Business model alignment in a cocoa supply chain: creating more fair trade

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Abstract

The cocoa industry has faced a variety of challenges, among others those concerning the integration of fair trade into the entire supply chain. This study aims to find element of business models that make it possible to integrate more fair trade along the cocoa supply chain and to analyse how these elements could be aligned. The main research question of this study therefore is: 'how can elements of business models along multiple stages of a cocoa supply chain be aligned, to increase the possibility of fair trade?'. This has been studied via a literature research on business models, the structure of the cocoa supply chain and its stakeholders, fair trade organisations and certifications, and theories on aligning or integrating business models into a supply chain. This has resulted in the identification of multiple challenges among the economic, environmental and social components of a business model, concerning transparency, traceability, productivity, management systems, and safe and healthy work environments. The main challenge appeared to be on the transparency and traceability of products, which would require better management and monitoring systems. The approach of sustainable supply chain management from the focal company of the supply chain was one of the recommendations given in addressing this challenge. Another set of recommendations has been given, where (1) the supplier code should be strengthened and made aware, (2) contracts throughout the chain should be revised and strengthened, and (3) a comprehensive monitoring system of the supply chain should be developed. Business model elements to tackles these challenges in are mainly the elements of 'strategy and organisation' of the economic component, 'benefits' and 'impacts' of the environmental component, and 'governance' and 'employees' of the social component.

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Introduction

Problem statement & research objective

The cocoa industry includes various challenges concerning sustainability and fair trade, such as child labour, poor farm management practices, a low level of productivity, poor working conditions, and climate change[1]. Over the years, multiple initiatives of corporate organisations have been developed to promote sustainable livelihoods of these farmers, for example the Cocoa Livelihood Programme[2] or the Nestlé Cocoa Plan[3]. Furthermore, a voluntary industry-wide strategy has been launched in 2014: CocoaAction, whose vision is to create a sustainable and growing cocoa sector, where human rights, farmers, communities and the environment is respected and conserved. Despite these initiatives, not enough transparency into the operations throughout the supply chain can be provided and there remains a vast majority of cocoa that cannot be traced back to the farms[4]. This means that there is room for improvement along the entire supply chain of the cocoa industry. One interpretation to take in mind when tackling these issues, is one from the business model point of view. At its very basis, a business model describes an organisation and the ways that it functions in the achievement of its goals, such as profitability, growth, or social impact[5]. It is a conceptual tool for understanding how a firm does its business[6]. This raises the question, if there are some elements in these models that are suited to tackle the previous mentioned challenges. This study seeks to find ways to integrate more fair trade and transparency throughout the cocoa supply chain, by identifying elements of business models that could be suitable to do so. Thus, the objective of this research is to find elements of business models that make it possible to integrate fair trade and transparency along the cocoa supply chain and to analyse how these could be aligned. This will be inspected through a literature research, consisting of the following five components. First, the structure of business models will be analysed, after which a business model framework will be developed. Second, the structure, processes and stakeholders of the (fair trade) cocoa supply chain will be mapped out. Third, current standards and certifications of various fair trade organisations will be identified. Furthermore, in this research, the possibility of aligning business models along a supply chain will be studied. This could give an insight to the final aspect of this research, being to analyse how more fair trade could be integrated along a cocoa supply chain, via aligning elements of business models.

Research questions

In line with the objective, the main research question will be:

- How can elements of business models along multiple stages of a cocoa supply chain be aligned, to increase the possibility of fair trade?

The sub questions are as follows:

- What approaches to business models are present in the literature and what elements are to be recognised?
- How is the cocoa supply chain structured and what processes and which stakeholders are present in along this chain?
- What are the standards and requirements of fair trade organisations, concerning the cocoa industry?

To answer the main question of this study, the findings on three sub questions will have to be combined and connected with each other. However, these questions alone are not sufficient to answer the main question. Therefore, the answer to the main question will be introduced with the following question:

- How can a bridge be created between the allignement of business models in supply chains?

The theory on business model integration and alignment that will be found, will be used to create a conceptual framework for the main question.

Definitions and basic concepts

It is important to create a basic framework of theory, before answering the sub questions and main research question of this study. Therefore, in the following section, some basic definitions, subjects and programmes will be described. In the following chapters, research on these topics will be done in more details.

[1] (Nelson & Phillips, 2018)
[2] (World Cocoa Foundation, 2018)
[3] (Nestlé, 2017)
[4] (Fair Labor Association, 2016)
[5] (Massa, Tucci, & Afuah, 2017)
[6] (Bocken, Short, Rana, & Evans, 2014)

The first concept to briefly define is fair trade, which is being defined by the European Fair Trade Association (EFTA) as “a trading partnership, based on dialogue, transparency and respect that seeds better trading conditions for, and securing the rights of, marginalised producers and workers”[7].

Before analysing multiple aspects of business model, a general description can already be given. At its very basis, a business model describes an organisation, and in what ways that organisation functions in the achievement of its goals, such as profitability, growth, or social impact[8].
Besides general implications of the corporate strategy, external factors such as customers and the market, internal factors such as conditions of service provision and value creation, must be considered for creating a holistic picture[9]. This results in a business model having three components: a strategic component, a customer and market component, and a value creation component.

The supply chain has been defined is many different ways. One way of doing so is by describing a supply chain as a network of organisations that interact in turning raw materials into finished products and services, delivering the to the end customers[10]. Another definition simply notes that a supply chain is an alignment of companies that brings goods or services to the market, including the final customer as part of this supply chain[11]. For the purposes of this study, a broad and including definition will be used of Mentzer *et al*, who describe a supply chain as “*a set of three or more entities (organisations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer*”[12].

Cocoa
The Theobroma trees grow in the regions of Central and West Africa and are famous for producing one of the most important seeds of those regions: cocoa beans[13]. These beans are processed for obtaining some of the main ingredients of chocolate, being cocoa powder, chocolate liquor, and cocoa butter[14]. The largest cocoa producing country, making up 33 percent of the global supply, is Ivory Coast. In second place comes Ghana[15]. Other main regions where cocoa beans grow are Asia (Papua New Guinea, Malaysia, Indonesia) and Latin America (Colombia, Brazil, Ecuador). Around 80 to 90 percent of the cocoa produced worldwide, comes from small family-run farms, which exist of five to six million farmers. This contributes to a worldwide annual production of 4.2 million tons of cocoa, valued at 11.8 billion dollars[16].

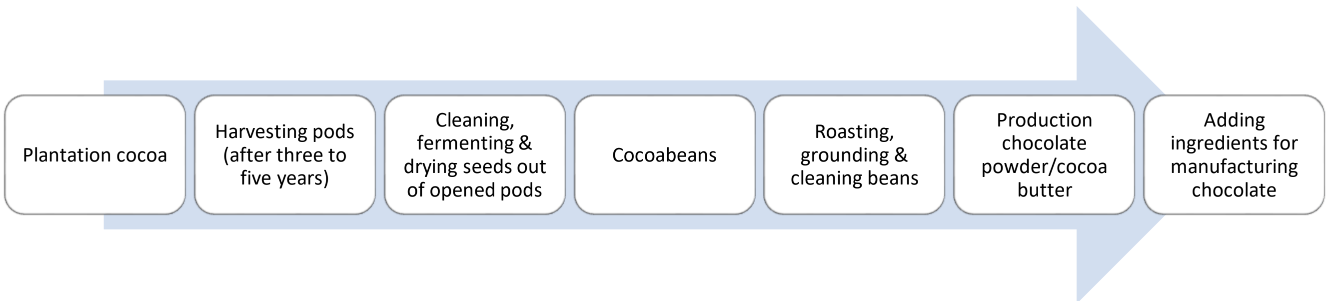


Figure 1: the process of cocoa.

The process cocoa goes through, as depicted in figure 1, is as follows:

- Cocoa is planted under temporary shade from food crops. To protect young cocoa trees from direct exposure to sunlight.
- Three to five years later, the pods can be harvested.
- The seeds that come out of the opened pods are cleaned, fermented and dried. This gives cocoa beans.
- The roasting of the dry beans begins. After this, grounding and cleaning follows to give a “paste”.
- From this, chocolate powder and cocoa butter can be made.
  When adding cocoa liquor, sugar and sometimes milk, chocolate arises.

[7] (EFTA (European Fair Trade Association), 2001)
[8] (Massa, Tucci, & Afuah, 2017)
[9] (Wirtz, Pistoia, Ullrich, & Göttel, 2016)
[10] (Abdelkafi & Pero, 2018)
[11] (Lambert, Stock, & Ellram, 1998)
[12] (Mentzer, et al., 2001)
[13] (Duguma, Gockowski, & Bakala, 2001)
[14] (Recanati, Marveggio, & Dottelli, 2018)
[15] (Beg, Ahmad, Jan, & Bashir, 2017)
[16] (Beg, Ahmad, Jan, & Bashir, 2017)

- Chocolate manufacturers can, when they don't make the dark or milk chocolate themselves, rework the chocolate by adding ingredients such as hazelnuts, raisins, vanilla, etc. Furthermore, they can rework it by moulding or coating the product[17].

Methods

This study consists of a literature review and a critical analysis of existing theories. Thus, a qualitative archival research will be done, taking a neutral stance on all data. Databases as Google Scholar, the Wageningen University Library, and Scopus will be consulted, as well as annual reports of cocoa and fair trade organisations. The analysis will start with searching for peer-reviewed articles on the main topics such as business models, fair trade, supply chains, and cocoa, as has been done in the previous section. After a general basic knowledge on these topics has been created, more detailed research can be done by searching more specific search terms. As already mentioned, for the first sub question, approaches to business models need to be researched. Afterwards, the structure of the cocoa supply chain needs to be mapped out. Important processes and stakeholders are going to be considered in this chapter as well. To support the findings on the cocoa supply chain, and to provide a clear visualisation of this chain, the case of Nestlé will be analysed as an example. Furthermore, current standards and certifications of various fair trade organisations will be identified by consulting literature and official websites of these organisations. Key search terms used in for the first sub question could be: 'business model definitions', 'business model research'. For the second sub question, search terms such as 'cocoa supply chain', 'supply chain actors cocoa', 'stakeholders cocoa supply chain', and 'cocoa industry stakeholders' are relevant. The third sub question will be approached with search words as 'fair trade certifications', 'fair trade organisations', 'fair trade standards'. During the research of this sub questions, websites of the organisations and annual reports have been read as well. For the final chapter, terms as 'sustainable supply chain management', 'business model integration', 'supply chain integration', and 'sustainable business models' were used, among others. The conclusions drawn from this research could be considered as a complement on the existing and used research. To answer the main research question, peer-reviewed articles on connecting and aligning elements of business models to supply chains will be studied. All findings of this literature research will result in an answer to the main research question. Note that this answer will be mainly conceptual of nature.

[17] (Dorin, 2003)

Chapter 1; Business models

Many peer-reviewed academic articles can be found on business models, but many scholars have different interpretations on what a business model actually is[18]. At its very basis, a business model describes an organisation and the ways that organisation functions in the achievement of its goals, such as profitability, growth, or social impact[19]. It is a conceptual tool for understanding how a firm does its business[20]. The model should not be confused with a firm's strategy, it should rather be interpreted as a conceptual framework that could help link a firm's strategy to its activities, or execution of that strategy[21]. The design of such a model can be crucial for an entrepreneur creating a new firm, but also for managers who are challenged to rethink their old business model, so it can be conformed to standards of future operations in their organisations[22]. First, this chapter will identify the main subject area of business models that is relevant for this study. Then, six different approaches to business model interpretations will be analysed, after which a framework will be developed that is going to be referred to throughout the rest of this study. This framework will answer the first sub question of this research, being: what approaches to business models are present in the literature and what elements are to be recognised?

Business models interpretations

Zott, Ammit and Massa (2011) suggest that business models have been mainly employed and described by scholars through addressing three different subject areas, without claiming mutual exclusivity among them: (1) e-business; (2) strategic concerns such as the creation of value, competitive advantage, and performance; and (3) technology and innovation management[23].

The first subject area, of information technology and e-business, includes internet-based businesses, e-commerce and e-markets, where firms conduct their commercial transactions over the internet. In this stream of literature, a business model is being described as a combination of a network of relationships, a value proposition, and a revenue model[24].

In the second area, business models are perceived to be an activity system for value creation and value capture. The literature shows that the research on business models in this category has mainly regarded three aspects. The first aspect is the creation of value in networked markets, meaning that in their business models, firms can experiment with various mechanisms of value creation that are networked among multiple stakeholders[25]. The second aspect concerns the relation between a firm's performance and their business model, where a business model is being described as a firm's method for using its resources in offering its customer better value, while making profit in conducting this[26]. The final aspect provides a distinction between a business model and other concepts of strategy. This is being explained with the fact that various companies can address the same market strategies and customers using very different business models[27]. Thus, the design of a business model and a product market strategy are complements rather than substitutes.

The last area concerns innovation management and technology. In this field, a business model is mainly interpreted as a mechanism that can connect the (innovative) technology to the needs of customers and/or to the resources/technologies of other firms[28]. This more functional perspective describes a business model as an "organisational and financial architecture of a company"[29].

Considering these three categories and the purpose of this research, being to find elements of business models that could integrate more fair trade throughout a cocoa supply chain, the focus of this study remains on the second category. This category is centred on activities or activity systems[30], which allows for the identification of key activities that could be improved in an organisation or integrated into the cocoa supply chain. Thus, a business model can be perceived as (1) an activity system where value is created and captured through networked markets among multiple stakeholders; (2) a method for using resources to offer better value and to make profit; and (3) a complement to a product market strategy. In the following part of this literary research, the search for defining relevant elements of business models continues through the analysis of different theories and frameworks on business models.

[18] (Zott, Amit, & Massa, 2011)
[19] (Massa, Tucci, & Afuah, 2017)
[20] (Bocken, Short, Rana, & Evans, 2014)
[21] (Richardson, 2008)
[22] (Zott & Amit, Business model design: an activity system perspective, 2010)
[23] (Zott, Amit, & Massa, 2011)
[24] (Zott, Amit, & Massa, 2011)
[25] (Zott, Amit, & Massa, 2011)
[26] (Afuah, 2002)
[27] (Zott, Amit, & Massa, 2011)
[28] (Zott, Amit, & Massa, 2011)
[29] (Teece, 2010)
[30] (Zott, Amit, & Massa, 2011)

Business model frameworks

Besides general implications of the corporate strategy, an organisation must acknowledge external factors (such as customers and the market) and internal factors (concerning the conditions of service provision and value creation). This makes it possible to create a holistic picture of an integrative business model[31], which results in a business model having three components: a strategic component, a customer and market component, and a value creation component, according to Wirtz, Pistoia, Ullrich, & Göttel (2016). The strategic component can be divided into three models, being: a resource model, where core competencies and core assets are mentioned; a strategy model, which exists of a value proposition and an overview of the strategic positions and paths of developments; and a network model, the maps out the business model networks and partners[32].

The customer and market component exists of the following divisions: a customer model, explaining the target groups and the customer relationships; a market offer model, including a description of the market, the firm's competitors, and their offered products and services; and a revenue model, concerning the revenue streams and differentiation[33].

Finally, the value creation component can be split into different aspects as well, including: a manufacturing model, defining the manufacturing process and the value generation; a procurement model, analysing the acquisition of resources and information; and a financial model, where the capital, financing possibilities and the cost structure are illustrated[34]. The complete display of all components of a business model, according to Wirtz *et al* (2016) can be found in annex 2.

According to Teece (2010), a business model "*articulates the logic, the data, and other evidence that support a value proposition for the customer, and a viable structure of revenues and costs for the enterprise delivering that value"*[35]. Its essence lies in identifying customer needs and their ability to pay, defining the way a firm responds to and delivers value to its customers, persuading customers to pay for value, and converting that revenue to profit through the appropriate design and operation of the different elements of the value chain. Teece's definition of a business model translates to six elements that can be determined: (1) technologies and features embedded in the service; (2) the benefit to the customer from consuming the product/using the service; (3) the market segments to be targeted; (4) the revenue streams; (5) the mechanisms to create value; and (6) mechanisms to capture value.

Another study, of Christensen, Bartman and Van Bever (2016), recognises four components in a business model: a value proposition for a firm's customers, the necessary resources (people, technology, products facilities, etc.), the processes operated to convert inputs to finished products or services, and a formula of profit dictating margins and the required scale for achieving an acceptable return[36]. As represented in figure 2[37], all components are interdependent from one another. These interdependencies define need of integration between all the four aspects of a business model.

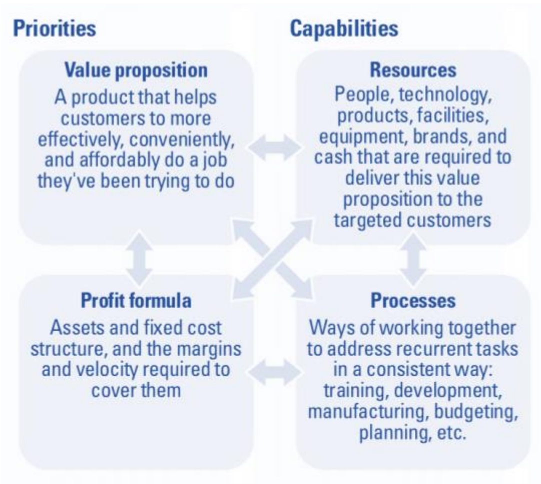


Figure 2: business model components, by Christensen et al (2016)

Richardson (2008) proposes that the concept of a business model could be developed into an integrative framework for the formulation and execution of a company's strategy. This framework could help with strategically thinking about the details of how a firm conducts its business. It could also provide a clearer insight on how the company's strategy is embedded in its activities, by describing all components of its business model.

Richardson's business model framework is based on the concept op value. He recognises three main components of the framework: the value proposition, the value creation and delivery system, and the value capture.

The value proposition is statement of a company's theory on how to compete in the market[38] and fits the previously named strategic component[39]. It concerns the reasons why a customer finds value in what the firm

[31] (Wirtz, Pistoia, Ullrich, & Göttel, 2016)
[32] (Wirtz, Pistoia, Ullrich, & Göttel, 2016)
[33] (Wirtz, Pistoia, Ullrich, & Göttel, 2016)
[34] (Wirtz, Pistoia, Ullrich, & Göttel, 2016)
[35] (Teece, 2010)
[36] (Christensen, Bartman, & Van Bever, 2016)
[37] (Christensen, Bartman, & Van Bever, 2016)
[38] (Richardson, 2008)
[39] (Wirtz, Pistoia, Ullrich, & Göttel, 2016)

sells, but it also includes the targeted customer/market[40]. It is important to question why and if that market is not already being served sufficiently by other companies. Thus, if a company can offer a greater value than its competitors to the targeted market, it has a strong value proposition.
The value creation and delivery system includes the various activities a firm undertakes for creating, producing, selling, and delivering their product or service. The capabilities and resources of various stakeholders and the division of labour/activities among these actors should be in line with the statements in the value proposition.
The value capture describes how the firm will generate its profit. According to Richardson, the value capture exists of two elements. The first element is the revenue model, describing through which sources or in what ways the firm will receive financial revenue in exchange for its products or services. The other element is the economic model, covering the costs, the margin and other financial components.

Morris, Schindehutte, and Allen (2005) have proposed another framework for business models, containing three levels of decision making, being the levels of foundation, proprietary, and rules. At each level, six basic areas of decision are recognised[41]. These decision areas can be formulated through six questions to be asked, each relating to different factors:

1. How will the firm create value? *(Factors that are related to the offering of the firm)*
2. For whom will the firm create value? *(Related to market factors*)
3. What is the internal source of advantage? *(Related to internal capability factors)*
4. How will the firm position itself in the marketplace? *(Related to competitive strategy factors)*
5. How will the firm make money? *(Related to economic factors)*
6. What are the time, scope, size and ambitions? *(Related to personal/investor factors)*

According to Morris *et al* (2005), each level has a different function in accordance to these questions. The foundation level is a generic level, where decisions are made regarding what the business is, ensuring these decisions are internally consistent. Moving to the proprietary level, the purpose is to develop unique combinations of decision variables that enable an advantage in the marketplace. In the final level, the rules level, certain operating rules or guidelines are established to ensure that all the decisions made can be reflected in the strategic actions of the company[42].

One other theory on business models is the one of the Business Model Canvas of Osterwalder and Pigneur (2010), which divides a firm's business model into nine components that are interconnected: the customer value proposition, customer segments, customer relationships, key activities, a firm's partners, key resources, channels (communication, distribution and sales), revenues, and costs[43]. These nine so called "building blocks" should indicate how a company intends to make money, covering the four main areas of business: customers, offers infrastructure, and financial viability. This canvas has a clear focus on economic value, however, values of social and environmental nature are not emphasized in this canvas.
Joyce and Paquin (2016) used the Business Model Canvas as a basis to design a more inclusive framework: The Triple Layered Business Model Canvas (TLBMC). It represents a tool for exploring business model innovation focused on sustainability aspects[44], extending the original business model with two layers. First, an environmental layer is considered, based on a lifecycle perspective. The main objective of this layer is "*to appraise how the organisation generates more environmental benefits than environmental impacts*"[45], which allows a better understanding of where in a firm's business model the largest environmental impacts can be found. This could give an insight as to where there is room for innovation, from an environmental point of view. The second addition is the social layer that focuses on a stakeholder perspective, which "*seeks to capture the key social impacts of the organisation that derive from their stakeholder relationships*"[46]. This allows for a better understanding of a firm's possibilities to innovate its business model, for improving its creation of social value. The TLBMC is presented in annex 1, as it was reproduced by Joyce and Paquin (2016). In this representation of the framework, there are nine components in each layer. The components of the economic layer (the original Business Model Canvas) remain unchanged as to the ones mentioned above. The environmental layer exists of the following components: supplies and outsourcing, production, materials, functional value, end-of-life, distribution, use phase, environmental impacts, and environmental benefits. The social layer contains these nine components: local communities,

[40] (Richardson, 2008)
[41] (Morris, Schinehutte, & Allen, 2005)
[42] (Morris, Schinehutte, & Allen, 2005)
[43] (Osterwalder & Pigneur, 2010)
[44] (Joyce & Paquin, 2016)
[45] (Joyce & Paquin, 2016)
[46] (Joyce & Paquin, 2016)

governance, employees, social value, societal culture, scale of outreach, end-user, social impacts, and social benefits.

Sub question conclusion

As already mentioned, for this research, the business model is being interpreted as: an activity system where value is created and captured through networked markets among multiple stakeholders, a method for using resources to offer better value and to make profit, and a complement to a product market strategy.

All studies that have been discussed above are briefly summarised in table 1, identifying all main elements/components/layers and their corresponding sub elements of business models. This gives an insight as to what elements are named more often than others and to what elements are onsidered the core of an integrated business model framework.

Table 1.

Author	Main elements of a business model	Corresponding sub elements
Wirtz *et al* (2016)	- Strategy; - Customer & market; - Value creation.	- Resource model, strategy model, network model; - Customer model, market offer model, revenue model; - Manufacturing model, financial model, procurement model.
Teece (2010)	- Value proposition; - Structure of revenues and costs	- Selection of technologies and features to be embedded in the product/service; - Determination of the benefit to the customers; - Identification of the market segments; - Confirmation of available revenue streams; - Design of mechanisms to create value; - Design of mechanisms to capture value.
Chistensen *et al* (2016)	- Value proposition; - Necessary resources; - Operated processes; - Profit formula.	- People, technology, products, facilities, equipment, brands, cash; - Training, manufacturing, budgeting, planning; - Assets and fixed costs structure, margins, velocity.
Richardson (2008)	- Value proposition; - Value creation & delivery system; - Value capture.	- "Why will a customer find value in the offered product/service?"; - Activities for creating, producing, selling & delivering the product/service; - How to generate profit o Revenue model o Economic model.

Morris *et al* (2005)	- Foundation level - Proprietary level - Rules level	Six questions for each level: - How to create value? - For whom is the value created? - What is the internal source of advantage? - How to position in the market? - How to create revenue? - What are the time, scope, size & ambitions?
Joyce & Paquin (2016)	Triple Layered Business Model Canvas: - Economic layer - Environmental layer - Social layer	- Partners, activities, resources, value proposition, customer relationship, channels, customer segments, costs, revenues; - Supplies & out-sourcing, production, materials, functional value, end-of-life, distribution, use phase, environmental impacts, environmental benefits, - Local communities, governance, employees, social value, societal culture, scale of outreach, end-user, social impacts, social benefits.

Having created an overview of the studied literature, a new framework on business models can be developed. It exists of all relevant components and corresponding elements, that will be referred to in the answers of the other sub question and main question of this research. Besides the explanation of the framework, it is also depicted in figure 3. The fundament of this framework is similar to that of the TLBMC, thus containing three main components: the economic, the environmental and the social component. The categorisation of these three components creates a clear overview for the company to not only consider financial factors in the decision making process, but also internal and external factors, as mentioned by Wirtz *et al* (2016). As opposed to each component having nine “building blocks”, each component consists of different key elements, which describe the firms most important features. These elements represent a comprised model of the different models in table 1.
The economic component contains the following elements:

- *Value.* In this element, the value will be depicted through the description of (1) the value proposition: ‘why will a customer find value in the offered product or service?’; (2) the value creation and delivery system; and (3) the value capture.
- *Customer and market.* This element consists of (1) identifying the customer and (2) detecting the market segments to be targeted.
- *Strategy and organisation,* where (1) the core competencies and assets of the firm; (2) the necessary resources; (3) a network of partners; and (4) the competitive advantage are being described.
- *Finance,* containing a profit formula, portraying the revenue streams and the costs.

In table 1, concepts as value, customer and market, strategy, organisation, and finance seemed to be emphasised in many models and are therefore the key elements. As shown in figure 2, different aspects of the key elements should be identified as well.
The environmental component exists of two elements:

- *Benefits,* describing benefits such as regenerative positive ecological value, the achievements of environmental reduction goals, or the ways a firm’s activities positively contribute to the environment.
- *Impacts,* consisting of a (1) representation of emissions or waist (during production, material sourcing, or distribution) and (2) the impact of the firm’s activities on human health and on the ecosystem.

For this component, the choice has been made not to include all nine building blocks of the TLBMC, but rather a description benefits and impacts of internal and external factors. In this study, an entire cocoa supply chain will

be taken into consideration, which does not necessarily call for an end-of-life indication or a use phase. Rather, it needs a clear description of benefits and impacts.
The social component comprises these four elements:

- *Stakeholders.* Even though the company's customers and partners are already portrayed in the economic component, all other stakeholders should be mapped out as well.
- *Social value.* This element illustrates (1) the social value creation for stakeholders and society; (2) the company's community engagement; and (3) how the product or service offered contributes to the consumers' quality of life.
- *Governance*, containing (1) the organisational structure of the firm (profit/non-profit, internal organisation); (2) the decision making policies; and (3) the engagement of the earlier mapped out stakeholders.
- *Employees,* where the demographics and the role of employees is represented, as well as their opportunities to training or development programs or the existence of support programs.

The key elements indicated in this component are aspects that seemed to be emphasised in multiple models in table 1. Therefore, these four elements, with their corresponding aspects, need to be analysed when creating a business model.

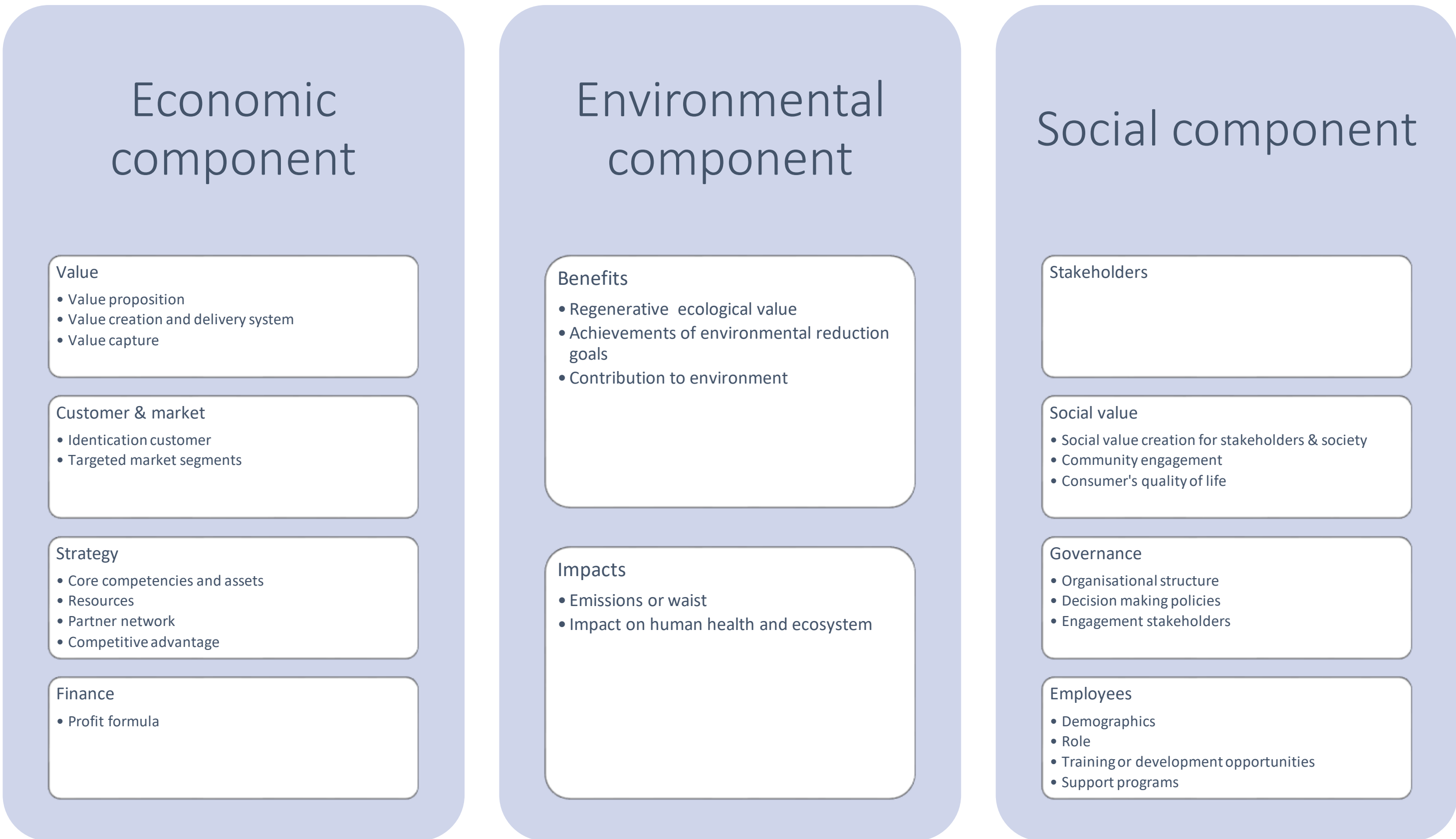


Figure 3: the business model framework

Chapter 2: The cocoa supply chain

As mentioned in the introduction, there is not enough transparency into the operations throughout the cocoa supply chain and a vast majority of the cocoa cannot be traced back to the farms. This chapter seeks to map out the structure of the cocoa supply chain, including its stakeholders and key processes. This could give an indication as to which members of the supply chain are in the greatest need of developments regarding the alignment of business model elements. Stakeholders, in this study, refer to any individuals or groups that could affect or be affected by the realisation of an organisation's objectives[47]. In this chapter, several concepts regarding the supply chain will be defined, after which two general depictions of the cocoa supply chain will be given. Next, the case of Nestlé cocoa will be used to illustrate their supply chain and other important stakeholders involved in their initiative to promote sustainable livelihoods for cocoa farmers. Finally, the second sub question of this research can be answered, with formulating the main important stages and stakeholders of the cocoa supply chain.

<u>Defining the supply chain, supply chain management, and supply chain integration</u>

To analyse the cocoa supply chain and all its stakeholders, one must first understand all definitions regarding a (integrated) supply chain. The supply chain has been defined is many different ways. One way of doing so is by describing a supply chain as a network of organisations that interact in turning raw materials into finished products and services, delivering the to the end customers[48]. Another definition simply notes that a supply chain is an alignment of companies that bring goods or services to the market, including the final customer as part of this supply chain[49]. For the purposes of this study, a broad and including definition will be used, where a supply chain is being defined as "*a set of three or more entities (organisations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer*"[50].

Managing the supply chain has become essential to firms that seek to improve the relationships with their channel members[51]. According to Abdelkafi and Pero (2018), supply chain management (SCM) integrates all business processes for managing the supply chain. Mentzer *et al* (2001) have given a clear definition of SCM, that describes SCM as "*the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole*"[52]. Thus, it seeks to improve a company's competitive performance by effectively linking integrated internal business processes with external operations of other channels in the supply chain, such as suppliers or customers[53]. Carter and Rogers (2008) take this definition to another level, adding the aspect of sustainability, which results in them describing the concept of sustainable supply chain management (SSCM). This involves the achievement of transparently and strategically integrating a company's social, environmental and economic goals, while systematically coordinating key inter-organisational business processes to improve the long-term performance of a company and its supply chains[54]. The integration of a company's social, environmental and economic goals correspond with the components named in the business model framework of the previous chapter, therefore making it convenient to involve the definition of SSCM in this study.

Otchere *et al* (2013) argue that because of the intensification of global competition and the increasing demand for better service, the need for integration between organisations in a supply chain has augmented. They therefore defined supply chain integration (SCI) as the degree to which all operations within a company, and the activities of its customers, suppliers and other members of the supply chain are integrated with another[55].

[47] (Freeman, 1984)
[48] (Abdelkafi & Pero, 2018)
[49] (Lambert, Stock, & Ellram, 1998)
[50] (Mentzer, et al., 2001)
[51] (Sana, Herrera-Vidal, & Acevedo-Chedid, 2017)
[52] (Mentzer, et al., 2001)
[53] (Otchere, Annan, & Anin, 2013)
[54] (Carter & Rogers, 2008)
[55] (Otchere, Annan, & Anin, 2013)

General depictions of the cocoa supply chain

In the introduction, the cocoa process was depicted as shown in figure 4. This process can be translated to a supply chain. An article in the Commodity Market Review of the Food and Agriculture Organisation of the United Nations[56] illustrates a simplified cocoa-chocolate supply chain, shown in figure 5. This supply chain corresponds with the cocoa process, in the way that local farmers sell their cocoa beans to exporters and/or converters. These sales can go directly or indirectly via a local buyer, a cooperative, and/or a traitant. Note that in this chain, converting stands for the cleaning, roasting, and grinding of the cocoa beans to produce cocoa liquor, which is then further processed to cocoa butter and cocoa powder[57]. After the converting, the produce will be shipped to chocolate manufacturers. Note that in figure 5, the broken arrows represent less important links than other arrows. For example, local traders or cooperatives trade more with large exporters and multinational converters, than they do with smaller domestic converters.

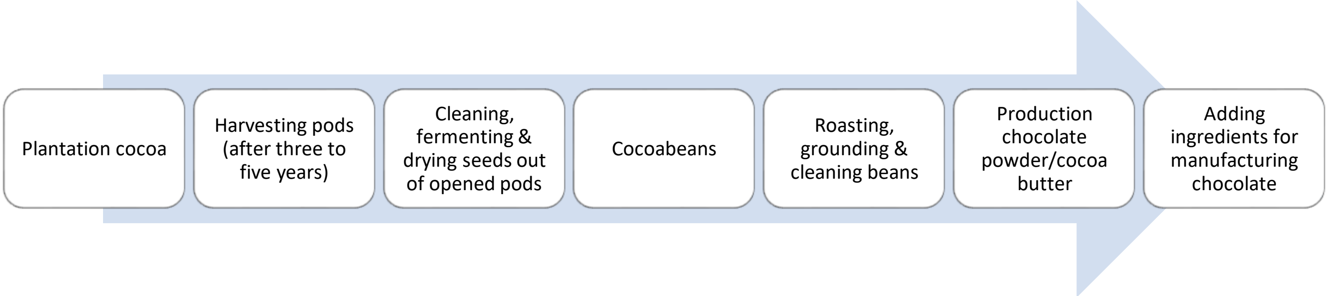


Figure 4: the cocoa process

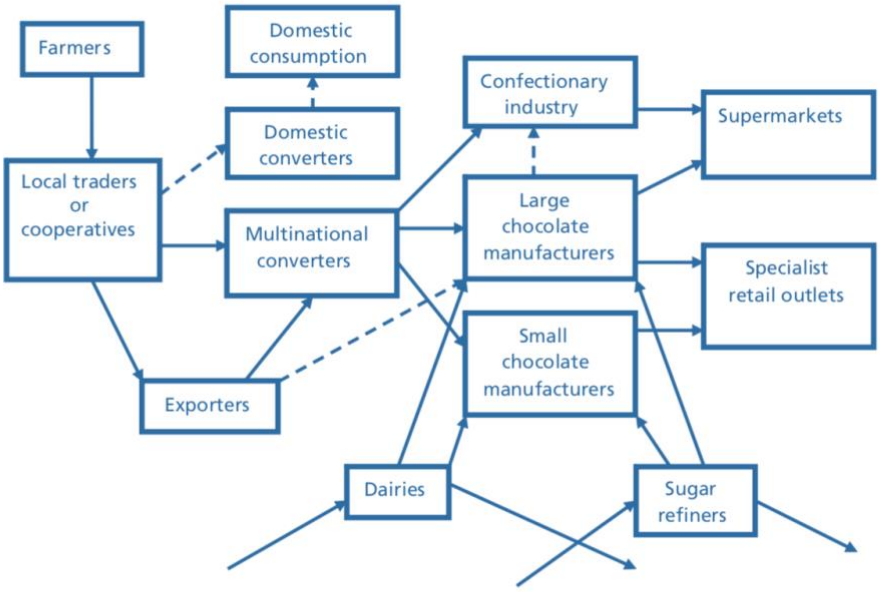


Figure 5: a general depiction of the cocoa supply chain. Note that the broken arrows represent less important links that the other arrows.

One other description of the cocoa supply chain, by Sutton and Kpentey (2012) in their book 'An enterprise map of Ghana', is depicted in figure 6[58]. In this book, using the example of the country Ghana, it is mentioned that Ghana's cocoa industry exists of the following three segments: production, processing and marketing. The figure illustrates many processes that occur in between these segments, such as collection and bagging, haulage and warehousing.

Sutton and Kpentey (2012) indicate that besides actors within the supply chain, the cocoa industry comprises of many other stakeholders that should be considered. For example, the government of Ghana aspires to support the cocoa sector by incerasing production and expanding the local processing capacity, through increasing private-sector investments. Measures and interventions suchs as the support of producer prices, the provision of effective pest and disease control, and the improvement of farming techniques are being implemented with these investments.

[56] (Gilbert, 2008)
[57] (Gilbert, 2008)
[58] (Sutton & Kpentey, 2012)

A study of Blitzer, Glasbergen and Leroy (2012) also identified other general stakeholders in the global cocoa sector such as NGOs or other parntерships that focus on adressing challenges of child labour, farmer training and sustainability standards[59]. Stakeholders in the cocoa industry can be found at governmental, non-governmental, and private level. The case of Nestlé depicts a clear example as to which stakeholders are important to consider. Therefore, to indicate which other stakeholders could possibly play a role in the integration of business model elements throughout the cocoa supply chain, an example is given with the case of Nestlé's cocoa supply chain in the next section.

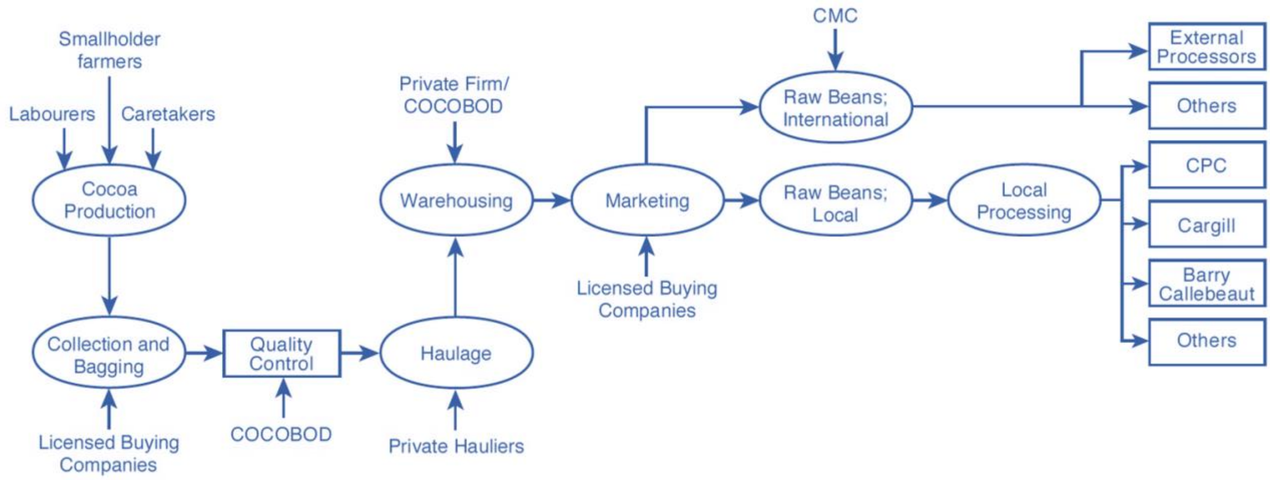


Figure 6: cocoa supply chain Ghana.
COCOBOD: Cocoa board (encourages and facilitates the production, processing and marketing of good quality cocoa.
CMC: Cocoa marketing companies
CPC: Cocoa processing company

<u>Example of Nestlé's cocoa supply chain and other main stakeholders</u>
Nestlé has partnered with local governments and NGOs to work on programmes that promote the improvement of labour conditions and sustainable farming in West Africa, with the so called Nestlé Cocoa Plan (NCP). It also seeks to increase the productivity and the crop quality, as well as to reduce child labour[60]. The NCP represents 35 percent of Nestlé's cocoa supply chain[61], in which the company works with its tier-1 suppliers. Nestlé defines their tier-1 suppliers as those with a direct commercial relationsip with Nestlé, thus their direct suppliers[62]. However, for the majority of the cocoa production, no direct relationship with the local farmers exists[63], which gave the Fair Labor Association (FLA) reason to assess Nestlé's standard cocoa supply chain in the Ivory Coast. The standard supply chain refers to "*any cocoa sourced outside of the NCP, meaning that Nestlé has no direct contact with the cocoa growers and procurement is managed by the sub-suppliers (tier-2 suppliers/traitants)*"[64]. During this assessment, a clear visualisation of Nestlé's supply chain had been provided, which is going to be examined in the following section of this chapter.

The simplified supply chain of Nestlé, as illustrated by the FLA, is represented in figure 7[65]. This supply chain is of Nestlé, and thus not a general depiction of cocoa supply chains, but it does give a clear depiction of main actors involved. The tier-1 suppliers of the Nestlé standard supply chain represent exporters that handle the procurement, processing and shipping of the cocoa beans. They are subsidiaries of multinational companies and provide cocoa beans to Nestlé, sourced from traitants, farmer groups (cooperatives) and other companies. The figure shows that Tier-1 suppliers are being supplied to by cooperatives and traitants. These cooperatives are either participating in corporate social responsibility programs of the Tier-1 supplier, which are part of the NCP or other sustainability programs, or are standard cooperatives with no specific sustainability program. Traitants are Tier-2 suppliers to the chocolate manufacturer and are large traders of cocoa beans, which are licensed by the Coffe and Cocoa Council in the Ivory Coast. They purchase cocoa beans from (small) farmers and/or pisteurs and

[59] (Blitzer, Glasbergen, & Leroy, 2012)
[60] (Nestlé, 2017; Fair Labor Association, 2016)
[61] (Fair Labor Association, 2018)
[62] (Nestlé, 2018)
[63] (Fair Labor Association, 2016)
[64] (Fair Labor Association, 2016)
[65] (Fair Labor Association, 2016)

sell these to the exporters. Other Tier-2 suppliers are cooperatives. A pisteur is an independent small trader of cocoa beans, mostly attached to a traitant, acting as a representative of a certain zone. The FLA extended the right side of the simplified supply chain with more details, as depicted in figure 8[66], but the core (traitants, pisteurs and cocoa growers) remains visibile.

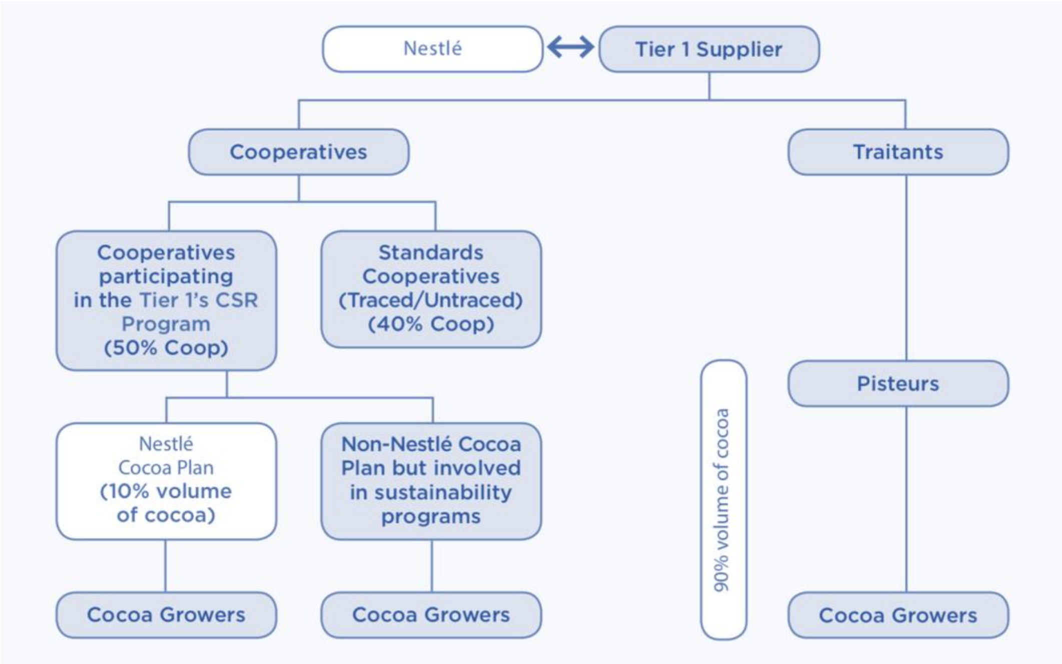


Figure 7: simplified supply chain of Nestlé's cocoa.

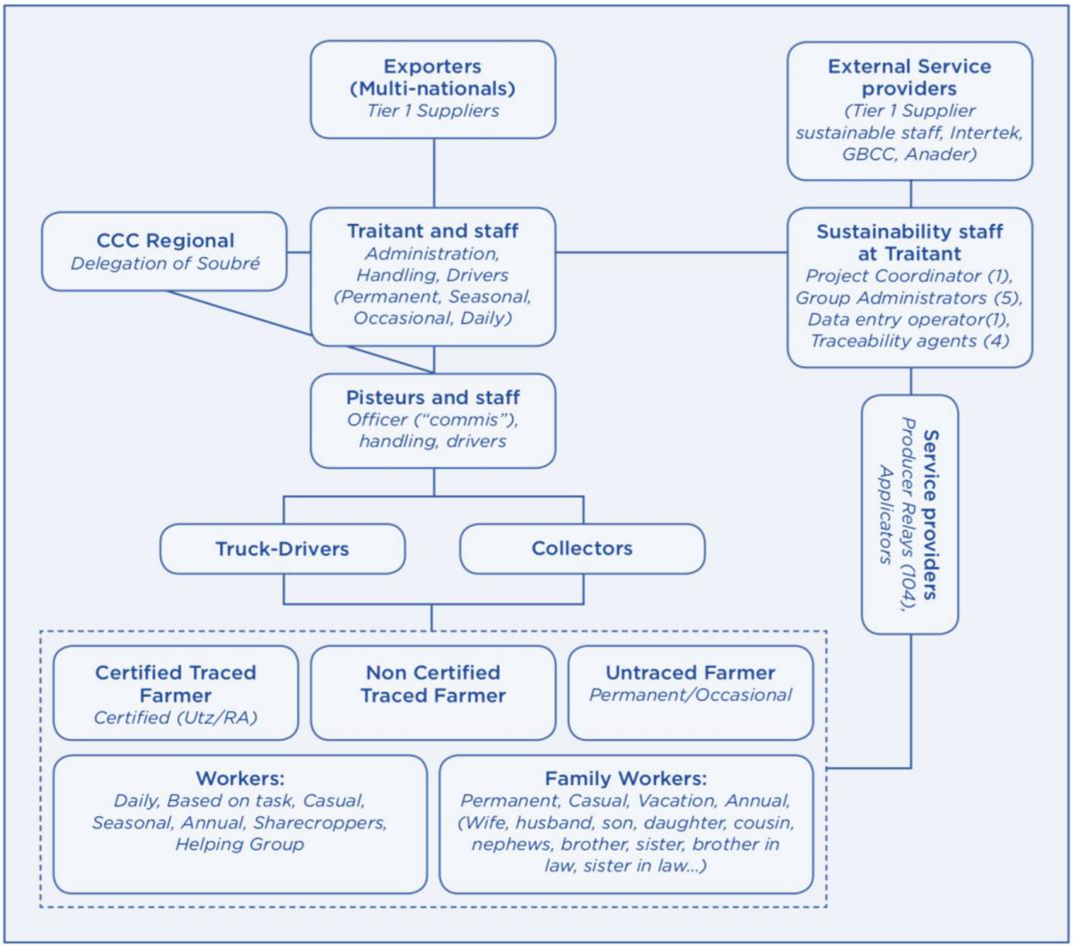


Figure 8: a more detailed version of Nestlé's cocoa supply chain.

[66] (Fair Labor Association, 2016)

Besides all members of Nestlé's cocoa supply chain, many other different stakeholders are involved. The Fair Labor Association (2012) also researched these actors for Nestlé in the Ivory coast. The FLA categorises all stakeholders into three sectors: the governmental sector, the non-governmental sector and the private sector[67]. These sectors can be found at international, national and local levels. Figure 9[68] gives a visual representation of all stakeholders identified by the FLA. The private sector has already been explained, as it exists of the organisations in the supply chain of Nestlé. The following stakeholders that are going to be discussed are by no means complete, but it is an indication of the most important ones for the purpose of this study.
At national and international level, governmental ministries and institutions have responsibilities in relation to the cocoa sector such as sustainable development of the agricultural sector, the elimination of child labor, the provision of education, and the improvement of life and working conditions of cocoa farmers. International non-governmental organisations (NGOs) sucs as the World Cocoa Foundation (WCF), the International Cocoa Initiative (ICI), and the International Cocoa Organisation (ICCO) have many fields of activity related to the sustainable development of the cocoa sector, involving farmer livelihood, productivity, quality improvement, school construction, and price risk management. Non-governmental stakeholders are of course also found at a national and local level, where attention is paid to community development of farmers through schooling and training, welfare improvement for small farmers, empowerment of women, and sustainable farming. Local communities are of importance as well in the cocoa production, which are depicted in figure 9[69]. Other non-governmental organisations to take in mind are sustainability programs and certifications such as UTZ Certified, Rainforest Alliance and Fairtrade Labelling Organisation. These initiatives will be discussed in the next chapter.

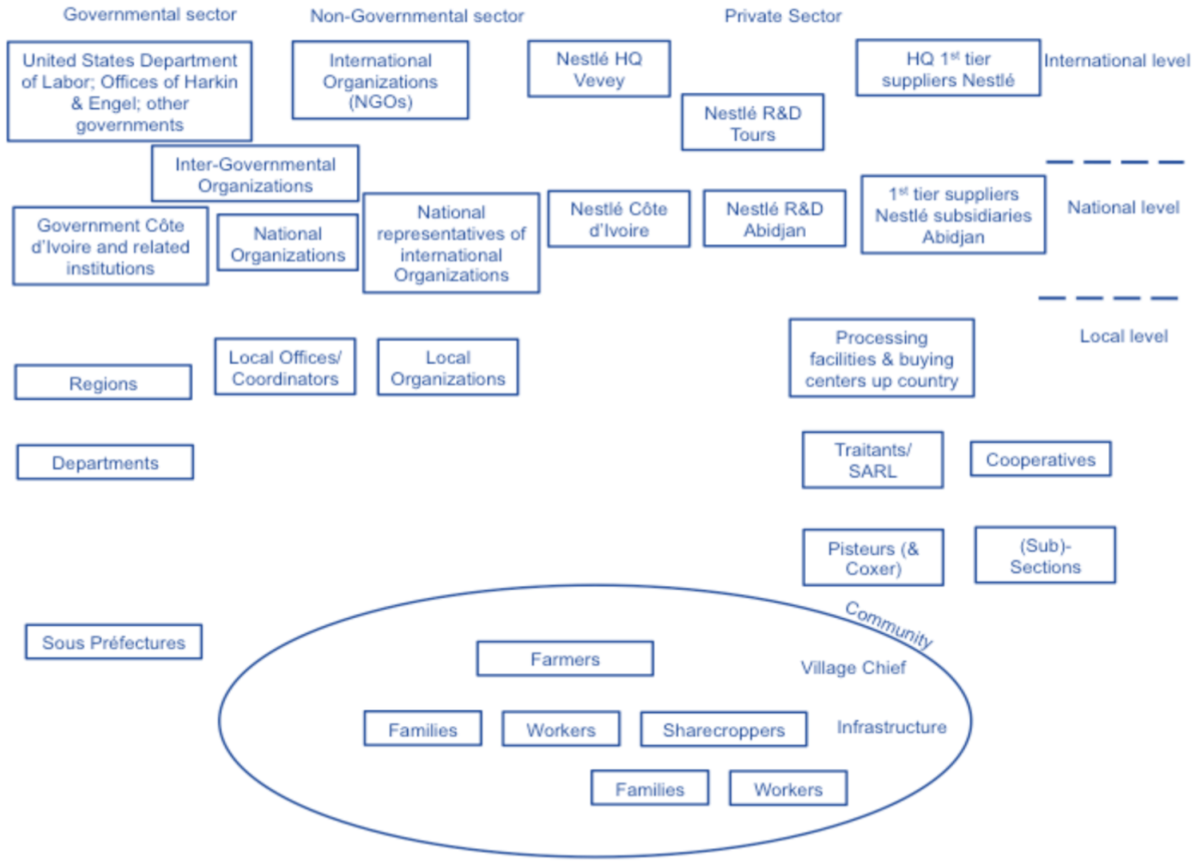


Figure 9: stakeholders of Nestlé's cocoa supply chain, identified by the FLA.

[67] (Fair Labor Association, 2012)
[68] (Fair Labor Association, 2012)
[69] (Fair Labor Association, 2012)

Sub question conclusion

After analysing general cocoa supply chains and the case of Nestlé's cocoa supply chain and its stakeholders, a number of key members and processes of the chain can be identified. Figure 10 indicites on the one hand the supply chain and its processes that is going to be considered during this study and on the other hand influences from governments and NGOs on that supply chain. The following members of the supply chain are going to be acknowledged in answering the questions of this study, from bottom to top:

- Smallholder cocoa farmers/workers;
- Local traders, cooperatives/pisteurs;
- Converters (cleaning, roasting, grinding of cocoa beans to produce coco liquor, powder and butter);
- Tier-2 suppliers/traitants;
- Tier-1 suppliers, exporters;
- Chocolate manufacturers.

It is important to notice that besides a general cocoa supply chain, other governmental and non-governmental stakeholders outside the cocoa supply chain are highly influencial and involved at levels variating from international to local. NGO's, governments, communities, certifcations, and other initiatives affect the cocoa production through regulations, requirements and sustainable development.

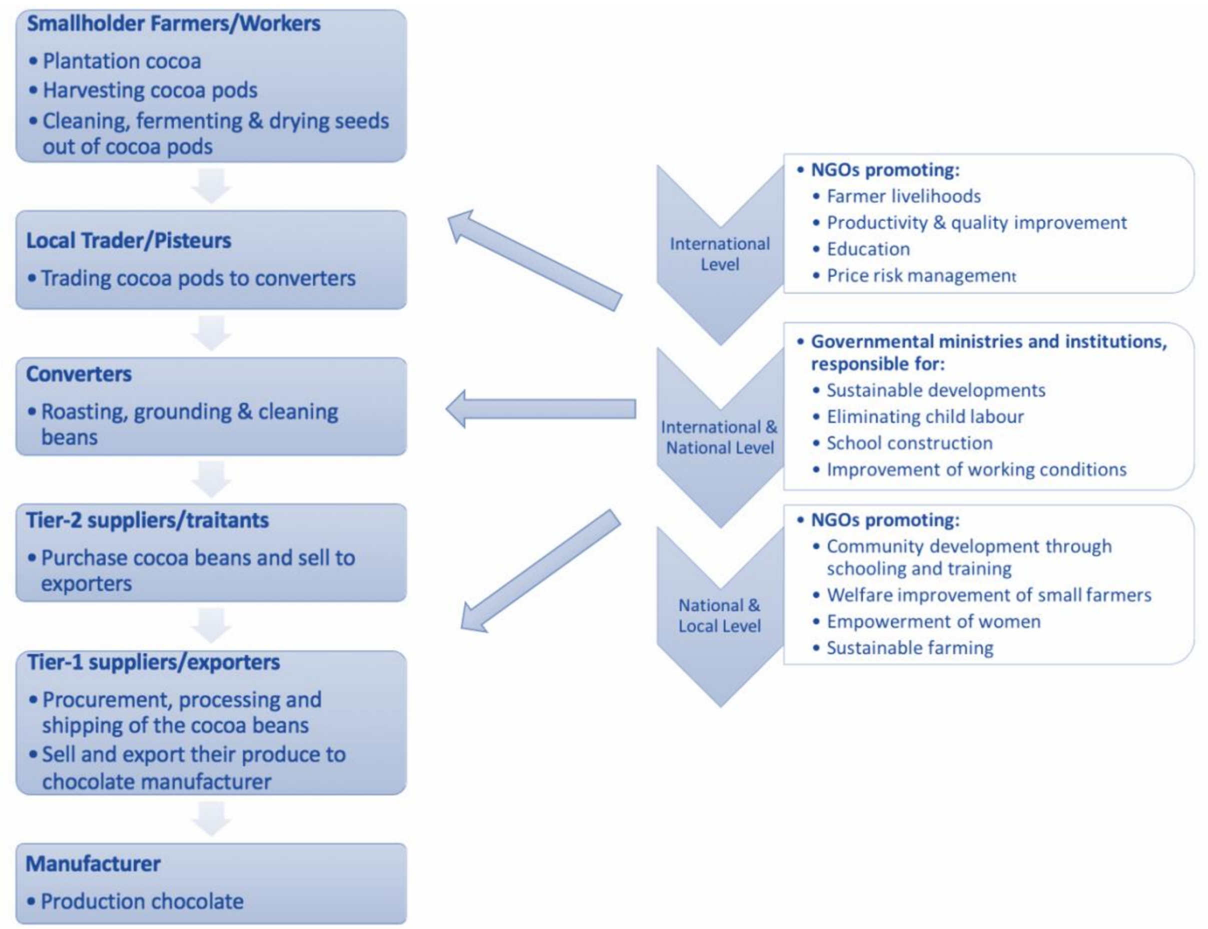


Figure 10: cocoa supply chain, processes and stakeholders.

Chapter 3: Fair trade

To find ways to integrate more fair trade throughout the cocoa supply chain, an analysis will be done on how organisations have worked on the development of fair trade over the past years and which aspects of fair trade are relevant for supply chain integration. This chapter will provide some basic knowledge on fair trade organisations and study the important factors of fair trade to consider during this study. First, several fair trade organisations and their main activities will be discussed. Second, main standards and requirements of three fair trade certification labels will be analysed. Afterwards, the main fair trade aspects that are relevant for this study will be summarised and categorised. The activities, standards and requirements of the discussed fair trade organisations will contain many similarities, but will be mentioned for the purpose of creating an overview of the most important/most often mentioned aspects in the conclusion of the sub question of this chapter, being: what are the standards and requirements of fair trade organisations, concerning the cocoa industry?

Fair trade organisations

As mentioned in the introduction, fair trade has been defined by the EFTA as *"a trading partnership, based on dialogue, transparency and respect that seeds better trading conditions for, and securing the rights of, marginalised producers and workers"* [70]. This definition has been agreed upon by all actors of FINE, which is an acronym based on the four main international networks for fair trade[71]. FINE consists of the international Fairtrade Labelling Organization (FLO, also known as Fairtrade International), the International Federation for Alternative Trade (IFAT), the Network of European World Shops (NEWS), and the European Fairtrade Association (EFTA)[72].
The FLO, for example, is the main actor in the coordination of the fair trade certification process[73]. The standards of their certification label will be explained later in this chapter. In 2016, the FLO released a five-year strategy called 'Changing Trade, Changing Lives 2016-2020'[74]. This strategy responds to challenges such as climate change, resource accessibility, wages and working conditions, governmental support, and the search for markets. These challenges translate to three long-term goals of the five-year strategy: (1) to make trade fair; (2) to empower small producers and workers; and (3) to foster sustainable livelihoods[75]. The theory behind this strategy and these goals is the 'Fairtrade Theory of Change'[76], which provides a framework for recognising indicators that could measure the results of fair trade and the progress towards fair trade goals. The theory states that certain interventions will lead to a number of outputs, outcomes and impacts, that will influence the FLO fair trade vision, which is "*creating a world in which all small producers and workers can enjoy secure and sustainable livelihoods, fulfil their potential and decide on their future*"[77]. The Fairtrade Theory of Change is depicted in figure 9[78]. Here, it is clear that these interventions have a strong relation to the three long-term goals of the five-year strategy.
These interventions are as follows:

- Creating standards and certifications for supply chain businesses, which includes price guarantees, fair trade premiums, and sustained trade. These standards consist of core requirements that organisations should pursue in order to tackle challenges for small workers, farmers and producers.
- Creating standards and certifications for small producers and organisations, which includes standards for business development, transparency, labour conditions, and environmental protection.
- Providing support to these small producers and organisations, including facilitating market access and securing better terms of trade. Furthermore, it involves trainings on negotiation skills, labour rights and financial skills.
- Building and sustaining fair trade markets in cooperation with workers, farmers, businesses and consumers. This could be enabled through establishing concepts, values, and brands of fair trade and through engaging all stakeholders, including consumers, to facilitate and to encourage sourcing on fair trade items. It also compasses the investment in constructive relationships with fair trade oriented (influential) businesses.
- Developing alliances and networks among all stakeholders. Networks could be strengthened through the development of strategic alliances between governmental actors, businesses, sustainability initiatives or other social actors, with shared interests and goals.

70 (EFTA (European Fair Trade Association), 2001)
71 (Renard, 2003)
72 (Acquaye, Yamoah, & Feng, 2015)
73 (Acquaye, Yamoah, & Feng, 2015)
74 (FLO Fairtrade International, 2016)
75 (FLO Fairtrade International, 2016)
76 (FLO Fairtrade International, 2018)
77 (FLO Fairtrade International, 2018)
78 (FLO Fairtrade International, 2016)

- Campaigning and advocacy of fair trade. Implementing campaigns on the need for more sustainable production and consumption could create more awareness and increase the incentive for organisations, governments and consumers to make trade more fair.

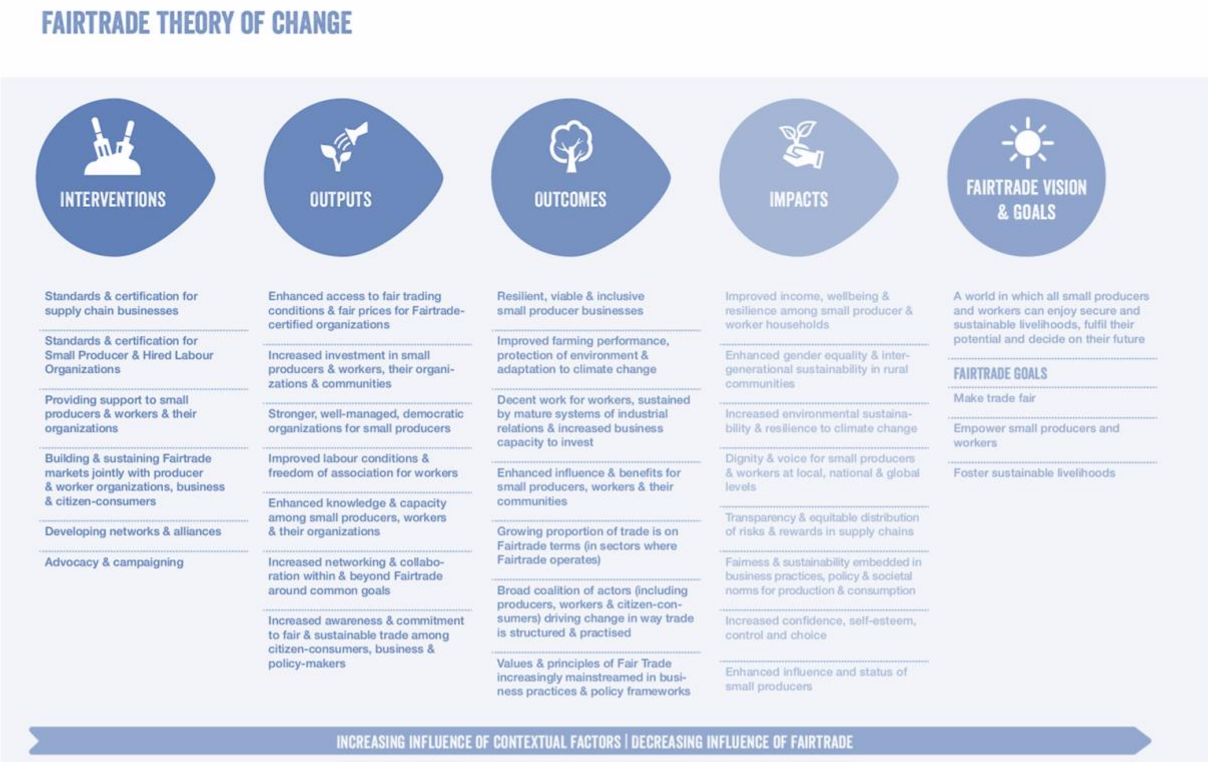


Figure 10

The World Fair Trade Organziation (WFTO) has been an important part of the fair trade movement as well. It hosts conferences, events and campaigns to advocate for fair trade. Their vision is to create "*a world in which trade structures and practices have been transformed to work in favour of the poor and promote sustainable development and justice*"[79]. The WFTO (2017) considers ten principles of fair trade, depicted in annex 3, that organisations must follow, being:

- Creating opportunities for economically disadvantaged producers, seeking to move from a situation of poverty and income insecurity to a situation where these producers are economic self-sufficient.
- Transparency and accountability. This accounts to stakeholders involved, pushing them to be more transparent in their management, trading partners and commercial relationships.
- Fair trading prices. Organisations should trade with the social, economic and environmental well-being of their trading partners in mind. They should not maximise their profit at the expense of others
- Fair payment and wages. The WFTO defines a fair payment as "*one that has been mutually negotiated and agreed upon by all through on-going dialogue and participation, which provides fair pay to the producers and can also be sustained by the market, taking into account the principle of equal pay for equal work by women and men*"[80]
- Ensuring no child labour and forced labour, demanding that organisations ensure there is no form of forced labour in their workforce.
- Committing to no discrimination, women's empowerment and gender equity. Organisations should have a clear policy on discrimination they should promote equal opportunities for men and women.
- Ensuring good working conditions. Organisations should comply with laws and conventions on health and safety, providing their employees with a safe environment.
- Developing skills and capabilities of employees/members, seeking to create the ability for employees to improve their, knowledge, skills and capabilities.
- Promoting awareness fair trade., using honest advertising and marketing.

[79] (World Fair Trade Organization, 2017)
[80] (World Fair Trade Organization, 2017)

- Respecting the environment[81], through minimising the impact the organisation has on the environment (maximising the use of sustainable resources, minimising energy consumption, or even using renewable energy technologies).

Certifications

According to Acquaye *et al* (2015), fair trade is a "*social movement that operates on the mind-set o facilitating community development by ensuring 'fair' guarantee prices for commodity producers*"[82]. To provide consumers awareness on how and where the chocolate they buy is sourced, labels or certifications on these products exist. In this section of the chapter, three cocoa certifications will be discussed: UTZ Certified, Fair Trade International, and Rainforest Alliance. During this section, there will be no in-depth investigation on the exact details of the requirements, but a general analysis of the important aspects to consider when using fair trade certifications. Note that UTZ Certified and Rainforest Alliance are developing a new certification program where they will eventually merge into a single new program by the end of 2019 (UTZ Certified, 2018)[83]. It is, however, not permitted yet to use the labels of UTZ and Rainforest Alliance interchangeably. Therefore, the labels are being discussed separately.

The UTZ Certification label promotes sustainable farming methods and sufficient labour conditions through the conditions of their internationally accepted Code of Conduct[84]. If producers meet the requirements of the Code of Conduct, they could sell their products as UTZ Certified. The certification is based on four aspects of sustainable agriculture, the first of which is management. This aspect relies on principles such as the fact that the farms are profitable and economically viable in the long term and that they are efficient in achieving optimal productivity. Supply chain actors should be well managed, and they should provide reliable services to other stakeholders, according to this aspect of certification[85]. The second aspect is called 'farming practices', where the quality of farming products should meet the requirements of the industry, and where the use of dangerous pesticides is reduces. The third aspect involves working conditions, where there should be no forced labour or child labour, school attendance should be promoted, and healthy and safe labour conditions should be ensured for workers. In the last aspect, called 'environment', supply chain actors should use energy and water efficiently, protect natural habitats and biodiversity, manage waste, prevent the contamination of water, and have the ability/capacity to adapt to climate change.

The FLO certification, called Fairtrade International, has specific standards for cocoa producers and traders that must be complied with in order to make use of this label. These standards consist of three main elements: trade, production, and business and development[86]. The element of trade focusses on the traceability of products and on the sourcing of sustainable products. The production element involves (1) efficient management of production practices, (2) environmental developments that protect the biodiversity and minimise environmental risks, (3) the minimalization of energy and greenhouse gas emissions, and (4) labour conditions. The final element, business and development, seeks to create possibilities for (women) empowerment, transparency, democracy, and non-discrimination[87].

The Rainforest Alliance is dedicated to the conservation of biodiversity and to ensuring sustainable livelihoods of farmers, foresters, and communities[88]. Though this organisation has multiple trademarks, this study will focus on the Rainforest Alliance Certified Seal, because while the other trademarks focus on publications off-product (marketing materials, websites and corporate materials), this label is used specifically on the product itself. This label ensures consumers that products from farms are produced with the use of socially and environmentally responsible actions[89]. The Rainforest Alliance Sustainable Agriculture Standard contains the criteria to be met in order to become certified[90]. This standard follows five sustainability principles, of which one is concerned with animal farming. For this study, only the other four principles are relevant, which are very much in line with the principles of UTZ Certified. The first principle concerns effective planning and management, where farms ought to implement an integrated management system that establishes the right systems and procedures to ensure continuous sustainable improvement. Second,

[81] (World Fair Trade Organization, 2017)
[82] (Acquaye, Yamoah, & Feng, 2015)
[83] (UTZ Certified, 2018)
[84] (UTZ Certified, 2015)
[85] (UTZ Certified, 2015)
[86] (Fairtrade International, 2011)
[87] (Fairtrade International, 2011)
[88] (Rainforest Alliance, 2019)
[89] (Rainforest Alliance, 2016)
[90] (Rainforest Alliance, 2019)

the conservation of biodiversity is of importance. Farms should contribute to the conservation of landscapes and to the protection of natural ecosystems. The third principle includes the conservation of natural resources, by minimising energy and water waste, improving soil fertility, minimising erosion, and reducing the use of pesticides. The final principle that is of importance involves improving the livelihoods and well-being of farmers, meaning no forced labour, no discrimination and protecting the health and of workers[91].

Sub question conclusion

To provide an overview of all interventions and aspects discussed above, table 2 and table 3 give a summary of all important aspects that have been discussed.

Organisation	Main important aspects
FLO	Interventions: - Creating standards for the supply chain, - Creating standards for small producers and organisations, - Providing support for small producers and organisations, - Building and sustaining fair trade markets, - Developing alliances and networks among stakeholders, - Campaigning and advocacy of fair trade. Goals: - Make trade fair, - Empower small producers, - Foster sustainable livelihoods.
WFTO	Ten principles of fair trade: - Opportunities for economically disadvantaged producers, - Transparency and accountability, - Fair trading prices, - Fair payment, - No child labour and no forced labour, - Gender equity and no discrimination, - Proper labour conditions, - Developing skills and capabilities of employees/members, - Promote fair trade, - Respect for the environment.

Table 2: summary important aspects of fair trade organisations.

Fair trade certification label	Main important aspects
UTZ Certified	Management: - Profitable farms, - Long term economically viable farms, - Optimal productivity. Farming practices: - Quality of farming products according to industry requirements, - Reducing of dangerous pesticides. Labour conditions: - No forced labour or child labour, - Promoting of school attendance, - Healthy and safe labour conditions for workers.

[91] (Rainforest Alliance, 2016)

	Environment: - Efficient use of energy and water, - Protection of natural habitats and biodiversity, - Waste management, - Prevention of water contamination, - Capacity to adopt to climate change.
Fair Trade International	Trade: - Traceability of products, - Sourcing of sustainable products. Production: - Efficient production practices management, - Minimalization of environmental risk and protecting biodiversity, - Minimalization of energy and greenhouse gas emissions, - Labour conditions. Business and development: - (Women) empowerment, - Transparency, - Democracy, - Non-discrimination.
Rainforest Alliance Certified Seal	Planning and management: - Integrated management system. Conservation of biodiversity: - Conservation of landscapes, - Protection of natural ecosystems Conservation of natural resources: - Minimising energy and water waste, - Improving soil fertility, - Minimising erosion, - Reducing the use of pesticides. Improvement of livelihoods and well-being of farmers: - No forced labour, - No discrimination, - Protection of health and safety

Table 3: summary important aspects of fair trade certifications.

The purpose of this chapter is to identify the main aspects of fair trade that are relevant for this study, when answering the main research question. The identified aspects of table 2 and 3 can be categorised in four elements, which are going to be referred to in the next chapter. The elements are as follows:

- <u>Production and management</u>. Important factors here are profitable farms, optimal efficient production, and efficient integrated management systems.
- <u>Labour conditions and livelihoods</u>. There should be no discrimination, forces labour, or child labour and gender equity must be promoted, as well as safe and healthy labour conditions. Besides this community engagement should be in mind and workers should have opportunities of schooling, training, and capability/skill development.
- <u>Environment</u>. The environment should be respected by the efficient use of water and energy, the protection of biodiversity, the reduction of energy and gas pollution and pesticides, and the improvement of soil fertility.
- <u>Trade and prices</u>. Fair trading prices and fair payments are of importance here, as well as the transparency of the supply chain, the traceability of products, and the use of sustainable sources in production.

These four elements should always be considered with the intention of creating more fair trade, developing and sustaining fair trade markets, and creating opportunities for smaller or economically disadvantaged producers, while respecting the environment. These considerations also correspond with the components identified in the business model framework of the first chapter, being the social, environmental and economic components.

Chapter 4: Main research question, business model alignment in cocoa supply chains

Brief summary of previous chapters and introduction

During this study, a business model framework has been developed with three main components: the economic, environmental and social component. These three components are considered to be the pillars of sustainability[92] and therefore used in this framework and during the rest of this study. When questioning how to align elements of a business model along multiple stages of a cocoa supply chain, only the most relevant key elements should be identified. In the supply chain chapter, six key members of the cocoa supply chain were identified. These supply chain members are all being influenced by governmental, non-governmental or private stakeholders on (inter)national and local levels through regulations, requirements and sustainable developments. One major aspect of these influences come from interventions and requirements of fair trade organisations, which were identified in the next chapter. The elements of fair trade to consider with the integration of business models in supply chains are (1) production and management, (2) labour conditions and livelihoods, (3) environment, and (4) prices and trade. Considerations on the intention of fair trade creation, sustainable market development, and opportunity creation for smaller or economically disadvantaged producers should be taken into account with these elements.

Thus, in the previous chapters, the concepts of business models, supply chains and their management, stakeholders, and fair trade have been discussed. Connecting only these topics however, is not yet enough to answer the main research question, being: 'how can elements of business models along multiple stages of a cocoa supply chain be aligned, to increase the possibility of fair trade?' To do so, literature on business model integration or alignment in supply chains must first be sought and analysed. This chapter will therefore exist of three sections. It will begin with giving an overview of the existing literature on these subjects, as an introduction to answering the main research question. The sequential section of this chapter will be structured as follows: the problems and challenges in the cocoa industry will be represented using three tables that illustrate each member of the supply chain, the business model components, and the corresponding challenges. During, the case of Nestlé will again be consulted, because the FLA incorporates supply chain mapping as part of its research, which recognises clear processes and practices for each supply chain actor. Next, a set of recommendations will be composed. Afterwards, several elements of business models that could possibly create more alignment along the supply chain will be identified. Finally, in the third section, the main research question will be answered with combining the identified business model elements with the industry challenges and acquired information from the literature.

Literature on business model alignment in supply chains

This section exists of relevant studies or findings from existing literature on business model alignment or business model integration. Trkman *et all* (2015) suggest that there is a need to link processes and inter-organisational alliances along multiple stages of the supply chain, through the management of business models. This would require managing interrelated elements of business models throughout a supply chain, which would enable companies to better align their internal and external processes. The study on a business model approach to SCM of Trkman *et all (*2015) even goes as far to propose that business models of different companies should be linked into one high-performing business model of the supply chain as a whole[93]. The business model management would then be done by the focal company of that supply chain. For instance, in the case of Nestlé, the responsibility of the business model management along the supply chain would be theirs. Trkman *et al* (2015) also discuss the need for companies to develop strategically aligned processes and capabilities along the entire supply chain, instead of just inter-organisationally. According to their study, successful SCI could be the consequence of these cross-organisational aligned processes.

The idea that the focal company would have the main responsibility in aligning activities in its supply chain corresponds with the study of Seuring and Müller (2008), as they suggest that focal companies often govern or rule the entire chain and provide contact with consumer. This means that the focal company has to take more than just economic reasoning into account when making decisions that affect the supply chain. Because of this, focal companies of supply chains could be held responsible by other stakeholders for the SCM of not only themselves, but also of their suppliers[94].

[92] (Hansmann, Mieg, & Frischknecht, 2012)
[93] (Trkman, Budler, & Groznik, 2015)
[94] (Seuring & Müller, 2008)

The concept of focal companies taking responsibility in aligning their supply chain could be translated into SSCM. As mentioned in the second chapter, SSCM involves the achievement of transparently and strategically integrating a company's sustainability (social, environmental, and economic) goals, while systematically coordinating key inter-organisational business processes to improve the long-term performance of a company and its supply chains. This definition is supported by Seuring and Müller (2008), as they define SSCM as "*the management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account which are derived from customer and stakeholder requirements*"[95]. Notice that this definition calls for cooperation between all members of the supply chain and considers customers as well as stakeholders. It is also important to recognise that both definitions of SSCM involve the three components of the business model framework of the first chapter, being the economic, social and environmental components. Another study of Gold *et al* (2010) argue that competition is shifting from a firm-level to a supply chain-level, which means that when considering sustainability challenges and corporate behaviour, SSCM calls for supply chains to strategically cooperate. Gold *et al* (2010) therefore suggest that organisations should cooperate as so called 'quasi meta-organisations', which would mean entire supply chains should aim to gain competitive advantage over rival supply chains[96], which then demands a high degree of SCI.

The implementation of SSCM ultimately aims to satisfy customers and gain competitive advantage[97]. However, activities involved in the integration of the three sustainability aspects are not only triggered by customers, who could reject the use of certain products if social or environmental problems through the supply chain of that product were reported[98]. Governmental entities and NGOs also create incentives for companies to do better, through regulations and requirements concerning corporate ecological responsibility[99]. These so called 'pressure groups' can lead to focal companies increasingly demanding their suppliers to perform according to environmental and social standards, set by these customers, organisations or governments[100]. This increases the importance of the integration of the complete supply chain and cooperation with all suppliers, thus ranging wider than just the tier-1 suppliers.

Focal companies that are involved in SSCM should thus focus on processes or practices that strengthen the relationships between their supply chain partners and enhance the transparency of information and resources. Beske *et al* (2014) suggest that in order for companies to be able to conduct SSCM, they should commit to incorporating members of a supply chain in decision making, knowledge access and sharing, technology and logistics integration, and partner development[101]. Beske *et al* (2015) incorporate five categories in which the practices of SSCM can be structured. The first category, strategic orientation, involves addressing a company's strategic values, incorporating all three dimensions of sustainability in their decision making. Continuity is considered to be the second category, which concerns the structure of the supply network of a company and how it interacts with its supply chain members on a constant level. The third category is collaboration, which seeks to link structural aspects such as technical and logistical decision making to operational processes throughout the supply chain, integrating the members of the supply chain and the quality of the information that is shared. The following category, risk management, engages the mitigation of risks through various practices of risk management. An example of monitoring specific suppliers is given as one of these practices but complying with standards and certifications is part of this category as well. The final category comprises the active engagement of stakeholders to benefit from and further pressure into SSCM[102].

To integrate all sustainability aspects throughout the supply chain, focal companies could focus on SSCM, with the cooperation of all supply chain members. Through the pressure of consumers and other stakeholders, focal companies should demand compliance of current social and environmental standards by their suppliers. Hereby, they should focus on processes and practices that enhance the transparency through the supply chain and the relationships with their partners. When answering the main question of this study, it is important to focus on recognising processes and practices of the cocoa supply chain and connect these to the elements of the business model framework, in compliance with the fair trade standards described in the third sub question. In doing so, a

[95] (Seuring & Müller, 2008)
[96] (Gold, Seuring, & Beske, 2010)
[97] (Seuring & Müller, 2008)
[98] (Seuring & Müller, 2008)
[99] (Guinipero, Hooker, & Denslow, 2012)
[100] (Seuring & Müller, 2008)
[101] (Beske, Land, & Seuring, 2014)
[102] (Beske, Land, & Seuring, 2014)

framework could be created on how to possibly align these business model elements along all stages of a fair trade cocoa supply chain. One should then consider processes in the categories, as named by Beske *et al* (2014), of decision making, knowledge access, technology and logistics integration, and partner development.

Challenges in the cocoa supply chain: processes and practices associated with business model elements and fair trade

The cocoa industry faces many challenges concerning the production of chocolate "from bean to bar", along multiple stages of the general supply chain. This part of the chapter will give an overview of which challenges are the most prominent at each supply chain member in the cocoa process. The Fair Labor Association (2012) released a study on the sustainable management of Nestlé's cocoa supply chain in the Ivory Coast, focussing on labour standards, which included supply chain mapping. This gave an insight as to what processes and practices are involved with what supply chain actor, but also as to what extend each supply chain member communicates with, coordinates and monitors others. This section will give a representation of the challenges concerning business model alignment, in combination with business model elements and the fair trade elements, which could then create a better understanding as to what business model elements are eligible for supply chain alignment, to create more fair trade and transparency.

Table 4a: problems and challenges concerning the alignment among cocoa supply chain members, of the economic business model component.

Supply chain actors	Chocolate manufacturers (Often focal company)	Tier-1 suppliers/exporters	Tier-2 suppliers/traitants	Local traders/pisteurs	Smallholder cocoa farmers/workers
Business model elements					
Economic component					
Value - Value proposition - Value creation and delivery - Value capture	Production & management - The goal is to assure quality according to industry requirements. However, this is difficult to monitor, due to unregistered farmers & unstable markets.				Production & management - The goal is to assure quality according to industry requirements. However, this is difficult to monitor, due to unregistered farmers & unstable markets.
Customer and market - Identification customer - Targeted market segments	Production & management - Lack of transparency leads to focal companies not fully being able to assure traceability of their produces to their customers.	Production & management - The traceability of produces often stops here for supply chains that are not in a certain fair trade or sustainability program.	Production & management - Difficulties in product traceability, especially in supply chains that are not in a certain fair trade or sustainability program	Production & management - Difficulties in product traceability, especially in supply chains that are not in a certain fair trade or sustainability program	Production & management - Difficulties in product traceability due to unregistered farmers.
Strategy and organisation: - Core competencies and assets - Resources - Partner network - Competitive advantage	Trade & prices - Has contract with Tier-1 suppliers for procurement and supply. - Paying fair prices throughout entire chain is difficult to monitor, because of unregistered farmers and fluctuating cocoa prices.	Trade & prices - Has contract with manufacturer for procurement and supply.	Trade & prices - Has seasonal contracts with local traders/pisteurs.	Trade & prices - Has seasonal contracts with Tier-2 suppliers/traitants. Production & management - Often more focussed on volume, rather than quality.	Trade & prices - Do not have contracts with local traders/pisteurs: usually these farmers are in a defined region where traders/pisteurs conduct businesses, but this is not a given assurance, as trader could change villages in between or during seasons.
Finance - Profit formula	Trade & prices - Focal companies are challenged to ensure fair prices for the produces for each member in the supply chain.			Trade & prices - Unstable income, due to fluctuating cocoa prices. - Receives no salary: keeps difference between what they receive from contractors and what they pay to farmers. They are often paid in advance by their Tier-2 suppliers. → unstable income, fluctuating cocoa prices.	Trade & prices - Many farmers struggle to sell enough produces to earn a sustainable income. Even when those farmers sell their beans, on average they are likely to receive only 6 percent of the final value of the produced chocolate bar[103]. Besides, often many people are dependent on one income. - Unstable income, also due to fluctuating cocoa prices.

[103] (Fairtrade International Labeling Organisation, 2019)

Table 4a illustrates the problems and challenges of cocoa supply chain members, concerning the alignment on the economic business model component. Each row represents a business model element and each column a supply chain member. The problems and challenges are then categorised by the fair trade components that have been identified in chapter 3. The first challenge starts at the element of value, where companies should always seek to assure quality according the industry requirements. The arrow in this row indicates that the problem is relevant throughout the entire chain, as al actors should be aware of the quality assurance. The main issue that comes with this challenge, is the fact that the compliance of these requirements is difficult to monitor, as farmers are more often than not unregistered[104] and markets are unstable. This problem goes hand in hand with another, yet similar, challenge of transparency, which is represented in the element of customer and market. For example, the study on Nestlé, of the FLA (2012), stated that cocoa procured through the NCP are traceable up to a 'cooperative level', which includes the manufacturer (often the focal company), its Tier-1 suppliers/exporters and Tier-2 suppliers/traitants. For the cocoa that is procured outside the NCP, which is the major part of the supply, the traceability already ends at the Tier-1 suppliers. Attempting to trace cocoa further upstream the chain is a larger issue still, as even the cocoa through the NCP does not guarantee traceability up to the farmer. The third challenge can be found in relationships between members of the cocoa supply chain, as is mentioned at the element of strategy and organisation. In the table, it is depicted how one actor has contracts with another. Though this is not a challenge itself, it shows that on the right side of the table, seasonal or even no contracts exist between Tier-2 suppliers, local traders or traitants, and smallholder farmers. Smallholder farmers often do not have contracts with its traders, but usually these traders have a defined region that they conduct their business. However, it is not guaranteed that they consistently trade with the same farmers, as they could change villages in between or even during seasons[105]. Traders particularly focus on volume, rather than quantity. Often, they receive an agreed upon amount from the Tier-2 suppliers or traitants and keep the difference between that amount and what they pay to the farmers, which leads to the final challenge in the economic business model component, of the finance element. Income of local traders, traitants and smallholder farmers are unstable, due to the fluctuating prices of cocoa. Besides, farmers struggle to sell enough of their produces to earn a sustainable income. The Fairtrade Living Income Strategy of Fairtrade International (2017) tackles both challenges of relationships between supply chain members and of the unstable income, by stating that actors should focus more on long-term trading relationships, which would share trade benefits more equally. To contribute to this challenge, it sets Fairtrade Minimum Prices to cover the costs of sustainable production and enable farmers with a 'safety net' against price drops of cocoa[106].

Table 4b: problems and challenges concerning the alignment among cocoa supply chain members, of the environmental business model component

Supply chain actors	Chocolate manufacturers (Often focal company)	Tier-1 suppliers/exporters	Tier-2 suppliers/traitants	Local traders/pisteurs	Smallholder cocoa farmers/workers
Business model elements					
Environmental component					
Benefits - Regenerative ecological value - Achievements of environmental reduction goals - Contribution to the environment Impacts - Emissions or waist - Impact on human health and ecosystem	<u>Environment</u> - The challenge of stating environmental standards for not only Tier-1 suppliers, but also for other supply chain members. Take, for example, Nestlé's through its Responsible Sourcing Standard[107].	→	→	→	<u>Environment</u> - Low farm productivity, caused by pests or diseases, insufficient pruning or aging cocoa trees. - When farms lack proper protective equipment, the exposure to dangerous agrochemicals[108] is at risk. - Other sustainability challenges are hard to realise, because of lack of schooling and electricity, among others.

Just as the challenge of the economic element of value, the challenge concerning the environmental business model component, depicted in table 4b, is relevant throughout the entire chain. Each member of the supply is

[104] (Fair Labor Association, 2012)
[105] (Fair Labor Association, 2016)
[106] (Fairtrade International, 2017)
[107] (Nestlé, 2018) For key principles, see Annex 4
[108] (Newsom, Milder, & Bare, 2017)

ought not to lose sight of providing sustainably sourced produces. Challenges for the smallholder farmer are, among others, related to low farm productivity that is caused by pests, diseases, insufficient pruning or aging cocoa trees[109]. Besides, farms often lack proper protective equipment, which leads to farmers having to work that could expose them to dangerous chemicals. The issue of productivity is strongly related to the fact that farms, especially those outside of sustainability programs, lack sufficient training or schooling and that villages face a shortage of health facilities, schools and electricity. The challenge of trainings will be further explained in the next section, of the social business model component.

Table 4c: problems and challenges concerning the alignment among cocoa supply chain members, of the social business model component

Supply chain actors	Chocolate manufacturers (Often focal company)	Tier-1 suppliers/exporters	Tier-2 suppliers/traitants	Local traders/pisteurs	Smallholder cocoa farmers/workers
Business model elements					
Social component					
Stakeholders					
Social value - Social value creation for stakeholders & society - Community engagement - Consumer's quality of life	<u>Combining all four fair trade components</u> - Challenge company itself to increase the sourcing of sustainable produces through sustainability programs.				
Governance - Organisational structure - Decision making policies - Engagement stakeholders	<u>Production & management</u> - Management systems of focal companies are often flawed in the sense that there is a low level of monitoring upstream suppliers, on the adherence of sustainability standards.				
Employees - Demographics - Role - Training or development opportunities - Support programs	<u>Labour conditions</u> - Focal companies are often involved in facilitating and financing trainings, premiums and management costs to Tier-2 suppliers[110]. However, they should be challenged to increasingly concern themselves with the training of other supply chain members as well.	<u>Labour conditions</u> - Receiving trainings and premiums from focal company. - Facilitating and financing trainings, premiums and management costs to Tier-1 suppliers[111]. - Provide trainings for traitants on sustainability issues (not in all cases).	<u>Labour conditions</u> - Receiving trainings and premiums from Tier-2 suppliers.	<u>Labour conditions</u> - Whether or not training is provided, and the intensity of this training, depends on the certification program to which this actor belongs[112]. - Actors in a non-certified program are highly unlikely to receive any training.	<u>Labour conditions</u> - Whether or not training is provided, and the intensity of this training, depends on the certification program to which this actor belongs[113]. - Non-certified farms receive very little to no training.

Challenges in the social business model component are mainly found at the level of focal companies, because they have the most leverage and capabilities to strategically plan, coordinate and finance social projects (such as the NCP in the case of Nestlé). The goals and standards set in these social projects have an effect throughout the entire chain, which is indicated with the arrow in table 4c. Management systems of focal companies are often flawed with a low level of upstream supply chain monitoring on the adherence of sustainability standards[114]. In the study of the FLA (2012), it appeared that the monitoring processes and practices of suppliers by Nestlé is limited to its Tier-1 suppliers or exporters. The responsibility to monitor the compliance of sustainability or labour standards is then shifted to certification organisations, whose monitoring efforts are often informal and not always recorded. Another challenge, that has already briefly been mentioned at the environmental component, is the lack of sufficient training programs and schooling. As indicated in table 4c, whether the upstream part of the supply chain receives training depends on the certification program that is involved. Non-certified supply chains are highly unlikely to receive any training program or schooling at all. With the cooperation with NGO's and local and national

[109] (Newsom, Milder, & Bare, 2017)
[110] (Fair Labor Association, 2012)
[111] (Fair Labor Association, 2012)
[112] (Fair Labor Association, 2012)
[113] (Fair Labor Association, 2012)
[114] (Fair Labor Association, 2012)

governments, focal companies should tackle the challenge creating a formal comprehensive monitoring system along the chain, which would address also address the issues mentioned at the economic component.

Recommendations

The FLA proposed a set of recommendations to Nestlé and other industry members who are concerned with the problems stated above. The core of these recommendations should not only be applied to Nestlé's supply chain, but they could benefit other organisations in the cocoa industry as well. Not all recommendations will be discussed, only the ones that are ought to be relevant for tackling the challenges of the cocoa chain and supply chain alignment. Furthermore, these recommendations will be stated in such a way, that it would be applicable for other organisations than just Nestlé. The first recommendation involves the strengthening of the supplier code (in the case of Nestlé: The Responsible Sourcing Standard[115]), which should aim to work with upstream supply chain members, ensuring sustainable supply through clearly defining key principles, key performance indicators (KPIs) and requirements. This will lay out well established conditions for business relationships. Second, awareness of this supplier code should be increased among all members of the supply chain. As mentioned above, the monitoring of supply chain members and the transparency of the chain needs improvement. Ensuring that all actors in the chain are aware of the principles and requirements will be a step in the right direction. The third recommendation entails reviewing and strengthening contracts that focal companies have with their first and second Tier suppliers and ensuring that the KPIs and requirements are included. This aims at long-term contracts and close partnerships, rather than seasonal contracts and no relationships with traders and farmers. The final recommendation concerns the monitoring of the supply chain. More specifically, focal companies should seek to develop a comprehensive monitoring system for the entire chain, incorporating the monitoring of labour standards, fair payment, and sustainable production. This would be by far the biggest challenge, as it tackles the biggest issue, but I would also generate the greatest returns. It can of course not be expected that the focal company would just come up with a system for this problem, but it should invest and actively participate in the creation of this system. Focal companies are often in such a position, that it could have large beneficial impact on the livelihoods of farmers and workers in the cocoa supply chain, because of its sizeable procurement of cocoa and its leverage. This means that they should not only demand compliance of current environmental and social standards by their suppliers, but also that they should go a step further and be assertive in tackling the challenges of the cocoa industry.

Identification business model elements

The business model element 'strategy and organisation' of the economic component seems to have potential for supply chain alignment, as many members have various responsibilities concerning this element. More specifically in the elements 'production and management', and 'trade and prices'. The essence of these fair trade elements is translated in individual responsibilities for each actor throughout the supply chain. In the element of production and management, the core challenge is to coordinate fair trade standards into the management (and thus the element of strategy and organisation) of each supply chain member, creating long-term relationships with its partners. For the chocolate manufacturer (often the focal company or carrier of the brand), this means that SSCM should be strategically planned and implemented, but also sufficiently communicated and facilitated to the rest of the supply chain. With pressure from the focal company, every other actor should then incorporate these fair trade standards into their own management, purchasing sustainable produces of their suppliers. Table 4a shows that supply chain members often have contracts with partners one step upstream or downstream the chain, but focal companies should aim to create strategic management system that monitor processes further along the supply chain. Taking the case of Nestlé as an example, presenting more formal monitoring systems could be considered in strategic part of its business model. Each member of the chain should receive fair prices for the produces they deliver, which means that in the management of not only the focal company, but also of other members, fair payment should be taken into their strategy of obtaining resources.

Another business model component that has the potential of supply chain alignment is the environmental component, combining both elements of benefits and impact. The challenges here lies again in not only requiring compliance with sustainability standards[116] of the Tier-1 suppliers, but also from members further upstream of the chain. Part of the solution could be to combine the business model element 'employees' of the social component with this issue. Providing schooling and training to employees and to supply chain members upstream of the chain could raise more awareness on policies, terms, conditions and standards. Besides, if one expects farmers and workers to perform environmentally responsible, sufficient training and schooling opportunities are

[115] (Nestlé, 2018)
[116] (Nestlé, 2018)

in order. Alongside the element of 'environment', another aspect of fair trade that could be considered with this business model element is the element of 'labour conditions'. Organisations in the chain should aim at no discrimination, forced labour or child labour, as well as at gender equity, safe and healthy working conditions, and schooling and training opportunities for all employees in the entire supply chain.

The final element that could potentially be aligned along the cocoa supply chain, is the 'governance' element of the social component. Even though this is an element that is mainly important for the organisations more downstream in the supply chain, it could set the tone for how decisions are made, and stakeholders are engaged. The focal company should create efficient integrated management systems, where organisational structure and decision making policies are clearly stated. Incorporating NGOs in tackling challenges of fair trade should be considered in the focal company's strategy and governance. Organisations such as the manufacturer, the Tier-1 suppliers and Tier-2 suppliers should cooperate and aim at a transparent flow of information, to incorporate all of the previously mentioned business model and fair trade elements in their business processes. Tackling the challenges of this component will also incorporate the challenges named in the economic business model elements of 'value' and 'customer and market', as transparency and traceability are the main issue in these elements.

Briefly summarising, the business model elements that are considered to be eligible for supply chain alignment are 'strategy and organisation' of the economic component, a combination of 'benefits' and 'impacts' of the environmental component, and 'governance' and 'employees' of the social component. Improving issues in these elements will also allow for developments in other elements, as they are not completely exclusive from one another.

Answer main research question

The answer to the research question can be found in combining the identified business model elements, the SSCM of a focal company, and the recommendations made in the previous section, for the cocoa supply chain. The largest challenge to tackle is the transparency and traceability issue of monitoring labour standards, fair payment and sustainable production. This leads to suggesting that a focal company should mainly focus on creating a comprehensive monitoring system, including this in their business model element 'strategy and organisation', but also considering it in the environmental component and in their social elements of 'government' and 'employees'. They should take this responsibility while focussing on SSCM, through the incorporation of all supply chain members in practices and decision making processes, as mentioned in the first section of this chapter. Also important is to focus on creating long term relationships though contracts up until the smallholder farmers to ensure trading businesses. To create a fundament for a monitoring system, three activities are proposed. First, a focal company's strategy should contain a strong and clear supplier code. The awareness of the principles and requirements of this code should be increased throughout the entire supply chain. Second, contracts between supply chain members should be revised and strengthened, as mentioned before in this chapter. Finally, in cooperation with (inter)national and local governments, NGOs and other private parties, organisations in the supply chain should contribute (if possible) to the registration of farmers, workers and local traders. It would be unrealistic to demand companies to only trade with registered parties, as this is a massive issue, but even the increasing awareness of the registration issue could contribute to better monitoring opportunities.

A consequence of establishing a monitoring system for the supply chain, would be the creation of more transparency and traceability. This could enhance the insight as to where there is room for improvement considering elements of fair trade. Organisations in the cocoa supply chain could then better focus on improving conditions in the fair trade elements of production and management, labour conditions, trade and prices, and environment.

Again, it is not realistic to expect focal companies to singlehandedly solve all issues, but as they are the organisations with the most leverage in the chain, they could pressure members upstream the supply chain to strive to 'do better'. They should seek to reduce the disparities in information and knowledge along the supply chain, through better communication, sustainable long-term relationships, and setting sustainability standards. They should incorporate these developments into their business model, namely in the elements of 'strategy and organisation' of the economic component, 'benefits' and 'impacts' of the environmental component, and 'governance' and 'employees' of the social component. Including these developments into an organisation's business model, allows for a clear "message" to send to its suppliers.

Discussion

This study has used a literature research in answering the main question of business model alignment in supply chain, as well as in answering the sub research questions. Search engines as Google Scholar, Scopus, and the Wageningen University Library were used during this study. The conclusions drawn from this research could be considered as a complement on the existing and used research. On the first three sub questions, enough literature was found to construct considered answers. However, research so far on aligning business models in supply chain has been very limited. Trkman *et al* (2015) have studied the concept for some amount, but there is a need for more qualitative and quantitative research. It should also be noted that the research from the FLA on Nestlé's cocoa supply chain dates from 2012, which means that recently, further improvements and developments of their NCP have taken place. However, the recommendations made are still ought to be relevant for the purposes of this study, as the issue of transparency and fair trade is still relevant today.

The answer to the main research question is rather conceptual of nature. Therefore, it is recommended that more research should be done on the theory of supply chain alignment of the identified business model elements.

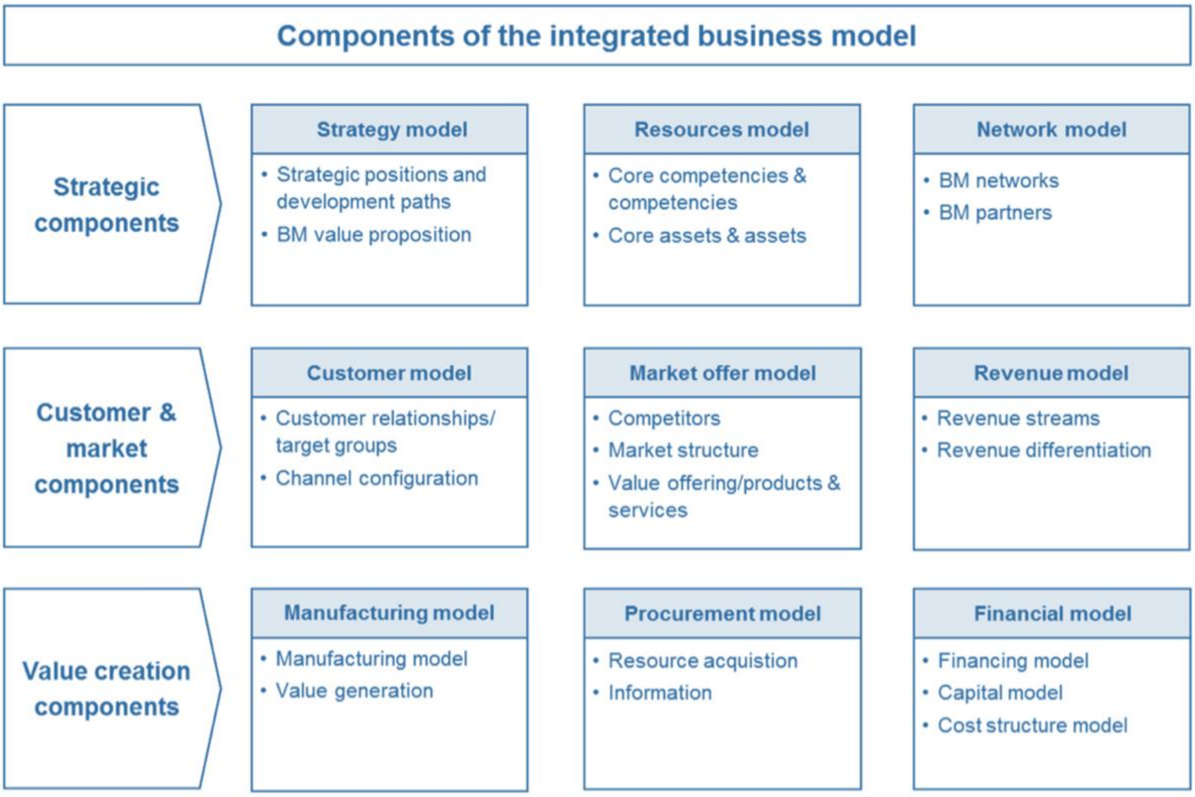
Conclusion

This study has researched the alignment of business model elements into a cocoa supply chain, to create more possibilities of fair trade and transparency. Within the scope of the three business model components, challenges concerning smallholder famer registration, unstable markets, long-term partnerships among supply chain members, transparency, traceability, schooling, and management systems for supply chain monitoring have been identified. It has been recommended that through a SSCM approach from the focal company, the supplier code should be strengthened and increasingly made aware, contracts between supply chain members should be reviewed and strengthened with the intention of creating long-term contracts, and a comprehensive monitoring system should be developed. It has been recognised that developments should be implemented among the elements of 'strategy and organisation' of the economic component, a combination of 'benefits' and 'impacts' of the environmental component, and 'governance' and 'employees' of the social component. The main research question for this study, 'how can elements of business models along multiple stages of a cocoa supply chain be aligned, to increase the possibility of fair trade and transparency?', has been answered with the suggestion that the main challenge of a monitoring system for the supply chain should be considered in the business model element of 'strategy and organisation', with environmental and social elements in mind. This should be conducted in corporation with NGOs, governments and other private organisations, through a SSCM approach from the focal company, as they have the most leverage to put pressure on these developments. Fundaments for such a comprehensive monitoring system are a strong supplier code and the awareness of it, and the revising and strengthening of contracts among members of the cocoa supply chain. Furthermore, focal companies should focus on creating long-term relationships with all members of the supply chain. This study also suggested that a consequence of developing this monitoring system could be the creation of more transparency, which could allow for positive developments concerning fair trade conditions. It is acknowledged that these recommendations are conceptual of nature and additional studies on these concepts should be conducted. However, this study could form a basis for further research.

Appendix

Annex 1. The Triple Layered Business Model Canvas (Joyce & Paquin, 2016)

Annex 2. Components of an integrated business model (Wirtz, Pistoia, Ullrich, & Göttel, 2016)



Annex 3. Ten principles of fair trade (World Fair Trade Organization, 2017)

Annex 4: Nestlé's Responsible Sourcing Standard (Nestlé, 2018)

1. **Nestle staff sources with care and respect for the people, planet and oceans where materials and services are produced.**

2. **Tier 1 Suppliers apply good labour standards in recruiting, compensating, and caring about their workforce. Preserving natural resources and conducting business in an ethical and collaborative way is ensured.**

3. **Intermediaries operate with the same principles of value, transparency and respect as their suppliers and clients, nurturing traceability and preserving information.**

4. **Origins, farmers and fishers, continuously improve their ways of working in:**
   - **Optimizing yield through conservative agriculture, preservation of soil biome and rationalization of agrochemical inputs,**
   - **Caring and respecting the workforce, animals, land, water and forests that they work with.**

5. **Supply Chain Tiers work in compliance with applicable regulations, continuously monitor, disclose, and improve against the Standard**

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