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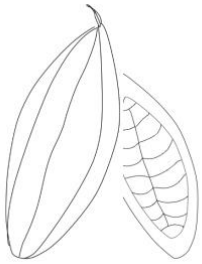

Sustainable Value Addition in the Global South

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A Comparative Case Study of Sustainable Value Addition Companies in the Cocoa Value Chain in Ghana

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Sustainable Value Addition in the Global South

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A Comparative Case Study of Sustainable Value Addition Companies in the Cocoa Value Chain in Ghana

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Abstract

Value addition is an economic concept that has been studied thoroughly. However, existing research does not sufficiently provide perspectives that expand the traditional concept of value addition in a way that accounts for the complex sustainability challenges present in global value chains. To fill this research gap, this thesis follows emerging scientific voices that challenge the merely economic understanding and proposes the concept of sustainable value addition and a new conceptual framework that operationalizes sustainable value addition at the farmer level of the Ghanaian cocoa value chain. In this context, two companies that aim to add sustainable value at the farmer level are compared, using a comparative case study approach with qualitative interviews. By juxtaposing farmers' perspectives, it is aimed to answer the main research question: to what extent do these companies add sustainable value at the farmer level of the Ghanaian cocoa value chain?

The main findings of this study are that both companies see economic value addition as an enabler of social and environmental value addition which aligns with the needs of the farmer side. At the same time, this focus leads to a neglect of the social and especially the environmental dimension which both companies show. A difference between the enterprises can be found in the consideration of the situation of women in cocoa farming. Besides a stronger focus on environmental value addition, collaboration along the value chain, including co-creation of solutions, participatory design of business cases, and Fair Ownership models, is seen as an important lever for sustainable value addition at the farmer level.

Keywords: value addition, sustainable value addition, local processing, comparative case study, cocoa value chain, Ghana

Table of Contents

List of Figures

List of Tables

List of Abbreviations

Abbreviation	**Definition**
CMC	Cocoa Marketing Company
COCOBOD	Ghana Cocoa Board
CMPU	Community Mobile Processing Unit
CSA	Climate-smart Agriculture
GHG	Greenhouse Gases
GVC	Global Value Chain
LBC	Licensed Buyer Company
NGO	Non-governmental Organization
RQ	Research Question
SQ	Sub Question
SVA	Sustainable Value Addition
SVAC	Sustainable Value Addition Company
TNC	Transnational Corporations
VSLAs	Village Saving and Loan Associations

1. Introduction

Coffee beans from Brazil, tea from India, cocoa from Ghana – globalization provides access to a diverse range of agricultural commodities that are processed into everyday consumer goods. The production, processing, and marketing of these primary commodities are organized in global value chains (GVCs). GVCs connect producers, companies, and consumers on an international scale and provide value chain actors in the Global South access to the world market (Gereffi & Fernandez-Stark, 2016). The emergence of GVCs offers a range of benefits such as increased productivity, diffusion of technology, and poverty reduction (OECD, 2021). In recent years, however, there has been growing concern about the negative social, economic, and environmental impacts of such globalized value chains, including the unequal distribution of profit margins along the value chain, the marginalization of social groups such as women and youth, and threats to the environment (OECD, 2017; World Bank, 2020a, as cited in OECD, 2021).

These concerns are also evident in the cocoa value chain in Ghana, one of the largest producers of cocoa worldwide: the country is highly dependent on the export and international trade of cocoa, but faces several complex sustainability challenges, including unequal distribution of revenues between cocoa and chocolate companies in the Global North and producers in the Global South, associated poverty, high rates of child labor, disadvantaged situations for women, and loss of biodiversity and native forests (Abdulsamad et al., 2015; Barrientos & Bobie, 2016; Fountain, 2018, 2020). In recent decades, there have been a variety of public and private efforts to address these challenges such as certification schemes, multi-stakeholder partnerships, and corporate sustainability standards. However, scholars investigating their actual impact state clearly that the interventions did not significantly improve the situation (Fountain, 2020).

Nevertheless, corporations operating in the cocoa sector play a key role in tackling the problems in global cocoa value chains (Fountain, 2018). How can companies contribute to solving the sustainability challenges and, hence, to sustaining cocoa production in Ghana in the long term? The concept of *sustainable value addition* proposed in this study might be a promising attempt. The concept originates in the economic notion of *value addition*. However, value-adding activities that focus solely on economic benefits do not necessarily acknowledge social and environmental challenges and needs. This builds the starting point of this scientific endeavor. This thesis enhances the primarily economic understanding of value addition with social and environmental perspectives, so it accounts for the Triple Bottom Line[1] associated with sustainability. Consequently, the concept of sustainable value addition is introduced and an own conceptual framework that operationalizes sustainable value added specifically at the farmer level of the cocoa value chain in Ghana is developed.

[1] The Triple Bottom Line refers to the social, economic, and environmental pillar (Elkington & Rowlands, 1999). It includes, for instance, elements of social justice, economic prosperity and environmental quality (Elkington & Rowlands, 1999).

1.1 Research Aims and Objectives

The overall research aim of the master thesis is to examine to what extent companies who aim to add sustainable value at the farmer level of the Ghanaian cocoa value chain actually do so. Following a comparative case study approach, two emerging companies that aim for sustainable value addition (SVA) at the farmer level are investigated. From now on, these companies are referred to as *sustainable value addition companies* and are abbreviated to SVACs. The selected enterprises KOA and Kumasi Drinks take a different approach to the cocoa sector. Instead of the usual processing of the cocoa bean into cocoa or chocolate products, the companies utilize the pulp of the cocoa fruit, which is normally a discarded by-product of the chocolate industry. The companies go new ways by focusing on local processing and income and product diversification to add sustainable value at the farmer level. Hence, they might be an emerging, promising means for tackling the sustainability challenges that are not yet solved through existing efforts in the last decades. With adopting a Triple Bottom Line with regard to value added and taking into account the qualitative approach of the proposed thesis, measuring SVA is a complicated domain.[2] Therefore, the research will focus on perceptions of social, economic, and environmental value added.

Three objectives are associated with the main research aim: the first objective is to understand how the cocoa value chain in Ghana is structured. This helps to specify the roles and relations of different actors within this commodity chain. The second objective is to define and operationalize SVA for the specific context of Ghana through the development of a conceptual framework. This step is essential for understanding the boundaries of the concept of SVA and what it encompasses at the farmer level of the cocoa value chain in Ghana specifically. In addition, the framework provides a lens for analyzing the data collected through qualitative semi-structured interviews. The third objective is to investigate how the two selected SVACs aim to add sustainable value and if their efforts match the challenges and needs present at the farmer level. Therefore, representatives of the two SVACs, farmers, and a non-governmental organization (NGO) as farmer representative are interviewed. This reveals relevant information about the SVACs' understanding of SVA as well as the actual challenges and needs of smallholders. From analyzing the data, factors that strengthen or weaken SVACs' success in adding sustainable value at the farmer level as well as custom-fit measures they can take to improve their SVA measures in the future can be identified.

[2] In economic research, measuring value captured follows measuring profit or profitability (Bowman & Ambrosini, 2000). This approach is not sufficient for operationalizing SVA as social and environmental value are difficult to measure by means of profit or profitability.

1.2 Research Questions

Based on the research aims and objectives, the following research question (RQ) will be central for this master thesis*: to what extent do SVACs add sustainable value at the farmer level of the Ghanaian cocoa value chain?* Five sub questions (SQ) will support answering this main research question:

SQ 1: How is the cocoa value chain in Ghana structured?

SQ 2: How do the two selected SVACs aim to add sustainable value at the farmer level of the cocoa value chain in Ghana?

SQ 3: What are the social, economic, and environmental challenges and needs at the farmer level of the cocoa value chain in Ghana?

SQ 4: Which factors strengthen or weaken an SVACs' success in adding sustainable value at the farmer level?

SQ 5: How can SVACs further improve SVA at the farmer level of the cocoa value chain in Ghana in the future?

1.3 Outline

The research questions are answered throughout this thesis, which is structured as follows: after introducing the research topic in this chapter, a theoretical background is provided in Chapter 2 to introduce relevant concepts of this study and to set the context. Definitions of the concept of value addition are explored, characteristics of agricultural GVCs and the cocoa value chain in Ghana are presented, and sustainability challenges in the latter are examined. In Chapter 3, relevant literature is reviewed and the resulting research gaps and implications for this thesis are presented. Chapter 4 examines existing perspectives operationalizing sustainable value before the new concept of SVA and a corresponding conceptual framework for SVA at the farmer level of the Ghanaian value chain is proposed. Chapter 5 explains the pursued research design of a comparative case study and elaborates on the desktop research and qualitative semi-structured interviews that were chosen as methods in this study. Chapter 6 presents the results of the interviews before they are discussed in light of the conceptual framework in Chapter 7. After reflecting on the research process and identifying limitations in Chapter 8, the thesis closes with concluding remarks in Chapter 9.

2. Theoretical Background

In this chapter, a theoretical background based on the academic literature is provided to set the context of this thesis. First, the concept of *value addition* is examined in its definitions and clarified for the context of this thesis. Value addition represents a central building block of this study. The focus in this subchapter is specifically set on understanding value in the context of agricultural GVCs. Second, GVCs are illuminated. It is investigated how they are structured and how the value chain actors are related to each other. Third, the cocoa value chain in Ghana is portrayed with its actors and their relationships to build a foundation for this thesis. Finally, social, economic, and environmental challenges existent in the cocoa value chain in Ghana are identified in literature. These form an essential basis for the further stages in this paper.

2.1 Defining Value Addition

The term *value*[3] is mainly present in economics and management literature streams. Authors identify problems with defining value due to literature using the term for different phenomena (Bowman & Ambrosini, 2000) or its "nebulous nature" (Sánchez-Fernández & Iniesta-Bonillo, 2007, p. 428). To structure existing definition attempts, Bowman and Ambrosini (2000) lean towards the distinction between *use value* and *exchange value* as suggested by classical economists: use value "is defined by customers, based on their perceptions of the usefulness of the product" (Bowman & Ambrosini, 2000, p. 4). Hence, it is based on the subjective evaluation of customers (Bowman & Ambrosini, 2000). Exchange value is associated with the price at the moment of sale: "it is the amount paid by the buyer to the producer for the perceived use value" (Bowman & Ambrosini, 2000, p. 4). Sánchez-Fernández and Iniesta-Bonillo (2007) arrive at a similar definition: "perceived value implies an interaction between a subject (the consumer) and an object (the product); it is comparative, personal, and situational (…); and it embodies a preference judgement" (p. 439). In the context of this study the term is generally understood as *benefit*.

According to Sadovska et al. (2020) debates about the term value in agricultural research refer mostly "to the specific term of value-added agriculture" (Sadovska et al., 2020, p. 4)[4]. There are various definitions of the term, which differ to a greater or lesser extent:[5] Coltrain et al. (2000) refer to value added as "to economically add value to a product by changing its current place, time, and form characteristics to characteristics more preferred in the marketplace" (p. 5). As an example, they mention the processing of

[3] The definition of value is a large research field in itself which cannot be covered within the scope of this thesis. See Pirgmaier (2021) for further investigations on economic valuation. See Fourcade (2011) for perspectives that challenge economic valuation studies. To narrow down the scope, this thesis takes consecutively the junction to value addition.
[4] The concept of value addition can be associated with the concept of economic upgrading. Both terms are used synonymously throughout this paper due to their interchangeable use in academic literature (see Humphrey & Memedovic, 2006).
[5] For an comprehensive overview on definitions of the concept of value-added agriculture see Sadovska et al. (2020, p. 4). This overview serves as an orientation for this chapter.

wheat as a primary commodity into flour which is desired by customers such as bakers (Coltrain et al., 2000). Trienekens (2011) understands the concept as one possibility for value chain actors to improve their position in GVCs. The author describes value addition in terms of improvements in quality, delivering time, or lowering of costs (Trienekens, 2011). Value is added "at different stages and by different actors throughout the value chain" (Trienekens, 2011, p. 63). Humphrey and Memedovic (2006) align with that by stating that value can not only be added through a physical transformation of a commodity but also through enhancing services surrounding the product, for instance, delivery conditions. Value addition strategies for agricultural commodities "involve certification (for example, organic produce) or closer links with traders, processors or retailers" (Humphrey & Memedovic, 2006, p. 5).

The United States Department of Agriculture (2015) provides a definition of value-added agriculture that is cited regularly in agricultural literature:[6]

> an agricultural commodity must meet one of the following five value-added methodologies: (i) Has undergone a Change in Physical State; (ii) Was Produced in a Manner that Enhances the Value of the Agricultural Commodity; (iii) Is Physically Segregated in a manner that results in the enhancement of the value of the Agricultural Commodity; (iv) Is a source of Farm- or Ranch-based Renewable Energy, including E–85 fuel; or (v) Is aggregated and marketed as a Locally-Produced Agricultural Food Product. (p. 26802)

Womach et al. (2005) and the United Nations Conference on Trade and Development (2019) take a perspective more focused on the Global South by referring explicitly to value addition in the production country and at the farmer level.

Womach et al. (2005) tie value-added agriculture "to manufacturing processes that increase the value of primary agricultural commodities" (p. 269). According to the author, the concept may also refer to enhancing "economic value of a commodity through particular production processes, e.g., organic produce, or through regionally-branded products" (Womach et al., 2005, p. 269). Value-added agriculture can be seen as a way for farmers to obtain a larger share of the final market price (Womach et al., 2005). As examples, the authors mention "direct marketing; farmer ownership of processing facilities; and producing farm products with a higher intrinsic value (such as identity-preserved grains, organic produce, (…)), for which buyers are willing to pay a higher price" (Womach et al., 2005, p. 269). The United Nations Conference on Trade and Development (2019) presents a more specific definition by linking value addition strongly with product diversification. Successful value addition is associated with a transformation of primary commodities in such a way that it leads to higher revenues and a higher proportion of value captured by the production country (United Nations Conference on Trade and Development, 2019). The diversification from cotton to cotton by-products is mentioned as an example for product diversification (United Nations Conference on Trade and

[6] For example, Amanor-Boadu (2003) and Sadovska et al. (2020).

Development, 2019). This means that not only the seed pods used for cotton production are processed, but also the crop residues such as stalks and leaves (United Nations Conference on Trade and Development, 2019).

Combining the definition attempts, this study understands value addition as an increase in financial revenues for different value chain actors in agricultural GVCs by physically transforming a primary commodity or changing the circumstances under which it is produced or processed. Based on the definitions of value addition provided, a wide range of value-adding activities is identified that can be financially beneficial for farmers:[7]

- Certifications and Voluntary Sustainability Standards (e.g., through promoting fair incomes)
- Cooperatives (e.g., ensuring stable incomes)
- Specialization approaches (e.g., geographical origin, crop type)
- Changes in the trade relationship (e.g., direct trade)
- Diversification strategies (e.g., income diversification, product diversification)[8]
- Reduction of costs during production (e.g., through increased productivity)
- Local processing of primary commodities (e.g., keeping activities that generate higher revenues in production countries)

The lack of value addition opportunities in producing countries refers to the power asymmetries that are present in commodity-based GVCs as described in the following subchapter. The market power of transnational corporations blocks the transfer of value added, inter alia through processing and branding in the downstream value chain, to the producing countries (Abdulsamad et al., 2015, p. 41). Smallholder's opportunities to add value "are being eliminated at the farm gate; and (…) few upgrading possibilities exist for small farmers" (Daviron & Ponte, 2005; Humphrey, 2006, as cited in Purcell et al., 2018, p. 642).

2.2 Power Asymmetries in Global Value Chains

The production and processing of primary commodities is organized in GVCs. GVCs are characterized by a high level of "concentration and centralisation, vertical integration and economies of scale, and (…) standardised logistical and transportation networks" (Fold & Pritchard, 2005; Gibbon & Ponte, 2005, as cited in Purcell et al., 2018, p. 642). The international organization of value chains is made possible by the dismantling of barriers on world trade markets, which has been caused, among other things, by falling tariffs and export subsidies in recent decades (Trienekens, 2011). GVCs connect companies, producers, and

[7] This list does certainly not claim completeness but provides a valuable overview for the context of this thesis.
[8] Income diversification refers to generating additional income streams, for example, by growing additional crops or following other activities next to cocoa farming (Sadovska et al., 2020). Product diversification can be described as a more efficient use of a crop, for instance, by using previously discarded cotton stalks and leaves (United Nations Conference on Trade and Development, 2019).

consumers in different geographical areas and act as “a stepping-stone” (Gereffi & Fernandez-Stark, 2016, p. 6) for value chain actors in the Global South to enter the world market. Access to international markets through GVCs is seen as a crucial precondition for development (Gereffi & Fernandez-Stark, 2016). However, producers in the Global South seeking to participate in GVC face power imbalances between companies in the Global North and producing countries in the Global South (Trienekens, 2011). These power asymmetries affect the distribution of costs and benefits along the chain, for instance, value addition occurs mainly downstream[9] the value chain in the Global North (Trienekens, 2011). This “hierarchical division of labor” (Aguiar de Medeiros & Trebat, 2017, p. 401) and asymmetric power relation reinforces the global inequality between North and South (Talbot, 2002).

Tropical commodities can be considered as a specific form of agricultural commodities whose cultivation is restricted to tropical latitudes in the Global South, while processing, branding, and consumption take place mainly in the Global North (Lass & Wood, 1985; Talbot, 2002). Furthermore, the cultivation of tropical commodities heavily relies on smallholder farmers (Lass & Wood, 1985). A farmer is considered a smallholder if the managed area encompasses up to ten hectares and the endeavor is family-focused, meaning the farming activity is “favouring the stability of the farm household system, using mainly family labour for production“ (Food and Agriculture Organization of the United Nations, 2012, p. 1). In GVCs, smallholders are in an unfavorable position as “they have little capital to invest, use traditional techniques, depend on family labor and lack contact with (international) market players” (De Janvry & Sadoulet, 2005; Daviron & Gibbon, 2002; Reardon & Barret, 2000, as cited in Trienekens, 2011, p. 52). Smallholders do not hold the same power with regard to, inter alia, bargaining and decision-making over what they produce as the buyer side (Talbot, 2002). This power imbalance is based on structural changes in the last decades. Since the 1980s, ongoing privatization, rapid technological advancement, liberalization of markets as well as enforcement of intellectual property rights have affected the organization of GVCs (Aguiar de Medeiros & Trebat, 2017; Purcell et al., 2018). This development led to an accumulation of power by transnational corporations (TNCs) to the detriment of actors more upstream in GVCs such as smallholders (Aguiar de Medeiros & Trebat, 2017; Purcell et al., 2018).

2.3 The Cocoa Value Chain in Ghana

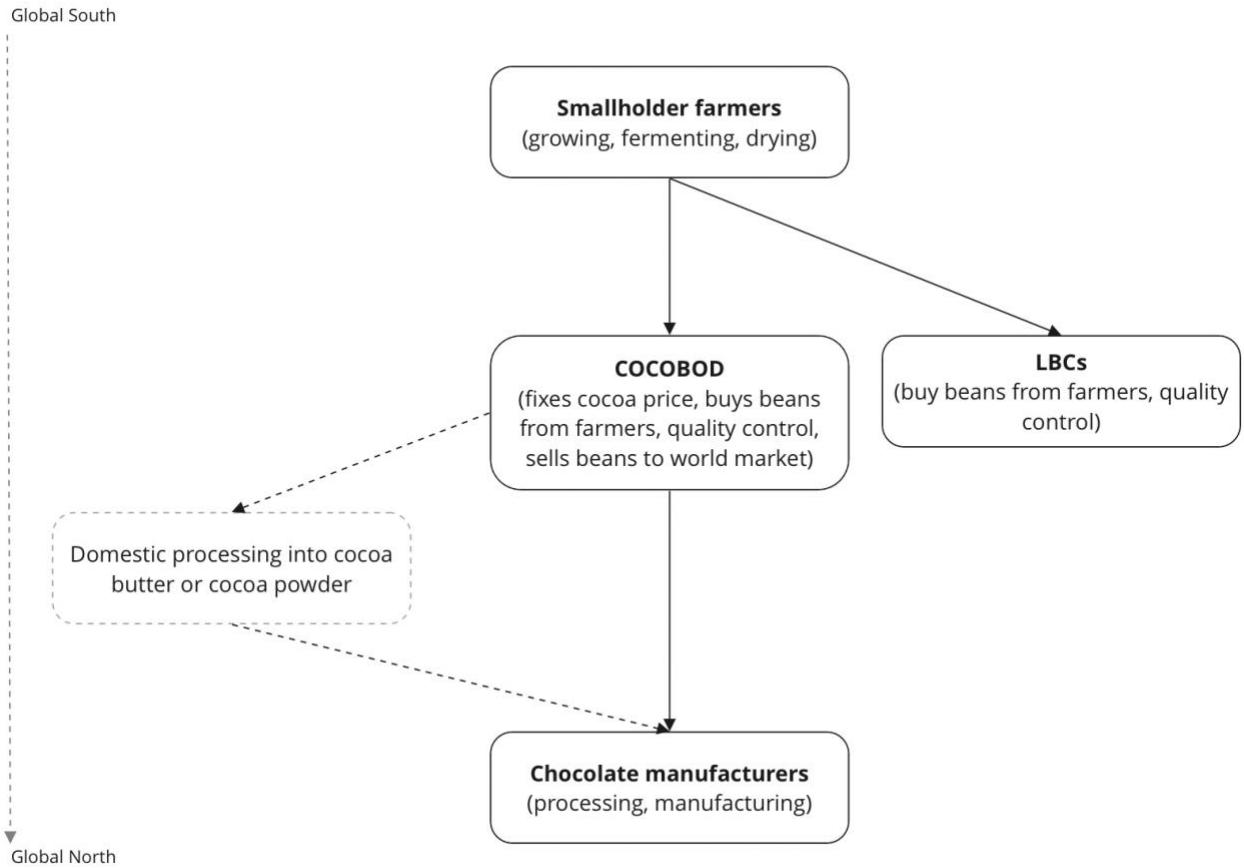
Cocoa as a tropical commodity is particularly interesting to illuminate as approximately 86 percent of cocoa produced globally is grown by smallholder farmers (Mohammed et al., 2011). Cocoa crops are suited for smallholder production as “it fits into the land tenure system, (…) most of the crop is harvested during the dry season and can be processed on a small scale without capital equipment” (Lass & Wood, 1985, p. 6). The

[9] Actors located downstream in the value chain are, for example, large firms that dominate processing and branding of tropical commodities (Abdulsamad et al., 2015; Fold, 2002).

power asymmetries identified in GVCs, in general, can also be found in the cocoa sector. Fold (2002) characterizes the global cocoa value chain as *buyer-driven* where a few TNCs lead essential stages of the value chain: grinding of cocoa beans (processors) and branding (manufacturers of chocolate). Farmers act as *price-takers* that have to defer to power structures determined by TNCs (Fold, 2002). This governance system highlights the imbalance of power in the global cocoa value chain, which is skewed to the disadvantage of production countries and, hence, smallholder farmers.

West Africa is the largest production area of cocoa, it accounts for 70 percent of the global production (Roldan et al., 2013). Ghana is the second largest producer of cocoa after Côte d'Ivoire (Ntiamoah & Afrane, 2008). About two million farmers grow cocoa in Ghana, mostly smallholders with an average land size of around 4 hectares (Roldan et al., 2013). According to a report on the annual state of the Ghanaian economy in 2020, cocoa remains a "vital foreign exchange earner for Ghana" (Institute of Statistical Social and Economic Research, 2020, p. 124). The value chain for cocoa is regulated by the government and "was never fully liberalized" (Abdulsamad et al., 2015, p. 40). Figure 1 provides a simplified structural overview of the cocoa value chain in Ghana that depicts the dominant role of the government.

Figure 1: The Cocoa Value Chain in Ghana (Authors own; based on Mohammed et al., 2011; Morris & Kaplinsky, 2015)



The Ghana Cocoa Board (COCOBOD) and its subsidiary, the Cocoa Marketing Company (CMC), are governmental institutions that fix the cocoa prices, ensure quality, and control export marketing (Ghana Cocoa Board, 2022). In the 1990s, a governmental reform to privatize the cocoa value chain in Ghana led to the invention of Licensed Buyer Companies (LBCs) that are – next to the COCOBOD – applying quality control measures and buying cocoa beans directly from farmers (Bymolt et al., 2018; Fold, 2002). However, the CMC as the marketing board of COCOBOD is still the only legally permitted gate for selling Ghanaian cocoa to the world market (Bymolt et al., 2018). Hence, after farmers grow, ferment, and dry the cocoa beans they are sold to COCOBOD or a LBC (Bymolt et al., 2018; Morris & Kaplinsky, 2015). Despite the national goal of exporting at least 50 percent of raw cocoa in processed forms (Essegbey & Ofori-Gyamfi, 2012), only 40 percent of cocoa beans are processed locally into cocoa butter or cocoa powder before their export (Mohammed et al., 2011). Ghana's processing industry is on the rise, but is hampered by high electricity prices and inconsistent power supply (Grumiller, 2018, as cited in Grumiller et al., 2018).[10]

2.4 Social, Economic, and Environmental Challenges at the Farmer Level of the Cocoa Value Chain in Ghana

Smallholder cocoa farmers find themselves in precarious economic situations: in 2015, smallholders worldwide only received 4-6 percent of the final market price which is, inter alia, the result of declining cocoa prices (Abdulsamad et al., 2015). Looking at Ghana in particular, only 15 percent[11] of cocoa farmers acquire a Living Income[12] although cocoa makes up the majority of the country's GDP (Boeckx et al., 2020). According to a study conducted by Tyszler et al. (2018), this means that the vast majority of smallholders producing cocoa in Ghana earn USD 2,288 on average per year which represents 52 percent of the Living Income Benchmark of USD 4,742.[13] The market power of TNCs "has effectively blocked transmission of the generated value upstream to producing countries" (Abdulsamad et al., 2015, p. 41) and there is a lack of transparency and accountability of the companies in the Global North and governments in the production countries (Fountain, 2020). Fountain (2020) points out that "in its current form, the business model for high yields of cocoa means poverty for farmers and excessive profit for chocolate manufacturers" (p. 7) with a lack of bargaining power on the farmer's side (Fountain, 2018). For some scholars the "single biggest positive impact for farmers and incentive for farming sustainably" (Fountain, 2020, p. 8) is for cocoa and chocolate producing

[10] In comparison, Côte d'Ivoire grinds more than twice as many cocoa beans as Ghana (Grumiller, 2018, as cited in Grumiller et al., 2018). The country is a "comparatively attractive location for processors due to low electricity prices" (Grumiller et al., 2018, p. 2).
[11] The percentage of farmers in Ghana achieving a Living Income varies in research. A study conducted in 2018 found 9.4 percent of typical male-headed households acquiring a Living Income (Tyszler et al., 2018).
[12] The term *Living Income* in this context refers to "the net income required for a basic, but decent, standard of living in cocoa producing areas in Ghana" (Tyszler et al., 2018, p. 7).
[13] The estimated values are calculated for a typical male-headed household including 3.5 adults and 2.5 children (Tyszler et al., 2018).

companies to pay a fair Farm Gate Price[14] through redistribution of revenues along the value chain that enables farmers to acquire a Living Income. The Covid-19 pandemic put even more pressure on farmers' financial situation: “though data is scarce, it is suggested that many farming communities saw a loss of current and future sales, payment delays, and experienced many other financial consequences” (Fountain, 2020, p. 4). In the long term, it is expected that the global recession as a consequence of Covid-19 measures causes a decrease in demand for chocolate in times where an oversupply can be determined (Fountain, 2020). This development “will cause downward pressure on global prices, with all the ensuing effects for farming households already in dire poverty” (Fountain, 2020, p. 4).

The economic difficulties are strongly connected to social challenges. Child labor in the cocoa sector is still high: in Ghana and Côte d’Ivoire together, about 2.1 million children work in cocoa production (Fountain, 2018). This high rate is caused by “structural poverty, increased cocoa production, and a lack of schools and other infrastructure” (Fountain, 2018, p. 3). Governments and companies are far from reaching their goals of reducing or even eliminating child labor[15] (Fountain, 2018). In addition, cocoa farming communities are affected by health risks originating in poverty, unbalanced nutrition, and a lack of access to health care (Fountain, 2020). The Covid-19 pandemic reinforced the situation of cocoa farming communities even more and led to increased costs for daily living, farm inputs, and health care (FCCI 2020, as cited in Fountain, 2020). Moreover, the lockdown measures including the closing of schools “put children at risk of exposure to child labour” (Fountain, 2020, p. 4). Governments but also companies operating in the cocoa sector play a key role not only in eliminating child labor but also in strengthening local infrastructure such as schools, health care, and market access (Fountain, 2018), especially after the reinforcement of challenges caused by the Covid-19 pandemic. Another challenge refers to gender[16] equality. Cocoa farming is referred to as a *male crop*; only 20 percent of cocoa farmers are female (Barrientos & Bobie, 2016; Hiscox & Goldstein, 2014). Women largely support their husbands in farming the land (Barrientos & Bobie, 2016) and thereby account for up to 45 percent of labor input without direct financial compensation (Greene & Robles, 2014, as cited in Barrientos & Bobie, 2016). Women’s labor input is often not sufficiently valued and a lack of training and access to resources to enhance their ability to scale up cocoa production can be observed (Barrientos & Bobie, 2016). Women farming cocoa “are about 25% less likely than men to have received training on farming techniques in the previous 12 months” (Hiscox & Goldstein, 2014, p. 4). In addition, the gender gap in terms of income and productivity is significant: women’s income and productivity levels are 25-30 percent lower than the ones of male farmers (Hiscox & Goldstein, 2014). According to Barrientos and Bobie (2016), women play a central role in maintaining cocoa supply and therefore “need to be better recognised, supported and integrated into cocoa programmes” (p. 9).

[14] The Farm Gate Price represents the price farmers receive for their cocoa (Fountain, 2018).
[15] The cocoa-chocolate sector committed to a 70 percent reduction of child labor by 2020 (Fountain, 2018).
[16] According to Barrientos and Bobie (2016), “gender relates to social relations between men and women (rather than biological difference), which can vary between socio-economic contexts and change over time” (p. 10).

Cocoa production is also affected by and affects environmental problems: cacao plants are originally an understory species that grows well in the shade of other trees, such as coconut palms (Lass & Wood, 1985). This agroforestry management system provides ecological benefits, especially with regard to biodiversity (Rice & Greenberg, 2000). However, changes in management systems[17] for the expansion of cocoa farming activities threaten biodiversity (Rice & Greenberg, 2000). In West Africa, about 90 percent of native forests are cleared, partly for the exploration of new cocoa production areas due to environmental degradation in existing plots (Fountain, 2018; Nitidae, 2021; Takyi et al., 2019). In addition, the use of fertilizers and pesticides[18] increased in recent years which leads to water pollution and harming of insects and animals (Nitidae, 2021). But also farmers' health is at risk because of a lack of adequate protective equipment (Nitidae, 2021). Crop diseases and loss of soil fertility due to herbicide use and increased and maladjusted application of fertilizer cause additional problems for cocoa production (Lass & Wood, 1985; Rice & Greenberg, 2000). Lastly, cocoa production is vulnerable to climate change (Boeckx et al., 2020). Climate change has and will continue to have major implications for cocoa production worldwide: "in 2050, almost 50% of the current cocoa growing areas may no longer be suitable for this crop because of longer droughts, higher temperatures and less rainfall" (Nitidae, 2021, p. 8). This can be also seen in Ghana. Variable rainfall and high temperatures lead to longer periods of drought which affect soil fertility and cause seedling mortality (Hutchins et al., 2015). In addition to climate change implications on cocoa production, agricultural emissions from cocoa cultivation as a contributor to climate change are contemplated in literature. In Ghana, greenhouse gas (GHG) emissions from agriculture are on the rise (Akrofi-Atitianti et al., 2018). This is caused mainly by deforestation practices (Akrofi-Atitianti et al., 2018). Climate change adaptation and mitigation practices mainly refer to going back to agroforestry methods that imply, inter alia, increased tree cover through tree planting (Boeckx et al., 2020; Hutchins et al., 2015; Nitidae, 2021). These management systems are associated with improving soil fertility and a reduced amount of pesticide input needed (Hutchins et al., 2015). However, agroforestry methods are "still in the initial stages of reintroduction in Ghana" (Hutchins et al., 2015, p. 8). Next to agroforestry, Climate Smart Agriculture (CSA) represents one approach to contribute to climate change adaptation, on the one hand, and mitigate GHG emissions, on the other hand (Akrofi-Atitianti et al., 2018). CSA refers to social, economic, and environmental measures that address sustainable development of the agricultural sector to ensure food security under climate change (Food and Agriculture Organization of the United Nations, 2013). The Food and Agriculture Organization of the United Nations (2013) defines CSA[19] along three pillars: "1. sustainably increasing agricultural productivity and incomes; 2. adapting and building resilience to climate change; 3. reducing and/or removing greenhouse gases emissions, where possible" (p. ix).

[17] In the 1990s *full sun* cultivation was promoted that requires clearing of native forest trees which are then intercropped with few fruit trees (Hutchins et al., 2015; Nitidae, 2021).
[18] Pesticides and fertilizers "are used to protect cocoa against increasing threats from pests and diseases, and to improve soil mineral content after several cocoa cycles" (Nitidae, 2021, p. 8).
[19] See Food and Agriculture Organization of the United Nations (2013) for a thorough exploration of CSA.

After the theoretical context of the thesis is set, the next chapter reviews existing literature examining concrete value addition activities in agricultural GVCs such as the cocoa value chain in Ghana. Based on the social, economic, and environmental challenges present in the cocoa value chain in Ghana, attempts to expand the traditional economic understanding of value addition are presented. This investigation subsequently leads to the introduction of the new concept of *sustainable value addition*. This involves examining existing frameworks for operationalizing *sustainable value* and developing a new framework for SVA specifically at the farmer level of the cocoa value chain level in Ghana.

3. Literature Review

The literature review consists of three subchapters: the first subchapter provides an overview of existing research on value-adding activities in agricultural GVCs and the cocoa value chain in Ghana, respectively. This investigation is based on the definitions of value addition and the list of different value-adding activities presented in Chapter 2.1. Referring to the sustainability perspective this thesis takes, the second subchapter investigates literature that challenges the purely economic concept of value addition by including social and environmental perspectives. The final subchapter summarizes the research gaps that emerged from the literature review and highlights the resulting implications for this thesis, which demonstrate the need for SVA particularly at the smallholder level of the cocoa value chain in Ghana.

3.1 Value Addition in Agricultural Global Value Chains

When looking at the concept of value addition in agricultural GVCs, existing literature represents the variety of definitions and value-adding activities provided in the previous chapter. In line with the definitions, scholars look at value addition mainly from an economic perspective: existing research investigates how value-adding business activities can enhance the competitiveness of enterprises (see Amanor-Boadu, 2003; Marchi et al., 2013) or focus on GVC participation of countries in the Global South as a means to increase domestic income (see Kummritz et al., 2017). Scholars examine certification schemes in the coffee value chain in different geographical areas and their effect on farmers' income (see Beuchelt et al., 2010; García-Cardona, 2016; Jun, 2020; Kiemen & Beuchelt, 2012). Several authors focus on income and product diversification, more precisely on ways to increase revenues by utilizing previously unexploited residues of different agricultural products and thus using them more efficiently (see Escalante et al., 2013; Guirlanda et al., 2021; Murthy & Naidu, 2012; Pandey & Soccol, 2000; Ubalua, 2007). Others investigate local processing as a way to increase domestic incomes (see Grover & Sharma, 2020; Sukha, 2003).

When looking at value addition in the Ghanaian cocoa value chain, the following perspectives predominate: Gockowski et al. (2011) assess the impact of using cocoa specialty crops on increasing cocoa farmers' incomes. Talbot (2002) presents a comparative analysis of coffee, tea, and cocoa with regard to forward integration[20] strategies, inter alia in the cocoa sector in Ghana. Laven (2011) dedicates her research to the inclusion of smallholders in the cocoa value chain and their associated opportunities for value addition considering the role of Ghanaian policies. Moreover, recently Van Huellen and Abubakar (2021) illuminate the potential for upgrading in the financialized Ghanaian cocoa sector. Essegbey and Ofori-Gyamfi (2012) investigate the innovation potential of Ghana's cocoa sector while providing a thorough overview of value addition through local processing of cocoa beans.

[20] Forward integration can be explained as "attempts by actors in the producing regions to move forward into the more advanced processing stages of the chains, in order to realize higher returns from their commodity exports" (Talbot, 2002, p. 701). It is therefore strongly related to value addition.

3.2 Challenging the Traditional Economic Perspective on Value Addition

These existing perspectives in the agricultural research stream depict a wide variety of value-adding activities. However, they majorly follow a solely economic notion of value addition through investigating economic actors' possibilities to add monetary value in different stages of agricultural GVCs. Some authors challenge this traditional understanding of value addition in merely economic terms: Zimnoch and Mazur (2018) introduce the measure of *gross value added* that does not only represent the profitability of a cooperative as an enterprise but also takes into account the social benefits cooperatives may provide. Mohan (2010) investigates upgrading as a means for enhanced competitiveness and sustainable development in the tea value chain by comparing three countries. Nitidae (2021) investigate sustainability challenges in the cocoa sector in Côte d'Ivoire and Ghana and compare respective sustainability initiatives on their effects. Several authors focus on the potential of multi-stakeholder partnerships and certification schemes in improving livelihoods of farmers, their vulnerability, or ecological problems that are present in different agricultural GVCs (Bacon, 2005; Bitzer et al., 2008; Bitzer & Glasbergen, 2015; Bitzer et al., 2013; Giovannucci & Ponte, 2005). Grumiller et al. (2018) focus on local processing of cocoa in Côte d'Ivoire and Ghana as a strategy for sustainable upgrading. Those authors directly or indirectly challenge the traditional economic understanding of value addition in agricultural GVCs and therefore point to a necessary further development of the concept.

A few authors actively complement the one-dimensional economic view of value and value addition by introducing the concept of *sustainable value*. The scholars coincide in their attempts to define the concept: Hart and Milstein (2003) emphasizes the link between sustainable value and shareholder value which is endorsed by other authors. Laszlo (2008) refers to sustainable value creation as "a way for companies to advance their business priorities, drive innovation, and achieve competitive advantage" (p. 119) and thereby highlights stakeholders marginalized by corporations, such as environmental NGOs and local communities, as recipients. Yang et al. (2017) and Sadovska et al. (2020) align with that by understanding sustainable value as a concept that comprises economic, social, and environmental benefits created for an enterprise and its stakeholders. It thereby encompasses not only financial benefits but also value provided to the environment and society (Yang et al., 2017). Figge and Hahn (2004) point in the same direction by proposing "a new approach to measure corporate contributions to sustainability called Sustainable Value Added" (p. 173). Sustainable value added measures whether a company creates additional financial value "while ensuring that every environmental and social impact is in total constant" (Figge & Hahn, 2004, p. 173).

3.3 Research Gaps and Implications for this Thesis

The literature review reveals three main research gaps**:** first, the understanding of value addition in solely economic terms is dominant in scientific literature. Studies investigate mainly how companies in consuming countries in the Global North can generate higher revenues. There are only a handful of studies challenging this traditional understanding by extending it with social and environmental perspectives. The few scholars contemplating sustainable value mainly take a business-centered point of view by focusing mainly on opportunities for enterprises to benefit from sustainability measures. This ties into the second research gap. Perspectives that examine SVA at the farmer level, particularly in cocoa value chains, are absent. As Sadovska et al. (2020) state, economic perceptions of the term value "are defined with a narrow group of stakeholders in mind, using primary financial dimensions of value" (p. 2). Other shareholder groups next to businesses are neglected (Sadovska et al., 2020). In addition, Purcell et al. (2018) identify a neglect of the primary commodity production stage as a critical factor in the overall value of the chain. This thesis wants to account for that by adopting a producer-centered viewpoint that leaves aside the much-deliberated business perspective. Third, the local processing industry in Ghana is on the rise (Grumiller, 2018, as cited in Grumiller et al., 2018) but local processing has not yet been sufficiently studied for its SVA potential. Cocoa is one of the Ghana's most important exports but value is added mostly in the Global North through processing and branding whereas actors in Ghana tend to be stuck in low-value activities (Abdulsamad et al., 2015; Fold, 2002). The question of how SVACs operating in Ghana can sustainably add value at the farmer level through local processing justifies the particular focus on Ghana. The identified research gaps serve as a starting point and raison d'être for this scientific endeavor.

The proposed master thesis ties into these research gaps and wants to investigate sustainable value that is added at the farmer level of the cocoa value chain in Ghana. But why is the traditional economic notion of value addition insufficient for this undertaking? Putting the previously presented literature in the context of this research endeavor and connecting it with the multidimensional challenges present in the cocoa value chain in Ghana (see Chapter 2.4), it becomes clear that the traditional economic approaches to value addition are not sufficient for tackling the complex sustainability issues in the Ghanaian cocoa value chain and, hence, maintaining cocoa production in the future. To exemplify the insufficiency of the traditional concept of value addition: reduction of costs during cocoa production might add monetary value, however, it is assumed that it cannot be guaranteed that it does not have adverse effects on humans and the environment. Similarly, local processing might lead to higher revenues for local value chain actors or increase the GDP of the production country. Nevertheless, it is suspected that this does not automatically imply that social or environmental challenges at the farmer level are mitigated. These considerations lead to the suggestion of enhancing the traditional economic concept of value addition in such a way that it also accounts for social and environmental aspects. There is "a need to view value creation based on a systems perspective, taking a broader view on sustainable agriculture" (Sadovska et al., 2020, p. 5) and sustainable value, respectively. This

new perspective is at the core of this study and aims to contribute to sustaining cocoa production in Ghana in the long term.

Based on the previous literature reviewed as well as the research gaps identified, the next chapter introduces the concept of sustainable value addition. It furthermore proposes a new conceptual framework that is developed from previous literature and the particular sustainability challenges present in the Ghanaian cocoa value chain. The framework operationalizes SVA, particularly at the smallholder level of the cocoa value chain in Ghana, and therefore provides a valuable foundation for the context of this thesis as well as the subsequent data analysis.

4. A New Conceptual Framework for Sustainable Value Addition

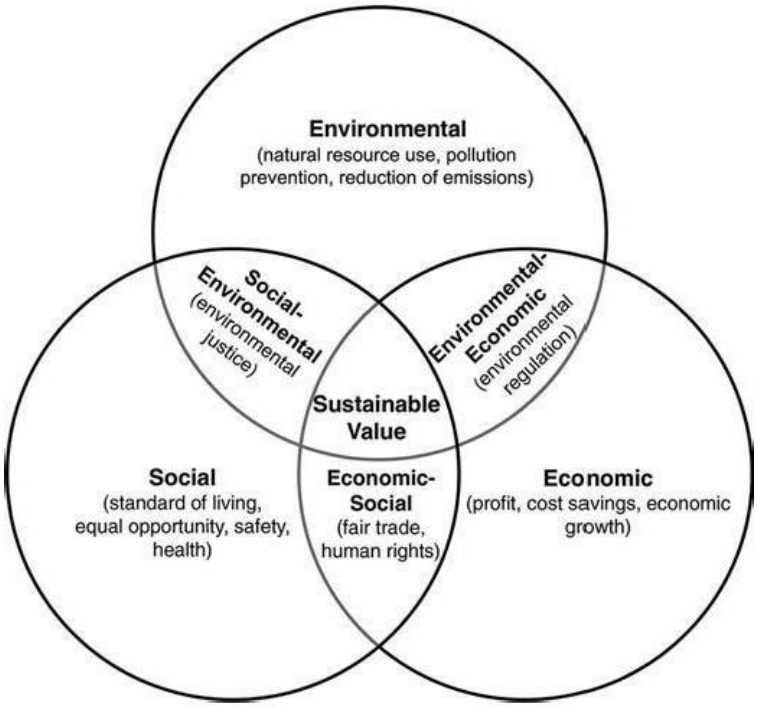
After the last chapter stated the insufficiency of one-dimensional economic perspectives on value addition, this chapter presents scholars that operationalize sustainable value. These build the foundation for developing and proposing the new concept of *sustainable value addition* in Chapter 4.2 as well as an own conceptual framework that operationalizes the concept specifically at the farmer level of the cocoa value chain in Ghana. The developed framework provides the foundation for the qualitative data collection and analysis presented later in this paper.

4.1 Perspectives on Sustainable Value

Individual scholars operationalize sustainable value. A well-established perspective in that realm provide Hart and Milstein (2003). The authors created a Sustainable Value Framework "that links the challenges of global sustainability to the creation of shareholder value by the firm" (Hart & Milstein, 2003, p. 56). Based on different sustainability drivers, the framework suggests business strategies to improve shareholder value (to accelerate innovation, develop a future growth path, reduce costs and risks, and improve reputation and legitimacy) (Hart & Milstein, 2003). The activities are mapped along two axes: internal-external, within the company or outside, and today-tomorrow on the vertical axis (Hart & Milstein, 2003). Following this framework, companies can align with the notion of sustainability.

Yang et al. (2017) introduce their framework by defining different elements of sustainable value that are depicted in Figure 2.

Figure 2: The Elements of Sustainable Value (Yang et al., 2017, p. 32)



The economic dimension is associated with the traditional understanding of value – profit, cost savings, and economic growth (Yang et al., 2017). The social dimension refers to standard of living, equal opportunities, safety, and health (Yang et al., 2017). The environmental dimension includes natural resource use, pollution prevention, and reduction of emissions (Yang et al., 2017). Destroyed value in this context can be associated with, for instance, health and safety problems, bad working conditions, and environmental pollution (Yang et al., 2017). Missed value includes the underutilization of by-products, among others (Yang et al., 2017).

Sadovska et al. (2020) developed a framework that "allows examination of an agricultural enterprise in different dimensions regarding its activities for creation of sustainable business value" (Sadovska et al., 2020, p. 15). The authors applied a systematic literature review of agricultural business literature to identify value-creating factors for agricultural enterprises that are aligned with the Triple Bottom Line (Sadovska et al., 2020). Factors that create value for agricultural enterprises are collaboration and partnership, trust, diversification, agricultural knowledge and education, and specific production techniques, such as precision agriculture (Sadovska et al., 2020). These value-creating factors together with the framework proposed by Hart and Milstein (2003) build the foundation for the authors' development of a framework for sustainable value creation in the agricultural sector (Sadovska et al., 2020).

4.2 Introducing Sustainable Value Addition and a Corresponding Conceptual Framework

Looking at the existing attempts to operationalize sustainable value, Hart and Milstein (2003) present a framework that centers its elements around corporate payoffs and benefits for businesses. Sadovska et al. (2020) takes a similar perspective with operationalizing sustainable value creation for agricultural businesses. As the existing frameworks are not suitable for examining SVA more upstream in the cocoa value chain, this study wants to adopt a problem-centered perspective where the sustainability challenges in the specific case of cocoa production in Ghana build the foundation for operationalizing SVA at the farmer level. The creation of such a framework leads to an in-depth insight into how SVA can be applied at the farmer level and, hence, can be further improved by SVACs operating in the Ghanaian cocoa sector.

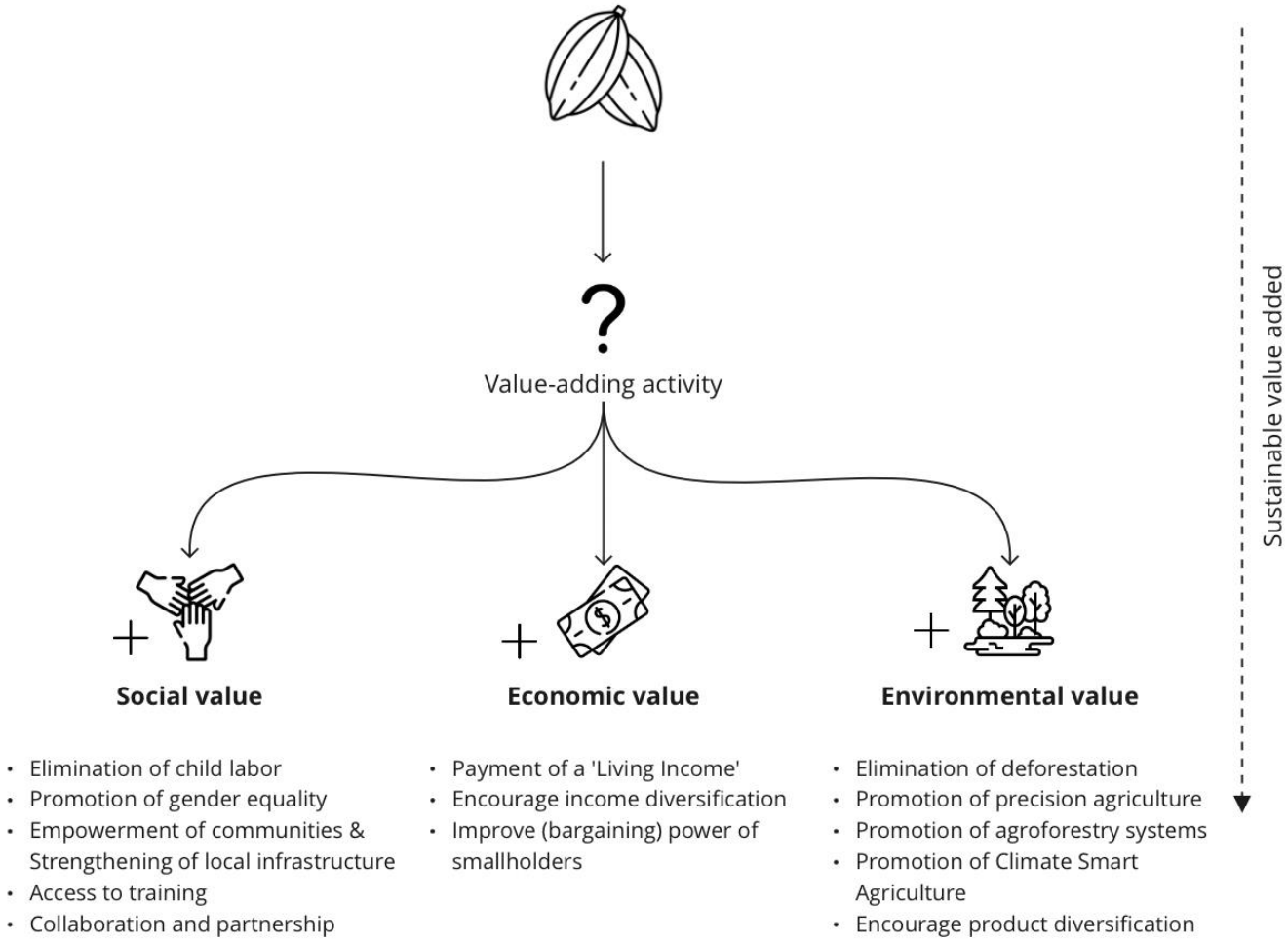
Based on the definitions for the concept of value addition (Chapter 2.1) provided in the literature and the perspectives on sustainable value illuminated in the previous subchapter, SVA as proposed in this research endeavor refers to a physical transformation of a primary commodity or a change of the circumstances under which it is produced or processed in such way that it:

- increases revenues for smallholders who are marginalized in the cocoa GVC
- but at the same time increases social and environmental benefits at the farmer level.

The value-creating factors identified by Sadovska et al. (2020), the elements of sustainable value by Yang et al. (2017) as well as the sustainability challenges in the cocoa value chain in Ghana identified in Chapter 2.4

build the foundation for developing a new framework for SVA at the farmer level of the Ghanaian cocoa value chain. In the framework illustrated in Figure 5, the production of raw cocoa is depicted at the top. After undergoing a value-adding activity – e.g., local processing and income and product diversification – social, economic, and environmental benefits result from this process at the farmer level. Therefore, the framework proposes indicators of social, economic, and environmental value that can be added based on the sustainability challenges present at the farmer level of the Ghanaian cocoa value chain. The respective indicators are presented in the following.

Figure 3: A New Conceptual Framework for Sustainable Value Addition at the Farmer Level of the Cocoa Value Chain in Ghana (Authors own)



4.2.1 Social Value Addition

Next to efforts to abolish child labor social value addition refers to promoting gender equality. The gender pay gap in cocoa farming should be closed and women should acquire fair financial compensation for their labor inputs as well as access to finance, training, and general support. Communities, especially youth should be empowered, and local infrastructure should be strengthened. Communities should have access to health care, education, and adequate nutrition. Cocoa farmers should have access to a variety of trainings to

develop farming knowledge and skills (Sadovska et al., 2020), for example, on climate change adaptation. Moreover, collaboration and partnership should take place “at all levels of the value chain, with practical examples being knowledge exchange, common use of processing, testing, and R&D facilities, etc.” (Sadovska et al., 2020, p. 9). This includes horizontal collaboration among farmers as well as vertical collaboration between farmers and actors more downstream the value chain, for instance, processors or the companies themselves.

4.2.2 Economic Value Addition

Economic value addition encompasses farmers receiving a fair share of the final market price including an adequate Farm Gate Price. Farmers should be paid a fair price for their cocoa which allows them to live a decent life. Economic value can also be added if diversification strategies (Sadovska et al., 2020) are encouraged. This can include growing additional crops or following other activities next to cocoa farming that generate additional income (Sadovska et al., 2020). In addition, the bargaining power of smallholders should be improved within the cocoa value chain. Farmers should not be at the mercy of companies in the Global North but should be heard, supported, and empowered to participate in decision-making and price negotiations.

4.2.3 Environmental Value Addition

Environmental value can be added through efforts to eliminate deforestation activities, for example, through phasing out production methods that are contributing to environmental degradation. This should be supported through the promotion of precision agriculture, which refers to a more efficient use of farming inputs such as fertilizers and pesticides (Bongiovanni & Lowenberg-Deboer, 2004, as cited in Sadovska et al., 2020). For climate change adaptation and mitigation, agroforestry methods should be promoted which can improve soil fertility and reduce pesticide input (Hutchins et al., 2015) besides contributing to biodiversity conservation. Furthermore, CSA practices which refer to, inter alia, increased productivity, resilience to climate change, and reduction of GHG emissions (Food and Agriculture Organization of the United Nations, 2013) should be encouraged. Another way to add environmental value refers to product diversification which can be associated with a more efficient use of commodities, for instance, through the utilization of crop residues such as the pod, the pulp, or the husks of the cocoa crop.

5. Research Design & Methods

The underlying research design of this thesis followed a constructivist approach (see Moses & Knutsen, 2019). This was particularly evident in the core of the data collection, the qualitative interviews. For examining to what extent SVACs add sustainable value at the smallholder level of the Ghanaian cocoa value chain different perspectives with different cultural and geographical backgrounds were taken into account. Gathering data from different actors led to different perceptions of the topic at hand. The ontology of constructivism acknowledges that in stating that there is not just one reality or *real world* (Moses & Knutsen, 2019). Instead, it focuses on perceptions of the reality which is associated with a variety of experiences and different views on a certain topic (Moses & Knutsen, 2019). In the context of this thesis, the perspective and understanding of different actors varied with respect to what the different dimensions of SVA, i.e., social, economic, or environmental entail, among others. Hence, care had to be taken not only to apply an appropriate level of sensitivity in conducting the interviews but also to reflect on the gathered data being culture and context specific.

In the following, the comparative case study approach is presented. Subsequently, the methods for data collection are elaborated. Finally, the data analysis procedure of this thesis is explained thoroughly. The limitations of the methodology are provided and reflected upon in Chapter 8.

5.1 Comparative Case Study Approach

The research design of this paper followed a qualitative comparative case study approach. A case study is an adequate approach when an in-depth understanding of cases is targeted (Creswell, 2013). Moreover, it is a preferred research strategy when the research investigates *how* or *why* questions when the researcher cannot control the events under study, and the topic at hand is "a contemporary phenomenon within some real-life context" (Yin, 2003, p. 1). Under these conditions, case studies are favored over other research methods such as experiments, surveys, or historical methods (Yin, 2003). Transferred to this scientific endeavor, the thesis raised research questions on how the cocoa value chain in Ghana is structured, how SVACs aim to add sustainable value at the smallholder level, and how they can further improve SVA at the farmer stage, among others. The researcher acted as an observer that gathers insight into the field by interviewing persons that are directly involved in the events (Yin, 2003). Hence, the researcher could not influence the events studied. Finally, the sustainability challenges in the cocoa sector in Ghana as well as SVA as an attempt to mitigate the problems are current real-life phenomena.[21] A comparative case study design enabled comparing specific units of analysis, in this case companies, to identify differences and

[21] In contrast, in an experimental research design the researcher tends to have higher influence on the events under study and the phenomenon under study is deliberately separated from its context through a controlled, laboratory environment (Yin, 2003). In historical research designs, the phenomenon is entangled with the context but it deals with non-contemporary events (Yin, 2003). Surveys are limited in their ability to investigate the context (Yin, 2003).

commonalities among them (Bartlett & Vavrus, 2017) which reinforced in-depth understanding. By analyzing, comparing, and discussing the goals, approaches, and impact the two SVACs claim to have in light of the conceptual framework and juxtaposing them with sustainability challenges and needs at the farmer level, it was possible to explore the extent to which SVACs add sustainable value at the farmer level of the Ghanaian cocoa value chain. It was assumed that this would not have been possible with a single case study.

In the first phase of the research, academic literature was reviewed for defining the concept of value addition. This initial literature review led to a list of different value-adding activities that was presented in Chapter 2.1. Based on that list, extensive web-based research has been conducted on concrete initiatives that practice or encourage value-adding activities in the cocoa value chain within the geographical boundary of Ghana. Thereby focusing particularly on initiatives that aim to add sustainable value. This second phase led to a table including twenty different value addition initiatives. For each initiative the following information was collected: name, foundation date, exact location in Ghana, type of initiative (voluntary sustainability standard, company or governmental program, multi-stakeholder partnership, cooperative or company), type of value addition promoted (social, economic, environmental), if the initiative was founded in the Global North or South, contact details, and the source of information.

In the third phase of the research, two cases were selected from the table created previously: KOA and Kumasi Drinks. The selection of the cases was based on purposeful sampling as introduced by Patton (1990). "*Information-rich* cases" (Patton, 1990, p. 169), meaning cases that enable in-depth learning about central issues of the research, were selected by applying the following criteria relevant to the topic under study: the two cases had to be initiatives that aim to improve social, economic, and environmental (sustainable) value at the farmer level, they had to be the same type of initiative so that they are comparable, and they had to show a lack of research on their value addition approach. Another important but subordinate criterion was the availability of contact details. Both KOA and Kumasi Drinks as selected cases aim for SVA at the farmer level of the cocoa value chain in Ghana. More precisely, both companies follow the approach of using the cocoa crop more efficiently by utilizing the cocoa pulp, which would normally be discarded, thereby creating social, economic, and environmental benefits for farmers. As this is a new type of value addition – local processing and income and product diversification – no previous research could be found.

The illumination of two cases was suitable because the comparison can better elaborate on peculiarities, similarities, and differences which leads to more in-depth findings and the possibility to draw precise conclusions and recommendations (Bartlett & Vavrus, 2017). Comparing more cases was difficult as the type of companies chosen emerged only recently and are unique in their value addition approach of using residues of cocoa production to create sustainable benefits at the smallholder level. The scope could have been extended to other value addition approaches. However, it would have been more difficult to make comparisons and thus provide case-specific recommendations.

5.2 Data collection

The data collection followed an inductive, Grounded Theory (Glaser & Strauss, 1967; Strauss & Corbin, 1994) oriented approach. This inductive approach was chosen instead of a deductive methodology due to the lack of research on the concept of SVA and the recent emergence of companies that aim for the specific type of SVA – local processing and income and product diversification. If there is insufficient previous research and knowledge available, an inductive approach is more adequate than a deductive methodology that reasons back from a set theory (Moses & Knutsen, 2019). In line with a qualitative Grounded Theory approach, data collection and data analysis were conducted in a simultaneous and continuous way rather than in a linear one (Glaser & Strauss, 1967). Table 1 provides an overview on the data collection methods and their purpose for answering the main research question and the sub questions. For data collection, two methods were combined: desktop research and qualitative semi-structured interviews. The two methods and their reasoning for this thesis are described in the following sections.

Table 1: Overview of Data Collection Methods

Data Collection Method	Purpose for Answering Research Question and Sub Questions
Desktop Research	• Understand structure of GVCs and associated power relationships (SQ 1) • Understand structure of cocoa value chain in Ghana (SQ 1) • Define value addition in the context of agricultural GVCs • Develop concept of sustainable value addition and conceptual framework • Create case descriptions of KOA and Kumasi Drinks
Qualitative Semi-structured Interviews	• Companies: provides insights into goals, approaches, and impact regarding SVA (SQ 2); input for case descriptions • Farmers & farmer representative: provides insights into social, economic, and environmental challenges and needs at the farmer level (SQ 3) → Subsequent data analysis led to answers to the main research question as well as SQ 4 and SQ 5 (provided in Chapter 7.5)

5.2.1 Desktop Research

Desktop research was a valuable method for understanding the structure of agricultural GVCs and their associated power relationships. More precisely, academic literature was consulted to portray the cocoa value chain in Ghana with its actors and their relations. In addition, desktop research formed the basis for the definition of value addition in the context of agricultural GVCs. The results of this investigation were presented in the theoretical background in Chapter 2 which sets the context of this research endeavor.

Academic literature also provided the basis for the development of a new conceptual framework for SVA at

the farmer level of the cocoa value chain in Ghana (Chapter 4.2). The framework development was based on two inputs: first, social, economic, and environmental challenges specifically present in the cocoa value chain in Ghana were identified through scientific literature and grey literature. These sustainability challenges were elaborated on in Chapter 2.4. Second, academic literature operationalizing the concept of sustainable value offered valuable perspectives for the development of the new conceptual framework. The existing approaches operationalizing sustainable value were presented in Chapter 3.3. This combination of inputs aimed to build a holistic and suitable framework for the specific case of SVA at the farmer level of the cocoa value chain in Ghana. Finally, desktop research also fed into the case descriptions of KOA and Kumasi Drinks that are presented in the beginning of Chapter 6.1 and Chapter 6.2, respectively.

5.2.2 Qualitative Semi-Structured Interviews

Besides desktop research, qualitative semi-structured interviews built the core of the methodological approach of this thesis. Four interviews were conducted via online videocalls between May and July 2022. Input was obtained from a total of five actors in the cocoa value chain in Ghana that were deemed relevant for the subject matter of this paper. Table 2 presents an overview of the interviews conducted.

Table 2: Overview of Interviews Conducted

Abbreviation in the following	Actor	Organization
I	Company: Representative of KOA	KOA
II	Company: Representative of Kumasi Drinks	Kumasi Drinks
III	Farmer representative: Representative of Solidaridad West Africa	Solidaridad
IV	Farmers: Two cocoa farmers in the Ashanti Region	-

interviews with representatives of KOA and Kumasi Drinks provided insight into the companies' goals, approaches, and impact regarding SVA which provided the foundation for comparison, and, hence, contributed to the case descriptions. Interviews with two male cocoa farmers[22] that are supplying KOA and Kumasi Drinks and an employee of the NGO Solidaridad as a farmer representative[23] revealed valuable perspectives on the social, economic, and environmental challenges and needs on the farmer level. In

[22] The interviewees were found through snowballing (Naderifar et al., 2017). More precisely, the representative of KOA was asked about contacts with farmers. The interviews were organized with the help of KOA and translated by a KOA employee.

[23] In the context of this thesis, an employee of Solidaridad West Africa acted as a farmer representative as the interviewee works together with smallholder cocoa farmers in Ghana for years and has, therefore, valuable knowledge about their social, economic, and environmental challenges and needs.

accordance with Brinkmann (2013), qualitative interviews were chosen as an adequate method to collect data on the individual perceptions on the topic of this thesis as the interviewer gained insight into subjective experiences of the interviewees. A semi-structured interview design as a rather flexible approach provided even more insights because the interviewer could "make better use of the knowledge-producing potentials of dialogues" (Brinkmann, 2013, p. 21) by following up on answers given by the respondents.[24] In addition, the researcher could tailor the interview guide to the respective actor group (company and farmer/farmer representative). Three different interview guides (see appendix A) were developed to obtain as pertinent data from the interviews as possible. The setup of questions followed the recommendation of Brinkmann (2013): "good interview questions (…) invite interviewees to give descriptions" (p. 22). Hence, the questions were formulated in such way that the respondents can first describe their perspective. Only after descriptive questions were asked, more reflective questions on the interviewees' opinion and feelings were raised (Brinkmann, 2013). Content wise, the indicators of the conceptual framework (Chapter 4.2) as well as the research questions provided the basis for the development of the interview guides.

The number of interviews conducted was based on the concept of theoretical saturation (Glaser & Strauss, 1967). Glaser and Strauss (1967) initially define theoretical saturation as a state in data analysis where "no additional data are being found" (p. 61) and similar issues show repeatedly. However, Low (2019) argues for "a pragmatic definition of saturation that lets go of the notion that there can ever be an absolute or complete end point to analysis" (p. 6). Hence, theoretical saturation in this research context is described as a point where all for the research topic relevant actor groups have been interviewed in a way that provides sufficient data for answering the research questions. Moreover, it is assumed that interviewing more actors of each group would not have revealed more insights. Nevertheless, theoretical saturation was a rather hypothetic goal of this thesis. That the entirety of the topic under study can be captured through input of the selected actors and number of interviews can certainly not be claimed.

The transcription of the interviews was based on the general guidelines of Azevedo et al. (2017). The interviews were transcribed following the denaturalized transcription method that "prioritizes the verbal speech" (Azevedo et al., 2017, p. 161). However, elements of a naturalized transcription method (Azevedo et al., 2017), for example, stutters, pauses, and laughter were included to enrich the selective, denaturalized approach, and hence, enable more in-depth interpretation of the data. The process of subsequent data analysis is explained in the following.

[24] In comparison, structured interviews follow a standardized set of questions to achieve comparable answers across participants (Brinkmann, 2013). In semi-structured interviews, the interviewer has more possibilities to shape the conversation in terms of his or her research topic (Brinkmann, 2013).

5.3 Data Analysis

After data collection, the interview transcriptions were transferred to MAXQDA for analysis. In line with the Grounded Theory oriented approach, the transcripts were reviewed thoroughly to identify common patterns and differences across the different groups of interviewees: "grounded theory researchers are interested in *patterns* of action and interaction between and among various types of social units (i.e., 'actors')" (Strauss & Corbin, 1994, p. 278). The developed conceptual framework on SVA in the cocoa value chain in Ghana presented in Chapter 4.2 provided the lens for the data analysis. This indicates that the coding procedure followed a hybrid approach including inductive and deductive elements: the conceptual framework served as a general orientation for the coding process, but the coding was conducted uncoupled from the indicators of the framework[25] and was open for input of the respondents. *Open coding*[26] (Corbin & Strauss, 1990; Saldaña, 2009) was applied as a first step of data analysis. In this step, the interview data was split into text segments, called codes (Saldaña, 2009).[27] To code the segments, descriptive coding[28] and *In Vivo* coding[29] were used (Saldaña, 2009). Descriptive coding was used as it enables summarizing text segments into main topics (Saldaña, 2009) which provides a foundation for categorizing and helps to structure the transcripts. In Vivo coding was used because it implies "attuning yourself to participant language, perspectives, and worldviews" (Saldaña, 2009, p. 45). This coding method was intended to avoid misinterpretations that could have occurred due to the different languages of the respondents and their different cultural backgrounds. Particularly in the context of the interview conducted with smallholder farmers, In Vivo coding can also be understood as a way of giving the within GVCs marginalized group of farmers a voice instead of using terms created by the researcher.

The initial coding ensured the openness vis-à-vis the data which is perceived necessary for investigating the newly proposed concept of SVA and the only recently emerged companies. After coding individual segments of the interviews, *axial coding* (Corbin & Strauss, 1990; Saldaña, 2009) was used which implies to "constantly compare, reorganize, or 'focus' the codes into categories" (Saldaña, 2009, p. 42). Simply put, similar codes were grouped and organized in categories. The codes and categories identified through open coding and axial coding were identified for each actor. The actor-specific codes and categories are described in the results Chapter 6.

[25] The connection to the indicators is discussed at a later stage in Chapter 7.
[26] The coding procedure was based on Corbin and Strauss (1990) and Saldaña (2009). Whereas Corbin and Strauss (1990) introduce open coding, axial coding, and selective coding, Saldaña (2009) refers to initial coding, axial coding, and theoretical coding. This thesis utilizes the original terminology of Corbin and Strauss (1990).
[27] The literature is not fully clear upon what 'open coding' encompasses. Corbin and Strauss (1990) refers to comparing "events/actions/interactions (…) with others for similarities and differences" (p. 12) and thereby building categories and subcategories. Saldaña (2009) describes open coding as a process to "fracture or split the data into individually coded segments" (p. 42). This thesis orientates on the latter for a clearer distinction between initial coding and categorizing.
[28] Descriptive coding refers to summarizing "the basic topic of a passage" (Saldaña, 2009, p. 70) in a word or phrase.
[29] In Vivo coding uses the original language or quotes of interviewees as codes instead of words generated by the researcher (Saldaña, 2009).

Finally, common and for the research relevant categories were grouped and reorganized in core categories or concepts in the process of *selective coding* (Corbin & Strauss, 1990; Saldaña, 2009). Selective coding "functions like an umbrella that covers and accounts for all other codes and categories formulated thus far" (Saldaña, 2009, p. 163). The actor cross-cutting concepts identified represented the focal phenomena of the study (Corbin & Strauss, 1990). The concepts are discussed in Chapter 7.

To summarize, open coding (building individual codes), axial coding (categorizing the individual codes), and selective coding (conceptualizing the categories) were applied to analyze the interview data collected. However, it has to be acknowledged that the boundaries between these stages are not sharp but rather blurred (Glaser & Strauss, 1967). In addition, the coding procedure was not conducted in a linear way but followed an iterative process in which the three stages "intertwine continually, from the beginning of an investigation to its end" (Glaser & Strauss, 1967, p. 43).

The coding procedure considered the two actor groups – the two companies and the farmers and farmer representative – as follows: first, the interview data of KOA and Kumasi Drinks were coded separately in order to acquire separate data sets for comparing them with regard to both SVACs' goals, approaches, and impact in terms of SVA. Afterwards, the cocoa farmers' and farmer representatives' data was coded. Subsequent data analysis led to answers to SQ 4 and SQ 5 and the main research question.

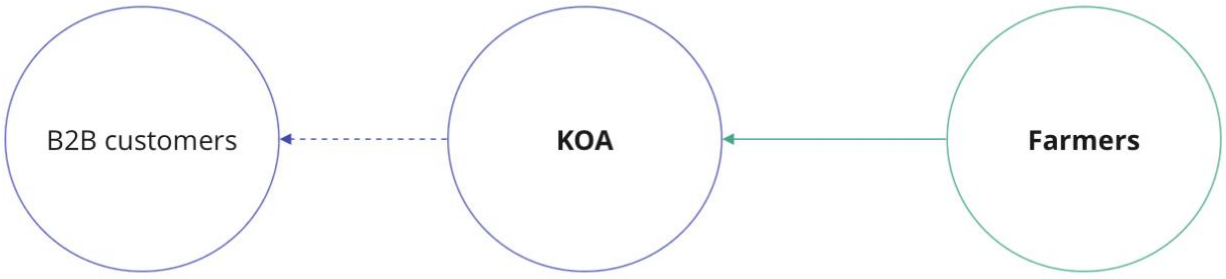
6. Results

In the first subchapter, the results of the qualitative semi-structured interviews with KOA and Kumasi Drinks are presented. More precisely, their goals, approaches, and impact in terms of SVA are identified. Afterwards, the interview results of the farmers and the NGO Solidaridad as a farmer representative are explored focusing particularly on identifying the social, economic, and environmental challenges and needs on the smallholder level of the cocoa value chain in Ghana. A tabular overview of the actor-specific categories explored in the following subchapters can be found in appendix B.[30]

6.1 KOA: Goals, Approaches, and Impact Regarding Sustainable Value Addition

KOA is a Swiss-Ghanaian start-up company founded in 2017 with the idea of contributing to sustainable growth in rural Ghana (KOA, 2022a). The company uses the previously discarded pulp from the cocoa fruit to produce juice and sell it to B2B customers (KOA, 2022a). Figure 6 depicts a simplified form of the KOA value chain. KOA developed a *decentralized system*: a Community Mobile Processing Unit (CMPU) drives from community to community as close to the cocoa farmers as possible to ensure fast processing of the cocoa beans as they start to ferment quickly otherwise (I, Pos. 17, 19). In the CMPU, the pulp is removed from the beans before the beans are returned to the farmer for further fermentation (KOA, 2022a). With this step, the farmers have an additional time investment of around three hours (I, Pos. 19). The CMPU currently generates around 1.5 tons of juice per day whilst running solely on solar energy (KOA, 2022a; I, Pos. 19). After the pulp extraction, the juice is transported to a factory in Assin Akrofuom for pasteurizing, packaging, and subsequent shipping to Europe (KOA, 2022b; I, Pos. 19). Through the value addition approaches of local processing as well as income diversification (diversifying income streams) and product diversification (more efficient use of the cocoa crop), KOA contributes to extra income streams for smallholder cocoa farmers and a reduction of 40 percent food waste whilst empowering communities (KOA, 2022a). Currently, the companies' farmer network includes 2200 farmers (I, Pos. 41).

Figure 4: Value Chain of KOA (Authors own)



[30] The names and positions of the respondents were treated anonymously. I denotes the interview with a representative of KOA, II denotes the interview with a representative of Kumasi Drinks, III denotes the interview with a representative of Solidaridad, and IV denotes the interview with two cocoa farmers.

The interview with a representative of KOA provided in-depth insights into the goals, approaches, and impact of the company in terms of SVA. Sustainability is thereby understood as responsibility which terminology is preferred over sustainability (I, Pos. 11). Hence, according to the respondent, being an actor in a value chain means to take responsibility and be transparent (I, Pos. 11). However, the interviewee has the perception that in the sustainability realm there is a lot of talking and less doing (I, Pos. 11). That is why KOA aims for radical transparency meaning, for instance, disclosing transactions to farmers (I, Pos. 11).

The representative of KOA points out social impact (I, G1) as the main driver of the company. The interviewee sees the processing of the pulp as a means for social impact which acceleration builds the core of the business (I, Pos. 15). The interviewee indirectly defines social impact by means of creating jobs locally, enabling additional income for cocoa farmers and thereby strengthening the local economy, building infrastructure, and providing new perspectives to youth in rural areas (I, Pos. 15, 30, 49). A lever is seen in keeping and creating processing jobs in Ghana instead of Europe which leads to a chain reaction: for each processing job generated, two and a half jobs are created in the local economy (I, Pos. 15). As another main goal of the company the creation of a standard is mentioned (I, G2) where the pulp is purchased from the farmers by default to provide an additional permanent income stream. Whereas the global cocoa price is dynamic and fluctuates annually, the price KOA offers for juicing the cocoa beans is fixed: farmers receive ten to twelve Cedi[31] per bucket (I, Pos. 39). In this context, the interviewee explains that the company wants to improve the role of farmers in the cocoa value chain (I, G3) which is characterized by dependence, instability, and powerlessness.

The respondent indicates that KOA started the construction of a second factory next to the one in Assin Akrofuom to reach 10,000 farmers (I, Pos. 23). KAO aims to expand their farmer network to 80,000 farmers in the next ten years (I, Pos. 23). Therefore, the construction of additional factories is planned (I, Pos. 27). In addition, a "business model 2.0" (I, Pos. 33) is envisaged to exploit additional potential (I, G4). The interviewee mentioned that the pulp is not the only way to address the various problems in the cocoa value chain in Ghana but also other products from the cocoa farm can be utilized in the future, for example, the cocoa pod itself that is discarded right now (I, Pos. 23). Moreover, blockchain technology, close and good collaboration with farmers as well as agricultural practices in the plantations, for instance, through avoiding monoculture, can be a way to address the challenges (I, Pos. 23, 25, 33). The interviewee also sees the adoption of production standards (I, G5), especially with regard to environmental standards and organic agriculture as a way forward to improve their actions in the environmental dimension.

To approach these goals and thereby add sustainable value at the farmer level, several aspects are deemed important by the interviewee: first, trust and proximity to farmers (I, A1) is considered a foundation for successful operations. Trust in the new idea of utilizing the pulp was created through literal transparency:

[31] The Ghanaian Cedi is the local currency in Ghana. According to the exchange rate in August 2022, 10 Cedi equal 1.21 Euro, 12 Cedi equal 1.45 Euro.

in the beginning, the CMPU had a transparent tarp so the farmers could see how the processing works (I, Pos. 21). Moreover, the respondent indicated that KOA is in direct contact with every farmer they work with (I, Pos. 56-59). The initial contact is set through a first training, registration of the farmers and signing of a cooperation agreement (I, Pos. 61). Daily contact is organized through a lead farmer in each community[32] that is coordinating when cocoa is ready to be harvested and processed in the CMPU (I, Pos. 61). According to the respondent, this proximity and trust led to farmers having a clear opinion about KOA which indicates the company's success (I, Pos. 41). Second, the interviewee emphasizes that employing local staff (I, A2) is a driver for the company's success. Sixty employees are located in Ghana and only around 12 are working from Switzerland (I, Pos. 43, 49). The exchange between the Ghanaian and Swiss employees is described as extremely close and on eye level (I, Pos. 9, 49). The personal exchange on site in Ghana is considered essential for keeping these close relationships (I, Pos. 49). Many of the employees in Ghana are former cocoa farmers and therefore bring valuable knowledge to the table (I, Pos. 21). Third, the representative of KOA deems important that business cases have to arise from local circumstances (I, A3) to be successful. Solutions for sustainability problems have to be created in Ghana for Ghana to increase acceptance on site and ensure economic viability which represents a "win-win situation" (I, Pos. 65) for all actors in the sector. KOA followed this idea by developing the business case in collaboration with farmers to understand how they work and ensure that it can be integrated in their traditional farming methods (I, Pos. 17). Fourth, to improve the position of cocoa farmers in the value chain through diversified income (I, A4) with fixes prices, as through pulp, can improve the role of farmers and allow them to see eye-to-eye (I, Pos. 71). Finally, to tackle the sustainability challenges more efficient land use and in this regard also more efficient use of the cocoa crop (I, A5) is considered a major driver to mitigate further deforestation and create additional income streams for farmers.

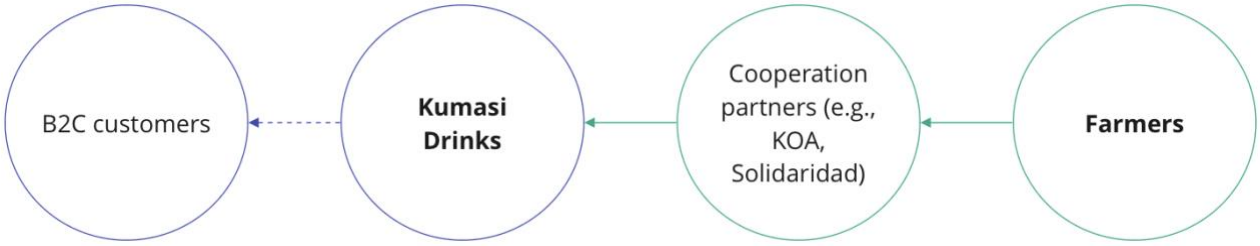
When it comes to the actual impact KOA has, the company's philosophy is described as making impact versus measuring impact (I, IP1). The respondent referred to the company still being a startup that is still setting up monitoring and impact measurements; environmental impact is not particularly focused (I, IP2). It is rather coming along with the social and economic aspects that are addressed (I, Pos. 35). But KOA wants to become more professional in the future in this regard (I, Pos. 35). Also, large-scale monitoring is in progress (I, IP3) currently; so far only small studies have been conducted mostly on request by customers (I, Pos. 37). Especially in the beginning, KOA had limited resources for monitoring which are seen as essential for measuring impact (I, IP4).

[32] The term *community* is used by the interviewee as a word to describe a village (I, Pos. 61).

6.2 Kumasi Drinks: Goals, Approaches, and Impact Regarding Sustainable Value Addition

Kumasi Drinks is a Dutch company founded in 2020. The company uses cocoa fruit juice extracted by KOA to produce soft drinks in the Netherlands for the European market (Kumasi Drinks, 2022a). Kumasi Drinks is a B2C company that aims to add economic, social, and environmental value at the farmer level through increasing farmers income per kilo of cocoa by 30 percent, encouraging gender equality, and reduce food waste in the cocoa value chain (Kumasi Drinks, 2022a). The company focuses on a direct relationship with the customer "to get the story of cocoa drink out, but also to communicate on the impact you can make if you drink cocoa juice" (II, Pos. 5). Figure 7 depicts a simplified form of the Kumasi Drinks value chain.

Figure 5: Value Chain of Kumasi Drinks (Authors own)



The interview with a representative of Kumasi Drinks provided in-depth data on the goals, approaches, and impact of the company in terms of SVA. Sustainability in the understanding of the interviewee focuses on people-trade relationships and particularly on *fairifying* meaning being transparent and honest about the value chain and associated actions taken by the company (II, Pos. 9).

The representative of Kumasi Drinks emphasizes that tackling poverty with additional income for farmers (II, G1) is the main goal of the company as it "is at the core of most of the problems in the cocoa supply chain" (II, Pos. 55). Next to fighting poverty, Kumasi Drinks focuses on women's and youth empowerment (II, G2; G3) through finding ways to include them in the cocoa value chain. Moreover, the interviewee pointed out that the company wants to improve the power imbalances within the cocoa value chain (II, G4) through a more equal distribution of money throughout the chain in a way that is "more focused on the wishes and needs of the smallholder farmers" (II, Pos. 95). In this regard, farmer should be supported to organize themselves to reach more bargaining power (II, Pos. 95). The respondent sees another goal in focusing on local value addition through local processing (II, G5) of juice but also other products, for example cocoa nibs. Lastly, the company does not only want to reach more farmers in the future – 10,000 in the next five years (II, Pos. 27) – and expand their brand to local markets in Ghana and Côte d'Ivoire (II, Pos. 91), but also inspire other businesses (II, G6) to make sustainable transitions in their commodity chains and "showing other opportunities, showing other business cases from which farmers can benefit directly" (II, Pos. 97).

To approach these goals and thereby add sustainable value at the farmer level, the representative refers to several aspects: first, the interviewee indicated that Kumasi Drinks focuses on collaboration with other

organizations (II, A1) which implement projects for them and, hence, enable them to scale up quickly as they do not have to set up own logistics. KOA is their technical partner that provides the cocoa fruit juice and thereby pays additional income to the farmers (II, Pos. 5, 17). Further collaboration does not take place but is wished for by the interviewee (II, Pos. 101). The NGO Solidaridad is supporting the company with establishing a Fair Ownership model within their supply chain (II, Pos. 77; III, Pos. 61).[33] Second, Kumasi Drinks wants to set up hundreds of local juice production facilities around West Africa (II, A2) for local markets. According to the respondent, the setup of these juice hubs is intended to bring financial benefits to communities (II, Pos. 91) and to get "knowledge on juice making out to as many farmers as we can by collaborating with cooperatives" (II, Pos. 17). Third, through setting up 'impact hubs' the company wants to provide education (II, A3) for families and youth on topics such as financial literacy as well as support people in the communities to set up own businesses. Fourth, besides interventions that are more focused on roles women can play within their value chain (II, Pos. 19), informal saving opportunities should be provided through 'Village Saving and Loan Associations'[34] (VSLAs) (II, A4). Lastly, the representative refers to the importance of employing local staff in the future (II, A5). Especially for large companies, setting up "local monitoring and evaluation impact teams" (II, Pos. 89) could contribute to a better understanding of local circumstances and context-specific ways of measuring.

When it comes to the actual impact Kumasi Drinks has, the interviewee mentions that measuring impact must become an intrinsic part of a company's policy (II, IP1) with all team members understanding and supporting it and money being provided for respective measures. The company has four monitoring and impact measurement factors in place or planned: firstly, the Living Income Household Survey (II, IP2) is a questionnaire targeted at cocoa farming households with the aim to measure the current income of farmers. The survey takes over one and a half hours and includes around 200 to 250 indicators (II, Pos. 45). The list encompasses mainly income indicators such as the size of land, number of income generation activities, and household demographics (II, Pos. 35). The first survey was conducted in 2020 and another one is planned for 2022 (II, Pos. 35). So far, it was executed among a small group of farmers (fifty farmers) because of a lack of budget (II, Pos. 45). According to the respondent, the survey also includes social indicators related to gender equality such as decision-making power, the role of the woman within the household, social capital referring to how well the woman is embedded in the community, and investment possibilities for woman, for instance "to how many sources of income does she have access" (II, Pos. 45). Secondly, the interviewee mentioned that the company uses blockchain technology (II, IP3) to monitor every transaction that is made to farmers. Thirdly, focus group discussions (II, IP4) are planned to

[33] Other collaboration partners are the cocoa trader ETG/Beyond Beans, the LBC Fedco, the Dutch government, the IDH (The Sustainable Trade Initiative), the company Rokbar, Döhler which supports with product development, and the KIT Royal Tropical Institute that supports impact measurement (Kumasi Drinks, 2022b).

[34] Village Saving and Loan Associations are "self-managed and self-capitalised savings groups that use members' savings to lend to each other" (VSL Associates, n.d., para. 4). The associations aim to improve the financial situations of people in urban slums and remote rural areas (VSL Associates, n.d.).

understand the communities in which they are active. This should give insight into topics such as income, gender equality, and alternative income generation activities (II, Pos. 45). Fourthly, the interviewee indicated the measurement of food loss – the amount of pulp saved for each cocoa pod – captures the environmental impact (II, Pos. 23). However, the respondent explains that environmental impact is not focused (II, IP7) because "poverty is at the core of most of the problems" (II, Pos. 55). For instance, poverty is seen as the core reason why farmers cannot adopt environmentally friendly agricultural practices (II, Pos. 59). Moreover, the interviewee sees a "a lot of environmental impact straight at the farmer level. But unfortunately or fortunately, that is not our direct (inaudible text segment) influence we believe" (II, Pos. 59). Overall, the representative points out the need for money when it comes to impact measurement (II, IP6) and refers to "doing the good stuff instead of measuring" (II, Pos. 53; IP7). In addition, the interviewee clarifies that the measurement efforts are in progress as the company is still small (II, Pos. 51).

6.3 Solidaridad's Perspectives on Social, Economic, and Environmental Challenges and Needs on the Farmer Level

The interview with a representative of Solidaridad[35] provided in-depth data on the social, economic, and environmental challenges and needs on the farmer level of the cocoa value chain in Ghana. The interviewee understands sustainability in two ways (III, Pos. 11): on the one hand, as the capacity or the ability to be able to produce something consistently. On the other hand, the respondent focuses on sustainability in the cocoa sector which includes environmental aspects meaning producing in balance with nature, social aspects meaning to ensure that farmers "participate in the growth, all the benefits that accrue to the sector" (III, Pos. 11), and economic aspects that refer to all value chain actors getting fair remuneration to lead decent lives.

The interviewee refers to a variety of challenges at the farmer level of the cocoa value chain which all refer to the lack of money as the focal problem (III, C1) that is the origin of other challenges. He describes the situation of farmers as a "tough life" (III, Pos. 13): many farmers cannot afford regular meals, good health care, or sending their kids to school. Due to a lack of money youth is migrating to urban areas and farmers see themselves forced to change land use (III, Pos. 13). According to the respondent, farmers earn less than a dollar per day (III, Pos. 13). Referring to a study conducted by the Living Income Community of Practice, he mentions that farmers an average cocoa farm family of five or six people need USD 312 a month to be able to live a decent life (III, Pos. 13). Moreover, the interviewee sees "a direct link between all (…) the negative social effects and poverty" (III, Pos. 29). Issue of child labor (III, C2) originate in the lack of money to pay workers as well as the lack of workforce and leads to children not being sent to school. The lack of money also forces farmers to marry "their daughters off early because they are not able to take care of

[35] In the context of this thesis, Solidaridad acts as a farmer representative as the person interviewed works closely with cocoa farmers and has valuable knowledge about challenges and needs at the farmer level.

them“ (III, Pos. 15) which negatively impacts the development of girls. He emphasizes that these challenges taking place on a large scale “you have an entire society or an entire community that is not doing well (…) the core of that is a lack of money or what you would call poverty“ (III, Pos. 15). He points out that once poverty is addressed, the social challenges farmers face will be mitigated (III, Pos. 29). In this regard, the interviewee refers to the disadvantaged situation of women (III, C3) in the cocoa value chain in Ghana. Referring to a study, he mentions that female farmers earn 23 percent less than male farmers (III, Pos. 17). Moreover, even in situations where the woman owns the farm, the husband tends to have the control over the income and expenses with the women not participating in decision-making (III, Pos. 17). Besides a connection to social challenges, the interviewee also sees the origin of environmental problems in a lack of money:

> again it goes back to money because again, for example, (…) let's say I had (…) an acre of cocoa farm and it was just me. And then as a year went on, I got married. So we're two, one income will not be enough to take care of the house. So I am forced to expand the farm. And then we have kids and then the need for money goes up. Then I continue to expand the farm and I may not do that in an optimal manner. And you would find situations where I may clear a primary or secondary forest so I can expand the farm and get in more income to be able to feed my family. (III, Pos. 19)

In this context, he refers to deforestation (III, C4) being a major environmental challenge present in the Ghanaian cocoa sector. Farmers cut down trees, either for expanding their farms for additional income or for building material (III, Pos. 25). According to the interviewee, farmers are aware that logging affects climate change which becomes tangible through irregular rain as well as a rise in the ambient temperature in the community they are living in: “they are aware of (...) that and what ought to be done to reverse the situation“ (III, Pos. 25). In addition, he mentions that next to deforestation the heavy use of chemical farming inputs causes a loss of biodiversity (III, C5) as well as pollution of groundwater and surface water. Furthermore, residues of herbicides impact the health of farmers (III, C6) who sometimes use herbs as medicine.

Another challenge that can be identified from the interview is the cocoa value chain being structured in a ‘top-down approach’ (III, C7): farmers “do not have the voice at the table where decisions are made (…) usually there's this top down approach where those of us who think that we know everything would meet in a room decide and then pass it on or dump it on the cocoa farmers“ (III, Pos. 13). Moreover, the interviewee provides his perspective on previous efforts (III, C8) such as Voluntary Sustainability Standards. He values their actions but does not see significant changes occurring which opens up questions about their effectiveness: “you ask yourself whether these things have been effective“ (III, Pos. 39).

Based on the challenges, the representative of Solidaridad highlights what is needed in his opinion to tackle the problems: first and foremost, he points out the need for an income that enables farmers to lead a decent life (III, N1) including being able “afford a balanced meal, pay for health, education, and also have something

small on the side in case of an emergency“ (III, Pos. 13). The provision of services to support farmers on their cocoa farms is one lever he sees to not only mitigate child labor and provide job opportunities for youth but also to increase household income (III, Pos. 29). Second, he stresses the need for a “fundamental shift in strategy” (III, Pos. 29) which includes *Fair Ownership* models (III, N2). The interviewee refers to ‘Fair Ownership’ as models “where farmers are not only suppliers of cocoa beans, but farmers are part owners of maybe a Licensed Buying Company or a grinding company or a chocolate company or a retail chain in Europe (…) so they can also participate in the margins along the value chain“ (III, Pos. 39). Third, he pleads for participation and co-creation of solutions together with farmers (III, N3). This includes “creating the civic space for farmers to participate in decision making“ (III, Pos. 47) using the “good structures on the ground” (III, Pos. 37). Fourth, the respondent sees a need for increasing income and decision-making power for women (III, N4) so they are “brought at par with their male counterparts” (III, Pos. 17). Fifth, climate change adaptation should be promoted (III, N5) which includes intensifying existing farmlands instead of exploiting new areas, agroforestry methods, farmer education about adaptation practices, insurances to compensate for losses caused by climate change as well as early warning systems with weather information and how farmers can cope with irregular rain. Lastly, he sees the government being responsible to adjust the cocoa price according to inflation (III, N6): “if the government says farmers get USD 2,000 per ton, farmers should get USD 2,000 per ton“ (III, Pos. 47).

6.4 Farmer Perspectives on Social, Economic, and Environmental Challenges and Needs on the Farmer Level

The interview with two smallholders that are supplying KOA and, hence, also Kumasi Drinks provided in-depth data on the social, economic, and environmental challenges and needs on the farmer level of the cocoa value chain in Ghana. Both farmers only grow cocoa (IV, Pos. 10) each on an area between six and eight hectares (IV, Pos. 16). Whereas one farmer understands sustainability as farmers coming together in a group to get information (IV, Pos. 20), the other farmer understands the concept as ensuring long-lasting cocoa production (IV, Pos. 20).

The farmers refer elaborate on various challenges they face in the cocoa value chain in Ghana. The most pressing problem, in their opinion, is the lack of money (IV, C1): “at the end of the day, most cocoa farmers don't get anything from their produce“ (IV, Pos. 22) because their income cannot cover the costs for farming inputs such as fertilizers and pesticides as well as what is needed to care for their family including school fees, for example. They explain that KOA thereby has a positive impact as “now they are able to pay their labors“ (IV, Pos. 78). However, they imply that with the additional income of KOA, they can only cover their costs (IV, Pos. 76). Furthermore, the interviewees explain that they do not receive support (IV, C2) from the government or European companies. This support is related to farming inputs as well as financial resources, for instance the cocoa price that did not change over the last four years (IV, Pos. 22, 24, 26). Regarding

climate change, both farmers indicate that it “has already affected their cocoa farming. There is change in the time of harvest, the quantity or the yield“ (IV, Pos. 44; C3). Even during the raining season, the leaves of the cocoa tree are smaller than usual and are falling off which leads them to “not getting anything at this season” (IV, Pos. 46). They see unregulated deforestation and illegal mining as the cause of climate change (IV, Pos. 50, 52): individuals “are cutting down a lot of trees in the forest, which is affecting the cocoa trees and also the environment“ (IV, Pos. 50). When looking at the situation of women in cocoa farming, the interviewees indicate that “women don't get any support (…) with their farming” (IV, Pos. 28; C4) and do not “get any money out of their farming” (IV, Pos. 28). The farmers see the cause for that in women not being able to perform the tasks on the farm which include weeding, pruning, and spraying of pesticides (IV, Pos. 12): “it mainly requires a man to perform those tasks“ (IV, Pos. 30).

The farmers emphasize several aspects that they consider necessary to meet these challenges: Firstly, they mention the need for provision of farming inputs (IV, N1) which are needed for high yields. The government should go back to supporting farmers with mass spraying and supply of fertilizers as they used to (IV, Pos. 26). The same applies to KOA: “KOA started by giving (…) two bottles of pesticides (…) it is their wish (…) it would continue (…) they wish maybe KOA will support them with spray machines or anything” (IV, Pos. 74) so they can have higher yields “with that, they would be able to get more juice“ (IV, Pos. 78). Secondly, the interviewees highlight that “they expect at least the value of their cocoa should go a little up“ (IV, Pos. 24; N2) which would allow them to buy agricultural inputs and also save some money (IV, Pos. 26). Thirdly, the farmers point out the need for higher revenues for their cocoa (IV, N2). With regard to KOA, they indicate that currently, KOA pays 10 Cedis per five kilo bucket of cocoa beans (IV, Pos. 93). However, they would need 15 to 20 Cedis to gain profits from their activities (IV, 86). Fourthly, the government should regulate logging (IV, N4) in form of “a policy that no cutting down of trees [is allowed] unless you get a permission“ (IV, Pos. 68). Finally, to improve the situation of women in cocoa farming, the respondents see a need of financial support and provision of labor for female farmers (IV, N5).

7. Discussion

In the following discussion, the results are conceptualized into actor cross-cutting concepts and discussed in light of the conceptual framework to answer the main research question posed in the introduction: to what extent do SVACs add sustainable value at the smallholder level of the Ghanaian cocoa value chain? In addition, the discussion provides valuable insights to answer sub questions four and five: which factors strengthen or weaken a SVACs' success in adding sustainable value at the farmer level? And how can SVACs further promote and improve SVA at the smallholder level of the cocoa value chain in Ghana in the future? After discussing the concepts, the answers to those research questions are synthesized in the last subchapter. A tabular overview of the actor cross-cutting concepts elaborated on in the following subchapters can be found in appendix C.

7.1 Economic Value Addition as an Enabler

As one core category or concept, economic value addition can be identified as an enabler of social and environmental value addition. The findings show that both KOA and Kumasi Drinks[36] put a major focus on the economic dimension of SVA. With their business cases, both companies aim to provide an additional income stream for smallholder: KOA integrates the aim for additional farmer income in their main goal of creating social impact (I, G1). To do so, the company uses income diversification (I, A4) – adding another income stream for farmers through purchasing the pulp – with the aim of farmers having more stability when it comes to income and independence from the dynamic cocoa price. Kumasi Drinks sees the addition of income for farmers to tackle poverty as their main goal (II, G1). However, this is done in an indirect manner through their technical partner KOA (II, A1). Fighting poverty through additional income is seen as a lever for tackling the social and environmental challenges present at the farmer level of the cocoa value chain in Ghana. Moreover, both companies aim for an improvement of bargaining and negotiation power of smallholders within the cocoa value chain (I, G3; II, G4). KOA focuses on the previously mentioned stability and independence as well as farmers coming to eye level but points out at the same time the importance of business cases having to arise from local circumstances (I, A3) with the participation of farmers, as they have set up the company. Kumasi Drinks emphasizes the fairer distribution of value along the chain and supporting farmers to organize themselves to acquire negotiation power.

This aligns widely with the challenges and needs of farmers. A lack of money is mentioned as farmer's core problem (III, C1; IV, C1) that acts as an enabler for tackling social and environmental challenges such as child labor and deforestation originating in farm expansion due to inefficient farming practices. However, while the farmers perceive KOA having a positive impact on their lives as they can pay for their workers, they

[36] For simplicity, from this point onwards the representatives interviewed are referred to their companies more generally.

indicate that the additional income they obtain from KOA is not sufficient to live a decent life (IV, N3). Whether this is an issue that farmers discuss with KOA cannot be answered at this point. In addition, the Ghanaian cocoa value chains' structure is referred to as *top down* (III, C7) where farmers do not have decision-making power. Co-creating solutions together with farmers (III, N3) and establishing civic spaces for farmers to participate in decision-making is seen as a lever to improve the position of farmers within the chain. Whereas KOA ties into this need with farmers participating in the business case formation of the company, Kumasi Drinks stays rather abstract when it comes to actually improving decision-making power of farmers.

When looking at the indicators of the conceptual framework presented in Chapter 4.2, it becomes clear that the indicator *Payment of a Living Income* does not directly apply for the context of the two selected SVACs as they are rather contributing to a Living Income farmers can acquire through their cocoa farming. The two companies, more precisely KOA (Kumasi Drinks only indirectly), are adding additional income on top of the income smallholders receive for their cocoa beans. Farmers have the same farming inputs and only an extra time effort of around three hours for juice extraction that generates additional income. In that sense they are contributing to farmers getting fair remuneration that enables them to lead a decent life. When it comes to the indicator *Encourage income diversification*, both companies meet that indicator as diversification of income is one of their main approaches to tackle the sustainability challenges at the farmer level. Finally, both companies emphasize the indicator *Improve (bargaining) power of smallholders* by stating their goal of farmers becoming more independent from buyers and getting supported in acquiring negotiation power.

The emphasis on economic value addition is in line with the phenomenon identified in previous literature. Scholars (see Hart & Milstein, 2003; Sadovska et al., 2020; Yang et al., 2017) mainly focus on the traditional economic side of value addition that is associated with higher revenues for GVC actors. Moreover, as Fountain (2020) states, companies paying a fair Farm Gate Price and guaranteeing a Living Income for farmers is seen as the biggest driver for sustainable cocoa farming. This is reinforced by the data collected and analyzed within this study. The same applies for the lack of bargaining power of farmers, which is stated by the majority of respondents. As Fold (2002) points out, the cocoa sector is largely buyer-driven with farmers being price-takers. These power asymmetries operate to the detriment of smallholders.

7.2 The Neglect of Environmental Value Addition

Another concept identified in the results shows that adding environment value is not particularly emphasized by either company. For KOA, environmental value addition rather comes along with social value they want to add (I, IP2). KOA wants to encourage using land and the cocoa crop itself more efficiently (I, A5) rather than logging for expansion of cocoa farms. This can be associated with supporting increased productivity. Measuring the actual environmental impact the company has, is targeted in the future. Kumasi Drinks do see poverty at the core of the problems in the cocoa value chain (II, IP5). From the interview data,

it is implied that if farmers would have sufficient financial means they would apply environmentally friendly farming practices. Hence, environmental value addition is not particularly focused. Despite they recognize a lot of environmental impact being possible at the farmer level, they do not see that being their direct influence.

This neglect of the environmental dimension of SVA by the SVACs is at odds with the challenges and needs at the farmer level. On the one side, cocoa farmers can already feel the consequences of climate change (IV, C3) in form of unusual variety in the harvesting time, quantity, and yield as well as small leave sizes. Moreover, rain comes irregularly and the ambient temperature in the communities is rising (III, C4). Farmers are aware what is needed to tackle climate change: the government should reinvent regulation for logging (IV, N4). In addition, climate change adaptation measures should be promoted (III, N5) that reach from increased productivity, agroforestry and education to insurances and early warning systems. On the other side, cocoa farming causes negative environmental impacts. Heavy use of fertilizers and pesticides, among others, cause loss of biodiversity (III, C5) and degradation of waters. This shows that climate change and environmental degradation impact farmer's livelihoods already and will continue to do so. That additional income automatically leads to environmentally friendly practices, as suggested by Kumasi Drinks, cannot be assumed per se.

The needs at the farmer level align with the conceptual framework. Increased productivity and regulatory measures to combat deforestation, and climate adaptation and mitigation measures such as agroforestry are seen as crucial in this regard. It becomes clear that both companies do not sufficiently meet the environmental indicators suggested by the framework. As implied by both SVACs, environmental value is rather added automatically alongside social and especially economic indicators. However, the farmers and farmer representative pointed out that a thriving environment is fundamental for sustaining cocoa production long-term which should be also in the interest of the companies. This is underlined by the sustainability understanding of one farmer that refers to ensuring long-lasting cocoa production.

The need for actively considering environmental value addition is also supported by the literature: about 90 percent of native forests in West Africa are cleared, partly for the exploration of new cocoa production areas due to environmental degradation in existing plots (Fountain, 2018; Nitidae, 2021; Takyi et al., 2019) and cocoa production is highly vulnerable to climate change (Boeckx et al., 2020). Therefore, to sustain cocoa production also in the future, SVACs should devote more efforts to add environmental value and support and collaborate with farmers to develop appropriate measures.

7.3 The Disadvantaged Role of Women in Cocoa Farming

As another core concept, the perceived disadvantaged role of women in cocoa farming stands out from the findings. Besides tackling poverty and empowering youth, Kumasi Drinks focuses on women's empowerment

(II, G2). The interviewee indicates that the company is working on an intervention that is more focused on roles women can play within their value chain. Moreover, women should be provided with access to VSLAs (II, A4) to reach more independence and power also within the household. The extensive (prospective) measuring efforts on gender equality (II, IP2), including decision-making power, women's roles within households, and investment possibilities for women, among other yield potential for further measures to improve the situation of women in cocoa value chain in Ghana. The interviewee of KOA does not specifically refer to the situation of women in cocoa farming in Ghana within their goals, approaches, and impact.

On the farmer side, the role of women in cocoa farming is strongly emphasized as a challenge, with corresponding needs. Female farmers are confronted with less income and decision-making power when it comes to finances within the household compared to male farmers (III, C3). The interviewees indicate that women get even less support in farming than their male counterparts (IV, C4) and make less money. To improve the situation of women in cocoa farming, financial support as well as support in terms of labor input are perceived crucial (IV, N5).

Looking at the conceptual framework, the indicator of *Gender equality* depicts the role of women. As the challenges presented in Chapter 2.4 describe, cocoa farming is dominated by males. Women do often not receive remuneration for their labor inputs and if they do, it is less than their male farmers. The prospective efforts of Kumasi Drinks to support women in participating in VSLAs align with adding social value by providing women access to finance. By rethinking roles women are playing and can play within the value chain, the company yields the potential to support women even more. Kumasi Drinks could even further develop their measures especially with regard to access to training specifically for female farmers. The results of their (planned) impact measurement could provide further guidance on what kind of training needs women have. In addition, a special focus could lie on efforts to close the gender pay gap.

7.4 Collaboration and Partnership as a Success Factor for SVA

The findings show that the concept of collaboration at all levels of the Ghanaian cocoa value chain can be a factor for successful SVA at the farmer level. KOA emphasizes the proximity to farmers (I, A1), being in direct contact with every farmer, is an essential building block for their success. The same applies for the collaboration between the Swiss and the Ghanaian employees (I, A2); it is described as very close and on eye level. Personal exchange is considered essential for keeping this close collaboration. Moreover, the co-creation of their business case together with farmers is seen as an important success factor for the viability of the company. This is also reflected in the interviewee pointing out the need for solutions developed in Ghana for Ghana; solutions to tackle the sustainability challenges have to arise from local circumstances (I, A3). Kumasi Drinks puts a strong focus on collaborating with other organizations (II, A1) for impact making,

measurement, and product development. They do not work directly with farmers, but through intermediary organizations such as Solidaridad that implement projects on site.

Collaboration within the value chain is also highlighted as a need on the farmer level. Co-creating solutions for combating the sustainability challenges together with farmers (III, N3) as well as inventing Fair Ownership models (III, N2) that bring value chain actors on eye level through co-ownership and a redistribution of value within the chain are seen as important factors that can improve the situation of farmers. Collaboration with farmers on eye level and thereby improving their decision-making power is also seen as a means to challenge the top-down approach currently in place (III, C7). Kumasi Drinks is collaborating with Solidaridad on the latter.

Collaboration and partnership at all levels of the cocoa value chain is an important indicator for social value addition in the conceptual framework. Both companies align with that indicator in different ways: KOA shows a strong emphasis on proximity and collaboration with farmers and between Swiss and Ghanaian employees whereas Kumasi Drinks focuses on collaboration with other organizations to implement SVA at the farmer level. However, the collaboration between the two companies is limited to Kumasi Drinks buying the cocoa fruit juice extracted by KOA. In the literature, collaboration is not specifically mentioned in the context of value addition. Nevertheless, Womach et al. (2005) points out farmer ownership of processing facilities as an example for value addition. This reinforces the mentioned need for Fair Ownership models. Coupled with the emphasis farmers place on such models, they could take a more dominant role in the proposed framework.

7.5 Answering the Research Questions

Based on the concepts discussed in the last section, this subchapter explicitly elaborates on the answer to the main research question posed at the beginning of the study as well as SQ 4 and SQ 5. Whereas SQ 1 is already answered in Chapter 2.3, the answers to SQ 2 and SQ 3 are presented in Chapter 6.[37]

First, the concepts discussed provided valuable insights to answer the main research question: *to what extent do SVACs add sustainable value at the smallholder level of the Ghanaian cocoa value chain?* The findings yield that the SVACs examined in this study focus heavily on adding economic value by creating diversified income through an additional income stream from juice production. While KOA is directly involved in creating this additional revenue stream, Kumasi Drinks contributes indirectly by purchasing juice from KOA. This emphasis on the economic dimension is in line with the literature that primarily focuses the traditional economic understanding of value addition associated with higher revenues for different GVC actors. Moreover, both SVACs aim to improve the bargaining position of smallholder farmers by providing them with a stable income and greater independence from the dynamic cocoa price, or by enabling farmers

[37] In the conclusion, the main research question as well as the sub questions are answered again in a summarized form.

to organize themselves. Furthermore, Kumasi Drinks emphasizes the creation of social added value through the empowerment of women and youth. However, efforts tend to be prospective and not yet implemented. KOA shows a strong focus on social impact which indirectly refers to economic value addition such as additional farmer income and thereby strengthening the local economy, creating jobs locally, and building infrastructure. Additionally, KOA wants to provide new perspectives to youth in rural areas. However, concrete measures that are in place are lacking for both SVACs. Looking at environmental value added at the farmer, both companies lack precise measures and claim that this dimension is not primarily focused but rather comes along with the economic and social impact.

Summarizing, this means that while the SVACs studied do add sustainable value at the smallholder level, they focus primarily on the economic dimension and neglect the social and especially the environmental value added which indicates room for improvement to account for the diverse sustainability challenges present at the farmer level and their respective needs. Partly, this can be explained by the fact that both SVACs are still small and have only recently emerged with their new approaches in the cocoa sector. This may complicate the implementation of precise measures and extensive monitoring, as evidenced by the narrative of making impact rather than measuring impact mentioned by both companies.

Second, the findings also provide valuable evidence for answering SQ 4: *which factors strengthen or weaken a SVACs' success in adding sustainable value at the farmer level?* A major factor that strengthens the ability of SVACs to add sustainable value can be found in the collaboration with farmers and other organizations to benefit from each other's knowledge, competencies, and different perspectives. Moreover, co-created solutions and business cases for tackling the sustainability challenges that arise from local circumstances can be an important lever for SVACs to add sustainable value. In addition, the implementation of Fair Ownership models yields the potential for adding not only economic value through additional income and improvement of bargaining power for farmers, but also social and environmental value addition by encouraging gender equality through strengthening the participation of women in those models as well as empowering whole communities and setting up local infrastructure using the structures and resources existing on the ground. Factors that weaken a SVACs' success in SVA can be identified as a lack of knowledge about local circumstances and challenges at the farmer level in all three dimensions as well as not focusing impact measurement and monitoring which results in not examining to what extent SVA efforts are effective. Related to this, a lack of funding for implementation of SVA and internal consensus on the measures and their monitoring can be associated with weakening SVA efforts.

Third, these implications tie into SQ 5*: how can SVACs further improve SVA at the smallholder level of the cocoa value chain in Ghana in the future?* Improvements for the future can be found in strengthening horizontal and vertical collaboration, especially with farmers as they know the challenges and needs at farmer level best, so they should be involved in tailoring custom-fit solutions. Also, Fair Ownership models should be considered where farmers can participate in margins being made further downstream the value

chain. Based on the findings, greater attention should be paid to concrete measures for social value addition, for instance elimination of child labor and access to trainings. The same applies for environmental value addition as smallholder face the problems of climate change and the impacts of environmental degradation that affect their farming. Promoting precision agriculture, CSA practices, and agroforestry methods should be considered in this context. A thriving environment is crucial to sustain cocoa production in the future.

8. Reflection & Limitations

The following section reflects on the research process of this thesis and identifies associated limitations. In the first subchapter, it is reflected upon the development of the new conceptual framework for SVA at the farmer level of the cocoa value chain in Ghana. In the second subchapter, it is reflected upon the overall research design and methods.

8.1 Reflection on the Development of a New Conceptual Framework for Sustainable Value Addition

This study proposes a new framework that operationalizes SVA at the farmer level of the cocoa value chain in Ghana. The strength of the proposed framework is seen in the context specific nature: besides existing frameworks focusing on sustainable value from a corporate perspective, the indicators of the framework originate from the challenges present at the farmer level of the cocoa value chain in Ghana which were identified in the literature. To get a grasp of the concept of SVA represented a challenge in the beginning, as existing research was strongly dominated by the traditional economic understanding of value addition. Moreover, there are several limitations coming along with the framework: firstly, the clear distinction in social, economic, and environmental elements of value addition has to be seen rather theoretical as the three elements intersect in many ways. Especially the social and economic dimensions overlap, for example, in the indicators *Promotion of gender equality* which includes, inter alia, fair income for women's labor inputs, and *Payment of a Living Income* which refers to fair remuneration for all farmers. The overlap is also evident in the results, which suggest that the three elements are intertwined, but particular importance is attributed to economic value addition that enables social and environmental value addition. Secondly, it can certainly not be claimed that all relevant indicators of SVA have been captured. Further research would be needed to assess if the set of indicators have to be expanded or individual indicators have to be substituted. Thirdly, the specific focus on Ghana offers in-depth and tailor-made application possibilities for the framework on other SVACs or initiatives that aim to add sustainable value. However, as the interviews indicated the challenges and needs on the farmer level in Ghana may also be a representation of the cocoa sector in West Africa in general (III, Pos. 45). This study focused on Ghana as the processing industry and, hence, value addition possibilities in this regard are less established compared to Côte d'Ivoire (Grumiller, 2018, as cited in Grumiller et al., 2018) which indicates a bigger need for investigation how to sustainably improve value addition at the farmer level through local processing. Nevertheless, further research is invited to examine to what extent the proposed framework is applicable for the cocoa sector in Côte d'Ivoire, for instance.

Despite those limitations, the framework offers a relevant contribution and extension to existing research focusing on either the traditional economic concept of value addition, or on sustainable value from a business perspective in the Global North.

8.2 Reflection on Research Design & Methods

In the following, it is reflected upon the comparative case study approach this thesis adopts before challenges and limitations are explored that occurred during data collection and analysis.

8.2.1 Comparative Case Study Approach

The research endeavor followed a comparative case study approach. Case study approaches come along with several pitfalls and limitations. One of the biggest concerns is the lack of rigor in conducting case studies which is associated with bias and neglecting systematic procedures (Yin, 2003). This was tried to be prevented in this thesis by putting explicit emphasis on the methodology. Another limitation is that case study outcomes are difficult to generalize as they only look at a single case or a small number of cases (Yin, 2003). By choosing two cases to compare the study offers valuable in-depth insights into the two SVACs. However, one must be aware that these findings may not be readily transferable and generalizable to other cases (Creswell, 2013; Yin, 2003). Consequently, the proposed thesis cannot depict the whole research field; the qualitative approach only provides an entry point for further scientific investigation. Further research should examine more cases to see to what extent the findings of this thesis can be transferred to other cases. A third concern about case studies is the high amount of time that is spent on data collection and the amount of results the researcher has to analyze (Yin, 2003). Although data collection and associated results were time consuming, the researcher tried to orientate on Yin (2003) stating that case studies can also be of high quality without extensive field work, participant observations, and long time scales (Yin, 2003). Therefore, the case studies were not observed over long time scales and field work was substituted with online interviews. Nevertheless, the comparative case study approach as taken in this thesis can be seen as an adequate method as it provided profound insights and results for the research subject.

8.2.2 Data Collection

Next to desktop research, qualitative semi-structured interviews build the core of the methodological approach of this thesis. During this process, several challenges and limitations emerged, particularly related to the interviews with cocoa farmers: first, finding farmers for interviews was a challenge that was anticipated, especially without being on the ground in Ghana. After unsuccessfully contacting several cooperatives and NGOs, one interview with two farmers could be arranged with the support of KOA. The second challenge is related to that. Since KOA arranged the interviews, its bias in selecting the two farmers cannot be ruled out. In addition, the interview was translated by a KOA employee who may be biased in the translation. However, the exact content of the interview and whether KOA would be addressed in the interview were not communicated beforehand to avoid potential bias. Third, the interviews were conducted with two male farmers. Especially regarding the situation and role of women in cocoa farming, a more diverse set of farmers could have led to even more gender specific insights and a fair representation of both

perspectives, the male farmers as the majority and the female farmers as a marginalized minority in cocoa farming. Fourth, the setup of the interview guide for the farmers was challenging. Particular attention had to be paid to sensitivity, as the questions were closely related to the life situation and challenges they face. Therefore, an open and flexible approach to the interview and related questions had to be adopted. Fifth, interviewing more employees from the two SVACs could have led to even more diverse answers and perspectives. It may be that the questions did not encourage respondents to talk about certain aspects which could have led to misinterpretations in the data analysis. This could have been prevented by interviewing more employees. Finally, as mentioned in Chapter 5.2.2 the state of theoretical saturation was a rather hypothetic goal in this research. It cannot be claimed that the entirety of the topic under study is depicted through the number of interviews with the selected actors. Conducting more interviews could have led to getting closer to the state of theoretical saturation. Nevertheless, the data collection yielded a variety of relevant information that could be processed into valuable results.

8.2.3 Data Analysis

The data analysis oriented on Grounded Theory comes along with challenges and limitations: first, open coding is a complex process which can cause researchers to get distracted from finding relevant ideas in the extensive amount of data (El Hussein et al., 2014). This also presented a challenge in this study. However, it could be mitigated by the conceptual framework and the research questions serving as an overall guidance. It could have been mitigated even more by applying a deductive approach (Moses & Knutsen, 2019) to coding that reasons back from the conceptual framework. However, this could have impacted the openness vis-á-vis the data and, therefore, led to relevant information on the new concept of SVA and the respective companies not being captured. Second, Grounded Theory approaches can be criticized for their limited generalizability (El Hussein et al., 2014). As stated before, this has to be acknowledged as a limitation of this thesis as it rather provided in-depth insights into the two selected cases. It could be valuable contribution of further research to study more cases to see to what extent the findings of this thesis overlap with other cases. Lastly, identifying and allocating the interview data to the indicators of the conceptual framework posed a challenge due to different wording and interview guide questions being stated very openly. Asking about specific indicators could have been one possibility to simplify the identification. At the same time, this could have limited respondents in their answers, providing less in-depth data and leading to socially desirable responses. Despite these limitations, the data analysis offered relevant outcomes for answering the research questions. Other scholars are explicitly encouraged to address these limitations in further research.

9. Conclusion

Value addition is a traditional economic concept that has been studied thoroughly in the context of agricultural GVCs. However, existing research does not sufficiently provide perspectives that expand the traditional concept of value addition in a way that accounts for the complex sustainability challenges present in GVCs, and more particularly at the farmer level of the cocoa value chain in Ghana. To fill this research gap, this thesis followed emerging scientific voices (Hart & Milstein, 2003; Sadovska et al., 2020; Yang et al., 2017) that challenge the merely economic understanding and proposed the concept of SVA as well as an own conceptual framework that operationalizes SVA at the farmer level of the Ghanaian cocoa value chain. Following a comparative case study approach, two SVACs were selected that aim to add sustainable value at the smallholder stage. The following research question and sub-questions were answered throughout this thesis by means of desktop research and qualitative semi-structured interviews.

To set the context for the research, the *structure of agricultural GVCs and the cocoa value chain in Ghana* in particular were examined in Chapter 2 (SQ 1). This highlighted the strong role of the government in the cocoa sector in Ghana and the state of the local processing industry. The interviews provided insight into *how the two selected SVACs aim to add sustainable value at the smallholder level by analyzing and comparing their goals, approaches, and impact regarding SVA* (SQ 2). While KOA emphasizes social impact as their main goal, Kumasi Drinks highlights the tackling of poverty. Both associate their main goals with additional farmer income. While KOA approaches their goals mainly by means of proximity to farmers and employing local staff, Kumasi Drinks focuses on collaboration with other organizations that implement their projects, amongst others. When it comes to the SVACs' impact, both are still setting up large scale monitoring, while Kumasi Drinks already established concrete measures. Environmental impact is not focused by both SVACs. The interviews also offered insight into the *social, economic, and environmental challenges and needs at the farmer level of the Ghanaian cocoa value chain* (SQ 3). The main challenges are found to be the lack of money, lack of support, women being disadvantaged, deforestation, and climate change consequences. The resulting needs are associated with adequate income, especially for women, provision of farming inputs, and an increase in the cocoa price, amongst other things. The first three sub-questions were indicative in nature and contributed to answering the main research question as well as SQ 4 and SQ 5.

By analyzing, comparing, and discussing the goals, approaches, and impact of the two SVACs in light of the conceptual framework and juxtaposing them with sustainability challenges and needs at the farmer level, *the extent to which SVACs add sustainable value at the smallholder level of the Ghanaian cocoa value chain could be explored* (RQ). The study finds in this regard that both SVACs see economic value addition as an enabler of social and environmental value added which aligns with the needs expressed from the farmer side. At the same time, this focus leads to a neglect of the social and especially the environmental dimension which both companies show. However, as farmers indicated, the effects of climate change and

environmental degradation are impacting their farming and livelihoods. A significant difference between the SVACs can be found in the consideration of the situation of women in cocoa farming. While Kumasi Drinks puts strong emphasis on improving livelihoods of women through access to finance, KOA does not specifically mention the role of women. Finally, both SVACs highlight the importance of collaboration but in different terms. While KOA deems proximity and close collaboration with farmers important, Kumasi Drinks relies on collaboration with organizations. The importance of collaboration is in line with the needs stated by the farmer side.

The examination of *which factors strengthen or weaken an SVACs' success in adding sustainable value at the farmer level* (SQ 4) showed that horizontal and vertical collaboration along the value chain, including co-creation of solutions, participatory design of business cases, and Fair Ownership models, is a major lever for strengthening SVA measures. They may be even more effective when arising from local circumstances. Factors that weaken SVA at the farmer level were found to be a lack of knowledge about local conditions and challenges and lack of funding. Moreover, a lack of internal consensus on SVA measures as well as neglecting impact measurement may hamper an SVACs' success in adding sustainable value.

This ties into the question of *how SVACs can further improve SVA at the farmer level of the cocoa value chain in Ghana* (SQ 5). The answer is summarized in the following recommendations: first, horizontal and vertical collaboration may be further expanded to leverage SVA efforts. This may include co-creating solutions with farmers for developing custom-fit solutions or the implementation of Fair Ownership models. Additionally, intensifying the collaboration between the two SVACs might be beneficial for both. KOA could benefit from the extensive (prospective) monitoring activities and partnerships from Kumasi Drinks whereas Kumasi Drinks can acquire valuable insights from the proximity KOA has to farmers. In that way both SVACs could increase their impact and join forces for further SVA measures. Second, both SVACs are recommended to upgrade their measures for adding social value with regards to elimination of child labor, precise measures to support women, and access to trainings. Third, greater attention could be paid to environmental value addition as a thriving environment is crucial for sustaining cocoa production and, hence, the livelihoods of cocoa farmers and the company's business cases in the long term.

Besides the limitations and entry points for further scientific investigation outlined in Chapter 8, further research could explore how policies, such as mandatory legislation, can improve SVA at the farmer level. Moreover, as this thesis proposed the new concept of SVA and a corresponding conceptual framework, scholars are explicitly called upon to further explore and test the contribution of this research. As not all indicators of the framework were thoroughly covered in the discussion due to interviewees not addressing them, additional research on these indicators, such as CSA, could be valuable to further examine the framework and its potential applications in other cases.

To conclude, this thesis contributes to research on sustainability science, policy and society in the following ways: on the one hand, it addresses complex sustainability challenges in the context of the cocoa value

chain in Ghana. From there, this study encourages expanding the one-dimensional economic understanding of value addition to a holistic intersectional system that considers both social aspects and planetary boundaries to sustain cocoa production in the long term. On the other hand, policy plays a key role in the sustainability transformation of cocoa value chains. Although this work focuses on companies, it supports the call for companies and governments to adopt effective policies to make sustainable cocoa an industry-wide norm.

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Appendix

Appendix A: Interview Guides

Table A1: Interview Guide SVACs

- Welcome & Introduction to the interview procedure
- Data protection clarified through consent form
- Questions in advance?

Topic	Question	Supplementary question	Supplementary question
Welcome			
Introduction	Can you please introduce yourself briefly?		
	What is your role/ what are your responsibilities at the company?		
	What does sustainability mean to you personally?		
Goals	What does the company?		
	How was the company founded?	What are the main pillars of the company?	
	What are the company's overall goals?		
	Which economic, social, and environmental benefits does the company want to create in Ghana?	Can you elaborate on the social/economic/environmental value?	
	What does the company do to add economic benefits at the farmer level?	What methods or strategies does the company use?	

	What does the company do to add social benefits at the farmer level?	What methods or strategies does the company use?	
	What does the company do to add environmental benefits at the farmer level?	What methods or strategies does the company use?	
Impact	What economic impact does the company have?	How is the economic impact measured?	Is the impact measurement guided by indicators? If so, which ones?
	What social impact does the company have?	How is the social impact measured?	Is the impact measurement guided by indicators? If so, which ones?
	What environmental impact does the company have?	How is the environmental impact measured?	Is the impact measurement guided by indicators? If so, which ones?
	What works well in these three dimensions? What works not so well?	How is the company trying to address the challenges?	
North-South Collaboration	How would you describe the cooperation between the Netherlands/Switzerland and Ghana (North-South)?	What works well? What works not so well?	
	Is the company in direct contact with smallholders? If yes, how is the contact organized?	What works well? What works not so well?	
Closing	How can companies or initiatives further improve social, economic, and environmental value addition in producing countries (by Ghanaian farmers) in the future?	What is needed for that?	
	What are the company's goals for the future?		

	What changes would you like to see in the cocoa value chain in general?		
	Further questions?		

Table A2: Interview Guide Farmer Representative

- Welcome & Introduction to the interview procedure
- Data protection clarified through consent form
- Questions in advance?

Topic	Question	Supplementary question	Supplementary question
Introduction	Can you please introduce yourself briefly?		
	What is your role / are your responsibilities at the NGO?		
	What are the NGO's goals?	What are the social, economic, environmental goals?	
	What does sustainability mean to you personally?		
Situation of farmers in the cocoa value chain in Ghana	How would you describe the overall situation of cocoa farmers in Ghana?		
	What challenges do cocoa farmers in Ghana face?	Which economic/social/environmental challenges do cocoa farmers in Ghana face?	Can you elaborate on the challenges?
	What is needed, in your opinion, to overcome these challenges?	What do farmers need in particular?	

Efforts by Companies in the Global North	How would you describe the collaboration between the Netherlands and Ghana?		
	What do you think about the efforts of companies in the Global North to improve economic/social/environmental situation of farmers in Ghana?		
	To what extend do these companies/initiatives meet the needs of farmers, in your opinion?	What kind of impact do these companies/initiatives have in your opinion?	
Closing	How can companies or initiatives further promote and improve social, economic, and environmental value addition at the farmer level in the future?	What is needed for that?	
	What changes would you like to see in the cocoa value chain in general?		
	Further questions?		

Table A3: Interview Guide Farmers

- Welcome & Introduction to the interview procedure
- Data protection clarified through consent form
- Questions in advance?

Topic	Question	Supplementary question	Supplementary question
Introduction	Can you please introduce yourself briefly?	Where is your farm located?	
	What kind of crops do you grow (only cocoa)?		
	How does your everyday life as a cocoa farmer look like?	What kind of activities do you do on the farm?	
	Did you hear about the concept of sustainability?	What does sustainability mean to you personally?	
General situation of farmers in the cocoa value chain in Ghana	How would you describe the overall situation of cocoa farmers in Ghana?	Can you elaborate on x?	
	Are there any challenges/problem cocoa farmers have in Ghana? Which?	Can you elaborate on these challenges?	What is your personal experience?
Economic challenges & needs	Which economic challenges do cocoa farmers face in Ghana?	Can you elaborate on these challenges?	
	What is needed, in your opinion, to improve that situation?		
Social challenges & needs	Which social challenges do cocoa farmers face in Ghana?	How do you see the situation of women in cocoa farming?	

	Did you receive trainings? If yes, on what? By whom?		
	Do you collaborate with other farmers? If yes, how?		
	What is needed, in your opinion, to improve that situation?		
Environmental challenges & needs	Which environmental challenges do cocoa farmers face in Ghana?	Can you feel consequences of climate change in cocoa farming?	What kind of impacts can you see?
	What is needed, in your opinion, to achieve a good cocoa harvest?		
	What is needed, in your opinion, to improve that situation?		
Role of companies	What is the role of European companies to tackle these challenges, in your opinion?		
	How do these companies address your challenges and needs right now?	Is that enough/successful in your opinion?	
Closing	How can companies further support cocoa farmers?		
	What changes would you like to see in the cocoa value chain in general?		
	Further questions?		

Appendix B: List of Actor-specific Categories

Table B1: KOA

KOA (I)	
Goals	G1: Social impact
	G2: Create a standard
	G3: Improve role of farmers in the cocoa value chain
	G4: Exploit additional potential (business model 2.0)
	G5: Implement production standards
Approaches	A1: Trust & proximity to farmers
	A2: Employ local staff
	A3: Arise from local circumstances
	A4: Diversified income
	A5: Efficient land use & efficient use of cocoa crop
Impact	IP1: Making impact vs. Measuring impact
	IP2: Environmental impact not particularly focused
	IP3: Large scale monitoring in progress
	IP4: Monitoring costs money

Table B2: Kumasi Drinks

Kumasi Drinks (II)	
Goals	G1: Tackling poverty is main goal (additional farmer income)
	G2: Women's empowerment
	G3: Youth empowerment
	G4: Improve power imbalances
	G5: More local value addition through local processing
	G6: Inspire other businesses
Approaches	A1: Collaboration with other organizations
	A2: Setting up juice production facilities (local juice hubs, 'Kumasi connect')
	A3: Provide education (impact hubs)
	A4: Offering informal saving opportunities for women (VSLA)
	A5: Employ local staff in the future
Impact	IP1: Measuring impact has to become intrinsic part of business policy
	IP2: Living Income Household Survey
	IP3: Blockchain (economic impact measurement)
	IP4: Focus group discussions (social impact measurement)
	IP5: Environmental impact is not focused
	IP6: Impact measurement needs money
	IP7: Making impact vs. Measuring impact

Table B3: Farmer representative – Solidaridad

Solidaridad (III)	
Challenges	C1: Lack of money is core problem
	C2: Child labor
	C3: Women are disadvantaged
	C4: Deforestation
	C5: Loss of biodiversity due to heavy use of chemical inputs
	C6: Herbicides impact health of farmers
	C7: Top-down approach
	C8: Existing/previous efforts are not enough
Needs	N1: Income to lead a decent life
	N2: Fair Ownership is key
	N3: Co-creation of solutions with farmers
	N4: Women need more money and decision-making power
	N5: Promotion of climate change adaptation
	N6: Government should increase cocoa price

Table B4: Farmers

Farmers (IV)	
Challenges	C1: Lack of money is core problem
	C2: Lack of support
	C3: Climate change has already affected their cocoa farming
	C4: Women don't get support with farming
Needs	N1: Provision of farming inputs needed
	N2: Cocoa price has to increase
	N3: Farmers need more money from KOA
	N4: Government should regulate logging
	N5: Women need financial support and availability of labor

Appendix C: List of Actor Cross-cutting Concepts

Table C1: Actor Cross-cutting Concepts

Concept	Actor-specific categories included	
Economic Value Addition as an Enabler	I, G1 I, A4 I, G3 I, A3 II, G1 II, A1 II, G4	III, C1 III, C7 III, N3 IV, C1 IV, N3
The Neglect of Environmental Value Addition	I, IP2 I, A5 II, IP5	III, C4 III, N5 III, C5 IV, C3 IV, N4
The Disadvantaged Role of Women in Cocoa Farming	II, G2 II, A4 II, IP2	III, C3 IV, C4 IV, N5
Collaboration and Partnership as a Success Factor for SVA	I, A1 I, A2 I, A3 II, A1	III, N3 III, N2 III, C7