subchapters describe Domori and Belyzium and the structure of their respective SC and the fifth describes the aims of the actors included in Domori and Belyzium's SCs. In subchapter six to eight the meaning of quality cocoa and chocolate and how quality chocolate is achieved and marketed is explained. Subchapter nine and ten describe relationships between different SC actors and subchapter 11 and 12 treats strategies for achieving sustainability in SCs and SCSs.

5.1 Domori

Domori is a so-called bean-to-bar chocolate producer, a chocolate producer who produces cocoa liquor in-house, based in Turin, Italy. The company was founded in 1997 by an Italian named Gianluca Franzoni and today, it has around 50 employees. Previous to founding Domori, Franzoni had lived in Venezuela for three years. During his years in Venezuela, he came in contact with cocoa cultivation and since he already had a passion for food he soon developed an interest for cocoa. He began travelling around to try cocoa produced by different farmers and simultaneously learnt about cocoa cultivation practices. Franzoni developed a particular interest in the Criollo cocoa varieties, the cocoa varieties considered to be of the highest quality, and decided that he wanted to found a company "that had the mission of enhancing high quality cocoa" (Baresani, 2012).

Today, Domori's philosophy is "based on the search for quality" (Domori, 2015), wherefore they predominantly use Criollo and Trinitario cocoa varieties in their products. Domori focuses on the production of dark chocolate, since the flavour of the cocoa plays a dominant role in dark chocolate. In 2002, Domori together with a Venezuelan family that Franzoni knew from his years in Venezuela, started a plantation in San José, Venezuela called Hacienda San José. Hacienda San José is devoted to the cultivation of Criollo cocoa and currently seven different Criollo varieties are cultivated at the plantation. The plantation is managed by the Venezuelan family who co-owns Hacienda San José and it employs 50 people. Today, 85 per cent of the cocoa that is produced at Hacienda San José is sold to Domori, while the remaining 15 per cent is processed by the Venezuelan family.

Domori produce two different lines of products: a business-to-consumer (B2C) line, and a business-to-business (B2B) line. All products included in the B2C line are produced for the final consumer and therefore intended to be consumed without being further processed. The products in the B2B line are supplied to businesses, such as pastry chefs (a chef specialised in making pastries, desserts and bread) and chocolatiers (a company or person that makes confectionaries from chocolate), who

process them further. Domori's best-selling products from the consumer line include a dark chocolate containing 100 per cent cocoa nibs and nothing else.

Apart from the best-seller, the consumer line includes a range of other chocolate products. Domori produces several different chocolates with 70 per cent cocoa content of genetically different cocoa beans. They divide their tablets with 70 per cent cocoa content into two different lines: the Criollo tablets and the Single Origin tablets. The 70 per cent Criollo tablets include six different products, produced from different cocoa varieties from Hacienda San José and the Single Origin tablets include six different products produced from beans of six different origins. The Criollo and Single Origin tablets contain two ingredients: cocoa nibs and sugar. The median price of one such tablet is 100 euros per kilogram chocolate.

The professional chocolate is produced as so-called couverture chocolate, chocolate shaped as small platelets and with higher cocoa butter content than consumer chocolate. As the consumer line, the professional line includes a range of different couverture chocolates with 70 per cent cocoa content produced from cocoa beans of various origins. These couverture chocolates generally consist of four ingredients: cocoa nibs, cocoa butter, sugar and soy lecithin. The cocoa butter and lecithin changes the consistency of the chocolate, a necessity for pastry chefs to be able to create thin chocolate films. Without added cocoa butter and lecithin these thin films would break.

5.2 Structure of Domori's Supply Chain

The structure of Domori's SC is presented in two parts: Domori's upstream SC and Domori's downstream SC, where upstream SC refers to the part of the SC that is in the direction opposite to the flow of materials and downstream SC refers to the part of the SC that is in the direction in which materials flow. In other words, Domori is upstream their customers and downstream their suppliers.

5.2.1 Domori's Upstream Supply Chain

Figure 10 shows the structure of Domori's upstream SC. Domori purchases cocoa from four different South American and three different African countries. The company processes approximately 500 tonnes of cocoa every year of which Ecuadorian cocoa represents the largest share (30 per cent), followed by Venezuelan and Peruvian cocoa (16 per cent each), Madagascan cocoa (13 per cent) and Colombian and Ivorian cocoa (ten per cent each). Tanzanian cocoa represents the smallest share of the cocoa that Domori processes (five per cent).

Domori purchases all their cocoa directly from single farmers or farmers' co-ops, except from Tanzanian cocoa, which they buy through a trader. Farmers' co-ops consist of a large number of smallholder farmers, in which the number of farmers varies depending on the co-op that is considered. Commonly, the way cocoa co-ops are organised is that wet cocoa is collected from farmers and it is then centrally

fermented and dried at facilities owned by the co-op. The single farmers that Domori buys cocoa from are not smallholder farmers but companies that own larger plantations and have several employees. For instance, Victoria Cocoa (the single farmer from Ecuador) owns a plantation of 500 hectares and employs 200 people.

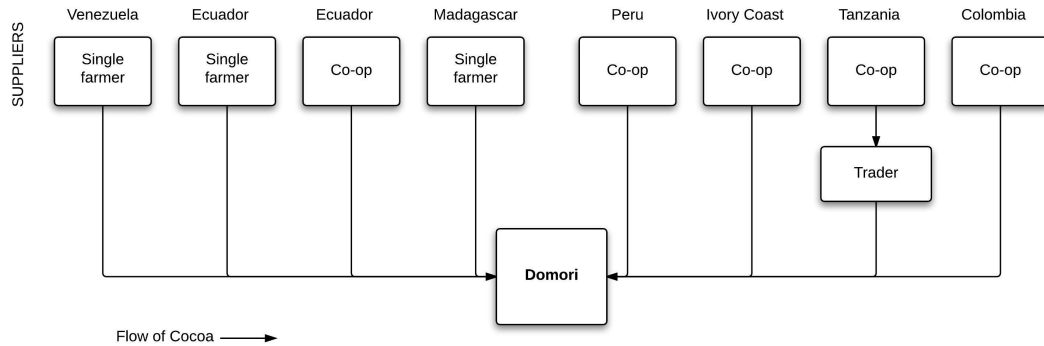


Figure 10. Domori’s upstream supply chain.

The decision on whether to buy cocoa from a specific supplier is predominantly based on an assessment of the quality of a cocoa sample. Samples are received from both current and potential future suppliers. Current suppliers send samples of each batch of cocoa they produce, based on which Domori determines if the quality of that particular batch is satisfactory. If the quality is in accordance with the company’s requirements they purchase cocoa from that particular batch. If the quality does not fulfil their requirements, they may assist the cocoa supplier with finding another buyer for that specific batch. Thereafter Domori collaborates with the supplier to understand why the quality has deteriorated relative to the last batch. The design of this collaboration is further described in Section 5.7. If the quality of a sample from a potential future supplier fulfils Domori’s requirements they may consider whether to add that supplier to their existing ones. If the quality of the cocoa is not satisfactory they will still provide feedback on how the cocoa producer can improve the quality of its product.

5.2.2 Domori’s Downstream Supply Chain

In Figure 11, Domori’s downstream SC is divided into Domori’s two product lines: the downstream SC of B2B products and the downstream SC of B2C products. Domori has business and consumer customers in several different countries, including Italy, France, China, Japan, Germany and Sweden. The structure of Domori’s downstream SC of B2B products differs depending on which country that is considered. Agrimontana, a company partly owned by the Illy SpA Group and thereby a sister company to Domori, is responsible for sales to the Italian market. Agriland, a company owned by members in Agrimontana’s board of directors, is responsible for sales to the French market. Importers supply all other countries in which Domori has professional customers. Via chocolate processors the chocolate products then reach the final consumer.

On the B2C product side, salesmen from various organisations are responsible for selling Domori's products to the Italian market. These salesmen do not exclusively sell Domori's products; they sell several different companies' products. Importers supply all other countries where Domori is present. Through either salesmen or importers, Domori's products are sold to retailers, which are commonly delicacy stores or wine shops. The final consumers then purchase Domori's consumer products from these retailers. The salesmen, importers and retailers that Domori goes through are according to Franzoni (2015) chosen "based on their philosophy about fine foods".

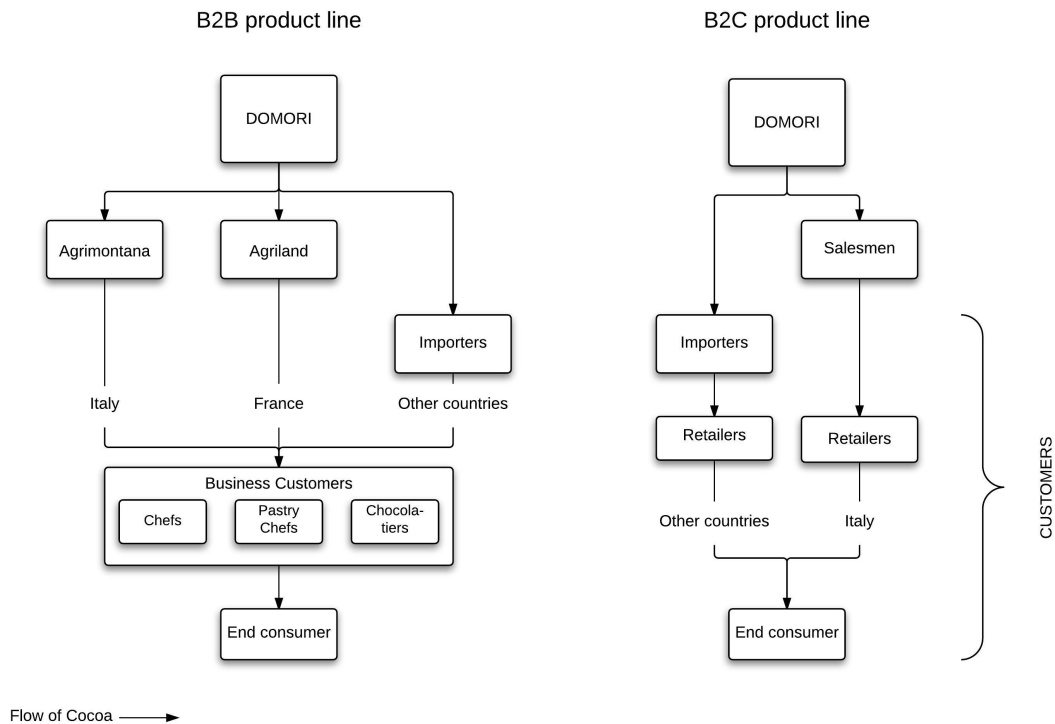


Figure 11. Domori's downstream supply chain.

5.3 Belyzium

Belyzium is a small bean-to-bar chocolate producer based in Berlin, Germany, that aims at processing around ten tonnes of cocoa every year. The company was founded in 2014 by Andrei Shibkov, who prior to starting the company had produced chocolate for nine years at home as a hobby. When Shibkov decided to professionally produce chocolate he started by travelling around South America to find cocoa of a flavour that he personally liked. Shibkov found the cocoa that he liked in Belize and purchased an abandoned cocoa plantation on which he planted Trinitario cocoa trees. He started a Belizean company with the plan that it would eventually sell cocoa to his German company Belyzium. Currently, the Belizean plantation has three employees. At the plantation they use organic farming methods and the Belizean company is also organically certified, as is Belyzium.

Belyzium is “dedicated to producing only the finest quality chocolate using the best organic ingredients” (Belyzium, 2015) and as Domori, they focus on the production of dark chocolate. The company has an assortment that includes a range of different chocolate products, and they produce chocolate both for consumers and professionals. As opposed to Domori, Belyzium do not have a variety of products produced from beans of different genetics and origins, rather they have products that contain different flavour additives, that have different cocoa content and that have been processed in different ways – but that are all produced of the same type of cocoa beans from Belize.

Belyzium offer chocolates produced in two different ways: including or excluding the tempering process (described in Section 4.2). These products differ in consistency; the non-tempered chocolate has to be kept in refrigerator temperature to not become grainy while the tempered chocolate is stable in room temperature. Among others, Belyzium offers both tempered and non-tempered chocolate tablets with a cocoa content between 78 and 89 per cent. These tablets all contain three ingredients: cocoa nibs, cocoa butter and sugar and are sold in tablets of 50 grams. Roughly, the price for Belyzium’s chocolate is 100 euros per kilogram.

5.4 Structure of Belyzium’s Supply Chain

Figure 12 below shows Belyzium’s SC. Shibkov’s Belizean company supplies Belyzium with all the cocoa that Belyzium processes. However, not all that cocoa has been cultivated at Shibkov’s plantation. Shibkov planted cocoa at the plantation only a few years ago and it takes several years for cocoa trees to start producing pods. Currently, there are only a small number of old cocoa trees, which grew on the plantation when Shibkov purchased the land, that actually produce cocoa beans. The amount of cocoa that these trees produce is not sufficient to meet Belyzium’s entire cocoa need. To supply Belyzium, employees of Shibkov’s Belizean company purchase wet cocoa beans directly from smallholder farmers in the area surrounding the plantation. The beans are then brought to Shibkov’s plantation where they are fermented and dried.

Since Belyzium is a newly started business, their downstream SC is still under development. At the moment they are solely present on the German market where they mainly use three different types of distribution channels for selling their products: they own a shop in Berlin in which both private and professional customers can purchase their chocolates, they sell their products through retailers and they distribute them via the web-based platform Food Assembly (described in Section 3.5). Belyzium has two requirements on the distributors that they work with: that they share Belyzium’s vision and that they are willing to communicate this vision to their customers.

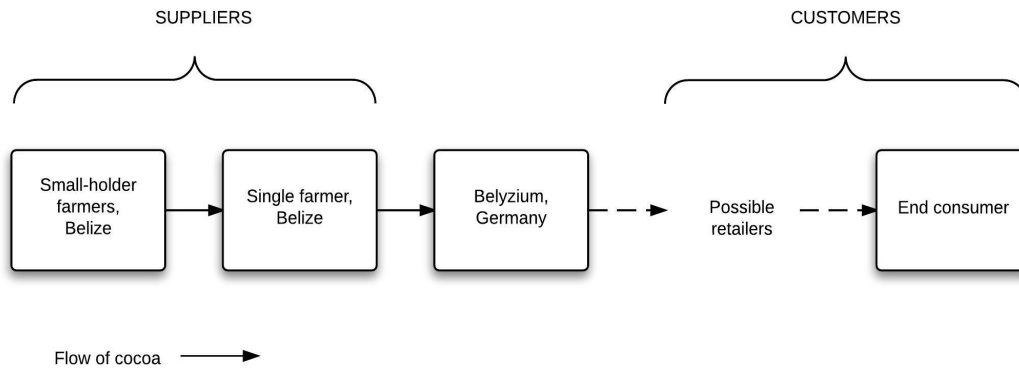


Figure 12. Belyzium's supply chain.

5.5 The Strive of the Supply Chain Actors

The actors included in Domori and Belyzium's SCs' primary strive is to produce a product of the best possible quality. This quest is constantly emphasised by interviewees and it is often the first information that is received when visiting company websites. As previously mentioned, both Domori and Belyzium see quality as their philosophy/dedication. Domori's supplier Victoria Cocoa (2015) claims that they "have the objective to produce the best quality fine aroma cocoa" and Domori's customer Berzelii expresses that they "want to give their customers the high quality products that they are expecting" (Engberg, 2015).

Many SC actors also strive to improve farmers living conditions. Interviewees do not emphasise this quest as strongly as that to achieve quality, but there is still enough evidence to claim that improving farmers living conditions is something that the SC actors strive for. Domori states that it is their mission "to fight for the dignity of the people working in cocoa farming" (Baresani & Franzoni, 2012) and Belyzium (2015) "hopes to change the lives of farmers and Mayan communities for the better". Guzman (2015) at Victoria Cocoa describes that social responsibility is crucial for them and Rojas (2015) at the UNODC (described in Section 3.5) explains that their relationship with Domori is based on the mission to improve social sustainability.

5.6 The Meaning of Quality Cocoa and Chocolate

As seen, the SC actors primarily strive to produce a product of the best possible quality. Whether a cocoa or chocolate is of high quality or not is predominantly determined based on its flavour. When asked to describe what quality is, the first things interviewees mention are aspects related to flavour. For instance, that a quality cocoa or chocolate has low astringency and bitterness and long, large and complex taste. According to Engberg (2015) at Berzelii "you know whether a chocolate is of good quality when you taste the chocolate" and Shibkov (2015) at Belyzium says that "good quality is about having the best possible flavour". Guzman (2015) at Victoria Cocoa and Rojas (2015) at the UNODC say that quality cocoa is all about flavour

cocoa and Guzman (2015) particularly specifies that quality cocoa is not bulk cocoa fermented in a good way.

Furthermore, different batches of quality cocoa or chocolate should have consistent flavour, i.e. taste the same. Berzeliï has based many of their products on specific Domori chocolates. For example, the recipe of one chocolate cream that Berzeliï produces is based on Domori's chocolate *Arriba*, which is produced of beans from Ecuador. If the *Arriba* chocolate suddenly changes flavour, Berzeliï must cover the difference with additives so that their customers will not also receive an inconsistent product. Since Domori do not add any flavour additives in their chocolates, they cannot deliver a consistent product if the cocoa they purchase is not consistent. Therefore, Domori will only continue to purchase cocoa from a supplier that can deliver a consistent product.

Interviewees also include aspects of sustainability, such as cocoa farmers' living conditions, in the definition of quality cocoa and chocolate. Certain minimum social requirements have to be fulfilled for a cocoa or chocolate to be considered to be of high quality, including that the farmers' get paid "enough". When discussing quality with interviewees, farmers' living conditions are often touched upon. In a conversation about quality and sustainability with Franzoni (2015) he says, "Maybe I never separated the two" and he further describes that quality is "about having a holistic view" in which he includes health and education.

For chocolate processors, flexibility and service are additional parameters of quality. For Berzeliï it is important that suppliers have the ability to provide them with products in a rather short notice. Berzeliï purchases some chocolate from Barry Callebaut, one of the largest actors within the chocolate industry, mainly because Barry Callebaut is highly flexible. Franzoni (2015) explains that it is difficult for smaller chocolate producers to compete with large chocolate producers in terms of service, since smaller companies do not have the same organisational possibilities to respond to customers' service needs.

5.7 Strategies for Achieving Quality Cocoa and Chocolate

For Domori and Belyzium to be able to produce chocolate of a quality that they are satisfied with their suppliers need to provide them with cocoa of adequate quality. The quality of cocoa is largely affected by the genetics of the beans and how the cocoa farmer handles the beans. Whether a farmer handles cocoa beans in a correct way much depends on his/her understanding of how various parameters affect the quality of cocoa. To produce cocoa of high quality, it is crucial that the farmer understands how different cultivation practices affect the cocoa, knows where in the SC he/she is positioned and understands the quality requirements of his/her customers. Unfortunately, this understanding is generally low among cocoa farmers. Many farmers have never even tasted chocolate and they have certainly not tasted chocolate made of their own beans.

To get access to cocoa of adequate quality, Domori and Belyzium work to improve their supplying cocoa farmers' understanding of agricultural practices and customer requirements. Both chocolate producers frequently visit their suppliers to teach them how to manage their plantations and to communicate what they require their suppliers to achieve. Shibkov spends approximately three months in Belize per year and Franzoni visits each of Domori's suppliers for approximately one week every year. One method of teaching that both Shibkov and Franzoni use is that they hold chocolate tastings with the farmers so that the farmers can compare chocolate produced from their own cocoa with other chocolate. Shibkov (2015) describes that when farmers taste chocolate produced from their own cocoa they become more aware of the effect they have on the final product.

Apart from making visits to cocoa suppliers, Domori and Belyzium have frequent contact with their cocoa suppliers to keep track of the development of the crop. Shibkov (2015) at Belyzium explains that he continuously is in contact with the manager of his plantation in Belize, who in turn has direct contact with all farmers that produce the cocoa Belyzium processes. Furthermore, the chocolate and cocoa producers are highly willing to share information between each other, since sharing information is positively related to the quality of cocoa. A prerequisite for Domori and Belyzium to be able to have close and frequent contact and efficiently share information with cocoa suppliers is that they purchase cocoa directly from cocoa producers, instead of buying from traders. Guzman (2015) at Victoria Cocoa explains that intermediaries often do not care about quality wherefore Domori and Belyzium are unable to leave the quality improvements work at the suppliers to an intermediary.

How cocoa beans are handled is however not merely affected by farmers' knowledge level. Also, the price that farmers receive for the cocoa they produce impacts how the cocoa is handled. Offering premiums for quality provides incitements for farmers to improve the quality of their product. Domori pays their cocoa suppliers between 33 and 133 per cent⁴ more than the market price for cocoa and Belyzium pays their supplier "significantly more" than the price for FT cocoa (Belyzium, 2015). Interviewees also highlight the importance of paying farmers a price that covers their production costs and is sufficient for them to live off.

Additionally, how cocoa is handled is also affected by the farmers' well-being. According to interviewees, a farmer who is satisfied with his/her living conditions is more likely to put effort into quality improvements. Therefore, it is important for chocolate producers to be socially responsible to get access to cocoa of the highest quality. However, it is important to notice that a chocolate producer will not get access to quality cocoa by solely offering farmers higher prices and being socially responsible. These measures need to be combined with other measures, including educating farmers to make them understand how they affect the quality of cocoa.

⁴ Calculated from absolute numbers provided by Franzoni (2015) and on a market price of USD3000/tonne cocoa.

Consequently, a cocoa may be socially responsibly produced without being of high quality.

5.8 Strategies for Marketing Quality Chocolate

Both Domori and Belyzium's products are priced several times higher than the common chocolate bar that can be bought in a supermarket. For potential customers to understand this price difference they need to understand differences in chocolate and cocoa qualities. Unfortunately, the average person's knowledge about cocoa and chocolate is very low. Commonly, people do not know that there exist different varieties of cocoa and that these varieties are of different taste and quality. Therefore, much of what Domori and Belyzium do to acquire new customers is about educating customers. For instance, Domori holds chocolate tastings with consumers, retailers, professionals and importers and Belyzium arranges weekly chocolate seminars at their shop and production site.

Domori and Belyzium also inform customers about cocoa and chocolate through various documents. Amongst others, the companies' packaging and websites have information about the origin and flavour of the cocoa that Domori and Belyzium's products contain. Furthermore, Domori has produced a book and Belyzium a documentary that both contain information about cocoa and chocolate. Also, Domori has developed a tasting guide, similar to those used in the wine sector, which is used to describe the flavour of Domori's different dark chocolate tablets and to teach people that different cocoa has different flavour.

5.9 Relationships Between the Chocolate Producers and Their Cocoa Suppliers

The relationships between Domori and Belyzium and their cocoa suppliers are characterised by being built on interpersonal relationships between individuals, trust and long-term commitments. Franzoni (2015) explains that when he selects suppliers it is important that he trusts the people working for the potential supplier. He further describes that to produce a product of high quality it is necessary to have a close relationship to the supplying farmers. Additionally, Guzman (2015) describes that Victoria Cocoa needs to have trustful relationships with their customers so that the customers feel comfortable that they receive the quality they have asked for. Shibkov (2015) explains that Belyzium only deals with people and organisations that they can have long-term relationships with. He further describes that to make relationships last it is necessary to act in a socially responsible way and explains that he has provided the manager of his plantation with electricity by installing solar panels.

5.10 Relationships Between Chocolate Producers and Their Customers

Domori and Belyzium's relationships with existing customers are characterised by extensive face-to-face interaction. Domori both visit customers and have customers visiting them. The customer visits includes visits to professional customers, such as

pastry chefs and chocolatiers, and to retailers of consumer products. Franzoni visits valuable B2B customers, importers and retailers to establish personal relationships with these. Furthermore, all importers that distribute Domori's products and many of Domori's other customers have visited the company's production site. As Domori, Belyzium also has much face-to-face interaction with their customers. Amongst others, Belyzium sells their products via the platform Food Assembly, which entire business idea is to make food producers and consumers meet face-to-face.

Another characteristic of the relationships with existing customers is that the chocolate producers have brought or plan to bring customers to their cocoa suppliers' plantations. Several of Domori's professional customers have visited Domori's plantation Hacienda San José in Venezuela, most of which have been internationally well-known pastry chefs. Also, Domori is planning to bring customers to Victoria Cocoa's plantation Hacienda Victoria in Ecuador. At the moment, Belyzium have not had any customers visiting their cocoa plantation in Belize. However, they aim at eventually having customers come there, as their customers have shown a strong interest in seeing cocoa plantations.

5.11 Strategies for Achieving Sustainability

As described previously in this chapter, for a cocoa or chocolate to be of high quality it needs to fulfil certain criteria of sustainability. When discussing sustainability in the cocoa and chocolate industry with interviewees they first and foremost bring up farmers' living conditions. A way to improve farmers' situation is to increase their power relative to other SC actors, since farmers then get control over their own living conditions rather than being dependent on chocolate producers. According to the interviewees, a strategy that chocolate producers may take to increase farmers' power is to share information about cocoa and chocolate with the farmers. This increases farmers' knowledge of the industry relative to the knowledge of the other SC actors and thereby increases farmers' power within the SC.

Farmers' living conditions are to a large degree also influenced by how much they get paid for the cocoa they produce. All interviewees believe that the market price for cocoa is too low to allow farmers a decent way of living. Guzman (2015) at Victoria Cocoa explains, "Sustainability is about asking the farmers how much money they need". Further, interviewees emphasise that a prerequisite for achieving sustainability in SCs is that chocolate producers have insight in where the cocoa that they purchase originates. Elsewise, chocolate producers have no way of knowing how much money the cocoa farmers have received for their cocoa.

5.12 Sustainability Certification Schemes

As explained in Chapter 4, SCSs are market tools that aim to achieve sustainability. However, the interviewees do not regard SCSs that aim at improving farmers' living

conditions as effective tools for achieving sustainability. Rather, many interviewees have a negative attitude towards such SCSs. Particular criticism is directed towards FT, where the main criticism is that FT does not achieve what they claim to be achieving: improving farmers' living conditions, that the premium FT certified farmers receive is not sufficient and that the FT scheme focuses on the wrong things. Another criticism is that it is costly to be part of an SCS. The general view is that the capital that these schemes extract from SCs instead should go to farmers. Still, Domori and Berzelii see that they might have to get certified not to lose customers, since they have noticed an increased demand for certified chocolate.

An issue with SCSs stressed by several interviewees is that SCSs offer the same premium for flavour and bulk cocoa, meaning that SCSs do not pay premiums for quality. The implication of this is that flavour cocoa farmers included in a SCS sell their best beans to chocolate producers that offer a premium for quality while their poorly processed beans are sold to the certification organisation. This happens since the premium for flavour cocoa most often is higher than the premium offered by the certification organisation. Nevertheless, many customers still associate sustainability certified cocoa with quality, a misconception that most often leads to disappointments.

6 Analysis

In this chapter the findings are analysed with the help of the theoretical framework, where the purpose is to answer the raised research questions. It starts by analysing drivers for having traceability in the SCs as well as several characteristics of the studied SCs and finalises with an analysis of how certain characteristics are connected to each other.

6.1 Drivers for Having Traceability in the Supply Chain

According to Golan et al. (2004), one of the objectives for food companies to have traceability in their SCs is to improve food safety and quality control. The main driver for why the studied chocolate producers have traceability in their SCs is to improve quality control, i.e. ensure that there is supply that meets the chocolate producers' quality requirements. As described in Chapter 5 – Empirical Findings, if the chocolate producers concerned in this study are to get the cocoa quality that they desire, they have to teach farmers how to execute certain cultivation practices. That the chocolate producers have the ability to trace the cocoa back to its origin is a prerequisite for them to be able to transfer knowledge onto the cocoa farmers.

A second objective for food companies to have traceability in their SC is to differentiate and market foods with subtle quality attributes, such as corn, wheat and soybeans (Golan et al., 2004). Although chocolate cannot be considered to be a foods with subtle quality attributes, traceability still seem to bring marketing benefits for the studied chocolate producers. Golan et al. (2004) means that traceability is required to highlight a product's process attributes, i.e. attributes that cannot be physically measured in the final product but are related to how the product has been produced. Domori and Belyzium need to have traceability in their SCs to respond to customers' demand for information about process attributes such as the origin of the cocoa and how the cocoa has been cultivated.

Additional motivators for food companies to have traceability in their SCs are to improve supply management and sustainability (Golan et al., 2004; Ringsberg, 2014). Whether or not these are drivers for why there is traceability in the chains concerned in this study is not obvious. Both Domori and Belyzium “use” traceability to improve aspects of social sustainability, such as farmers' material standards, and to improve aspects of supply management, such as relationships to cocoa suppliers. However, social sustainability and effective supply management both improve the quality of the products that are brought forward by the SC. It is not possible to determine whether the ultimate goal of improving social sustainability and supply management is to improve the quality of the cocoa or if these are ultimate goals themselves.

6.2 The Meaning of Quality

As mentioned in Chapter 2 – Theoretical Framework, Reeves and Bednar (1994) state that most definitions of quality derive from one of four broad views of quality: as value, as conformance to specifications, as meeting and/or exceeding customer needs and as excellence. The dominating view of quality among the actors included in this study is that quality is excellence. Quality cocoa and chocolate is predominantly described as having certain flavour characteristics. Cocoa and chocolate quality is regarded as something absolute rather than relative to any resource spent on getting the cocoa or chocolate. In Domori and Belyzium's SCs it seems to be the chocolate producers who decide what good quality cocoa and chocolate is. Domori and Belyzium educate both their cocoa suppliers and their customers in cocoa and chocolate quality.

6.3 Quality Management in The Supply Chain

Saunders (1997) distinguishes between two basic approaches to quality: defect detection and defect prevention, where the defect prevention approach implies that companies place responsibility on their suppliers to take preventive and inspective quality measures. According to him, the main objectives of making suppliers take this responsibility are to improve standards of quality and to reduce costs. Both Domori and Belyzium are predominantly using methods of defect prevention since using preventive methods is a prerequisite for getting access to cocoa of the standards of quality that they desire. If Domori and Belyzium solely would focus on inspecting purchased cocoa for defects then they would have to accept the non-satisfactory standard of quality that their suppliers are able to achieve without their involvement. However, since this standard of quality is not satisfactory, the chocolate producers have no other choice than to work with improving their suppliers defect preventive measures.

6.4 Structure of The Supply Chains

The analysis of the structure of the SCs is divided in two parts, one for the SC upstream the chocolate producers and one for the SC downstream the chocolate producers.

6.4.1 *Upstream Chocolate Producers*

Morehouse et al. (2010) explain that the increasing outsourcing of roles such as manufacturing, logistics and purchasing has given companies less control over key processes. Although common in the chocolate industry, Domori and Belyzium have neither outsourced the cocoa roasting and grinding processes to a cocoa-processing firm nor any part of the purchasing process to a trader, with the exception of Domori's purchasing of Tanzanian cocoa. An important reason for keeping these processes in-house is that the chocolate producers want to have control over processes that highly impact the quality of the final product. Roasting affects the flavour of the beans and purchasing decides the selection of cocoa.

Additionally, outsourcing inevitably leads to the loss of direct contact between the producers and the suppliers that were previously 1st tier suppliers and now are 2nd tier suppliers (Butterworth, 1995). Likely, not wanting to lose direct contact with farmers is an additional reason for why none of the studied chocolate producers outsource cocoa roasting and grinding or cocoa purchasing. An actor between the chocolate producers and the farmers would most likely complicate the information exchange between the two – an exchange that is crucial for the chocolate producers to get the cocoa quality they desire.

6.4.2 Downstream Chocolate Producers

Unlike the purchasing and the cocoa processing, Domori has outsourced a large part of their sales process. Having direct contact with all consumers and chocolate processors would simply imply too many relationships for them to manage, wherefore they have focused on keeping direct contact only with the most valuable chocolate processors. Domori has less than ten suppliers to handle but presumably hundreds of consumers and chocolate processors. A drawback of having outsourced part of their sales process is that they have reduced their control over a key process. However, this process is not affecting the quality of the chocolate and is therefore likely not as important to have control over as for instance purchasing and cocoa processing.

Nevertheless, outsourcing part of the sales process still entails lost direct contact to consumers and chocolate processors, meaning that information to customers further down the SC has to travel through intermediaries such as retailers, importers and salesmen. As described in Chapter 5 – Empirical Findings, new customers to Domori has to be taught to understand the different flavours of chocolate and cocoa. Because a large part of the sales process has been outsourced, intermediaries are responsible for much of this teaching. Presumably, this is the reason behind why Domori bases the decision on which intermediaries that are to sell their products on the intermediaries' philosophy about food quality. An intermediary that, as Domori, is passionate about absolute food quality is more likely to transfer information about chocolate and cocoa quality on to their customers.

Belyzium has outsourced a smaller part of their sales process than Domori. Belyzium has some retailers but are themselves responsible for the majority of their sales. This strategy is possible to maintain since they have fewer final customers than Domori and thereby have fewer customer relationships to manage. Since Belyzium is new on the market, the direct contact to the consumer is of greater importance than for Domori. According to Buttle and Ang (2006), customer acquisition is crucial for a business in its start-up phase. As explained earlier, both Belyzium and Domori's customer acquisition strategy relies on that Domori and Belyzium have the possibility to educate new customers. However, since Belyzium is in its start-up phase, the acquisition of customers is more important than it is for Domori who already has a customer base.

6.5 Relationships Between Actors in The Supply Chains

In this subchapter the relationships between the actors in the SCs are analysed. It is divided in to two parts. The first part focuses on the relationships between chocolate producers and their cocoa suppliers and the second on the relationships between chocolate producers and their customers.

6.5.1 Chocolate Producers and Their Cocoa Suppliers

Saunders (1997) distinguishes between two different models for buyer-supplier relationships: the partnership model and the adversarial model, where the former is preferable. Evidence suggests that the relationships between Domori and Belyzium and their cocoa suppliers have characteristics that fit the partnership model rather than the adversarial model. This is clarified in Table 7, which shows a comparison between the characteristics of an adversarial relationship, a partnership relationship and the relationships between the studied chocolate producers and their cocoa suppliers.

Table 7. Comparison between the characteristics of an adversarial relationship, a partnership relationship (as described by Saunders (1997)) and the relationships between the studied chocolate producers and their cocoa suppliers.

Adversarial relationship	Partnership relationship	Relationship between studied chocolate producers and their cocoa suppliers
Arm's length, formal communication approach	A high frequency of both formal and informal communications	Quality improvement work demand high frequency of communications
Adversarial attitudes	Co-operative attitudes	Co-operative attitudes
Lack of trust	A trusting relationship	Relationships are personal and built on trust
Aggressive, "win-lose" approach in negotiations – price focus	Problem solving, "win-win" negotiating styles, with an emphasis on managing total costs	Focus on improving quality of both supplier's and buyer's product, leading to better prices for both parties. Buyer helps suppliers find additional customers.
Emphasis on individual transactions and short-term contracts	Long-term business agreements	Large investments of buyer's resources on each supplier require long-term relationships commitments from both parties
Little direct contact and involvement in design activities	-	Much direct contact and involvement of buyer in supplier activities
Reluctance to share information	Open sharing of information by multifunctional teams	Sharing information crucial for achieving good product quality
Reliance on goods inward inspection and defect rectification	Vendor certification and defect prevention approaches	Defect prevention approaches

A partnership relationship is further characterised by the presence of what Saunders (1997) calls goodwill trust, i.e. "mutual expectation of open commitment to each other and the willingness to do more than what is formally expected". Goodwill trust

is the basis in, at least, some of the relationships between the studied chocolate producers and cocoa suppliers. Domori and Belyzium are doing more than what is formally required by them by for instance helping suppliers to find additional customers. Also, Belyzium has ensured that their supplier has access to electricity. In exchange, the chocolate producers get better quality cocoa than what they would have gotten otherwise.

According to Saunders (1997), the basis for a partnership relationship implies that there is equality of power between the parties. Based on this statement, it is debatable whether or not the relationships between cocoa suppliers and chocolate producers can be described as true partnerships. The chocolate producers have a power advantage over their cocoa suppliers. In the majority of Domori and Belyzium's supplier relationships, Domori and Belyzium have financial power as well as greater knowledge of how to produce high quality cocoa.

However, Domori and Belyzium are also dependent on their cocoa suppliers. According to Cetinkaya (2011), the importance of a SC's stakeholder is affected by its substitutability, which refers to whether it is possible to replace a stakeholder with another who can provide the same product to the same quality and price. The less substitutable a stakeholder of the SC is, the more important is that stakeholder. Although the substitutability of Domori's and Belyzium's cocoa suppliers vary, one can argue that they generally have a low substitutability. In most cases, Domori and Belyzium have to invest much time and effort on a new cocoa supplier before it reaches an acceptable standard of quality. Cocoa suppliers who at first contact can provide them with the quality they require are not abundant. Hence, if the relationship to one cocoa supplier ends, it is likely that it would take time before this supplier could be replaced.

Cetinkaya (2011) further means that a stakeholder of the SC who has greater knowledge of the requirements of the final customer is more important than one who has little such knowledge. Both Domori and Belyzium has invested much on making their suppliers understand what is good chocolate and what is not, i.e. the preferences of the final customer. Hence, the more education they have given a supplier the more important has that supplier become.

Barriers to Developing Partnership Relationships

It is suggested that both buyer and supplier can gain greater benefits by having a partnership relationship than an adversarial (Dale & Lascelles, 2003; Saunders, 1997). However, Dale and Lascelles (2003) show that certain aspects of the buyer-supplier relationship can act as barriers to the development of a partnership relationship: poor communication and feedback, misguided supplier improvement objectives, lack of customer credibility, lack of purchasing power and supplier reactivity. The first four aspects do not appear to be present in the relationships between neither Domori and their suppliers nor Belyzium and their suppliers. In the studied SCs there is extensive information sharing and feedback between chocolate producers and cocoa farmers,

the buyers are actively involved in helping farmers solve quality problems, there is credibility that the chocolate producers are serious about continuously improving the relationship to their suppliers and the buyers have purchasing power. However, it is not obvious that the fifth aspect – supplier reactivity – is not present within the relationship between chocolate producers and cocoa farmers. It could be that this is a barrier that the chocolate producers are trying to overcome by educating suppliers; if suppliers have knowledge about cocoa quality their possibility to proactively work with quality improvements increases. For instance, it is difficult to use a proactive method such as benchmarking if one does not have knowledge about one's industry.

6.5.2 *Chocolate Producers and Their Customers*

The adversarial and partnership models of buyer-supplier relationships will not be used to analyse the relationships between Domori and their customers and Belyzium and their customers, since these relationships are too many and too diverse in their characteristics to be generalised. What can here be said about these relationships is that Domori appears to have created so-called bonds to some of their business customers. According to Buttle and Malkan (2015), the creation of bonds is an efficient B2B customer retention strategy, and there are large economic benefits of investing in customer relationship management to retain customers. Bonds can be social, which are found in positive interpersonal relationships between people or structural, which are created when companies commit resources to each other. Domori appears to be working on creating social bonds, since Franzoni visits valuable B2B customers, importers and retailers to build personal relationships to them. Two types of structural bonds are also present in some of Domori's customer relationships: knowledge bonds, created when each party invest to understand the other's processes (Buttle & Maklan, 2015), and process bonds, created when processes of the two companies are aligned (Buttle & Maklan, 2015). Knowledge bonds are created when customers visit Domori's production site and when Domori visit their production facilities. An example of a process bond is that Berzeli has based their recipes on specific chocolates that Domori produce. By doing so, Berzeli has adapted its processes to Domori's products.

6.6 Sustainability

According to Epstein (2008), which aspects of sustainability a company decides to focus its efforts on depend on the context in which the company operates. The actors included in this study predominantly focus the sustainability discussion on aspects related to the cocoa cultivation and the cocoa farmers, which is also where the largest sustainability issues in the chocolate industry are present. Of the three dimensions of sustainability, the social dimension is given the most attention and particularly farmers' socio-economic situations. As previously mentioned, farmers being underpaid is a widespread issue within the cocoa and chocolate industry.

It is not only the sustainability focus that is dependent on the context in which a company operates. Von Marrewijk (2003) highlights that the company context also

affects how the company defines sustainability. As previously described, the studied actors include aspects related to social sustainability in the concept of quality, i.e. for cocoa to be of high quality it also has to fulfil certain social sustainability requirements. However, none of the studied actors include aspects of quality in the definition of sustainability. It is clear that when it comes to cocoa, it may be sustainably produced without being of high quality. This is because sustainability achievements are not dependent on activities that improve quality, such as for instance quality performance is dependent on the cocoa growers' satisfaction.

6.6.1 Sustainability Management of the Supply Chain

Welford (2003) argue that companies need to expand their sustainability efforts to include not only their internal processes but also their external. The fact that both chocolate producers focus the sustainability discussion on the cocoa cultivation process indicates that they have included their suppliers in their own sustainability performance. This broader view of sustainability may be linked to the expansion of QM to include the SC that both Domori and Belyzium have achieved. To achieve satisfactory cocoa quality they are forced to focus much of their QM activities at the cocoa plantations. The large attention given to cocoa cultivation for quality reasons could, of course, boost the attention given to sustainability aspects of this process.

There are several methods for integrating sustainability initiatives into a company's purchasing strategy (Epstein, 2008). The studied chocolate producers are currently using at least two such methods: holding supplier meetings and providing suppliers with training and technical assistance. The main purpose of using these methods is to improve the quality of the cocoa, wherefore mostly quality requirements are communicated during supplier meetings and suppliers are trained in how to manage their farms in order to produce cocoa beans of best absolute quality. However, by having these management practices in place, there are prerequisites for communicating sustainability requirements to suppliers and for educating suppliers in sustainable agricultural practices.

6.7 The Connection Between Quality and Sustainability

It seems that Domori and Belyzium's quest to produce chocolate of excellent quality has created certain prerequisites for achieving sustainability in the studied chains. According to Ringsberg (2014), traceability is a necessity for ensuring sustainability in SCs – without traceability companies cannot work with sustainability improvements in their SCs. As described in Section 6.1, Domori's and Belyzium's strive for achieving excellent quality is presumably the main driver for why there is traceability in the studied SCs.

Traceability has allowed the two chocolate producers to successfully implement methods of defect prevention with their suppliers, which in turn has been made possible because of the partnership relationships they have with their suppliers. According to Saunders (1997), the defect prevention approach to quality implies that

quality should be built into the suppliers' processes, which in turn requires traceability. Further, for a company to successfully implement a defect prevention strategy in purchasing, close collaboration and intensive interaction with suppliers is required. Such close collaboration and intensive interaction are characteristics of a partnership relationship (Saunders, 1997).

The partnership type of relationships between chocolate producers and suppliers is also positively connected to SC transparency, defined by Lamming et al. (2001, p. 4) as “the two-way exchange of information and knowledge between supplier and customer”, since transparency is affected by for instance companies' willingness to share information and the existence of mutual trust between companies (Ringsberg, 2014). As previously shown, information sharing between chocolate producers and cocoa farmers is a prerequisite for getting access to cocoa of acceptable standard of quality and goodwill trust is existing in many of the buyer-supplier relationships. Ringsberg (2014) means that the existence of SC transparency is positively related to traceability. Figure 13 below visualises that because of Domori's and Belyzium's strive for excellent quality, the studied chains have properties that directly or indirectly improve the possibilities of achieving sustainability in SCs.

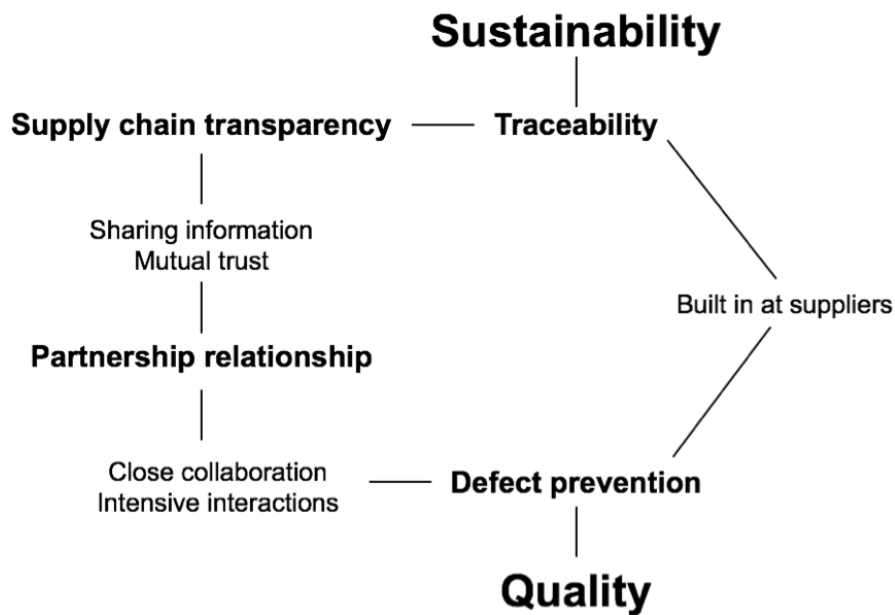


Figure 13. Because of Domori and Belyzium's strive to achieve excellent product quality, the studied chains have characteristics that either directly or indirectly improve the possibilities of achieving sustainability in SCs.

7 Discussion

This chapter includes a discussion of the impact on quality and SC sustainability if Domori and Belyzium should increase their production volumes. The chapter also discusses the potential benefits for actors in Domori and Belyzium's SCs aligned with being part of a SCS. Further, Domori and Belyzium's SCs in relation to the general cocoa and chocolate industry are discussed. The chapter finishes with a discussion of implications of methodological choices.

7.1 Implications of Increased Production Volumes

Naturally, if Domori and Belyzium are to increase their production volumes they need to get access to larger volumes of cocoa, which can be achieved by purchasing larger volumes from current suppliers and/or increasing the number of cocoa suppliers. When Domori and Belyzium reach a certain number of cocoa suppliers it might become too complicated to manage them all, wherefore Domori and Belyzium may be forced to at least partly outsource the purchasing process to traders. These traders would then have to perform the quality improvement work at the cocoa plantations that the chocolate producers are currently doing. A reason for why Domori and Belyzium are purchasing directly from cocoa producers today is that their experience is that traders cannot provide them with cocoa of sufficient quality. Therefore, increased production volumes could eventually mean that Domori and Belyzium would not get access to cocoa of as high quality as they currently have.

As has been described in previous chapters, because of cocoa farmers lack of understanding of how to produce a high quality product, Domori and Belyzium are required to have direct contact with cocoa farmers to get access to cocoa of the quality they desire. If, however, the farmers could take responsibility for the quality of their cocoa there would no longer be much need for Domori and Belyzium to be involved in quality improvements at neither new nor current suppliers. It would then be possible for Domori and Belyzium to outsource the purchasing process without incurring a loss of quality. Thereby, if cocoa farmers themselves could achieve a quality satisfactory for Domori and Belyzium, Domori and Belyzium could increase their production volumes without incurring a loss of quality as a consequence.

However, outsourcing the cocoa purchasing process to a trader would imply that the direct contact between Domori and Belyzium and their cocoa suppliers would be lost. This would make it difficult to maintain partnership relationships between the chocolate producers and their suppliers. As previously described, partnership relationships are positively related to traceability, which is positively related to sustainability. This means that an increased demand for dark chocolate with increased production volumes and outsourcing of the cocoa purchasing process as a result could negatively affect the possibilities of improving sustainability in Domori and Belyzium's SCs.

7.2 Benefits of Sustainability Certification Schemes

Actors in Domori and Belyzium's SCs seem to get few benefits if Domori and Belyzium's would become included in any of the large SCSs FT, UTZ or RA. The potential financial benefits of certifying the studied SCs are somewhat difficult to predict. On the one hand, SCSs do offer cocoa farmers price premiums. On the other hand, the studied chocolate producers offer significantly higher price premiums to cocoa farmers than FT, UTZ or RA do and it is uncertain whether a certification scheme would actually increase these premiums. It must also be taken into consideration that fees must be paid to be part of a SCS. Such fees are cash flows out from the SCs. According to Pots et al. (2010) SCSs contribute to transparency and traceability in international SCs. However, there already is both transparency and traceability in Domori and Belyzium's SCs, wherefore being part of a SCS would not add these benefits to the studied SCs. At the moment, the only incitement for Domori and Belyzium to become certified by FT, UTZ or RA is likely marketing benefits, since the demand for certified cocoa and chocolate is increasing.

7.3 Domori and Belyzium's Supply Chains in Relation to the General Cocoa and Chocolate Industry

Naturally, one wants to place this study in relation to the general cocoa and chocolate industry. When doing so, many technical similarities can be seen between the studied SCs and the general cocoa and chocolate industry, including the characteristics of the cocoa cultivation and processing and the chocolate production. Because of these technical similarities, it is tempting to connect other characteristics of the studied SCs to characteristics of the general cocoa and chocolate industry, for instance organisational and managerial characteristics. However, such comparisons are difficult to make and may actually not increase the understanding of Domori and Belyzium's SCs. The general cocoa and chocolate industry consists of 90 per cent bulk cocoa, which predominantly is used in products with low cocoa content in which cocoa is not the main flavour ingredient. Therefore, the quality of the cocoa does generally not affect the quality of the final product as much as it does in Domori and Belyzium's products. Thus, the possibility to improve the quality of cocoa is not as strong an objective for having traceability in SCs in the general cocoa and chocolate industry as it is for Domori and Belyzium. Furthermore, products made from bulk cocoa are very different from Domori and Belyzium's products wherefore it is likely that the two attract different customers. Also, flavour cocoa, which is the cocoa that Domori and Belyzium use, and bulk cocoa have separate markets with separate supply and demand.

7.4 Implications of Methodological Choices

The conduction of this study required a series of methodological choices, each of which affect the outcome of the study. The choice of research design set the framework for the study already in the beginning of the process. According to Bryman and Bell (2003), choosing one research design over another design implies

making trade-offs between different dimensions of the research. As previously described, a multiple case study design was chosen for the conduction of this study. This choice inevitably meant that the possibility to generalize the findings to apply to SCs of chocolate producers that use origin labelling was lost. However, if another research design had been chosen, the study would instead have lost depth. With that said, this study does not have the objective to generalize its findings nor can it do so.

Since this study tries to capture the key characteristics of Domori and Belyzium's entire SCs, the collected data should cover the variety of actors included in these SCs. Much of the findings presented in this study are based on data collected from interviews. For those reasons, interviews were carried out with representatives from different types of SC actors, including suppliers, customers and collaborative partners of Domori and Belyzium. It is of course possible to question the selection of SC actors to interview. Whether enough actors were interviewed and whether the interviewed actors together could provide a thorough picture of Domori and Belyzium's SCs. In theory it is possible to hold interviews with representatives of all SC actors. However, in reality it is practically impossible to collect and handle qualitative data from all SC actors, since the studied SCs together include hundreds, perhaps thousands of actors. Inevitable, a selection of SC actors to interview had to be made.

Another research method used in this study was observations. As previously described, observations were made at Domori and Belyzium's production sites and at the production site of a professional customer of Domori. Doing observations at the production sites of more actors could have allowed for an even deeper understanding of Domori and Belyzium's SCs. At the same time, this would have increased the volume of data to process and analyse and more data does not necessarily have to be better. The effort of collecting and processing a specific data set has to be put in relation to the benefits that particular data set adds to the study. Here, the net benefits of doing field visits to Domori and Belyzium were considered to be very high, while the net benefits of doing field visits to for instance cocoa suppliers were regarded to be lower.

8 Conclusions

As presented in Chapter 1 – Introduction, the aim of this thesis consist of two parts: (1) to analyse the objectives for why there is traceability in Domori and Belyzium’s SCs and (2) to determine the key characteristics of these SCs.

Concerning the first part of the aim, this thesis has found that the most important objective for why there is traceability in the studied SCs is to improve the quality of the chocolate produced by Domori and Belyzium. Yet, ensuring sustainability, and particularly social sustainability, also appears to be a driver for why there is traceability in these chains. The studied actors do not separate the term quality and the term sustainability completely. Aspects of sustainability are included in the concept of quality but aspects of quality are however not included in the concept of sustainability.

Concerning the second part of the aim, several key characteristics have been identified to be present within the studied SCs. The findings showed that Domori and Belyzium keep the cocoa purchasing and cocoa processing in-house. Based on the analysis, this thesis can conclude that there are at least two important reasons for doing so: (1) to have control over processes that highly affect the quality of the chocolate and (2) to have direct contact with cocoa producers and thereby simplify the exchange of information.

The findings have further showed that both Domori and Belyzium have outsourced parts of their sales process to intermediaries. The sales process does not affect the quality of the chocolate wherefore it is not as important to have control over as cocoa purchasing and cocoa processing. Belyzium has outsourced a smaller part of their sales process than Domori. Belyzium, who is new in the industry, must focus on acquiring customers, which is achieved by educating customers in cocoa and chocolate quality. Therefore Belyzium benefits more than Domori of having direct contact with potential customers.

Additional key characteristics that have been identified to be present within the studied SCs are the following:

- Domori and Belyzium take a defect prevention approach to quality, where they work to “build in” quality at their cocoa suppliers. The main objective of taking this approach to quality is to improve standards of quality.
- The chocolate producers relationships with the cocoa producers have characteristics in line with those of partnership relationships, including:
 - High frequency of communications
 - Co-operative attitudes
 - Personal and trusting relationships
 - “Win-win” negotiation styles, where both parties benefit of the relationship

- Long-term relationships
 - Open sharing of information
 - Defect prevention approach
- The cocoa suppliers are important stakeholders in Domori and Belyzium's SCs, mostly because the cocoa suppliers have low substitutability – i.e. it is difficult to find other actors who can provide cocoa to the same quality and price. However, Domori and Belyzium's cocoa suppliers are also important because they have gained knowledge about the requirements of the final customer.
 - Social and structural bonds appear to be present between Domori and some of their B2B customers.
 - The sustainability discussion among the studied actors focuses on aspects related to social sustainability and particularly on the cocoa farmers' situation. Hence, the chocolate producers have broadened their sustainability discussions to include their suppliers.

Finally, this thesis can conclude that Domori and Belyzium's quest to produce chocolate of "the highest" possible quality has made their SCs develop characteristics that are positively related to achieving sustainability in SCs. This since Domori and Belyzium's QM requires traceability, SC transparency, defect preventive approaches to quality and partnerships relationships – all which are directly or indirectly positively related to achieving sustainability in SCs.

9 Directions for Further Research

The completely qualitative nature of this research has provided a profound picture of the key characteristics of Domori and Belyzium's SCs. A first suggestion for further research is that it could take a more quantitative approach, include several SCs of companies that produce dark chocolate, strive to achieve excellent quality and have traceability in their SCs in order to describe patterns and differences among these.

Furthermore, this thesis has shown that the quest for achieving excellent quality has made the studied chains develop characteristics that are positively related to sustainability in SCs. This raises the question whether striving to improve quality could have a similar effect in other food industries. Further research may focus on explaining the relationship between quality, traceability, certain key characteristics identified by this thesis and sustainability. It may address questions such as: is there traceability in SCs of companies whose mission is to achieve excellent quality? Is improving quality the main objective for why there is traceability in SCs of other origin labelled foods? Will quality improvements facilitate sustainability improvements in SCs in other food sectors?

It goes without saying that what is characteristic for Domori and Belyzium's respective SCs works in these particular chains. However, it remains unknown whether other companies could manage their chains in similar ways and whether managerial practices can continue if Domori and Belyzium undergo change. Since the demand for dark chocolate is increasing, it is of particular interest for further research to address if the SCs can be managed in the way they are currently managed if production volumes increase. Interesting research would also be to study whether companies whose mission is not to produce something of excellent quality, but of quality that meets the customers' needs could benefit from adopting the SCM practices that Domori and Belyzium are using.

Lastly, the actors included in this study criticise SCSs for not contributing enough to sustainability. Meanwhile, in the studied chains, quality improvements have created prerequisites for sustainability improvements. What is best from a sustainability perspective and how to achieve sustainability in the chocolate industry are questions that remains unanswered. Research that assesses various strategies for improving sustainability in both chocolate chains but also in other food chains seems much needed.

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Most people probably remember the so-called horsemeat scandal in Europe in 2013, where foods advertised as containing beef were found to contain up to 100% horsemeat. This scandal revealed a major breakdown in food companies' knowledge of where things they purchase come from. Such knowledge is not only a prerequisite for ensuring that something is what someone claims it to be, but also for efficiently improving sustainability and quality.

In this study, we look deeply into the supply chains of two chocolate producers who know how the cocoa they purchase have travelled through the supply chain before reaching their doorsteps. By conducting interviews and making field visits to Germany and Italy, we try to answer how these chocolate producers benefit from knowing where their materials originate and what it is that is characteristic for their supply chains.