



# Establishing a Ghanaian cooperative-owned cocoa processing plant

Barriers, solutions and opportunities to overcome the extreme poverty line



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## Preface

During my study International Food Business at Aeres University of Applied sciences and Dalhousie University, I became interested in the cocoa industry as I learned that the Netherlands is the biggest processor of cocoa beans, despite not producing any cocoa beans ourselves.

The chocolate industry is a source of many controversies in this world regarding child labour, slavery and underpaid farmers. By wanting to change the industry I thought of a solution; why don't the cocoa farmers unite and start their own cocoa processing factory, this might help them raise their wages without having to rely on the big multinationals. Furthermore, African farmers seemed to have an edge over the European and US processors as cocoa is produced in their own countries where labour is cheaper and processing allows for more products to be stored and shipped in a container for export due to trimming its waste product. Additionally, it skips transport to another processing country and goes straight to the source. What is holding these cocoa producers back?

The industry turned out to be way more complicated than originally thought but through this thought process, I concluded there to be a knowledge gap.

This thesis with the title “Establishing a Ghanaian cooperative-owned cocoa processing plant” and the subtitle “Barriers, solutions and opportunities to overcoming the extreme poverty line” is looking for solutions to the barriers one would face when starting a cocoa processing facility, as well as exploring the implementation possibilities which make this research able to be used in practice and could help the smallholder farmers overcome the extreme poverty line.

My thesis coach Taco Medema is the person I would like to thank most for his help and the fact that he was always available for meeting me or providing feedback where needed.

Furthermore, I would like to thank all participants of the interviews who took their spare time to help this research progress.

Thank you to Dalhousie University and Aeres University of Applied Sciences to provide me with the learning structures to get an understanding of this incredibly difficult but interesting industry.

I hope this thesis brings change to the industry full of problems, that produces the chocolate we all know and love.

## Table of contents

Preface .....	iii
Glossary.....	vi
Summary .....	vii
1. Introduction .....	0
1.1. History of Cocoa .....	0
1.2. The production process of chocolate .....	1
1.3. Supply chain of cocoa in Ghana .....	2
1.4. Processing facilities of cocoa products over the world .....	5
1.5. Challenges of the chocolate industry.....	8
1.6. Certifications, Cooperatives and NGOs in connection to the cocoa industry .....	10
1.7. Barriers to starting a processing plant in Africa.....	12
1.8. Research objective .....	13
2. Materials and methods.....	14
2.1. Sample.....	14
2.2. Method .....	15
2.2.1. Validity .....	15
2.2.2. Reliability.....	15
2.2.3. Reflexivity.....	15
2.3. Data analysis .....	15
3. Results .....	17
3.1. What are the barriers to starting a cocoa processing plant in Ghana? .....	17
3.1.1. Internal barriers .....	17
3.1.2. External barriers.....	18
3.1.3. Internal and external - corruption and governance issues .....	18
3.2. What could the solution be to the identified barriers to starting a processing plant in Ghana? ....	19
3.2.1. Internal solutions .....	19
3.2.2. External solutions.....	19
3.3. Would a cooperative help solve the barriers to starting a processing plant? .....	19
3.4. How could a cooperative implement the solutions to the barriers to starting a processing plant? .....	20
5. Discussion.....	23
5.1. Discussion of results.....	23
5.2. Discussion of research method.....	25

6. Recommendation.....	26
Bibliography .....	28
Appendix 1. Interview questions Ghanian cooperative (affiliate) .....	36
Appendix 2. Interview questions about financial support for institutional employee.....	37
Appendix 3. Interview questions cocoa processing/chocolate industry professional .....	38
Appendix 4. Interview information.....	39
Appendix 5. Transcription of the interview with Dr. Owusu-Amankwah (Rita Owusu-Amankwah).....	40
Appendix 6. Transcription of the interview with Jeroen Krufft .....	43
Appendix 7. Transcription of the interview with Hammond Kwaku Wolanyo Mensah .....	49
Appendix 8. Transcription of the interview with Charles Brefo-Nimo .....	53
Appendix 9. Transcription of the interview with Benjamin Figarede.....	59
Appendix 10. Transcription of the interview with Habiba Nyarko Agyemang .....	65
Appendix 11. Transcription of the interview with Martijn Bron.....	71
Appendix 12. Code system MAXQDA.....	77

## Table of figures

Figure 1: Steps in the production of semi-finished cocoa products and chocolate (CBI, 2021) .....	1
Figure 2: Production/ consumption around the world (Fountain & Huetz-Adams, 2020).....	2
Figure 3: Global leading countries of cocoa bean processing in 2018/2019 and 2020/2021 (Statista, 2020a) .....	5
Figure 4: Sold production volume of semi-finished cocoa products in Europe (CBI, 2021) .....	6

## Glossary

**CHED** Cocoa Health And Extension Division  
**CMC** Cocoa Marketing Company of COCOBOD  
**LBC** Licensed Buying Company  
**RFA** Rainforest Alliance  
**SDP** Seed Production Division of COCOBOD

## Summary

This study focuses on the identification of barriers and solutions to starting a cocoa processing facility that produces semi-finished products in Ghana and whether a cooperative is suitable for founding one. Furthermore, it aims to equip the cooperatives with practical and concise recommendations, which aspires to create a form of additional income which could benefit smallholder farmers living under the extreme poverty line to surmount that.

“What can be possible solutions to the challenges of establishing a cooperative-owned cocoa processing plant in Ghana?” is the main research question of this study which will be answered using a qualitative approach to collect data by way of semi-structured interviews to provide cooperatives with practical knowledge within the industry. The answer to the main question is given in the four paragraphs that follow.

The barriers to starting a cocoa processing plant in Ghana can be categorized into internal and external barriers, one of the internal barriers is the lack of financial resources for starting a cocoa processing plant. Secondly, finding a market to sell processed products could be a barrier. Furthermore, cooperatives are run by farmers therefore expertise could be a barrier. The know-how of running a business as well as having the technical knowledge of how the machinery works and how to repair it when it breaks down. The correct quality of the products the industry demands can be a challenge as multinationals demand products that strictly follow the procedure prescribed as it can affect the taste of their end-product. Competing in that market requires is scale, which is another barrier. Being able to consistently transport products to the buyer. External barriers include the need for licensing as Ghana requires companies who want to buy cocoa beans to be licensed. Another challenge is that the Ghanaian infrastructure, roads, access to water, internet and electricity cannot be relied upon. The climate can become a barrier when producing or transporting (semi-)finished product, as cocoa butter and chocolate bars melt. Ghana promotes domestic growth but its policies can be contradictory creating a regulatory barrier. Ghana’s domestic market for cocoa products is very small creating another barrier. Lastly, corruption and governance are an issue, however, it is mentioned that this could be a risk for every organization.

Financial barriers were a concern to all of the participants of the research and all of them offered solutions. The main finding was that NGOs can support cocoa cooperatives, mainly by helping them with access to capital. The NGOs can also assist in making the cooperative appealing to invest in. Finding a market to sell to is a barrier that can be overcome by creating a marketing plan to promote the cooperative’s products. The solution that was found for the small domestic market, is by trying it on a small, local or regional scale first with minimal processing equipment by the cooperative.

Cooperatives may not be a right fit for the cocoa processing business, as these are farmers and it is not their field of expertise. With proper guidance, it could become successful.

There have been no converging implementation ideas for the solutions to the barriers. Most of the results to this sub-question have been business models that could work, which have been mentioned in the results. Furthermore, one has been outlined in the recommendation.

Concluding, Ghanaian cocoa cooperatives are not suitable for starting a cocoa processing facility aimed at the international market. There are business models that are more accessible to them. It is recommended to start a pilot for a small-scale cocoa processing facility aimed at the domestic market. When it runs smoothly, a long-term plan could be rolled out supplying the neighbouring countries.

# 1. Introduction

This research explores the possibilities of setting up a cocoa processing plant by a Ghanaian cooperative which could provide an extra income for smallholder farmers to help them overcome the extreme poverty line.

## 1.1. History of Cocoa

The cocoa tree, *Theobroma cacao*, is the indigenous species of the South American rainforests. Around 600-400 BCE during the Mayan area drank a drink based on the fermented beans of cocoa with added spice and water. It was believed to be the essence of life and therefore had a lot of uses in both their religion and medication (Ludlow, 2012).

Exploration, during the 15<sup>th</sup> and 16<sup>th</sup> centuries, by the Spanish caused them to find cocoa beans in Central America. Which became a novelty drink for the rich (Ludlow, 2012).

In the 1800s, during the industrial revolution, cocoa was now able to be ground by steam engines and produced on a much larger scale than before. During that time the first chocolate bar was produced and due to the possibility of scaling, it became more widely available to the general population (Science Meets Food, 2019).

During that time, the Dutch Coenraad Johannes van Houten invented cocoa powder that was easily soluble in water and milk by making it alkaline. During the production of his cocoa powder, he also got cocoa butter as a by-product, which he pressed from the beans as it would make it better digestible. He managed to get a patent for his cocoa powder, which became famous in the Netherlands and grew the Dutch cocoa industry even further (Bierman, 2007). This is most likely, besides the strategical location of the harbour, the reason why the Dutch got so big in the cocoa processing industry. The Dutch currently are the biggest importer of cocoa beans worldwide, which they process into powder, butter, paste and chocolate (Andrzejuk, 2014).

Presently, More than 70% of the world's cocoa comes from West Africa, mainly from Cote d'Ivoire and Ghana. Around 5 to 6 million farmers get their income from cocoa farming and 40 million to 50 million people's income depends on cocoa farming which delivers 70-100% of their income (Aneani & Ofori-Frimpong, 2013) and its demand is only expected to grow (Beg, Ahmad, Jan, & Bashir, 2017).

Globally, the International Institute of Sustainable development predicts that the cocoa market will grow at a compounding growth rate of 7.3 % yearly, from 2019 to 2025, predicting it to reach 16.32 billion USD (Voora, Bermudez, & Larrea, 2020). The main drivers of growth will be due to its wide appeal and popularity in the food and beverage industry. Moreover, emerging countries with an increasing GDP per capita such as Mexico, China, Indonesia, Turkey and India are becoming new end consumers of chocolate. Asia is expected to become the second-largest market for cocoa products (Voora, Bermudez, & Larrea, 2020).



## 1.2. The production process of chocolate

Around 60% of all cocoa in the world is used to process it into chocolate products. The other 40% is used in bakery products and confectionery and chocolate types of drinks (Paschall & Seville, 2012).

Interestingly, a very small portion of the world's cocoa butter is used in the production of soap, cosmetics and pharmaceutical products (Research and Markets, 2021).

Chocolate is a highly processed product, as it undergoes a complex processing procedure from cocoa bean to chocolate bar or other edible product. Three main cocoa varieties are used within the cocoa industry; Forastero, Criollo, and Trinitario. However, these varieties play a minimal role in the taste of the chocolate as they are mixed more often than not (McShea et al., 2008). Overall, the principles of the production process have stayed the same over the last 150 years (Beg, Ahmad, Jan, & Bashir, 2017).

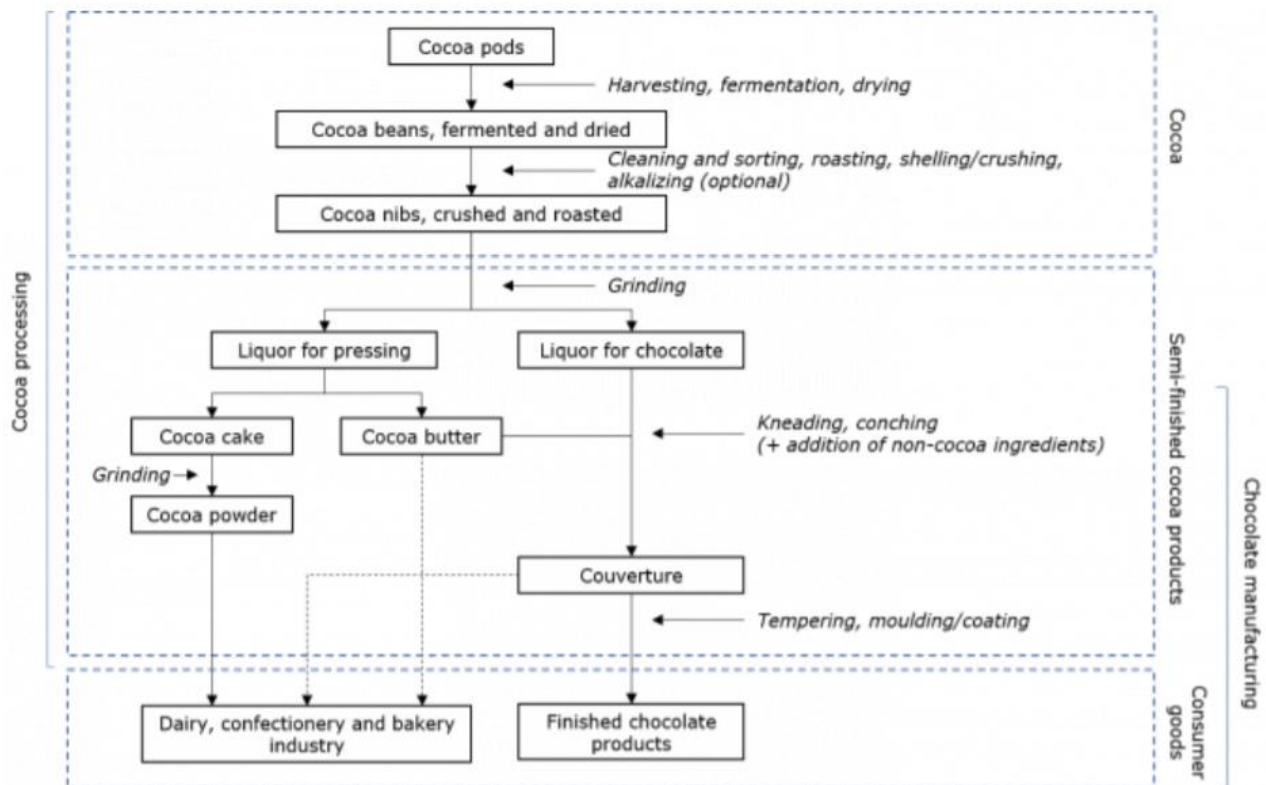


Figure 1: Steps in the production of semi-finished cocoa products and chocolate (CBI, 2021)

When the beans are harvested, they are stored, fermented and following that the beans are dried. The next main stages include; roasting and alkalization (Aprotosoaie, Luca, & Miron, 2015).

When crushed, you have cocoa nibs which is the product that you can grind into either liquor for chocolate or for pressing. As can be seen in figure 1, to make chocolate you need liquor for chocolate, cocoa butter and non-cocoa ingredients such as sugar. After kneading and conching, couverture is made which is a chocolate product high in fat and is easy to use for tempering. Couverture is used in chocolate bars as well as in the bakery and confectionery industry (CBI, 2021).

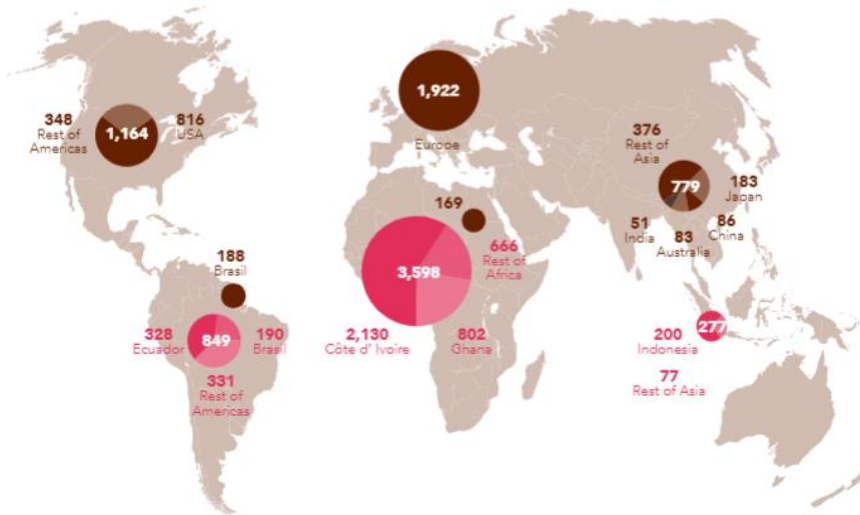
Currently, as can be seen in figure 2, the biggest producers of cocoa are located in West Africa, notably in Cote d'Ivoire and Ghana whereas the biggest consumers of cocoa are located in Europe.

### Production / Consumption

Cocoa production in 1,000 tonnes 2019/20 (forecast)

Domestic consumption of cocoa in 1,000 tonnes 2018/19

Source: ICCO 2020, Table 2, 40



A significant part of this cocoa is double and sometimes even triple certified.

Figure 2: Production/ consumption around the world (Fountain & Huetz-Adams, 2020)

Despite efforts by the government to increase value addition in its export of cocoa, less than 20% of cocoa exports for the period 1995-2013 were processed. This implies that at least 80% of all cocoa exports of the country are in the raw form (Qinetti, Bangmarigu, & Qinetti, 2018 p.4). Apart from value addition, processing the cocoa beans in Ghana will reduce their weight and increase the shelf-life of the product. During the roasting and processes for the creation of nibs and cocoa liquor, high temperatures are used to remove water content which will make the product weigh less and reduce the number of microorganisms (Copetti, Iamanaka, Frisvad, Pereira, & Taniwaki, 2011). This makes it more food-safe and will increase efficiency during shipment. The weight reduction is also a factor that determines the price of the container shipment, as the price of the shipment decreases when the weight decreases (Clever, 2020).

### 1.3. Supply chain of cocoa in Ghana

The supply chain of cocoa in Ghana is partially liberalized since the early 1990s. It has elements of privatization but the government holds a strong presence in the market. COCOBOD, Ghana's Cocoa Board, used to have a marketing monopoly on both domestic purchases and international exports before the partial liberalization (Monastyrnaya, Joerin, Dawoe, & Six, 2016).

Nearly all of the cocoa that is produced in Ghana is harvested at smallholder farms, where its available land usually does not exceed four hectares (Aneani & Ofori-Frimpong, 2013). The following paragraphs are in order of the supply chain process, starting at the input supply and ending at the consumer as chocolate or other cocoa-related products.

#### Input supply

At the start of the chain, seeds, fertilizers, pesticides, fungicides and farming equipment are an essential part of the input supply. These can be supplied by either a private input dealer or by COCOBOD's Cocoa Health and Extension Division (CHED) or Seed Production Division (SPD). These last two input suppliers are unique to Ghana, they distribute seeds, fertilizers even conduct spraying of the cocoa (Monastyrnaya, Joerin, Dawoe, & Six, 2016 p.11).

## **Production**

There are around 800,000 smallholder farmer families in Ghana producing cocoa (Danso-Abbeam, Setsoafia, & Ansah, 2014). These farmers are growing, harvesting, fermenting and drying the cocoa (Monastyrnaya, Joerin, Dawoe, & Six, 2016 p.12).

## **Internal marketing and transportation**

There are around 40 international and private national Licensed Buying Companies (LBCs), these are generally partially supported by COCOBOD through low-interest loans at the beginning of the cocoa season to purchase cocoa from the farmers (Monastyrnaya, Joerin, Dawoe, & Six, 2016 p.11). The LBCs are responsible for buying cocoa and high-quality standards are required by COCOBOD, which buys it at fixed prices. With increased competition among the LBCs, the choice for the farmer increases. This encourages the LBCs to compete on extra services that add value for the farmer (World Bank, 2013 p.12-13).

## **Export**

All the cocoa in Ghana is delivered to COCOBOD, which stores cocoa in three take-over centers before the cocoa is shipped (Monastyrnaya, Joerin, Dawoe, & Six, 2016 p.12). CMC works closely with COCOBOD, it contracts a fixed price with international merchants, cocoa processors, and chocolate manufacturers. This practice hedges the risks of price volatility, around 60-80% of the cocoa is pre-sold (World Bank, 2013 p.21).

## **Processing**

The raw cocoa is exported for around 80%, the remaining 20% is processed into semi-finished or consumer products. Only a small percentage of that 20% is meant for domestic consumption. The Ghanaian government successfully tried to attract investments into domestic cocoa processing. They offered economic incentives like discounts and tax-free zones as well as extended payment credits. This resulted in almost quadrupling the country's grinding capacity from early 2000 to 2013, from 110,000 MT to 431,500 MT respectively (Monastyrnaya, Joerin, Dawoe, & Six, 2016 p.12). Furthermore, this has increased the demand for domestic cocoa as importing it from abroad with a 20% duty, is said to be not economically viable as processors face high operational costs (Angelucci & Asante-Pok, 2019 p.19).

## **Cocoa waste management**

Cocoa waste is bought from farmers and processors. Cocoa shells, husks, and skin as well as inferior quality cocoa beans are among those purchases. Feed and complements for animal nutrition, fertilizers are made from these products (Vásquez et al., 2019).

## **Retail**

Ghana's retail is as mentioned before not the main driver of cocoa sales. However the products, both domestically and internationally produced cocoa products are sold in traditional open-air markets (Monastyrnaya, Joerin, Dawoe, & Six, 2016 p.13).

## **Consumers**

Powdered cocoa drinks are the most affordable and most popular among the Ghanaian population, but cocoa consumption remains low in Ghana (Monastyrnaya, Joerin, Dawoe, & Six, 2016 p.13).

**Vertical integration in the cocoa supply chain**

Most large companies are engaged in both processing beans and sourcing the beans directly from the country of origin to benefit from economies of scale. Many chocolate manufacturers used to process the beans as well but decided to focus on other parts of the business. Mainly trading companies took over these processes, however, high-quality chocolate brands still process their own to ensure the desired quality (Donovan, 2006 p.17).

## 1.4. Processing facilities of cocoa products over the world

In this chapter the leading countries of cocoa processing are discussed as well as a few of the leading multinationals in this industry.

### Global processing industries

The production of cocoa is executed primarily in west-Africa, however, a large part of the beans are transported to Europe or the US for further processing. Most of the market is dominated by multinationals, as they can deliver high quantities which are priced favourably due to the economies of scale, making it harder for small and medium-sized companies to compete in this market (CBI, 2021). Furthermore, less than 21% of the total global cocoa processing market is in hands of West Africa (Research and Markets, 2021). However, west-African Cote d'Ivoire is currently the largest cocoa processor in the world with the Netherlands second, as depicted in figure 3. Furthermore, figure 3 shows a slight increase in cocoa bean processing in the west-African countries; Cote d'Ivoire and Ghana (Statista, 2020a). Europe is currently the largest importer and processor of cocoa (Research and Markets, 2021).

*(in 1,000 tons)*

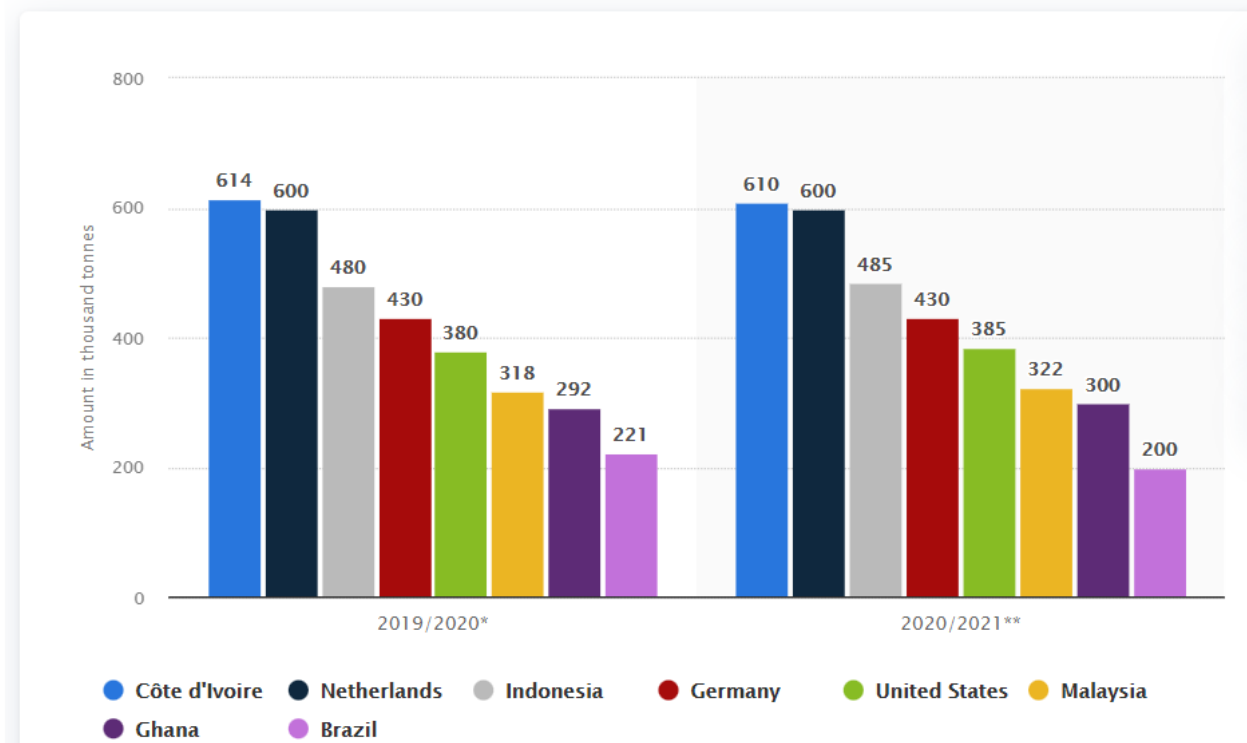


Figure 3: Global leading countries of cocoa bean processing in 2018/2019 and 2020/2021 (Statista, 2020a)

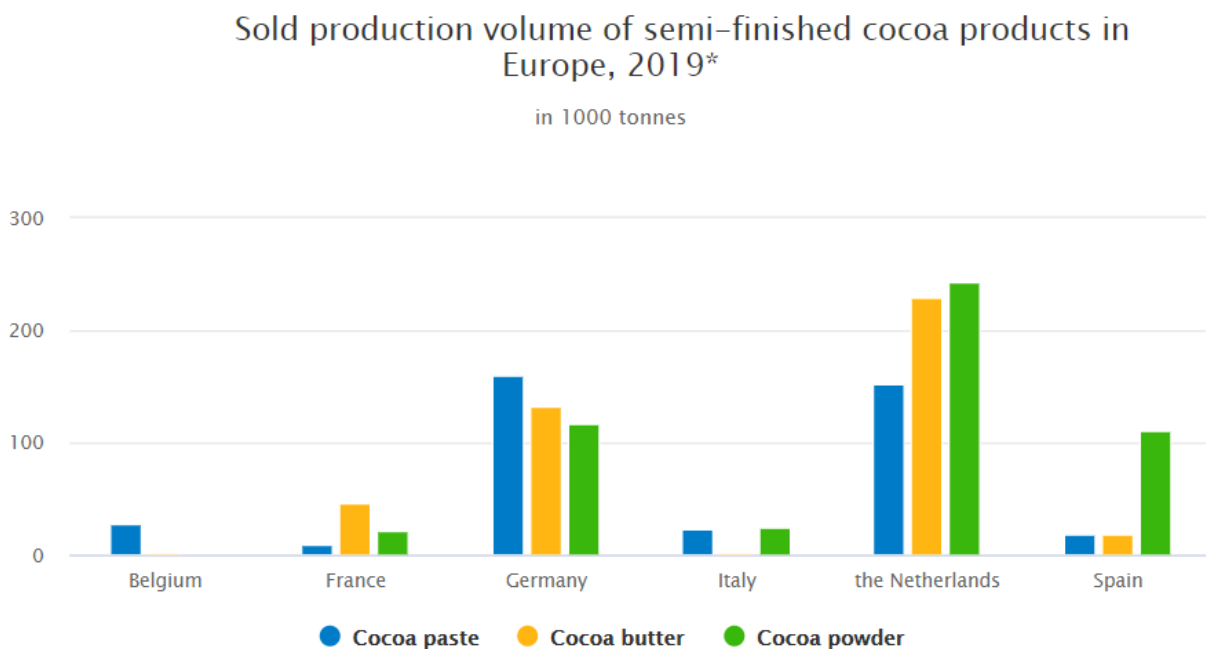
The Netherlands is ranked as high in figure 3 because it houses cocoa processors such as Cargill, Ecom/Dutch Cocoa and Olam, which can be labelled as processing giants within the industry. Other large cocoa grinders in the EU are Natra, INDCRESA and Nederland SA (Spain), Cémoi (France), August Storck, Confiserie Coppeneur et Compagnon, Ludwig Weinrich and Schokinag (Germany), ICAM, Ferrero and Elah Dufour (Italy) (CBI, 2021).

"Multinationals such as Barry Callebaut, Cargill, Cémoi, ECOM/Dutch Cocoa, Olam, Nederland SA and Crown of Holland (only organic) are based in Europe and supply the whole range of semi-finished cocoa products to the European food and confectionery industry. Generally speaking, chocolate makers and manufacturers prefer sourcing cocoa products from multinational companies because they have the scale and finance to guarantee the quality, quality consistency and availability" (CBI, 2021).

Three grinding companies Cargill (U.S.), Archer Daniels Midland (U.S.), and Barry Callebaut (Switzerland) are the big processing forces in the cocoa market, 57.4% of the chocolate market is in control by five chocolate and confectionery companies together (Beg, Ahmad, Jan, & Bashir, 2017).

Currently, Cargill has cocoa processing plants in Europe (France, Germany, The Netherlands, UK), Africa (Ghana and Ivory Coast), Asia (Indonesia) and Latin America (Brazil) (Cargill, 2021).

In figure 4, the sold production volume of semi-finished cocoa products in Europe is depicted, where the Netherlands is unrivalled in processing cocoa butter and cocoa powder. The sold production of cocoa paste seems to be a close tie between the Netherlands and Germany (CBI, 2021).



Source: Prodcom, 2021

Figure 4: Sold production volume of semi-finished cocoa products in Europe (CBI, 2021)

### Growing direct imports

The semi-finished products market which is sourced from the cocoa-producing country is growing despite heavy competition from EU cocoa processors. The share of direct imports for cocoa products differs. The cocoa paste was most imported directly from its source country in 2020, with a 46% share of all imports for this product. Cocoa butter has a 38% share of direct imports. The lowest share of direct imports for cocoa products was cocoa powder in 2020, with only an 8.6% share (CBI, 2021).

Due to a rise in demand for semi-finished products and chocolate in general, two big cocoa multinationals; Olam and Mondelez, have decided to cooperate in building a high-tech sustainable

cocoa farm in Indonesia. This will most likely increase the share of direct imports from Asia in the future (Baskett, 2021).

### **Chocolate manufacturing**

As for chocolate, the leading exporter according to Statista in 2020 was Germany with almost 5 billion U.S. dollars' worth of chocolate-containing products. Belgium is second, with a little more than half of Germany's exports. Italy is third, with 2.09 billion U.S. dollars (Statista, 2020b). Six big chocolate manufacturers currently rule the worldwide chocolate industry. These are Nestlé, Mondelez International, Ferrero, Mars, Lindt Sprüngli and Hershey's (Logatcheva & van Galen, 2015). This all shows there is a big and growing worldwide market for chocolate products and semi-finished cocoa products. In addition to that, overall processing numbers are gradually rising in west-Africa.

## 1.5. Challenges of the chocolate industry

The chocolate industry has been known for its challenges within the chain. The chocolate manufacturers can produce chocolate bars and other confectionaries for a low price as they are able to use the west-African situation to their advantage. In this sub-chapter, the challenges and characteristics are explained.

### **Human rights and child labour**

The biggest players in the cocoa and chocolate industry are situated in West Africa. The industry is built up out of systematic injustice as Tony's Chocolonely describes it. Profit over people's rights is still a common theme in West Africa (Tony's Chocolonely, 2020). In Côte d'Ivoire and Ghana, workers earn between €150 and 300 euros a year, which was found in studies as early as ten years ago and today not much has changed (Fountain & Huetz-Adams, 2020).

Escaping the cycle of poverty is difficult in these countries due to extreme poverty, which could be labelled as modern slavery. Farmers resort to illegal practices such as child labour to make a living (Fountain & Huetz-Adams, 2020). It's made possible to do this without being reprimanded because cocoa is grown on independent smallholder plots and most of them are not connected to bigger organizations, thus giving the individual farmer little fear of being fined (Global Slavery Index, 2018). In West Africa's biggest cocoa exporting countries, Ghana and the Ivory Coast, work a combined number of 1.56 million children under illegal circumstances, as their parents are unable to make a living wage by themselves (Sadhu et al., 2020).

### **Increase in average age among farmers**

The price of living is increasing, and the farmer's income is not, as they are unable to get sufficient value from their land. The children of these farmers make the switch to other crops such as rubber or they stop and move to the city. This means that currently, the average age of a cocoa farmer is rising, currently, it is 51 years old (Beg, Ahmad, Jan, & Bashir, 2017). This leads to distress over the sustainability of the cocoa chain, as no supply means no chocolate bars. Fairtrade is hoping to solve that and many other of these problems by giving the farmers a livable income (Krauss & Barrientos, 2021).

### **Gender inequality**

Women are working on the cocoa farms often but are not recognized nor getting paid equally to a man. Often women are excluded from participation in multiple aspects of life. When women are part of a family that owns a farm, they do not earn their share of a reward. This is often due to a high percentage of female illiteracy and innumeracy. Sustainability programs will often fail to reach women unless they are designed to do so (Fountain & Huetz-Adams, 2020).

### **Environmental changes**

A threat to the farmer's income is the expected reduction in yields as the cocoa trees are aging and the temperatures are rising in Ghana (Voora, Bermudez, & Larrea, 2020).

Unstable prices of cocoa on the world market make it especially hard for smallholder farms. Other impacts include heavy rainfall or extreme droughts and bushfires, leading to losses in the yield of the farmers. The roads and the infrastructure is often damaged which constantly threatens the food security of the people working in the cocoa sector (Monastyrnaya, Joerin, Dawoe, & Six, 2016). Furthermore, pests are also causing losses, therefore Ghana's COCOBOD has enabled access to pesticides which should be preventing these losses (Mulangu, Miranda, & Maiga, 2015).



### **Healthcare**

In West Africa, tropical diseases are abundant and due to their lack of proper healthcare hard to battle. Access to clean drinking water is also still one of the problems the inhabitants face on a daily basis. Needless to say, this causes a diverse variety of problems such as joint pains, and reduction of eyesight and are more vulnerable to diseases. The diseases are hard to treat as the healthcare facilities are often expensive and the families wait until it gets more serious, making it harder to treat. These health issues cause a loss in productivity (Fountain & Huetz-Adams, 2020).

### **Low soil fertility**

Low soil fertility is also one of the challenges the farmers and the government have to take into account. The governmental cocoa agency COCOBOD does provide fertilizers and the spraying of this is also taken care of (Ali, Awuni, & Danso-Abbeam, 2018).

### **Pricing**

The price of cocoa on the market is volatile due to the influence of many of the above-mentioned factors as well as different factors like; extreme weather, pests and disease and political instability. Furthermore, farmers use outdated methods and tools and lack the funds to invest properly, such as replacing old trees and investing in fertilizer. But there are also factors for the price of cocoa on a retail level. Retailers play a big role in increasing the sustainability of the sector. The retailer wants the lowest prices, which puts pressure on the chocolate producer and this conflicts with the necessary price of the cocoa at farm level. Furthermore, more and more retailers are selling chocolate under their own brand. Which essentially makes the retailer a chocolate company themselves (Fountain & Huetz-Adams, 2020). In addition to that, retailers and chocolate producers still get the largest part of the revenue of the supply chain (Tony's Chocolonely, 2020).

### **Low prices, low income, child labour and slavery**

As mentioned in the previous sub-chapter, Ghana's smallholder farms are receiving low prices for their cocoa. A Ghanaian smallholder farmer earns an estimated \$ 0.78 per day, which is under the extreme poverty line of \$ 1.90 per day (Global Poverty Line Update, 2015). In Ghana and the Ivory Coast work a combined number of 1.56 million children are under illegal circumstances, as their parents are unable to make a living wage by themselves (Sadhu et al., 2020). Besides child labour, the Global Slavery Index estimated in 2018 that for every 1,000 children working in Ghanaian cocoa agriculture 1.5 were enslaved ("Cocoa | Global Slavery Index," 2018). The farmers use child labour to cut labour costs and maximize profits.

## 1.6. Certifications, Cooperatives and NGOs in connection to the cocoa industry

In general, the overall quality of cocoa beans has been increasing, this is mainly due to better equipment, training of the farmers, market and regulatory standards which could be owed to the popularization of certifications (Ingram, van Rijn, Waarts, & Gilhuis, 2018).

### **Certifications**

Certifications for farmers have been becoming more popular among farmers and cooperatives. To name a few of these that have been growing in recognition are; organic, Fairtrade, UTZ Certified and Rainforest Alliance. Audits are performed by an independent party to offer some assurance that the, in this case, cocoa beans have been produced according to the set standards of the certification. These standards for the certification can range from environmental to ethical standards (Paschall & Seville, 2012).

Certifications can be a useful tool to broaden the knowledge of the farmer in terms of planning, health, handling, storage, fertilizers and other chemicals. Other non-certified farmers also benefit from this, according to evidence from UTZ, as this knowledge has a spillover effect on them (Ingram, van Rijn, Waarts, & Gilhuis, 2018). Additionally, certification is a good tool to get a premium price for the product. However, research indicates that only between 40% and 80% of cocoa produced as certified gets sold as certified due to low quality or low demand. (Fountain & Huetz-Adams, 2020).

### **Cooperative unions**

"A cooperative is a legally established organization in Ghana that represents the interests of primary societies (the first-tier organization under the umbrella of cooperative unions, whose legal members are individual farmers) by interacting with government agencies, local governments and buyers. On behalf of its primary society members, it provides technical assistance to growers, engages with standards systems and coordinates the disbursement of the Fairtrade Premium. It may also negotiate services to be provided by NGOs and government agencies. It may become engaged in buying cocoa from smallholders (as a licensed buying company, or LBC); however, to date only one cooperative union acts as an LBC (Kuapa Kokoo Farmers' Union). " (Donovan, Stoian, Degrande, & Foundjem-Tita, 2016 p. XI).

Currently, only around 20% of all farmers are organized in groups or cooperatives within the west and central African cocoa supply chain. However, governments and NGOs are supporting farmers to join or form cooperatives (Hütz-Adams, Huber, Knoke, Morazán, & Mürlebach, 2016). Overall between 2,500 and 3,100 cocoa cooperatives exist in Côte d'Ivoire, for other West-African countries it could not be traced how many cooperatives each country has. However, a large number of the before mentioned cooperatives are not functional and do not offer services to their members (Hütz-Adams, Huber, Knoke, Morazán, & Mürlebach, 2016).

### **NGO's**

#### **Fairtrade**

"Fairtrade is a third-party standards system that structures a trading partnership between international buyers and producers and workers in developing countries. Two critical elements of the Fairtrade Standards system are the Minimum Price and the Premium. The Minimum Price acts as a safety net for producers against downward price fluctuations. In the case of cocoa, the Minimum Price (FOB) is currently set at USD 2000 per tonne for conventional beans and USD 2300 for organic beans, though since 2007 the world market price has been above this threshold. In addition to the floor price that kicks in when the world market price falls below this threshold,

there is a Fairtrade Premium (currently at USD 200 per tonne) that farmers receive for cocoa sold under Fairtrade terms." (Donovan, Stoian, Degrande, & Foundjem-Tita, 2016 p. XI).

Under these Fairtrade regulations, the cooperative unions decide how they use the Premium. An example would be to cover the costs of cooperative management, invest in community development and/or payout to members as additional cocoa-derived income. Furthermore, local Fairtrade offices can help with technicalities for the cooperatives to strengthen cooperative organizational efficiency and assist in some of the services by cooperatives to their members (Donovan, Stoian, Degrande, & Foundjem-Tita, 2016 p. XI).

### **Rainforest Alliance (and UTZ)**

The UTZ organization joined the Rainforest Alliance back in 2018 to build on each other's strengths and bring even more positive change to the industries they both operate in. Products can have their certification seal which stands for companies and farmers that are taking steps toward a world where both our world and people thrive alongside each other (Rainforest Alliance, 2021b). However there was a 32% decrease in the number of Ghanaian cocoa farmers connected to the program, this was due to a ban on double certification such as having both Rainforest Alliance and Fairtrade. Additionally, stronger requirements on GPS data also caused part of the decrease (Rainforest Alliance, 2021a).

The premiums from these NGOs cause the connected cooperatives to have money available for investments. This money could be used in starting a cocoa processing plant. The next paragraph briefly touches on the barriers to starting a processing plant in Africa.

## 1.7. Barriers to starting a processing plant in Africa

Africa is still developing and in contrast to other developing regions, Africa's industrialization is still growing. Furthermore, Africa has multiple favourable advantages, such as the availability of low-cost labour and an abundance of natural resources and raw materials. These are signals of a coming manufacturing revolution (Signé, 2018). Some pressing issues of the continent are identified in this sub-chapter.

### **Labour force**

Even though the country houses a considerable amount of low-cost, under-employed labour, Africa's labour force is lacking in skills and efficiency. Especially for specialized forms of production, only two-thirds of 15-24-year-olds in Africa have completed primary education (Signé, 2018).

### **Costs**

Ports, roads, and power infrastructure are all primary factors that inhibit growth in Africa, as it is not fully developed. Furthermore, high levels of corruption and bureaucratic restrictions, increase the cost of distribution. However, Africa is working on improving bureaucratic and tax regulations as well as increasing public (and private) investment in infrastructure (Signé, 2018).

### **Digitalization**

Empirical evidence suggests that African countries are facing a gap in global digitalization. Moreover, compared to other countries Africa benefits less from digitalization once it is installed (Lopes & Te Velde, 2021).

### **Transportation**

Transportation networks are insufficient for efficient transport, which means that the ability of a manufacturer to capitalize on regional economies of scale is weaker (Signé, 2018).

### **Energy infrastructure**

Despite enormous investments in energy infrastructure, power outages are more than common in most parts of Africa. Africa's electricity prices are much higher than comparable developing regions (AFDB, 2013). Most manufacturers operating in West Africa have to rely on costly backup generators as a primary energy source, which negatively affects their profit margins (Signé, 2018).

### **Bureaucracy**

Port and tax bureaucracy in Africa contributes to the highest direct and indirect costs of international trade in manufacturing in the world. Moreover, it generally takes several different documents for export and generally takes between 10 to 50 days to ship depending on the country (Signé, 2018).

### **Politics**

Government ministries in African countries have not been able to effectively address issues that inhibit the investment environment, issues like; overlapping jurisdictions and uncoordinated personnel practices. These problems stem from the root cause; corruption as tax, industrial, and trade regulations offer considerable opportunities for the people in those positions (Signé, 2018).

## 1.8. Research objective

The above-mentioned barriers illustrate a general picture of the African challenges one would face when starting a factory of some sort, however, the barriers to a cocoa processing plant in Ghana have never been researched. The question is whether west-Africa, more specifically Ghana, can partially expand itself as a player in the chain to also become a processor of cocoa beans as there are currently just a small amount of cocoa processing plants.

It has yet to be researched what is holding them back, what could be changed and whether a cooperative could play a part in its solution so the smallholder farmers can get an additional income which could possibly be achieved by a cooperative-owned cocoa processing plant. The research aspires to present an outline of practical implementations for the cocoa cooperatives in Ghana so that a cooperative-owned processing facility could be used to surmount the extreme poverty line.

Therefore, a research question has been developed to find solutions.

Main research question: *Can the barriers to starting a cocoa processing plant in Ghana be overcome by a cooperative?*

The following questions contribute to answering the main question:

*What are the barriers to starting a cocoa processing plant in Ghana?*

*What could the solution be to the identified barriers to starting a cocoa processing plant in Ghana?*

*Would a cooperative help solve the barriers to starting a cocoa processing plant?*

*How could a cooperative implement the solutions to the barriers to starting a cocoa processing plant?*

The answers to these questions will provide practical advice for the Ghanaian cocoa cooperatives on the barriers, solutions and opportunities the target group has.

## 2. Materials and methods

This study adopted a qualitative approach to collect data by way of semi-structured interviews to gain in-depth practical knowledge and understanding of the challenges the cooperatives face when starting a cocoa processing facility in Ghana. Furthermore, this method gave the interviewees the possibility of voicing their thoughts on possible solutions.

### 2.1. Sample

For this study, a total of 7 people were interviewed. The interviewees were categorized into three categories which were interviewed to find the barriers the cooperatives would face. The interviewees were categorized depending on their professional history. This category determined the questions they were asked which can be found in appendix 1, 2 and 3. Furthermore, the interviewees have been selected semi-randomly and were interviewed individually (Baarda, 2020, p. 117–140).

Semi-random participant selection in this research means that e-mails have been sent out to companies, cooperatives, NGOs and multinationals where the researcher only requested to interview someone, then they would have their choice in who they thought would fit. LinkedIn's messaging function has also been used to invite interviewees. Furthermore, some participants have been contacted through earlier interviewees, where some participants linked the researcher with others in the industry, as can be found in the transcriptions in appendices 6-8.

The three categories are:

1. Industry professionals, employees, owners or directors of chocolate brands or cocoa processing brands with knowledge of the Ghanaian cocoa industry with at least 5+ years of experience in the international cocoa industry.
2. Ghanaian cooperative affiliates, employees or professional advisors of a Ghanaian cocoa cooperative with at least 5+ years of experience within the cocoa industry.
3. Financial support institution professional, employees of a company or NGO which supports the financial needs of cocoa-based businesses. The interviewee requires 5 years of experience within the cocoa industry.

These categories were created to discover both surface-level as well as complicated industry-specific barriers and solutions. Some of the interviewees could be categorized into multiple categories due to their extensive professional backgrounds. These individuals were asked questions about both of the categories they belonged to. The 5 years of experience requirement is to set a bar on the acquaintance with the cocoa industry, which allowed the interviewee to speak about practical insights into the industry's challenges. These practical insights gave challenges and solutions from the three different perspectives which gave this research additional, practical substance. Furthermore, both international and Ghanaian professionals were interviewed to recognize the international perspective of the cocoa industry and address additional barriers or solutions. International actors of the chain were also selected for this sample as they may hold a different perspective on the matter which could give other practical problems or solutions to the research questions. Furthermore, cocoa is shipped, processed and eaten internationally which shows that the chain is largely an international matter. Lastly, the interviews were completed through video calls or over the phone (Baarda, 2020, p. 117–140).

## 2.2. Method

The interviews were centred around the four major sub-questions:

What are the barriers to starting a cocoa processing plant in Ghana?

What could the solution be to the identified barriers to starting a cocoa processing plant in Ghana?

Would a cooperative help solve the barriers to starting a cocoa processing plant?

How could a cooperative implement the solutions to the barriers to starting a cocoa processing plant?

Semi-structured means that the main- and sub-questions are chosen but the researcher can choose to ask more in-depth about certain topics that could be of interest to the study. Additional questions can be asked or extra context is allowed to be asked (Baarda et al., 2021, p. 91-181).

The semi-structured interview outlines (appendix 1, 2, 3) are structured in a way that the interviewee can give both their opinion on the idea as well as give structured answers as to what barriers they can identify and voice their thoughts on possible solutions.

### 2.2.1. Validity

The study's validity is achieved by a couple of implemented factors. One of which was through the feedback of an impartial person unfamiliar with the subject strictly to look at the results and create a more impartial view on the results. As qualitative research is interpretative research; certain results where the author may have unintentionally put an emphasis on certain points and a disinterest towards other points which were mentioned in the results. Furthermore, imprecise concepts e.g. "optimal" or "favourable" were removed or altered to increase the study's reliability (Baarda et al., 2021, p. 91-181). These individuals were David Metz as well as Michel Willemsen.

Furthermore, triangulation was used to increase the study's validity. Triangulation is the process of finding different data sources which have points of convergence (W. Creswell & Creswell, 2018, p. 274, 275). The answers in the form of barriers or solutions that were given by the interviewees have to be mentioned by two different individuals in order for it to be a result, this establishes the process of triangulation.

### 2.2.2. Reliability

There were several methods used to ensure reliability in this study. The study made use of transcripts, which were checked for obvious mistakes. For the data analysis, the codes were checked to see if there was a shift in the meaning of certain codes during the process of coding. To prevent this from happening the researcher continually compared the data with the codes as well as writing down the definitions of the codes (W. Creswell & Creswell, 2018a, p. 274, 275). This was accomplished through MAXQDA software with the help of connecting memos to the codes which made the aforementioned shifts in meaning more apparent.

### 2.2.3. Reflexivity

In qualitative research, it is important to state the researchers' background, culture and experiences that may shape their interpretations which may assign results based on that. In the discussion, reflexivity will be recognized (W. Creswell & Creswell, 2018a, p. 258).

## 2.3. Data analysis

The interviews are recorded and transcribed in order to give a comparison between the interviewees. The comparison is made to give answers to each question (Baarda, 2020, p. 117–140). Coding gives insights into the acquired data and identifies recurring themes and segments, furthermore, research inductive coding will be used as it establishes clear links between the research objectives and the raw data from the interviews (Thomas, 2003). During this analysis with inductive coding, precise codes are created as this captures the complexity and diversity of the data. Around 160 codes were used in this process, the coding system has been added in Appendix 12. Higher-level categories are created from the initial code list, which will decrease the number of themes and categories. To add to these themes and categories, existing research, as well as theory and concepts, are utilized to support the findings

(Linneberg & Korsgaard, 2019). Overall, the varied data was condensed into something that shows what the challenges and suggested solutions are for starting a cocoa processing plant in Ghana. Furthermore, the participants have given insights into the implementation of the solutions as realistically as possible for a cooperative, which have been analyzed in the discussion of results.



### 3. Results

This chapter will describe the results of the interviews with Ghanaian and international participants that have taken place for this particular study. The barriers and solutions are written in bold to accentuate the result.

#### 3.1. What are the barriers to starting a cocoa processing plant in Ghana?

##### 3.1.1. Internal barriers

One of the barriers that came up in all the seven interviews was the **financial** barrier. Ghanaian cocoa cooperatives generally don't have the financial resources to start a capital-intensive project like starting a cocoa processing facility. They usually pay out their members, the farmers, first when they receive their payment for selling the beans.

*The roasting itself is a challenge in its way because it is a huge investment also the processing of liquor transforming into butter and powder is kind of a complicated task because it's also a huge investment, cocoa price is roughly costing, I mean I'm talking industry scale, I'm not talking about anybody who wants to start processing in their kitchen because obviously you can do that, but for an industry it's around a 10 million euro investment to get an efficient cocoa butter press based on the requirement of that industry (Figarede, 2022).*

The second challenge for starting a cocoa processing plant seems to be **finding a market to sell their products to**. This can be a challenge as the cooperatives generally don't have international contacts at their disposal. Without sales, there is no business.

*If you are not able to put on a strong marketing strategy, you may not even have the market for the product (Brefo-Nimo, 2022).*

Another challenge the interviewees spoke of is **expertise**, the know-how of running a business as well as having the technical knowledge of how the machinery works and how to repair it when it breaks down. The members of cooperatives don't have knowledge of cocoa processing machinery because they are cocoa farmers, most of them have never been to Europe or the United States where a large number of the processors are located.

*You need to have the expertise to do it because most of these companies that are into processing, are people, companies or organizations who have done this over the years and have really enjoyed the economies of scale, they have the skills, the techniques, the expertise the technology to do this (Brefo-Nimo, 2022).*

This technical knowledge that might be missing is also seen in the quality of the product. Food safety and having the **correct quality** that the industry demands are seen as another barrier. Mondelez, Mars and other chocolate industry giants have their trusted suppliers of processed cocoa, roasted exactly the way they require for their end-product. Delivering this distinct product to meet the buyers' demands can be challenging.

Furthermore, the interviewees were skeptical about whether the cooperative would be able to have the **scale** to consistently deliver its products to the market. This is essential to producing for the world market at competitive prices.

### 3.1.2. External barriers

The barrier that has been mentioned by five of the seven interviewees was the barrier of **licensing**. Becoming a licenced buying company is necessary to buy the beans and be able to process them further down the line. This problem is captured in the following citing by Charles Brefo-Nimo.

*So, one, major one, they should be an institutional regiment in terms of buying cocoa in Ghana, the regulator which is COCOBOD, regulates the sector. So, first of all, to even have access to cocoa beans to buy from farmers you need what we call a license so that you become a licenced buying company. So that is the first step, the element of institutional challenge to get all this paperwork done (Brefo-Nimo, 2022).*

Another barrier is the **infrastructure**, which is drastically different in Ghana when compared to the biggest importers of cocoa beans, which the Ghanaian processing facility would compete with. Roads, access to water, internet and electricity are points you cannot always rely on in Ghana. When the business is unable to depend on the infrastructure, it forms problems with the reliability of the processing facility.

The supply chain challenges could also be considered barriers. Such as **temperature control**, the cold-chain, which is essential to keeping the chocolate bars in shape after production and when shipping it to their destination. When producing semi-finished products this is also a problem as cocoa butter, one of the ingredients of chocolate also melts in Ghana's climate. This can establish food safety risks.

Ghana is promoting domestic growth, in the form of processing facilities for instance, however, the findings of this study suggest that the policies can be contradictory. This is a **regulatory barrier**.

*Also policy wise, the government is now trying to encourage actors now for chocolate making so there is government initiatives who are trying to promote that, but you see that it is... we have our own challenges with accessibility of policies, its benefits, sometimes contradicting with policy guidelines and implementation (Owusu-Amankwah, 2022).*

When the processing facility is placed in Ghana, most of the products are exported as there is only a **very small domestic market**.

### 3.1.3. Internal and external - corruption and governance issues

Corruption was mentioned explicitly in two interviews, however, it was said that it was not strictly a matter for Ghana alone, but it was a risk for every organization.

*Shortening the chain like this or going into processing, if not managed well, could also lead to higher, like they are more susceptible to corruption and embezzlement if they're not given right supporting systems (Owusu-Amankwah, 2022).*

**Corruption and governance issues** can be both an internal and external barriers as it can occur within the government or the structure of a cooperative in this case.

*For most cooperatives, and its not just limited to just Ghana or even Africa, for most cooperatives governance is always an issue, (...) a few people taking control of the face of the cooperative and not involving the membership (...) In that sense, the potential of leaving the farmer out of the equation is higher. Also, that they concentrate more on the processing because that is where the money comes from, if the cooperative forgets about being producer oriented, becoming more processing oriented you will lose your base of supply (Owusu-Amankwah, 2022).*

## 3.2. What could the solution be to the identified barriers to starting a processing plant in Ghana?

### 3.2.1. Internal solutions

The **financial barriers** were a concern to all of the participants of the research. However, all of the participants also offered solutions to this barrier. A solution that was mentioned two times was that NGOs can support cocoa cooperatives, mainly through helping them with access to capital and finding other parties for the cooperative that are willing to invest in their ideas. The NGOs can also assist in making the cooperative appealing to invest in.

*We don't give working capital, we are a business advisory organized building, basically giving them the tools and the know-how to work, organizing their governance, human resource, financial management systems and (...) in some places we may link you to markets for example. We make you attractive that you are able to be a good supplier for the market (Owusu-Amankwah, 2022).*

**Finding a market to sell to** is a barrier that can be overcome by doing marketing internationally to promote the cooperative's products and as mentioned above by Dr. Rita Owusu-Amankwah, NGOs can help with finding markets to sell to.

### 3.2.2. External solutions

The **domestic market barrier** is the only barrier to which three interviewees have a solution. The domestic market for cocoa products is small in Ghana, but there is potential. Trying it on a small, local or regional scale first with minimal processing equipment by the cooperative could be a solution.

*Cocoa consumption on the Africa continent is almost non-existent, and so there is a lot of work that has to be done in that area to ensure that we increase the consumption of cocoa per capita so that it becomes a lucrative market for cocoa for those that set up and sell regional, for the moment it is a tiny market but it may be picking up (Wolanyo Mensah, 2022).*

## 3.3. Would a cooperative help in solve the barriers to starting a processing plant?

Currently, there are no cooperative-owned processing facilities, as far as the participants of the study knew. The participants were asked if cooperatives could solve the barriers that they mentioned to starting a cocoa processing plant. Two interviewees mentioned that cooperatives may not be a right fit for the cocoa processing business, as these are farmers and it is not their field of expertise. With proper guidance, two individuals mentioned that it could become successful.

*Farmers may not be the best people who would start a cooperative but employing professional external help could make it all a little bit more expensive to set up such a venture (Wolanyo Mensah, 2022).*

*A cooperative has the potential of getting a lot more, given a lot more impact, by creating raw employment or by improving the lives of the farmers, access to beans would for me relatively higher working with a cooperative than an individual, a lot more cost-effective, cooperatives are not supposed to pay, there are some tax waivers for cooperatives if an investor would want to start a processing facility I would align with a cooperative. It cannot be done in vain, it should be done carefully with the proper guidance (Nyarko Agyemang, 2022).*

There are other business models which were suggested that could potentially make it profitable, these are mentioned in the next result of the last sub-question.

### 3.4. How could a cooperative implement the solutions to the barriers to starting a processing plant?

There have been no converging implementation ideas for the solutions to the barriers. Most of the results to this sub-question have been business models that could work. However, these do not meet the standard of triangulation as mentioned in the methodology. In the recommendation, there will be a segment where the researcher explains the best option with the backing of the interviews and literature.

#### **Processing for existing chocolate makers**

Jeroen Kruft states that when cooperatives have been selling beans to international chocolate companies of medium to small size, there could be an opportunity to inform them of the possibility of taking over their processing activities in Ghana. The cooperative could process it to the liking and required quality of the company they would sell it to. He says that this is an existing model which has been put to use in Peru and the Dominican Republic. A common problem according to him was that there is a lot of overcapacity in these facilities as they generally don't have enough customers (Kruft, 2022).

#### **Cooperative as stakeholder**

Hammond Kwaku Wolanyo Mensah proposes the idea of introducing a processing plant that is not run by the cooperative, external professionals are hired to manage the plant for them. In this case, the cooperative would be a stakeholder in the operation.

*The cooperatives do not have to run the plant, they could be shareholders, where they employ competent agents that manage the plant for them. The interface between the coop and the investors for the market would be that group of competent agents that they employ. These are some of the ways, the challenges a cooperative faces can be addressed (Wolanyo Mensah, 2022).*

#### **Small-scale processing**

The cooperative can start a small-scale cocoa processing operation as Jeroen Kruft, one of the interviewees of this study has seen this happen in other parts of the world by cooperatives. He mentions that this is not capital intensive, as small-scale processing machinery is relatively cheap, he says it is possible to start this for just a few hundred euros. The operation can be run by local Ghanaians, such as groups of women and/or teenagers. It can provide an additional income for the farmers, which is something he has seen in other cocoa-producing countries (Kruft, 2022).

## 4. Conclusion

The purpose of this research was to provide practical insights into the challenges, solutions and opportunities to start a cocoa processing plant in Ghana, which could be used to create an additional income for the Ghanaian cocoa cooperatives. Interviews were the main source of data collection to sketch practical examples of barriers and solutions that one would encounter. These interviews illustrated a broad image due to the different categories the interviewees were classified among, on grounds of their current and/or past professional occupation. This research found that cooperatives face

both internal and external challenges when establishing a cocoa processing plant in Ghana that make it a difficult project to launch.

One internal barrier the research found was the scarcity of financial resources within Ghanaian cocoa cooperatives. The small-holder farmers which are part of the cooperatives require the standard income to live. It makes it hard for the cooperatives to invest when the income remains low. Premiums on the beans they sell have helped sustain a higher income over the years. In the introduction of this report, the Fairtrade premium's advisable uses were mentioned and also confirmed this. Creating these organizational efficiencies as well as introducing management- and governance structures could prevent corruption or other fraudulent activities from happening.

A part of the financial solution was found in this research. When starting a venture to add value to a cooperative's current activities, such as processing their products, NGOs could be of help by supporting them financially in two ways. Firstly, NGOs can help them set up a business plan and financial management systems, which would be one of the steps in making the cooperative inviting to (foreign) investment. The following step would be by connecting them to these streams of investment. The financial barrier was not the only barrier this research found however.

Being able to sell your product is essential to running a business, therefore the interviewees mentioned this to be a challenge. Cooperatives require international demand for their products or create domestic demand because their domestic market is practically non-existent at the moment. Either way, a marketing strategy is required. Marketing their products and brand is another point that forms a challenge, however, this is a matter NGOs could assist in.

A part of this research found that when processing semi-finished products for multinationals like Mondelez, Mars, and others, these cocoa giants require consistency in two ways, being able to deliver the product as the contract dictates as well as consistency in the quality of the product, produced as they specified. Their exact procedure and recipe of processing the beans which they require for the characteristic taste of their end-product. If these two factors are not on the level they desire, you are deemed inadequate to their degree of processing. Furthermore, you require a certain scale size of production and processing to distribute the product to them. This loops back to requiring substantial amounts of capital, which could enable you to just begin with playing on their level. This seems to be an unreasonable amount of investment for a cooperative.

External barriers that the interviewees indicated were securing a license that allows a company to buy the beans (back) from the regulatory organ of the government, COCOBOD. COCOBOD regulates the sector by selling the beans for a pre-determined price, which is generally above the international market price. It also regulates the input for the production of the beans by the farmers as well as the end quality, which causes Ghana's beans to be of higher quality than average on the world market.

Contradictive policies within the Ghanaian government form a barrier to starting a venture like the one that has been outlined in this study. While they try to create a supportive regulatory environment, the government's different aspirations converge into a bureaucracy that seems to accomplish the opposite.

While the Ghanaian beans might be of higher quality, the same cannot be said about the country's infrastructure. The study finds that the infrastructure is one of the main external barriers of concern to the interviewees when starting a cocoa processing facility. Roads, access to water, internet, and electricity are considerable issues in this West-African country. When you are unable to rely on these

basics, it will threaten the reputation of the facility because as mentioned, consistency is of great importance to multinational chocolate companies.

Whether the facility is producing semi-finished products like cocoa butter or finished product such as chocolate bars, the climate is a barrier. Temperature control is a must, which is directly correlated to the food safety barrier and the financial barrier.

The members of Ghanaian cocoa cooperatives lack the skills to set up a cocoa processing plant. This was voiced mostly when discussing the sub-question "Would a cooperative be helpful in solving the barriers of starting a processing plant?". The research concludes that Ghanaian cocoa cooperatives are managed by farmers who have no experience in the field of cocoa marketing, and processing nor are they skilled in running an internationally or domestically-oriented business. Some NGOs could offer help in the form of expert advising on many of the barriers the cooperative would encounter as well as providing them with adequate business tools and management systems. As well as practical developmental programs such as food safety practices. External help by NGOs helps solve barriers as mentioned by participants, cooperatives are not specifically advantageous in starting a processing plant.

For the last sub-question, "how could the cooperatives implement the solutions to the barriers of starting a processing plant?", there were no converging ideas voiced by the participants of the interviews.

To conclude this research, it is not yet feasible for a cooperative to start a processing plant in Ghana that orients its business model at multi-national chocolate companies. The cooperatives have too little financial resources and knowledge, however, this challenge compensated to a certain extent with the external assistance of NGOs. Yet it is still unlikely that the financial resources of external parties can stretch to the amount of capital that is required to participate in that part of the industry. Furthermore, the challenges that withhold the cooperative from playing on the international cocoa processing playing field are mostly the external barriers such as the lack of infrastructure and the inevitable inefficiencies it causes. There are business models that the interviewees mentioned that have a possibility of success in the industry. Oriented at a smaller domestic market with the requirement of limited financial resources. This is relevant to the cooperatives in Ghana as it could create an additional income with minimal investment and financial risk. This business model is elaborated in the recommendation section of this study including supporting data from the interview results.

## 5. Discussion

### 5.1. Discussion of results

Through this research, information about the barriers and solutions to starting a cooperative-owned cocoa processing facility as part of the Ghanaian cocoa industry has become evident. The research was necessary to fill the knowledge gap and demonstrated a new way of income for small-holder farmers in a cooperative, a group that desperately needs that due to their low income. As mentioned in the introduction in the challenges of the chocolate industry sub-chapter, a Ghanaian smallholder farmer earns an estimated \$ 0.78 per day, which is under the extreme poverty line of \$ 1.90 per day (Global Poverty Line Update, 2015). The research presented practical implementations of the research to provide the smallholder farmers with this extra income created by a cooperative-owned processing facility that could be used to surmount this extreme poverty line.

The information that was gathered through this research was provided in four segments, answering the four sub-questions. This provides cooperatives with insights into barriers, solutions and possible practical implementations which could be very valuable to this target group.

In this research, the barriers were the cornerstone of the findings. By highlighting these barriers and asking participants in the interviews about possible solutions to these barriers, the results of whether a cooperative is suitable for a venture like this came to the surface.

In the introduction, barriers to starting a processing plant in Africa were introduced. There is an overlap between the results of that part of the introduction and the results of the first sub-question of this study that answers the barriers of Ghana specifically. The financial barrier was not addressed in the introduction, while in the study's interviews all seven of the participants voiced it to be their greatest concern. The introduction did mention the costs but the results of the study were able to show the extent of the financial resources a cooperative would need to start a processing plant.

Another internal barrier to starting a cocoa processing facility that was missing in other research was the barrier of finding a market, which is a challenge for Ghanaian cocoa producers as they are generally not well connected to the processing or consuming countries. This overlooked barrier was captured in this research.

Overlapping results with other studies from the introduction was seen in the section that discusses the labour force. It is mentioned that Africa's labour force is lacking in skills and efficiency (Signé, 2018). This is also a result of this study, where interviewees raised their concern over the missing expertise on running a business, technical knowledge of how the machinery works and how to repair it when it breaks down.

Two other points this research found were barriers to entering the international cocoa industry through starting a cocoa processing plant in Ghana were quality assurance and scale. The quality of the output that the industry demands is necessary to supply the multinational chocolate producers such as Mondelez, Mars and others. That market requires the beans to be roasted exactly the same way every time following the same production procedure to meet the quality needs of the buyer. Furthermore, the issue of scale is also a demand of the industry. The ability to supply the buyer with enough of the demanded products is a challenge. This is essential to producing for the world market with competitive pricing.

The external barriers are found to have an overlap with the introduction's research. Infrastructure is named to be a barrier in this research as well as in the introduction. As said, ports, roads, and power infrastructure are all primary factors that inhibit growth in Africa, as it is not fully developed (Signé, 2018). Which supports the findings of this study.

In the introduction, an external barrier is described, bureaucracy in the form of overlapping jurisdictions and uncoordinated personnel practices. This is similar to one of the findings of the study as well where two interviewees indicated the complex structure of the regulations and policies in Ghana.

Another external barrier, licensing, was mentioned by a majority of the interviewees of the study but was not mentioned in the introduction. The introduction research had a focus on the continent while licensing to become an LBC is only required in Ghana, as regulated by COCOBOD.

Furthermore, two findings of the study were not found in the introduction's research possibly due to their practical nature. The climatic circumstances of Ghana can affect the (semi-)finished product, as cocoa butter and chocolate can be blemished or it can form a food-safety issue. Furthermore, the domestic market formed a challenge as domestic consumption is low. The barriers given in the introduction for Africa, as a whole, introduced a surface-level view of the problems one would face when starting a processing facility in Africa. This study concluded through sub-question 1, deeper insights into practical challenges that arise when starting a processing plant in Ghana, which was the intention of the study. Nevertheless, the barriers and their practical appliance exceeded the expectations of the researcher.

When researching the introduction of this study, the solutions were scarce for the barriers that were mentioned. This meant that the interviewees gave new insights into sub-question 2. Financial resources are proven to be limited for Ghanaian cocoa farmers, however, the study showed that NGOs can assist in access to capital, locate external investors as well as support the cooperatives with financial and management tools which make it more appealing for the external parties to invest. Furthermore, NGOs showed to be of help in finding customers as well, which helps overcome another barrier of the study. A solution to an external barrier, the lack of a domestic market, was offered. Small-scale operations could help overcome this. These solutions guide the cooperatives and manage to close the knowledge gap for this target group.

Corruption and governance issues are issues within all organizations, both internal and external. Questions asked by the researcher were not in the semi-structured format but were asked whenever the topic touched the subject. Nevertheless, there were enough converging ideas on the subject for it to be part of the results. The introduction lightly touched on these issues, where it's said that corruption is used as tax and trade regulations offer considerable opportunities for corruption (Signé, 2018).

The third sub-question was constructed to identify the opinion of the interviewee on whether cooperatives are suitable to start a cocoa processing facility. The opinions varied but converged on the matter that they may not be suitable. However, two other participants argued it could be possible but would require proper guidance. This is interesting as NGOs are found to be helpful in that matter.

The last sub-question addressed the implementation of the findings for the Ghanaian target group. In the results of this part of the study possible implementation plans have been outlined by a few of the interviewees. Some of the results are based on observations in other countries where these business models have been implemented. Furthermore, one of the results is further analyzed in the recommendation where supporting evidence from both the introduction as well as the study's own findings forms the fundamentals of an attainable business to support the cooperative's needs.

It is beneficial to the cooperatives to use the information in the study's results, conclusion and recommendation to start a cocoa processing plant and gain an additional income. The cooperatives are advised to seek consultation from NGOs such as Solidaridad and IDH, this research can be used to present them with the challenges as well as the solutions and opportunities the cooperative has. The



business models can be used as a guiding line and in the recommendation relevant and resourceful data is added so the cooperatives can use it to develop their own strategy.

## 5.2. Discussion of research method

The method of collecting data was selected as qualitative research through semi-structured interviews with three categories of experienced people in the cocoa industry. The questions of the interviews were designed to sketch a real image of the situation and provide the target group with practical solutions to the barriers and possibilities for implementation.

The first sub-question's overall responses described the issues of the industry well, which demonstrated the effectiveness of the associated questions. However, the limitations of the first sub-question were found in the interview questions aimed at financial support institution employees. Options for acquiring financial resources were asked. The question proved to be too broad when too little convergence was found in this particular question. More concise questioning or usage of backtracing, where you ask another participant in a different interview the findings of the other interview, could possibly form better practical results for the target group.

In the following sub-question, the solutions were asked to the mentioned barriers. These questions were formulated based on the answers given to the associated first sub-question. This usage of semi-structured interviewing was demonstrated to be successful as the interviewees were generally able to name different solutions.

Limitations of the research method were revealed in the third and last sub-question.

For the first question associated with the third sub-question "Would a cooperative be helpful in solving the barriers to starting a processing plant?", the particular challenges for a cooperative were asked, while earlier for the first sub-question the participant had already been asked about challenges for starting a cocoa processing plant. While it was thought that the participant would give different answers, it turned out that it was mostly the same. Furthermore, it might also play a part in the fact that the researcher explained what the research was about before the interview took place, where he mentioned that it had to do with the role of a cooperative in starting a cocoa processing facility. This is not necessarily a bad thing, however, as it gave the participant another chance to think of other barriers.

The interviewees were valuable sources of data mainly because of their years of experience in the cocoa industry and their different perspectives. Generally, different perspectives are favourable but because the solutions and implementations, which were offered for sub-question 3 and 4, were so diverse some of the results were not able to converge for it to be accepted according to the materials and methods' triangulation prerequisite. Therefore, some of the answers of participants could not be implemented in the results section of the study. The multitude of perspectives may have been caused by the three different categories; the interviewees' differences in relation to the cocoa industry. For this reason, the study might have been a better fit for a larger research operation. Nonetheless, the broadness of the last sub-question managed to produce several practical implementation plans and business models which could prove to be a valuable alternative income for the target group.

## 6. Recommendation

The Ghanaian cocoa cooperatives are unsuited for operating a cocoa processing facility on an international level. There were interviewees that mentioned business models that focus on a different part of the industry which is outlined in this recommendation.

According to the interview with Hammond Kwaku Wolanyo Mensah, a normal cooperative holds around 15.000 smallholder farmers (Wolanyo Mensah, 2022). When they produce Fairtrade or for other certification programs, the cooperatives earn a premium on their beans. This provides an additional income that can be used in investing in the cooperative if a percentage of the acquired premiums are combined. NGOs can consult on what investments to make it can start with organizing their governance, human resources and financial management systems. This research suggests that starting a cocoa processing plant has a possibility of having success when under proper assistance. Therefore, once those basics are established, a marketing plan can be constructed and the search for a market for cocoa products can begin.

With the help of the premiums and external funding based on the constructed marketing plan and business model, the cooperative can pilot a small-scale cocoa processing operation as Jeroen Kruft, one of the interviewees of this study, has seen this happen in other parts of the world by cooperatives. He mentions that this is not capital intensive, as small-scale processing machinery is relatively cheap, he says it is possible to start this for just a few hundred euros (Kruft, 2022).

As maintenance and knowledge of big machinery can also be a barrier, these smaller basic machines are easier to understand, maintain and produce cocoa-derived products with. Local Ghanaians or family members can occupy the small-scale production facility which further supports the local economy. The facility can choose what type of product they want to produce, beverages made of cocoa might be more accessible than chocolate bars due to the climate in Ghana. As research in the introduction mentioned; powdered cocoa drinks are the most affordable and most popular among the Ghanaian population (Monastyrnaya, Joerin, Dawoe, & Six, 2016 p.13).

Innovations with local and traditional ingredients can be trialled to focus on the domestic market. The Ghanaians know the taste of their people which gives them the ability to create products that the people like. The domestic market is small as mentioned in the results and conclusion of this study, however, a marketing plan created with the assistance of professionals from NGOs can aim to change that.

In the introduction under the sub-chapter "Supply chain of cocoa in Ghana", waste management is introduced. Cocoa shells, husks, and skin as well as inferior quality cocoa beans are used to make fertilizer (Vásquez et al., 2019). This is something the cooperative's small-scale facility can look into to add value to the smallholder farmers' plots of land as well.

The business model that is outlined here in this recommendation can be started as a short-term project, a pilot and see if it works out for the cooperative. If it does work, a long-term project can be started. The cooperative can choose to invest more and use some of the earnings (assuming it has made a profit and/or the terms of payment of the external investors are long-term with low interest) to invest in a bigger facility with more capacity and scale and choose to invest more in marketing to try and sell to neighbouring countries, depending on their import tariffs.

This business model is chosen because it tackles both the internal as well as external barriers mentioned in this research. Not all challenges can be solved in the short term, especially the external barriers can be hard to work around as it is not always within the control of the cooperatives. A small-scale

processing plant aimed at the domestic market doesn't require the financial resources it would need when competing at an international level. Nor would it need international contacts to create an export market, as it is operating domestically.

This is recommended to the cocoa cooperatives in Ghana who want to create an additional income to surmount the extreme poverty line the smallholder farmers succumb to present in modern-day Ghana.

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## Appendix 1. Interview questions Ghanian cooperative (affiliate)

### ***What are the barriers of starting a cocoa processing plant in Ghana?***

1. Do you think vertical integration for farmers and cooperatives is a good idea?
2. What positive and negatives effects do you expect when the chain is shortened?
3. What challenges would you expect to face when starting a cocoa processing plant in Ghana?
4. How could these challenges be overcome?
5. Do you think that this could be a profitable venture?

### ***What could the solution be to the identified barriers of starting a processing plant in Ghana?***

The questions will be formulated based on the barriers which are identified during the interview in sub-question 1.

### ***Would a cooperative help solve the barriers to starting a processing plant?***

6. Are there currently any cooperatives with a cocoa processing plant?
7. What would a cooperative see as a challenge when starting a processing plant?
8. Do you believe cooperatives could be part of the solution to overcoming the stated barriers?

Further questions will be formulated based on the barriers which are identified during the interview in sub-question 1.

### ***How could a cooperative implement the solutions to the barriers to starting a processing plant?***

9. You stated that ... would be a barrier, the solution that you gave was ..., how could this be implemented by a cooperative?

***The questions will be formulated based on the barriers which are identified during the interview in sub-questions 1-3.***

## Appendix 2. Interview questions about financial support for institutional employee

### ***What are the barriers of starting a cocoa processing plant in Ghana?***

1. What barriers would you expect to face when starting a cocoa processing plant in Ghana?
2. Would access to capital help when facing the mentioned barriers? How?
3. What are the options for a cocoa cooperative in Ghana to acquire capital for setting up a cocoa processing plant?
4. What are the up-and downsides of the mentioned options for acquiring capital?
5. Would you say a cocoa cooperative in Ghana would be suitable for starting a cocoa processing plant?
  - 5a. What makes/ or doesn't make it suitable?
6. Could you predict what the effect would be on the cocoa chain if Ghana were to be not just a producing country but also started processing cocoa?

### ***What could the solution be to the identified barriers of starting a cocoa processing plant in Ghana?***

Further questions will be formulated based on the barriers which are identified during the interview in sub-question 1.

### ***Would a cooperative help solve the barriers of starting a cocoa processing plant?***

7. What would be a challenge for a cooperative when starting a processing plant?
8. Do you believe cooperatives could be part of the solution to overcoming the stated barriers?
9. Do you see any problems that could arise when a cooperatives vertically integrates itself into the chain that is normally in hands of the European cocoa processors?

### ***How could a cooperative implement the solutions to the barriers of starting a cocoa processing plant?***

10. You stated that ... would be a barrier, the solution that you gave was ..., how could this be implemented by a cooperative?

Further questions will be formulated based on the barriers which are identified during the interview in sub-questions 1-3.

## Appendix 3. Interview questions cocoa processing/chocolate industry professional

### ***What are the barriers of starting a cocoa processing plant in Ghana?***

1. Why are processing plants of cocoa still mainly located in Europe?
2. Is it difficult to start a cocoa processing plant in Ghana?
3. What do you think the benefits would be of having these processing plants in Ghana?
4. What would be the effect on the cocoa supply chain when moving these processing plants to Ghana?
5. How would your company be affected if Ghana also became a cocoa processing country?

### ***What could the solution be to the identified barriers of starting a processing plant in Ghana?***

The questions will be formulated based on the barriers which are identified during the interview in sub-question 1.

### ***Would a cooperative help solve the barriers to starting a processing plant?***

6. What would be a challenge when starting a cocoa processing plant in Ghana as a cooperative?
7. Do you believe cooperatives could be part of the solution to overcoming the stated barriers?
8. Do you see any problems that could arise when a cooperatives vertically integrates itself into the chain that is normally in hands of the European cocoa processors?

Further questions will be formulated based on the barriers which are identified during the interview in sub-question 1.

### ***How could a cooperative implement the solutions to the barriers of starting a cocoa processing plant?***

9. You stated that ... would be a barrier, the solution that you gave was ..., how could this be implemented by a cooperative?

The questions will be formulated based on the barriers which are identified during the interview in sub-questions 1-3.

## Appendix 4. Interview information

<b>Participant's name</b>	<b>Years of experience within the cocoa industry</b>	<b>Type(s) of experience (within the 3 categories of the study)</b>	<b>Date of interview</b>
<b>Dr. Owusu-Amankwah (Rita Owusu-Amankwah)</b>	18 years	Ghanian cooperative affiliate (consulting and researcher)	26/1/2022
<b>Jeroen Kruft</b>	11 years	Processing/chocolate industry professional and cooperative affiliate (Founder of multiple chocolate brands and worked for NGO)	15/2/2022
<b>Hammond Kwaku Wolanyo Mensah</b>	5 years	Financial support institution employee (20 years of experience in finance and enterprise development and gave credit to smallholder farmers, works in Ghanaian NGO)	23/2/2022
<b>Charles Brefo-Nimo</b>	12 years	Ghanian cooperative affiliate & ex-financial support institution employee (Director in NGO Ghana, consulted in the cocoa industry)	1/3/2022
<b>Benjamin Figarede</b>	17 years	Processing/chocolate industry professional (Did cocoa purchasing for cocoa processors, worked for a cocoa NGO, now director of B2B/B2C cocoa sourcing company that sources their cocoa mostly from cooperatives)	3/4/2022
<b>Habiba Nyarko Agyemang</b>	6 years	Ghanian cooperative affiliate & financial support institution employee (Used to run a consultancy and now works for NGO with focus on cocoa doing business advising as a country representative of Ghana)	10/3/2022
<b>Martijn Bron</b>	25 years	Processing/chocolate industry professional (Global head of Trading at Cargill cocoa and chocolate and had many other roles within the cocoa part of the company)	12/3/2022

## Appendix 5. Transcription of the interview with Dr. Owusu-Amankwah (Rita Owusu-Amankwah)

Rutger ter Horst: Goodmorning.

Dr. Owusu-Amankwah: Hi, hello. How are you?

Rutger ter Horst: I am doing well thanks, how are you?

Dr. Owusu-Amankwah: Good.

[Irrelevant small talk, including small introduction]

Rutger ter Horst: Do you think that vertical integration for farmers and cooperatives is a good idea? So like, is it a good idea for farmers or cooperatives to get into the processing or other types of integration of the chain as well?

Dr. Owusu-Amankwah: Yeah, okay, well let me start by saying that most of the farmers in Ghana own small plots of farms, not big plantations, mostly family farms. Most of them, the Ghana system, COCOBOD buys the cocoa. So through the licensed buying companies, they sell their cocoa to the licensed companies to COCOBOD.

Rutger ter Horst: Yeah.

Dr. Owusu-Amankwah: That's where most of the farmers end. Because they start the cultivation of cocoa, clearing of land, managing the farm, harvesting, drying, and selling the beans. Once they sell the beans, that is the end of their rule. Most of the farmers, that is how it is.

[Connection was disconnected]

Dr. Owusu-Amankwah: I was saying that most of the farmers, most of the cocoa farmers business stops at when they sell their beans. Most of them, are individual farmers. Those who are into cooperatives, go a little bit beyond that selling point. For instance, Kuapa Koko, a farmers union. They have gone into processing of cocoa.

Rutger ter Horst: Interesting!

Dr. Owusu-Amankwah: In fact, they started a long time ago. They have their factory in the US. The chocolate is called divine chocolate. They don't process it in Ghana. Even though, Kuapa Koko has a big share in Divine Cocoa, it is still managed by somebody else. The farmers are part, but don't really have control. Recently, the farmers union has become a licensed buying company. They buy the raw beans from the farmers and sell it to COCOBOD.

Rutger ter Horst: Ooh okay.

Dr. Owusu-Amankwah: We have two main cocoa cooperatives, that are licensed buying companies. Kuapa Koko is one of them, making the Divine Cocoa. I did about 5 years ago, a strategic plan for them.

Rutger ter Horst: Okay, and they don't have to sell it to COCOBOD?

Dr. Owusu-Amankwah: No no, everybody has to sell it to COCOBOD. Even if you.. For instance, in the future, the cooperative wants to set up a processing plant, they still have to sell their beans to COCOBOD, and later buy it back from COCOBOD.

Rutger ter Horst: Ooh, haha, okay!

Dr. Owusu-Amankwah: Haha, that is how it works!

Rutger ter Horst: Mhhm, what do you think happens, when, one of these cooperatives start a processing plant. What challenges do you think they would face?

Dr. Owusu-Amankwah: It would be an interesting development. The cooperative that starts doing that, that would be wonderful. I want to see that one day in Ghana. They have a lot of challenges, financial challenges. It is very capital intensive project. They may lack the capital to do that. Let me go back to say that the cooperative that is now a licensed buying company has been able to do that, was able to do that because of Mondelez international. Because of their premiums, for the last ten years. A long time.



That is why they were able to do that. So, going forward, when they want to start a processing plant, they will of course, they need a source. Otherwise they cannot.

Rutger ter Horst: No, I understand.

Dr. Owusu-Amankwah: Managing farms and such is very expensive. If that is going to happen, they need support of an external source. Also their capacity, they need a building to do that of course.

Rutger ter Horst: Yes, that makes sense. So, if they have support by either premiums or another external monetary source, what would be the next challenge, you think?

Dr. Owusu-Amankwah: Getting, land, a plant. But that will not be a real challenge if they have the money. Getting a license is not hard for starting a processing plant. And I think it would be a great innovation to the cocoa sector in Ghana.

Rutger ter Horst: Mhhm. Okay. And what do you think would be the most suitable for starting that kind of processing plant? An NGO or a cooperative? What do you think?

Dr. Owusu-Amankwah: Either of them, to me, can work. Now I know, cocoa farmer cooperatives are coming together, they come and form a processing plant, and as I said they need an external source. They need to be mobilized to do that, to set up this processing plant.

Rutger ter Horst: Okay, interesting. The next questions will be about solving the barriers to starting a cocoa processing plant in Ghana. That would be mainly about the financial problems then. Do you think it would also be a governmental challenge?

Dr. Owusu-Amankwah: No, the government will not be a challenge, surely they will give you support. They have an organization called one factory one district, they are supporting groups of people to start companies, they support you in the capital you need and all that. If the farmers are interested in those plans, the government will not be in their way.

Rutger ter Horst: Why do you think there are so little processing plants in Ghana, if it is only a financial barrier and you could get help from the government what do you think is the barrier to start?

Dr. Owusu-Amankwah: Heh, well maybe, they haven't aspired to do that. For instance, I led a strategic plan they were not thinking about starting a buying licensed company, once we started talking about issues, then they realized we can do that, we can do this. Okay, and they did. Sometimes you need to tell them, you know, they can do it. They need the realization it can be done.

Rutger ter Horst: That makes a lot of sense!

Dr. Owusu-Amankwah: Another key issue, is marketing. Marketing the chocolate product, or the powder. That is a huge barrier. Okay, because in Ghana nobody really consumes cocoa, so you have to export. Which has its own challenges.

Rutger ter Horst: Okay, marketing. Interesting. And you mentioned the financial barriers, and you mentioned the premiums that helped them achieving those goals in moving towards a cocoa processing plant. What other financial tools do they have? And you mentioned One company One district?

Dr. Owusu-Amankwah: One factory One district, yes.

Rutger ter Horst: Ah oh yeah. And besides that, what other financial tools or financial help do the Ghanaian people have to their disposal. What do you think?

Dr. Owusu-Amankwah: Credit facilities could be an option in Ghana, however it is very expensive. If you're taking a loan from the bank you will pay more than 20-25% interest annually, and that is the lowest! None takes out a loan for this kind of venture, they are afraid to be in debt, they don't want that.

Rutger ter Horst: I understand.

Dr. Owusu-Amankwah: What I would say is, because I think it is a good idea, create awareness. Sell the concept to some big cooperatives in the countries. They will see it is possible and then they can mobilize themselves to do that. They can even enter into partnerships with other NGO's or other parties that are interested. So, yes, I remember when I was working with Tony's Chocolonely, I was a consultant for a

long time. Tony's did a cooperative called Obofa, that is an organic cocoa cooperative, in fact I was hired to support building their capacity and make sure they are also not using children for producing cocoa. So Tony, from 2010-2017 I have been working with Tony's chocolonely and COCOBOD is supposed to give the funding for cocoa to farmers, and sometimes it delays. So Tony's was giving a loan through "Progresso" to the farmers, where the interest to the loan was negligible. So they were getting that loan to buy cocoa.

Rutger ter Horst: I see, so Tony's was giving a loan to Obofa, which is a Ghanaian cocoa cooperative? Is that correct?

Dr. Owusu-Amankwah: Yes, exactly. So they were buying the cocoa from the farmers, and sometimes the money from COCOBOD delays. The farmers have the cocoa but the cooperative sometimes do not get the money right away to buy from the farmers. Say, I want 50 tonnes of cocoa. They need to meet this target, they need to find a way to get the beans from the farmers. They get that loan through "Progresso" from Tony's and they purchase the beans from the farmers and meet their target from Tony's. Tony's was the highest premium paying company to cooperatives.

Rutger ter Horst: Oh okay, so they are really making a change then, huh?

Dr. Owusu-Amankwah: Yes, it has changed a bit though, when I was working with them the arrangement was different.

Rutger ter Horst: I see, alright. Well those were the questions from me to you. Thank you very much for taking your valuable time to help me. I really appreciated this and your answers really helped me in my research.

Dr. Owusu-Amankwah: No problem, happy to help.

Rutger ter Horst: Great, thank you, have a nice rest of your day.

Dr. Owusu-Amankwah: Thank you. Bye.

## Appendix 6. Transcription of the interview with Jeroen Kruft

Jeroen Kruft: Hi, met Jeroen.

Rutger ter Horst: Goedemiddag met Rutger ter Horst

Jeroen Kruft: Ja! Hey Rutger. Bel je vanuit Wageningen?

Rutger ter Horst: Nee nee, vanuit Rhenen, dat ligt ernaast. Ik kan u niet helemaal super horen helaas.

Jeroen Kruft: Oh. Hoor je me zo beter?

Rutger ter Horst: Ja nu iets beter ja.

Jeroen Kruft: Ik dacht dat je mij belde vanuit Wageningen. Ben je een student bij de WUR?

Rutger ter Horst: Nee, ik woon in Rhenen, dus ik zit heel dichtbij.

Jeroen Kruft: Ooh vandaar! Maar waar studeer je dan?

Rutger ter Horst: Aeres. In Dronten.

Jeroen Kruft: Dronten helemaal, oke. En nu onderzoek je dus de cacao, en je had daar wat vragen over.

Rutger ter Horst: Ja klopt!

Jeroen Kruft: Nou, steek van wal zou ik zeggen.

Rutger ter Horst: Ik heb al een klein beetje verteld waarover het onderzoek ging, dat vooral nu cacao verwerkers in Nederland zitten, en of die misschien beter in Ghana zouden kunnen gaan zitten en of de cooperatieven hiervoor misschien een oplossing zouden kunnen zijn. Dan zal ik gelijk de eerste vraag stellen. Waarom denkt u dat de cacaooverwerkers voornamelijk in Nederland zitten?

Jeroen Kruft: Je mag wel jij zeggen hoor.

Rutger ter Horst: Oh oke.

Jeroen Kruft: Maar, dat is historisch zo gegroeid natuurlijk, de familie Van Houten. Begin 19<sup>e</sup> eeuw de cacao pers uitgevonden, zo werd de hele cacao industrie eigenlijk gerealiseerd. Want toen kon je de de vetten vervangen door andere vetten zoals plantaardig of vetten van koeien. Vetten van andere makelij. Toen kon je dus eigenlijk het ratio van het poeder gaan aanpassen. Daarom staan aan de Zaan nog steeds verwerkingsfabrieken en zijn wij de grootste importeur en verwerker van cacaobonen maar je ziet ook in Zwitserland zijn ze enorm bezig geweest met het verfijnen van chocola, zoals de familie nestle die poeder voor melk maakten en melk chocola van maken. Ook zijn de Amerikanen zoals Hersheys er flink mee aan de gang gegaan dus die hebben ook wel een tweede plaats verworven als verwerker importeur. Maar waarom staan de fabrieken überhaupt in het noorden, dat is natuurlijk omdat wij daar veel kennis, en je hebt er ook veel kapitaal voor nodig en afrikaanse landen zijn nou eenmaal wat minder kapitaal krachtig. Maar je ziet wel dat grote bedrijven zoals Barry Callebaut en Olam zetten nu ook wel verwerkingsfabrieken neer op de plaats van origine zoals in Afrika en Indonesie waar ze vooral voor de chinese markt half-fabrikaten maken.

Rutger ter Horst: Waarom denkt u dat die verandering plaats aan het vinden is?

Jeroen Kruft: Nou, dat is al een tijdje zo, dus dat is niet van dit moment. Het wordt wel iet wat uitgebreid. Het heeft namelijk een aantal voordelen. Namelijk als je de cacao al van z'n schil ontdoet en je gaat het als likeur maken. Ik neem aan dat je al wel de verschillende direktaten van de cacao industrie kent?

Rutger ter Horst: Ja zeker.

Jeroen Kruft: De boter kun je in een pers gooien en dan heb je cake en die cake kun je weer vermalen tot boter, he?

Rutger ter Horst: Ja, mhm.

Jeroen Kruft: Het meeste van alle half-fabrikaten worden in bakproducten en cereals gebruikt. Dat gebeurt nu ook wel in ontwikkelingslanden, maar het is voornamelijk grote bedrijven, multinationals. De Ghanezen hebben zelf wel een aantal bedrijven. Cacao likeur is een stuk efficiënter om te vervoeren, dat

kun je je wel voorstellen. Dan bonen die nog een schil hebben en tussen elke boon zit nog wat lucht. Dus je kunt gewoon meer vervoeren.

Rutger ter Horst: Ja.

Jeroen Kruft: Maar, de grote maar, de poeder en de boter prijs is ook heel belangrijk om concurrentieel te zijn binnen de industrie. En dan zie je ook dat je een bepaalde schaalgrootte moet hebben bij die verwerkingsfabrieken. Op het niveau SME dan ben je meestal optitief genoeg, dan heb je moeite om die schaalgrootte te halen. En bij cacao, dat is zo'n prijsgevoelig product. Al dat snoepgoed wat ervan gemaakt wordt moet zo goedkoop mogelijk in de supermarkt gevonden worden, de marsen en de snickers, die concurreren natuurlijk heftig met elkaar. Dat is niet een reep waar je meer geld voor neerlegt omdat het zo'n mooi product is met een verfijnde smaak. Dus de meeste van de half-fabrikaten zijn gewoon ontzettend goedkoop. Dat moet ook goedkoop want als je niet goedkoop genoeg bent dan komt er wel weer een volgende van Nestle. Daar staan ook onze supermarkten goed om bekend, al die prijsoorlogen. Dat heeft tot gevolg dus dat je enorm efficiënt moet produceren en niet groot genoeg fabriek hebt, dan ga je niet concurrentieel genoeg zijn met je prijs en dan verlies je het. Dan gaan de mars en de snickers niet meer jouw product afnemen. Een hele grote remmende factor is dat voor heel veel landen, je moet echt van goede huize komen en groots dingen aanpakken wil dat een succes zijn. Je kunt je natuurlijk gaan richten op specialiteit producten, die mooie speciale chocolade repen waar je wat meer voor wilt betalen. Vaak zijn de bedrijven die dat maken meer van het Bean to Bar gehalte. Daar heb je vast van gehoord.

Rutger ter Horst: Ja, zeker.

Jeroen Kruft: Die willen de bonen zelf analyseren en willen dus helemaal geen half-fabrikaten, die vinden het leuk om de bonen zelf te verwerken en daar iets van te maken tot een chocolade reep. Dus de verwerkers zouden het meer moeten hebben van het lage segment en misschien het midden segment, zoals als je kijkt naar Tony's die het gebruikt van Callebaut. Dat is de grootste chocolade fabriek van de wereld. Daarin moet je heel concurrentieel zijn. Olam ook bijvoorbeeld, met zo'n 16 fabrieken over de hele wereld. Ecom ook, doet ook veel aan verwerking. He, Theobroma. Dat zijn allemaal hele grote fabrieken, die zie je ook allemaal terug aan de Zaan.

Rutger ter Horst: Juist.

Jeroen Kruft: Maar je ziet ze wel in West-Afrika, daar moet je wel groot zijn om half-fabrikaten te produceren. Aan de ene kant heeft het te maken met de energie prijzen, in bepaalde landen, zoals ivoorkust is de energieprijs laag, en in andere landen zoals nigeria daar is het niet echt van de grond gekomen want de energie prijs is daar hoog. En dat wordt vantevoren natuurlijk berekend, van "kan het uit?".

Rutger ter Horst: Ja, ik begreep ook dat in Ghana ze vooral nog gebruik maken van aggregaten, omdat ze eigenlijk niet kunnen vertrouwen op het elektriciteitsnet.

Jeroen Kruft: Ja klopt, als je dan een dieselmotor moet aanslingeren dan is dat niet bepaald bevordelijk voor de prijs, dan is al je winst weg. Dus daarom, als we de capaciteit toch hebben hier in het Noorden en er is een stabiele leverancier en geen interrupties van electriciteit dan kunnen de machines gewoon de hele dag aanblijven, dus zegmaar elke seconde dat zo'n machine uitstaat kost ze gewoon geld. Dus dan zegt een Olam niet van "Laten we dat maar lokaal gaan verwerken". Kan wel, maar dan laten ze er eerst een berekening op los van bijvoorbeeld een lokale markt, bijvoorbeeld ze gaan nu bijvoorbeeld een nieuwe machine opzetten in Brazilië, van Olam. Nou waarom is dat? Waarschijnlijk is het een grote markt daar, dat is allemaal voor de Zuid-Amerikaanse markt.

Rutger ter Horst: Dus het is vooral, als ik u goed begrijp de grootte die ze moeten hebben en qua electriciteit is het ook een lastig verhaal. Wat ziet u dan nog verder als een cacao verwerkingsfabriek gebouwd zou worden in Ghana, wat voor een barrières zouden ze nog meer tegenkomen denkt u?

Jeroen Kruft: Je moet uiteraard de juiste technologie hebben, een Ghanees bedrijf dat dat zou willen gaan doen, weet je de Ghanezen zijn heel goed in het produceren van cacaobonen en maar het

produceren van chocola of zelfs een stap daarvoor, cacao likeur, dat is toch wel een heel ander verhaal. Dusja, je moet technisch geschoold zijn. Dat zullen ze ook niet zo 1,2,3 in huis hebben.

Rutger ter Horst: Nee precies.

Jeroen Kruft: Daarnaast zullen ze de machines gaan moeten aanschaffen, die worden dan bijvoorbeeld ook in Nederland gemaakt Duyvis-Wiener, he. Ja, dan moeten die verscheept worden daarheen, dan nog de energie, de schaal, en ze moeten de klanten hebben, want wat dus veel gebeurt, je noemde cooperatie, want voor cooperaties is het echt het slechtste idee om dit te gaan beginnen. Want ik heb heel veel kleine cooperaties gezien die hun eigen chocola of half-fabrikaten willen maken, die gaan dan allemaal dure machines aanschaffen daar moet dan de hele cooperatie, dus alle kleine boertjes moeten daarvoor bijdragen maar uiteindelijk kunnen ze het niet kwijt. En dan zitten ze ermee. Dan zeggen ze dus eerst "Ja, we willen waarde toevoegen, in Europa gaan ze er allemaal met de winst vandoor!". Nou heus niet hoor, want die marges zijn allemaal ontzettend klein voor de verwerkers, voor die grote multinationals. Dus dat is soms allemaal erg schipperen. Giganten zoals Olam zitten dan ook nog in andere commodities waardoor ze het allemaal uiteindelijk weten te balanceren. Maar die hebben ontzettend veel financieringsrisico's, supplyrisico's, kwaliteitsrisico's die ze allemaal meenemen en uiteindelijk onder de streep moet het allemaal uitkunnen. Maar die kleine cooperaties, dat is gewoon de markttoegang, de capaciteit die ze kunnen neerzetten, dus de prijs die veel te hoog wordt... in mijn ervaring, zegmaar een kleine cooperatie of middelgrote cooperatie of zelfs een grote heb ik nog nooit gezien die het succesvol heeft kunnen doen.

Rutger ter Horst: Oke dat is interessant.

Jeroen Kruft: Dat zou ik dus niet adviseren, ik zou een businessplan opzetten en dan zie je zelf dat het niet gaat.

Rutger ter Horst: U heeft, als ik het goed las, zelf Red Ape opgezet, klopt dat?

Jeroen Kruft: Ja ja, en daarvoor ook andere merken zoals Another Chocolate in equador zelf gemaakt. Ik heb toen het bedrijf opgezet met het idee dat het in eigen land veel waarde toevoegd en in het land van origine houden. Daar in Zuid-Amerika heb je natuurlijk ook wel de koopkracht van de bevolking die de chocolade zelf kunnen kopen, meer dan in West-Afrika. Daar is de prijs nog vaak hoger dan hier in Europa, omdat wij hier gewoon zo efficiënt zijn en er zoveel concurrentie is. Dus daar betaal je gewoon een groot deel van je salaris aan voedsel maar dat vinden mensen daar niet erg.

Rutger ter Horst: Wow ja. Maar terug komende op de dingen die verwerking van cacao in Ghana tegen zou houden, hoe zouden de barrières overkomen kunnen worden? Dus je noemde markttoegang, capaciteit, technologische ervaring en electriciteit als problemen hoe zou daar wat aan gedaan kunnen worden denkt u?

Jeroen Kruft: Ja eigenlijk komt het erop neer dat een SME daar niet geschikt voor is. Cooperaties willen nog wel eens hun eigen repen maken maar zoals ik al eerder zei is het dan geschikter om dat op een kleinere schaal te doen. Voor hun eigen leden of hun eigen dorp. Chocola moet dan een lokale of regionale markt hebben. Als je repen gaat vervoeren heb je ook in een land als Ghana gekoeld transport nodig want anders smelt het. Op ten duur brengt het problemen met zich mee en kun je niet groeien.

Rutger ter Horst: Juist ja, maar hoe ik het een beetje voor me zag, als een cooperatie een verwerkingsfabriek start, wat u dus afraadt, maar als we daar even voorbij kijken...

Jeroen Kruft: Ja

Rutger ter Horst: ... dan, wat zouden de effecten zijn als zij het zouden verwerken en verkopen aan de Nestle en Milka, wat zou dan het effect zijn als dat in Ghana gebeurt op de supply chain?

Jeroen Kruft: Wat zou dan het product zijn? Wat zouden ze willen verkopen?

Rutger ter Horst: Het half-fabriekaat, het poeder, de boter wat er precies verkocht zou worden moet dan verder nog uitgezocht worden.

Jeroen Kruft: Juist ik snap je vraag, geen chocolade repen dus want Nestle heeft precies hun eigen formules om hun klassieke chocola te maken. Maar ook voor cacao massa hebben ze hun specifieke

specificatie voor want die gasten zijn gewoon king van het verwerken van bonen om tot een bepaalde mix te komen waarin niet alleen food safety dingen waarin dingen zoals residue levels belangrijk zijn maar ook bijvoorbeeld hoe fijn de cacao likeur is dus de finesse, het wordt helemaal berekend welke mixes je kunt doen van welke verschillende bonen om tot een bepaald product te komen om voor een bepaalde prijs te zien of dat goed is voor een Kit-Kat bijvoorbeeld of een chocolade poeder of Nesquik. Dat wordt allemaal geregeld vanuit hun fabrieken, dus ze zitten helemaal niet te wachten op een klein beetje product, want dat zal het dan zijn van een cooperatie, dat is weer extra gedoe waarbij de kwaliteit niet is geborgen. En waarschijnlijk kan die cooperatie het ook niet doen voor de prijs waarop Nestle het kan doen die hun machines 24/7 per dag aan heeft staan. Snapje?

Rutger ter Horst: Ja, Ja duidelijk.

Jeroen Kruft: Mogelijk, dan zou je een stukje marketing moeten doen, misschien hebben ze al klanten die hun bonen kopen en misschien zijn het wel mooie biologische bonen of Fair Trade of hebben ze er een mooi verhaal bij, hebben ze een identiteit, een mooi websiteje, wat op social media brengen ze hun verhaal over in het land over hun cooperatie. Nou, die klanten zouden bijvoorbeeld chocolade makers kunnen zijn van misschien single origin, Ghana, reep voor het middensegment of misschien wel het hogere segment van chocola moet je dan naar kijken die het leuk vinden om ook dat verhaal van hun cooperatie aan hun klanten te vertellen of er iets over te schrijven op de wikkel. Je kent ze wel, de ene heeft een nog mooier verhaal dan de ander.

Rutger ter Horst: Haha, ja.

Jeroen Kruft: Nou, als dat soort partijen nou overtuigd worden van “ luister ,jullie kopen nu al een tijdje onze bonen, maar vinden het interessant om een fabriekje op te zetten van wat jullie doen in Europa hier in Ghana te doen, zouden jullie daarin geïnteresseerd zijn? Inplaats van het kopen van de bonen, de cacao massa te kopen?”. Dan zou bepaalde fabrieken zoals bijvoorbeeld Chocolate Makers in Amsterdam, die doen dat al, die kopen al, chocolade massa uit Peru en de Dominicaanse Republiek want die kennen gewoon die mensen en dat is gewoon een goeie fabriek. Ze zijn er wel, ik heb wel gehoord dat er vaak heel veel overcapaciteit is, want ze hebben nog te weinig klanten. Maar dat soort chocolade makers zit ik dan aan te denken als een soort doelgroep voor een cooperatief. Je moet dan ook eigenlijk klanten hebben die ook technische informatie met je willen delen, want het is wel een risico, want als jij gewoon de bonen binnenkrijgt dan kan jij het verwerken zoals je dat wilt. Je moet dus kunnen garanderen dat de cacao die de cooperatie nu zelf wil gaan maken dezelfde kwaliteit zal hebben als dat wat zij maken. En dat is toch een technisch verhaal, wat boeren groepen, want dat zijn cooperaties, toch niet zo goed in zijn, dus ja, schoenmaker blijf bij je lees!

Rutger ter Horst: Ja, daar zit wat in, dus eigenlijk zoals u net ook al zei is een cooperatief er eigenlijk niet geschikt voor?

Jeroen Kruft: Je zou er naar kunnen kijken, maar over het algemeen, niet. Het is dan natuurlijk wel een generalisatie. In Congo heb je ook een federatie van cooperaties, dus die groepeerd dat dan ook weer dan heb je in elk geval de massa, zodat ze als ze op stoom raken ze ook concurrentieel kunnen zijn hopelijk want zover ik weet produceren ze nu tegen een verlies. Maar, neem mijn woord er niet voor aan, maar ik zal je wat studies opsturen waar ik ook aan mee heb gewerkt...

Rutger ter Horst: Oh, ja graag!

Jeroen Kruft: ...ik heb een Dominikaanse republiek studie maar daarin kun je wel lezen over die cooperatie in Congo. Daarin staat wel wat over hoe ze de verdere verwerking doen als cooperatie en cacao producerend land. Hoe ze daar wel of niet internationale klanten krijgen. Mexico heeft ook heel veel snoepfabrieken, die kopen ook veel cacaomassa in, dat staat ook allemaal in het rapport. En ik stuur je ook een rapport op over waardetoevoeging waar veel over de verwerking staat en prijsopbouw.

Rutger ter Horst: Dat zou fijn zijn!

Jeroen Kruft: Maar dus over het algemeen, cooperaties op commercieel niveau laten runnen, met onderhoud en elektriciteit en dergelijke is het niet echt een optie. Wat ik wel heb gezien is dat als je de

ruimte hebt dat er grote groepen jongeren of vrouwen daar ambachtelijke chocolade maken, op kleine schaal met wat kleine machines met een klein laboratoriumpje, daar kun je voor een paar honderd euro met chocolade repen maken. Dus dat zorgt voor een leuk extra inkomen voor de boeren families. Dat heb ik wel veel gezien en dat is ook veel logischer.

Rutger ter Horst: Ja duidelijk, ookal is dat misschien wat lastiger in Ghana zelf, waar de bevolking niet echt chocolade eet. Of heeft u dat anders gezien?

Jeroen Kruft: Sommige sub-culturen is dat wel anders ja, ook wordt er niet zo veel koffie gedronken als hier en niet zoveel chocolade gegeten, ookal denk ik wel dat iedereen melkchocolade lekker vindt en trouwens is het, zeker pure chocolade, is erg goed voor ook jonge kinderen, zelfs erg gezond. Vanuit nutritioneel perspectief is het dus ook goed om de leden van het cooperatief chocolade mee te geven, natuurlijk geen 90% maar 60-70% is al heel goed. Hoeft dan ook niet super professioneel maar gewoon met het embleem van de cooperatie, iets waar ze trots op zijn. Erg voedzaam voor de familie.

Rutger ter Horst: Interessant, gewoon iets kleinschaliger.

Jeroen Kruft: Maarja, je zult het altijd van case tot case moeten bekijken. Welke aperature is er nodig om die en die kwaliteit te maken, expertise nodig, etcetera. Maar vertel eens over de Ghanese cooperaties, want jij bent in contact met ze?

Rutger ter Horst: Nee, nee, helaas nog niet, ik kwam met het idee omdat ik dacht dat dat misschien wel zou kunnen werken, maar ik heb nog geen contact met ze kunnen krijgen na vele pogingen maar het zijn er ook niet zo bar veel die echt de grootte die ook die massa kunnen leveren zoals u ook zegt, maar inderdaad ik dacht als een cooperatief nou ook een geldschieter zou hebben vanuit Europa bijvoorbeeld, een Fairtrade of iets dergelijks dan zouden er wat machines gekocht kunnen worden, en als zij de markt ervoor hebben dan leek het voor mij alsof dat wel zou kunnen werken.

Jeroen Kruft: Ja inderdaad, nouja wat je zegt je moet de markt ervoor hebben, cacaobonen kun je altijd wel kwijt die zijn heel erg veelzijdig inzetbaar dus als Nestle het niet koopt koopt Olam het wel en als Olam het niet koopt dan koopt Mars het wel.. er zijn altijd wel kopers voor. Als je de markt hebt, je hebt dus je klanten weten over te halen om op jou over te stappen, dus dat ze eigenlijk hetzelfde product hebben maar zij minder hoeven te doen en ze kunnen het waar maken dat die kwaliteit hetzelfde is, dan is dat best wel mogelijk! Dan moet je een bepaalde schaal hebben, ze zullen er misschien toch iets meer voor moeten betalen omdat je alle kosten er in moet meenemen zoals de elektriciteit en onderhoud en verzekering maar je bespaart ook kosten met het transport. Dingen zoals onderhoud die hier zo normaal zijn is daar nog heel anders, soms al lastig om auto onderdelen te krijgen, laat staan voor een chocolade fabriek, dus dat moet je echt goed organiseren dat dat echt goed blijft runnen. Maar het kan, als een land het zou kunnen in West-Afrika is het wel Ghana, redelijk goed georganiseerd land. Er wordt trouwens wel wat gedaan in Ghana hoor, maar ik denk niet dat dat cooperaties zijn, waarschijnlijk prive bedrijven misschien zelfs overheidsbedrijven, want in Ghana wordt veel door de overheid gedaan he zoals COCOBOD.

Rutger ter Horst: Ja, ja.

Jeroen Kruft: Wil je een cacaooverwerker in Ghana een succes laten worden dan zul je niet op cooperatief niveau maar nog een niveau erboven moeten kijken, een organisatie van de overheid en dan op basis van wat de klant wil regionaal en internationaal massa gaan maken om poeder van te maken en massa van maken maar dat het wel een stapje boven het cooperatieve niveau.

Rutger ter Horst: Ja, precies en anders dus aan de andere kant van het spectrum, heel klein zonder ingewikkelde machines.

Jeroen Kruft: Ja precies.

Rutger ter Horst: Nou, dat zijn hele interessante inzichten die u daar geeft. Daar ben ik echt heel blij mee. Dankuwel. Ik had niet zulke antwoorden verwacht, maar erg interessant.

Jeroen Kruft: De conclusie is, het is moeilijker dan je dacht haha.

Rutger ter Horst: Ja exact haha!

Jeroen Kruft: Graag gedaan, ik zal je nog wel een link sturen waar je de rapporten kunt downloaden.  
Rutger ter Horst: Super, nogmaals dank, tot ziens.  
Jeroen Kruft: Tot ziens, Rutger.



## Appendix 7. Transcription of the interview with Hammond Kwaku Wolanyo Mensah

Rutger ter Horst: Good morning mister Hammond Mensah.

Hammond Mensah: Good morning Rutger, how are you?

Rutger ter Horst: I'm doing well, how are you?

Hammond Mensah: I'm good, how do you pronounce your name?

Rutger ter Horst: Haha, good question. Most English speaking people call me Roger, which I would say is the equivalent of the Dutch "Rutger".

Hammond Mensah: Ah!

Rutger ter Horst: Quite hard to pronounce. Haha. Are you in the office right now?

Hammond Mensah: No, no I am home, I'll leave after talking to you.

Rutger ter Horst: Ah okay, well thank you very much for this possibility of talking to you.

Hammond Mensah: You're welcome.

Rutger ter Horst: I will be asking you around like 10 questions, related to finance and cocoa in Ghana so I hope you can answer but if you can't that's no problem. Oh and by the way, do you mind if I record this conversation on my phone?

Hammond Mensah: Not at all, you can proceed and record.

Rutger ter Horst: Perfect, thank you.

Hammond Mensah: Okay so I am going to switch my device, I currently using my phone now, I am going to switch to my laptop so if you could hang on a second...

Rutger ter Horst: Sure, sure.

Hammond Mensah: Okay, there it is.

Rutger ter Horst: Perfect. Alright. Shall I start then?

Hammond Mensah: Please.

Rutger ter Horst: Okay, so my research is mainly about the cocoa business in Ghana, and setting up a processing plant in Ghana for a product that could make chocolate. What barriers do you expect to face when someone is starting a cocoa processing plant?

Hammond Mensah: You mean from the finance side? Or from the entire thing?

Rutger ter Horst: Yeah like, when you're starting one, what would be the difficulties in that?

Hammond Mensah: Okay, well I am assuming you have the market and everything in place and the only thing that you need is a place that you can deliver to the market. Issues of land acquisition, would be one. Are you able to find land that is litigation free, that is located in a place where you have all the services, like water, access road, electricity and at a very good price. The second one, would be labour. Are you able to find the both skilled and semi-skilled labour in the right numbers in order to man the facility? And the third one would be money, capital. Are you able to find capital in the appropriate form, to invest in the venture. And then there is this (unintelligible) that will be getting the cocoa bean into the plant. Currently, in Ghana, all the cocoa beans belong to the government even if you have a plant in Ghana, you cannot just go to a farmer and buy their cocoa beans. The beans must first go to the government and then you would obtain an application to procure some form for your processing facility.

Rutger ter Horst: Yeah at COCOBOD right?

Hammond Mensah: Cocoa marketing company I should say. So, these broadly are some of the barriers that you could run into. Apart from the, like the taxation, you may run into. Some challenges, this is not restricted to the cocoa industry, but in general, we have quite a number of exemptions on our starting produce. Like, when you start a processing plant in Ghana, the tax laws say, that you must benefit from the tax exemptions on the equipment that you are going to be using especially with agricultural processing and so on and so forth. And it usually depends on the size of your investment, the tax exemption will come up somewhere around, lets say 2 million dollars, now the (unintelligible) officer in

the, let's say Ghana investment promotion center who must make a decision that you will be exempted from paying 2 million in taxes, sometimes they are a bit careful to not make that decision they will push it to the Ghana revenue authority and they will push it to the ministry of finance and it would take some time for most exemptions to fall in place. So also, when it comes to setting up and getting a business up and running very quickly apart from the issues of water and electricity and labour and so on. Are also the issues surrounding taxation and so on that may not be able to kick in quickly so you're going to have to do a lot of back and forth to get the result. So broadly, these are some of the challenges that you may run into. Assuming you have the market and everything is fine.

Rutger ter Horst: I see, because you used to work for, or were the CEO of a company that helped smaller companies right? To gain access to capital, did you ever help someone set up a cocoa processing plant by any chance?

Hammond Mensah: Not a cocoa processing plant, I have some interaction with some entrepreneurs when I was the head of the business unit of the Danish embassy. The Danish embassy also had a program where we supported local companies to set up processing plants in Ghana, or let's say in Africa. Anywhere we had a Danish embassy. I worked with one of the entrepreneurs set up a cocoa plant, but that was many years ago. But in terms of setting up a cocoa processing plant these are some of the challenges that I have enumerated and people are usually encouraged to setup outside of the original capitals because of tax incentives. The tax will be lower, if you set up in the community, then you have a 5% tax rate or something. But usually again, depending on the economics, you want to set it up very close to the market or very close to the point where you can easily deliver to the market or close to the raw material. Most of the cocoa processors are set up near the port, so that as soon as processing is done, they can send the processed goods out. And most of them are on a good day, around 10 minutes away or less, from the port, on a bad day 25 to 30 minutes. Most of them are set up there, also in what we call the "free zone enclave", that is a zone where you are treated as a foreign company and so you have a tax break for a certain number of years and what you also have to put on the table is that you have to export a minimum of 70% of the output, outside of Ghana. So most of the companies who have their markets out there are set up in the free zone enclave.

Rutger ter Horst: I see, that's interesting. So there are a couple of processing plants there close to that free zone.

Hammond Mensah: There are a good number there, yeah. There's Cargill, there's a local one, which is private. There is another local one, but that one is public, that is a cocoa processing plant that belongs to the government but it is a private initiative. We have, Cargill and Barry Callebaut.

Rutger ter Horst: Ah yeah I have heard of those. So, if a cooperative, cocoa cooperative wants to acquire capital to set up a cocoa processing plant in Ghana, what would be their options?

Hammond Mensah: Yes, so well, there are multiple ways of course but, Ghanaian cocoa cooperatives' ability to acquire capital for setting up a cocoa processing plant will depend on their level of maturity. For traditional funding sources like banks, private equity or venture capital funds, impact investors, Development Financial institutions like that, cooperatives must meet all the requirements for investment by these organizations. A number of these organizations, in collaboration with loss guarantee mechanisms, could also come together to develop and deploy a blended finance strategy that ensures that each of the capital providers meets their return expectations while delivering a favourable weighted average cost of capital to the cooperatives. Otherwise, innovative financing instruments could be developed targeted at these cooperatives. But most of all, cooperatives should be in the position to mobilize equity or things like subscriptions from their members in volumes that signals their commitment to potential capital providers. Cooperatives will need a lot of investment-ready and deal-ready technical assistance from Enterprise Support Organizations, such as Solidaridad, to make them attractive to potential investors.

Rutger ter Horst: That is very interesting. Glad to hear there are many different options. But earlier you mentioned that the government also has a processing plant. Do you know at what scale they operate?  
Hammond Mensah: yeah, they also export, I don't know what their market is. I know they also sell finished products on the local market, they sell chocolate bars and other cocoa derivatives on the local market. You should be able to find them online.

Rutger ter Horst: Okay, and besides the government, would you say a cooperative of cocoa farmers would be suitable for starting a cocoa processing plant?

Hammond Mensah: Yeah the government has hinted that it wants to do something like that. But it remains to be seen, but I think cooperatives could own cocoa processing plants. As to whether they should own the plant in the communities and then transporting the goods to the port which can be several hundreds of kilometers away is something we need to assess. During my brief period at the Danish embassy, I also facilitated the establishment of processing plants here in Ghana. One of the things I lend from the Danish economy is usually the cooperatives own the processing plant. So let's say the pig farmers association would own the plant where they make the sausages and bacon and ham. I think it is a great model to look at, but again, we should look at the procurement, storage and distribution is done locally, because if all the cocoa must leave the community and go to Accra but then you have the processing plant in the community. What it means it that when the cooperative applies on the beans, the beans must leave Accra and come back, that may not be efficient. So if we want to promote the use of the coops, as processing units they would have to take a look at the whole distribution and storage arrangement to make that efficient.

Rutger ter Horst: Do you see any differences between a private party and a cooperation? When starting a processing plant, as in the difficulties of starting one, do you think that would be easier for a cooperative or would you say they face different challenges?

Hammond Mensah: I would say, they face different challenges. Because for a private entity, you have the founders and a couple of shareholders. If you have a coop, you have around 15.000 owners, identifying and managing the expectations, hopes and fears of 15.000 people is certainly more difficult than just managing a couple of farmers and shareholders. So I think that the difficulty may lack in the shareholding structure and how the stakeholders are managed. Every other difficulty may pretty much be the same, because, unless, there is a deliberate effort to remove some of the barriers that cooperatives potentially face in setting up these processing plants but then the arguments would be that if you have the capacity to remove the barriers for the coops then you might as well remove it for the private people as well, so you have a level playing field. I believe they would be pretty much the same, just a difference in the managing structure, just because of the sheer number when it comes to the coops. But then, there is also, if you are a group of individuals, the propensity that you have at entrepreneurial dispositional mindset is probably higher than that what exists in a coop, so that will be the other difference. If you are going to be engaging external investors, having an entrepreneurial disposition or mindset is very critical. These are the two main differences. Shear number in the cooperative area and also having the entrepreneurial dispositional mindset which you usually don't find in a cooperative setting.

Rutger ter Horst: I see, so that what you mentioned earlier about money, labour and electricity would work better for a group of stakeholders than a cooperative, or is that not true?

Hammond Mensah: Yeah, for land labour and capital, lets start with land, we would have to critically assess placing the plant in the community instead of putting it near the port. How would they manage the waste. That is one, number two, whether it makes sense to ship the product from the communities to the port because once they are processed they have much more value than the raw beans. If there is an accident or a delay, anything can happen, the consequences would be much more severe than for raw beans. So the economics of where to put the plant is important. There are industrial parks in Accra for example that the cooperative can own, and make the investment there. The cooperatives do not

have to run the plant, they could be shareholders, where they employ competent agents that manage the plant for them. The interface between the coop and the investors for the market would be that group of competent agents that they employ. These are some of ways, the challenges a cooperative faces, can be addressed. So, you know farmers may not be the best people who would start a cooperative but employing professional external help could make it all a little bit more expensive to set up such a venture for private individuals to that.

Rutger ter Horst: Mhm, and is this already an existing structure that is already running in Ghana where a cooperative...

Hammond Mensah: Okay, so no, Ghana does not have a structure where cooperatives own a processing plant, we don't have that yet. Cooperatives may be doing little things here and there, like getting a training in how to produce artisanal chocolate, but that is on a very very very small scale. We haven't gotten to the point. It would be an interesting thing to look at to close the income gap, because today farmers are earning less than a dollar a day, the average farmer. Based on a study in 2018, a family of five should earn around 11 dollar a day, in order to live, and save something small in case of an emergency. Forward integration by a group of farmers, would help. If we can demonstrate that, owning a processing plant here and exporting sustainably produced cocoa to Europe and America and the rest of the world.

Rutger ter Horst: What about a more regional market? Making it in Ghana and selling it in Accra for example.

Hammond Mensah: Sure, if you realize that if you look at the statistics and data, cocoa consumption on the Africa continent is almost non-existent, and so there is a lot of work that has to be done in that area to ensure that we increase the consumption of cocoa per capita so that it becomes a lucrative market for cocoa for those that set up and sell regional, for the moment it is a tiny market but it may be picking up. Especially within the context of the continents free trade area which seeks to remove trade barriers and ensure the movement, goods and people is done much more efficiently and I think the Worldbank estimates that if this thing is implemented it should be able to deliver 400 billion dollars worth of trade across the African continent. So, in that context I think there will come a really good regional market for producers of the continent.

Rutger ter Horst: Interesting! Well that was my last question, so thank you very much for your answers. It was really interesting to hear more about the financial side of the business, I feel like I have gotten some interesting insights.

Hammond Mensah: I am grateful to be of help.

Rutger ter Horst: Glad to hear that, thanks again and have a great rest of your morning.

Hammond Mensah: Thank you, you too. Goodbye!

Rutger ter Horst: Bye.

## Appendix 8. Transcription of the interview with Charles Brefo-Nimo

Charles Brefo-Nimo: Hi, now it works.

Rutger ter Horst: Ah perfect, hello sir!

Charles Brefo-Nimo: Yes.

Rutger ter Horst: Thank you for helping me with this research and for letting me interview you. I have already told you briefly what the research is about, right?

Charles Brefo-Nimo: Yes, if you could give some brief background again to give it some context please.

Rutger ter Horst: Yes I am researching the cocoa industry of Ghana in particular and I am looking at what cooperations can do to start a processing plant in Ghana. So I will ask you around 10 questions and by the way, could I voice record this to transcribe it in the future, is that okay with you?

Charles Brefo-Nimo: Yeah that is fine.

Rutger ter Horst: Thank you, could you tell me a little bit what you do at IDH?

Charles Brefo-Nimo: So, maybe get that question again, you want to ask me what I do as a person or about what IDH does in Ghana?

Rutger ter Horst: A little bit of both maybe.

Charles Brefo-Nimo: You maybe already have a bit of background of what IDH does but just to put it in context, we are neutral conveners for systematic change we do this through building a very strong connection we work together with partners, public, private, US and EU partnerships. As you may be aware we are present in many other countries, around 38. We have 2 major projects in Ghana, one may be of interest to you as it is the cocoa and forest initiative. I am the senior programs manager for Ghana, the country lead for the cocoa and forest initiative. So basically, CFI as we normally term it, is a framework of action that was signed by the two leading cocoa producing countries that is Cote d'Ivoire and Ghana with also cocoa buying companies or processors or chocolate brands who signed this signatory and made specific commitments and actions of actually trying to further halt further deforestation which is also driven by the commodity cocoa. So this particular program or initiative has three critical areas one being the forest protection and restoration the second pillar being sustainable cocoa production and farmer livelihoods and the third one being community engagement and chain inclusion. So for CFI as I mentioned what we do usually is ensure transparency in our work, which means that we have a very solid governance structure. We have around 5 taskforces who provide very technical support, these include a mapping taskforce, agroforest taskforce, [unintelligible] taskforce, safe gas taskforce, funding taskforce and these taskforces provide some unique technical support. Normally we draw the information from the CSO's the NGO's the relevant governmental organisation and also from the private sector and of course we have a CFI secretariat who runs the day to day administration of the whole initiative. So in brief this will give you some background context of what CFI is and what we tend to do and our focus in terms of our [unintelligible]. If that is enough for you?

Rutger ter Horst: Wow okay, and would starting a processing plant also fall under one of the programs?

Charles Brefo-Nimo: yeah, so, as I mentioned, the signatories to this initiative are also made of private sector partners so, some of these partners are people, groups or organizations who are into cocoa buying and also marketing so there are various stakeholders. So to answer your question, indeed yes. But these are brands, these are bigger companies who are doing processing of cocoa and the likes of Cargill and Callebaut, Mondelez and all that, they are processors. But when we are talking about that cooperative level, farmer cooperatives that you cannot, we don't have as far as I know.

Rutger ter Horst: But you did help start up Cargill, is that what you said?

Charles Brefo-Nimo: so, Cargill, is a big brand. The likes of Hersheys, Callebaut with a global presence. They only source beans from Ghana and process the cocoa beans into a semi-finished product not even into a finished product, process it into cakes, another thing they could export for final products would be

in chocolate. But a farmer group, a cooperative, your focus of your research, in Ghana is difficult to talk about cooperative who are into processing. So what a cooperative does is they would provide the cocoa beans, they are made up of small holder farmers depending on which cooperative, some are quite big, like Kuapa Kokoo and the likes. Now what this cooperative does is that they collect beans from their members and they sell it to these companies who do the processing and as I said there are even a lot of buying companies who's business it is to just buy the beans then we have the brands and the processors they are more interested in processing it into a semi-finished product before export, that is something you need to understand. But a typical cooperative, having their own processing, we do not have any in Ghana.

Rutger ter Horst: No, I see, none that would make it into a semi-finished product, okay.

Charles Brefo-Nimo: yeah yeah

Rutger ter Horst: But what if, say, you are starting one. You are starting a processing plant, that buys the cocoa beans and processes it into a semi-finished product. What do you think would be the challenges that your company would face?

Charles Brefo-Nimo: So, one, major one, they should be an institutional regiment in terms of buying cocoa in Ghana, the regulator which is COCOBOD, regulates the sector. So, first of all, to even have access to cocoa beans to buy from farmers you need what we call a licence, so that you become a licenced buying company. So that is the first step, the element of institutional challenge to get all this paperwork done. Next one, if it is a big business, you need capital. Capital has to be big enough to even get into the market. Normally, if you look at our structure, it is the case that our regulator, COCOBOD, have to provide what you call "seed money" for local buying agencies to go to market and also buy this from the farmers. But the reality is that sometimes the seed money doesn't come early enough so people have to do their own investment, and that is where you see the difference between the big big players, who have the money and forward buy the beans from the farmers. So first you need the capital, and capital is quite is high to break into a market and start buying cocoa. The third point would be the technology and the capacity because its one thing, to have the capacity but processing also requires skills, knowledge.

Rutger ter Horst: Mhm, the expertise.

Charles Brefo-Nimo: Yes, these are tricky challenges, the top three that I can think about.

Rutger ter Horst: Yeah okay, and would you say a cooperative would be better suited to overcome these obstacles? Getting that license, getting the capital and getting the expertise and technology?

Charles Brefo-Nimo: Yeah, so, cooperative farmers, they have come together and they are the producers actually. So if we have a cooperative of 20.000 or less, say 10.000, then we decide to put the beans together but that doesn't mean anything because if you don't have the license to trade as a buyer, then it is going to be difficult. So the first point is that cooperative must then rise to become a licenced buying company. In fact, there are plans like that coming up, there is a cooperative associated to Mondelez cocoa life who have been working as a cooperative and they used to [unintelligible] to Mondelez. The cooperative is thinking of setting up their own [unintelligible], in fact as I speak to you, this cooperative called... I don't need to disclose, but anyways a cocoa farmer cooperative that decided to go into buying their own beans and processing their own beans, okay, the lines you are thinking and talking about, and of course, this cooperative what I understand is also been operating as a cooperative for quite some time and they have the resources and they have been able to put up a small factory in one of the communities that I know, maybe as we go along, this is possible. But the steps need to be followed, and the first step is that you need a licence to buy cocoa. They are a registered cooperative, the next step is that they have got a license, once you got one you can now buy. And then the next thing is whether you want to either identify a processor that you will say you will produce to (*I think he meant sell*) or you can decide and go do the processing yourself. And that is why I say that if you want to and get to that stage and the few things you need to think about is that you really need the capital to do it, you need to have

the expertise to do it because most of these companies that are into processing are people, companies or organizations who have done this over the years and have really enjoyed the economies of scale, they have the skills, the techniques, the expertise the technology to do this, so that is how this goes, thank you.

Rutger ter Horst: Yeah okay, that is interesting, but would you say that if they get a licence , no no wait, is it hard to get a license, that question first.

Charles Brefo-Nimo: Yeah first you need to meet certain criteria, it is, one would say not too hard but ofcourse theres clear conditions present that you need to meet, you first need the capital to demonstrate that you can do this. You need to show that. The buying of the beans requires that you do this at a community level that the cocoa is produced right, so you need the warehouse in place, you need to have the purchasing clerks in place, you need to also make sure that you have the capital to kind of forward buy, because you cannot really rely on the regulator to say that the regulator will give you the money before you go and buy the cocoa beans otherwise by the time you get there you wouldn't get one to buy. So I think you should have your capital as strength. I think the criteria is clear, I can look for it but I don't have on top of my head how much seed capital that you need to have, but first of all most of these cooperatives are licenced buying companies apart from the Ghanian based companies, one of the conditions would be that you need the directors to be mostly Ghanians. You also need the manpower as well.

Rutger ter Horst: I see, if the cooperation does manage to get a license, would you think it would become a profitable venture, why or why not?

Charles Brefo-Nimo: Okay said, it is also a very high risk business [Connection lost]

Rutger ter Horst: Excuse me could you repeat what you said, please? I think the connection just got lost.

Charles Brefo-Nimo: Okay, [Connection lost]

[Small break because of the internet connection]

Charles Brefo-Nimo: Apologies for that.

Rutger ter Horst: No worries, we were talking whether it was a profitable venture.

Charles Brefo-Nimo: Yes alright, so for every business everybody says I want to get a profit, ofcourse the cocoa business is profitable venture, but it also have its own risk like any other business. Because it's a cash crop, a product or commodity, once you have it there is a ready market for it. In fact, the price is known, even before you start the drying of the beans and that is how it works in Ghana so cocoa price is not like you go to the market here you go to bargain, it is already known. So this is a cash crop. So, definitely people make a profit, the other aspect is also the risk that is associated to it, we have purchasing clerks as we call them they buy them for you and sometimes you need to give them money in terms of advance to go and get produces for you when they buy at a community level. So there is also reported cases where there's high risk because people could easily manage funds that has been given to them. So, the [unintelligible] is to put in the measures, and to make sure that you are on top of it and today the good news is also on mobile technology where pre-made systems are made via mobile money so you kind of cut down on error prone processes which involves people handling fiscal cash which would also be one of the high risk.

Rutger ter Horst: I see, okay, the next question would be, what positive and negative effects do you expect to face when the chain would be shortened, normally the cocoa would be processed in Europe and now in Ghana, what would you think are the negative and positive effects that it would bring.

Charles Brefo-Nimo: Okay let me take the positive bit, if you are processing in Ghana, what it is you are cutting down on cost of transport. Normally transport for raw cocoa beans you can imagine what it would cost you via shipment but if you are doing your processing you are cutting all these cost down. The other is also labour, you are not paying the rates in Ghana as you are in Europe, which is far far cheaper. These are the two key benefits of processing in Ghana. That is why I think the major companies are starting their processing here now. The disadvantage is that you are also competing, for instance you

are processing this into chocolate, now you are going to face competition in terms of your brand, your marketing, in a country where the people not really consume chocolate. Maybe you are able to do it but if you are not able to put on a strong marketing strategy, you may not even have the market for the product. Some local processors in Ghana, I know about Niche, Niche is a big local processor, the owner was living abroad he has also the market abroad, foreign exchange makes it easier. You are processing at a cheaper cost and also you are not paying shipment as much, but if you are able to get a market, then your profit margin is also going to be very very high. The likes of Niche [unintelligible other company names] those guys are doing very very well, if you go to their plant you can see they are also progressing very very well. It also has to do with this analogy of labour, cheap labour, less transport, but most importantly they were able to create a market beyond the shores of Ghana. This is the dynamics about this.

Rutger ter Horst: Yeah indeed, because normally I'm thinking they are selling semi-finished products, right? Are they also selling this to companies like Mondelez or is that smaller? Or is that something you do not know?

Charles Brefo-Nimo: Okay, so the examples I gave, people who process to end the cycle, who produce it into chocolate bars and they are selling abroad. So, two typical examples where the factories are now sited in Ghana, owned, one is owned by a Ghanaian, but his marketing of his products is also of a high premium, it is not a common chocolate you'd find on a market anywhere these are premium chocolate that are sold in high street shops, service shops, but they also have a market abroad, like Niche is selling beyond the shores of Ghana. But otherwise, the actors who are doing the processing, the semi-processing, these are companies who are companies who sell to chocolate companies, some of them also have an extension, like the Mondelez and the Callebaut, the nestles they all have plants abroad that end the cycle by producing chocolate. So they sell, processed beans, so you can imagine the volumes that they are able to transport, at a very reasonable cost as compared as to when they were selling the entire cocoa beans. Like the way COCOBOD does, like they sell these things [phone starts ringing]. Sorry I need to pick this one up.

Rutger ter Horst: Sure sure, go ahead.

Charles Brefo-Nimo: I'm sorry, this was coming from the Swiss embassy, we had some engagement with them as well. Once we are done I'll get back to them.

Rutger ter Horst: Oh wow, okay thank you.

Charles Brefo-Nimo: So yeah I think you understand the distinctions I am trying to make.

Rutger ter Horst: yeah yeah

Charles Brefo-Nimo: let me unpack this, they are processors, people that are in this business their idea is to buy the cocoa beans and process it. If you look at the chain, that is where their value chain ends. They are people that use these beans and process it into chocolate and the big brands like Mondelez, all these guys, have factories abroad. Now, some of these processors, they sell directly after they have done their processes to the companies abroad. Then we have the LBC, Licensed Buying Companies, most of these guys buy just cocoa beans, they buy it on behalf of the regulator, most of them are sometimes called Local Buying Companies, they buy it locally and send it to the COCOBOD which further sends it abroad, most of the cocoa beans shipped to the Netherlands or UK market. Now what I get from your whole research is you look at cooperatives who can process the cocoa beans, alright?

Rutger ter Horst: Yes, that's correct.

Charles Brefo-Nimo: Aha, that's why we start with saying we don't find a lot of them, but in recent times, who are cooperatives that have decided to have a license to buy and process their own cocoa. But as we even speak, they haven't started yet. If you've read about, your literature points say, cooperatives like Kuapa Kokoo for instance, they buy their cocoa beans but they sell it to a specific company called Devine, who buys their produce and process their beans. Just to show you the complexities and all that in this sector.



Rutger ter Horst: Mhm, yeah, and Kuapa Kokoo produces the cocoa for Devine chocolate, and how do they do this? Do they process it in Ghana and send it to the US, because that is where they are based right?

Charles Brefo-Nimo: Right, so, what Devine does is that, buys the cocoa beans from Kuapa Kokoo, they don't process at all in Ghana. So they pick it up, like shipments, raw cocoa beans. Most of the national buying companies, we have around 30 of them, they buy beans and even with the big brands that I have mentioned, what they also do is some of them buy the beans and then sell it to, for instance, Mars is not in Ghana right, but Mars process for chocolate, Mars buys their beans from say [names a cocoa company] in Ghana and Mars receives the beans either as a shipment or whatever. So over the years we did not have a lot of companies that do a lot of processing or grinding in Ghana, they started maybe in a last decade. I have told you about Cargill, they started recently, Barry Callebaut also has a factory that processes cocoa. What they do is they buy the beans and then they would process that into semi-products and they will ship it. That is the whole structure.

Rutger ter Horst: I see, that makes sense, and as for, to come back to the processing plant, there were several barriers for starting a cocoa processing plant in Ghana by a cooperative. But would you say that there is another organization that would be better suited, like COCOBOD themselves, why aren't they processing the beans?

Charles Brefo-Nimo: That's a good question, well as a regulator, I do not think it is part of their core-business, but there is also a cocoa processing company, CPC, a Ghanaian limited liability company, over the years going as far back as the 70's where we have CPC processing cocoa, okay, is also sort of government company, the government has a share in that company. And they process cocoa as well. We have Ghana chocolate, the golden tree chocolate as we call it, which is on the market so there is a factory that sells to the market. So I don't think for the government it is that interesting to start and make quick money, COCOBOD also doesn't have the interest to do processing itself.

Rutger ter Horst: Okay, and for the last question... You stated that, a license, but let's say they have a license, a cooperative, then having capital would still be a barrier, would IDH or Solidaridad or any other NGO might be of help to help a cooperative start a processing facility? Or do you think that is not achievable? What is your opinion on that?

Charles Brefo-Nimo: Yeah, personally, if you look at the way more of these NGO's work, we all have our core model of [unintelligible], take IDH for instance, IDH may not be getting into the space for supporting a cooperative to establish a processing plant but of course we can be talking about maybe they need capacity building for farmers. When looking at the big players in the industry, at the operational costs and all that, are the issues you need to content with, and as we mentioned you need a very big capital to get into it, so normally what you find these NGO's doing, of course they are also working with donor funding and so our focus would normally be to provide say, training for farmers for good agricultural practices, micro forestry issues and now we are working on issues that have to do with living income, those are the discussions, our impact teams are more to do with how people can have a better job, a better income, better environment. So, this would be the conversation, but I find it very difficult for us, Solidaridad, SMB's and all this to be venturing into an area that may not be part of our core business, apart from to support farmers in terms of advise, terms of capacity building, but this is an area which I cannot see, its more of a private business sector mind, here moving into processing cocoa beans is more of a business that you are talking about and as a NGO we have no, we are not too much involved in the issues of setting up a business, all you can do is facilitate access to finance, these are the areas that can come to play, where farmers can get access to finance or showing them where they have access to capital so they can do stuff like that so that's the kind of [unintelligible] I see.

Rutger ter Horst: Okay so it is more of a private business idea. So, you're saying that the way Devine chocolate did it is a very good way of working.

Charles Brefo-Nimo: Yeah so you see Devine's business and so Devine comes in and says, you Kuapa Kokoo, you are a cooperative, you have members and the numbers, now what we can do is we get your produce, we process this and sell it on the market and then we make you, the cooperative, have a share in the business, so what happens, at the end of every year when Devine declares their profits, they give back to the cooperative, their share of the profit margin. In that case it makes it a cooperative who is also bench training to some level of business, but they are taking the higher risk, Devine takes the risk. It is expected once Devine makes profit, then Kuapa would also make, because Devine has the capacity and the expertise to even market the product, it would have been very difficult for Kuapa to have done that, either processing it or even ending it or selling it, there is that market and the branding you need to put in place as well to get the product sold and get your money, so I think their approach is better, the only thing I know about Devine and Kuapa over the years has been, organizational politics [unintelligible] because sometimes the expected profitability that Devine is making, sometimes the people or the cooperative think they are not getting the margins, sometimes happens, I worked a bit as a consultant for the Kuapa Kokoo. But otherwise, that is the best model, here you are not taking a risk, you are just a cooperative, all you do is get all your beans and sell it and you get also premiums because you are selling for Fair Trade a certified company, once the money come, the cooperative also need to make sure their members also benefit from any accrued benefits in terms of profit that is coming to them as well.

Rutger ter Horst: But why is Devine chocolate not in Ghana then, for processing then, are they, wouldn't you think that would be better?

Charles Brefo-Nimo: Yeah, I wouldn't be able to tell why, but the analogy we just made if you are shipping the beans to say abroad, then you are paying so much, the volume is already heavy, most of the things are also processed into something else. If you do the processing, then you are also likely to reduce the cost and maybe you also create jobs for the people and that sort of thing, but it is a business decision you have to make, for me it is also one thing, if you are able to also send it abroad where your market actually is, is also a very good reason why you want to do that, because it also come with a lot of the ethical issues when you are processing you have a factory where your suppliers could attest to the quality you are putting in place. The other advantage could also be, maybe you are processing the beans itself, the waste could also be used for something else, I don't know but some people think you can also use the waste that comes out from breaking the shells from breaking the beans into something else. There may be a lot of reasons, yes.

Rutger ter Horst: Okay thank you, you really gave me some interesting insights into the subject, I think you are very knowledgeable on the subject.

Charles Brefo-Nimo: Thank you too, never hesitate to come back again for any further complication or anything else beyond this, I would be happy to be of help. Thank you very much.

Rutger ter Horst: Thank you very much! Have a nice rest of your day.

Charles Brefo-Nimo: Same to you, bye.

Rutger ter Horst: Bye.

## Appendix 9. Transcription of the interview with Benjamin Figarede

Rutger ter Horst: Yes... Do you hear me now?

Benjamin Figarede: Yes, I can.

Rutger ter Horst: Ah, perfect!

[Small talk - irrelevant to the subject]

Rutger ter Horst: So, I have found Uncommon cocoa through OBOFCA, the cooperative.

Benjamin Figarede: Wait how do you spell that?

Rutger ter Horst: O – B – O – F – C – A?

Benjamin Figarede: Aah, okay, ABOCFA, yeah don't worry, it is recent for me this name of cocoa and is a challenge for me of pronouncing it. I used to call it OCBOFA, I realized it is OBOFCA. But it is, we're working with them and they're kind of a good coop, let's say, and have been working with a lot of interesting players in the industry, they're working with Cho in the US, working with Tasa in the US, working with Tony Choclonely which I am sure you know, that brand came on top of all sales of chocolate in the Netherlands after just a few years, so yeah it is kind of a disrupting company even though, uh there is a report, at the moment, and some interesting lines in I think it is the Guardian the newspaper, putting them up front saying that even though they are putting all their energy working without child labour, there is still child labour in their chain. But I think it is easy to target them because they are kind of transparent in the way they work and they share a lot of information while most of the makers in the industry are just not saying anything about it, I think it is not totally fair, even though it is true that unfortunately the challenge is still existing, so yeah interesting sorts. What I like to share is not the Uncommon position, let's say, I'm gonna share you two different visions, the one from Uncommon and mine, maybe starting with mine because it is more related to the question you are asking yourself of this industry. So let's go back to, what are that first transformation you are considering, processing the cocoa beans to liquor and then maybe powder and butter which are the main use of this industry. All the chocolate makers are not buying beans because of the challenges to store, to transport, to use them in their factory, because there would be some processes around the bacterization, the roasting itself is a challenge in its way because it is a huge investment also the processing of liquor transforming into butter and powder is kind of a complicated task because its also a huge investment, cocoa price is roughly costing, I mean I'm talking industry scale, I'm not talking about anybody who wants to start processing in their kitchen because obviously you can do that, but for an industry its around a 10 million euro investment to get an efficient cocoa butter press based on the requirement of that industry, when I say that I mean it is a very centralized industry, if you take out Barry Callebaut and Cargill and Olam, those three companies have plants in the Netherlands. I used to work at Cargill, which is the biggest cocoa processor around Amsterdam. In Zaandam you have Cocoa the Zaan, which is ADM another big trading company which is sold out their assets, their chocolate part went to Olam a Singaporean based company that is trading cocoa and a lot of other raw materials in the world and on the other hand the bean part has been sold to Cargill... Or was it the reverse, I don't know, just to be sure that the company wouldn't just go to only one player, they decided via EU regulation to split the sale to those two makers but in the end it makes it so that only three makers in the world are processing a percentage between 60-70 somewhere percent. Barry Callebaut about 1.2 million transformation and Olam and Cargill should be roughly processing 800-900.000 metric tonnes so that makes them really huge players and if you take that out of the 5 million metric tonnes of production worldwide then you have that percentage, 60 something percent. If you take that in the picture, that makes anybody willing to be a part of that picture, needs to be a big player. Around 90% of all chocolate worldwide is bought from supermarkets, apart from France where you have a huge tradition of craft makers. Amsterdam is still the biggest cocoa importer of the world, even the two main ports of the ivory coast reach the level of importation seeing cocoa. The reason for that, there's been historically this huge culture of cocoa based on the different

territories that the Dutch have been connected to. So that made it a huge player and also the supply chain. The huge warehouses where the beans are stored in Amsterdam [connection interruption]

Rutger ter Horst: Oh, hm?

Benjamin Figarede: ... So basically the canals, not the canals of Amsterdam but the supply chain canals, they basically load up a boat of, I don't know, 80-100 tonnes of cocoa in bulk and when it arrives at the factory or it can be stored there when they don't need it immediately, but when it arrives at the factory they have these types of huge vacuum that suck the cocoa from the boat into the factory, that makes the Netherlands a "can't beat platform" in terms of supply chain, because there is no other makers in the world that have that infrastructure. If you want a huge factory, as with Barry Callebaut is the case, they need basically truckloads from the port to their factory, they don't own the truck so the truck must be unloaded once it arrives, otherwise they have to pay fees for his occupation. My vision is that, the port of Amsterdam makes it, as it has some competitive advantages any other processor around the world, already with some economical challenges or technical issues in the chain to make it happen. So the biggest factory from Cargill is producing, I think 250.000 metric tonnes in a year maybe they reached 300.000 now, I'm not sure but it means that they are processing roughly a 1000 tonnes a day so those boats will be loaded with around a 100 tonnes so that means they have 10 around the factory. So when you think of trucks, the amount would be huge. Also it means that the infrastructure they have are very automatized there is not a lot of human tasks in the factory, a factory like that can have maybe 10 people on shift, because everything is mechanized in the background. It means that, anybody who would be willing to invest in the factory has that as a competition, facing huge makers that have unlimited resources, they have access to international companies, they have access to critic lines that makes it that kind of complex for any competitor that wants to play around those figures, and also it means that if you want to bring a factory that brings a 10<sup>th</sup> of what they do, which would be a 100 tonnes or three trucks a day, is already existing even in origin countries and bigger ones. Then you have the challenges of your yield, and I am not an expert in that area but I assume if you build a factory for only 30.000 tonnes versus players that have buildings, factories for 300.000; you're not playing the same game. So it means that, in the end you are in the same market, there is nobody who really values the difference, well atleast, maybe the value would be lower because you are not Cargill or Olam, so it means that your reputation is not there in the market and you have to grow it, while they have the reputation of being really consistent and big players and renown for many years, I think Cargill's operation of cocoa started in the 80's when they first acquired General Cacao, that was a major player in the cacao industry and that was based in the Netherlands and that was when they started to grow their side of the industry and in the end also those kind of companies, if you take Cargill or Barry Callebaut or Olam they have access first to the beans because they have their own sourcing operations in origin countries, then there is the fact that they process the beans and have some factories that process chocolate, so they have a direct connection to the industry of chocolate maker because sometimes those chocolate makers, and Tony's is an example of that, they buy chocolate basically. They don't buy beans, they don't buy semi-finished product, they buy directly chocolate that is process by Barry Callebaut. They would receive tanks of that chocolate, move them, pack them and then send them to the retailers but it means that the investment of those three players in the value chain is huge because they are from the beans almost to the finished product, in some industries even to the finished product, they sell not bars but couverture, either in trotmakers or industrial so it means that they have an access, a piece in the value chain that is kind of huge. And there is this, another very important part is if you are considering processing beans in one origin you don't have access to beans from other origins, if you are processing beans from Ghana, don't dream buying beans from the ivory coast, which is the neighboring country because the challenges of importing beans in those countries are immense the regulation makes it very challenging, and I'm not just saying that for that, but if you bring in beans to Brazil from ivory coast, it exists, the big players are doing it, there are important factories in Brazil while production

is still limited in Brazil they don't have enough beans to meet their needs so they would import it from West-Africa but they need to have some people from Department of Agriculture from Brazil travelling to Ivory Coast while they making the load, you have to bring a lot of the documents so bringing your shipment is a challenge so just to say that most of those big players, why do they have a factory in the Netherlands is it will give them the opportunity to blend different kinds of beans and that blending of the types of beans will give them economically a better outcome and also technically in terms of quality products, it gives them some consistency. You would mix some beans from Cameroon for example, in your mix, because they are reputed for the color they bring to your powder for example, so that makes another challenge at processing at origin also existing. In the fact, those processes at origin already exist and I am almost sure the capacity of factories in Ivory coast already overpassed the processing capacities of Netherlands. While Netherlands might be number 2 in terms of capacity Ivory Coast might be reaching not far from a million ton in processing while the Netherlands might be at 700 to 800, something like that, Ghana is in that range also, I'm not fully sure about these figures, you could talk to people at the ICCO to get more accurate figures on this, but so, that's another thing, those factories exist and then the challenges of those factories is different then processing here. The cost energy is bigger, the cost of electricity in Europe is very low in comparison to the price of electricity in West-Africa. Also, the service, those big equipment need to be serviced all the time, the access to technical people exists but it is more costly. You don't, if you have a challenge, an equipment is missing, is out of service, it might take you up to one month to repair it because, it means that, in the way you have to get organized you need to have a lot of spare parts in your workshop to be able to be more independent if anything happens in your factory. It means that, I remember, because I used to work at Cargill, I think in Ivory Coast they had like 2 millions Euros or US Dollars invested in just spare parts, to be sure that if they have a challenge in the process they would be able to replace it and then order the part at the manufacturer to [unintelligible] supply chain challenges, so they would fly it, so the cost of bringing those equipment is really high while if you're in Europe, and I am not saying it is easy, because these days with the challenges in producing and the supply chain also what used to take you a month might take you up to three months these days. Even at origin you can't be better, this is also some challenges I see, and also yes, you are transporting less in terms of shipping, you have less moisture in your shells but you have to consider that investing in those territories is not the same price as here, the loan from any financial institution might be very different might be very different to what you are used to in Europe. The cost of investing in Europe would be around 1% per year, if you are thinking of investing in those territories with the country risk, political risk, all the aspects of those mechanics would all have an impact on your access to investment so this also to take into consideration. The local regulation might be a challenge, I'm not in any way judging the political side of Africa saying they have bad leaders or something but it is just a fact for a country like Ivory Coast and Ghana, cocoa is such an important resource that they don't want anybody to jump in it. So they put regulation in place, that makes it sometimes a bit challenging to consider the investment, you could get some advantages from the state, maybe some taxes you don't have to pay when you are investing locally but then the process might be more complex bringing an industrial project here, if you bring an industrial project here you have to talk to a lot of regulators but its quite fring, you don't have the challenges of convincing anybody any leader of the benefit of it so it might need to go down road investing over there that could ethical challenges, if I may say, maybe you don't have to bribe but maybe you need an important local player in your business model so that would take a share of your activities locally, it was the case for Cargill, it used to have a local investor as well in their investment to assure they were at least some connections with the people running the state and the regulations body. So on that area it's happening, Ghana and Ivory Coast have huge processing facilities but in the meantime there are some challenges in making also a coop or a group of farmers leading that, there could be some artificially bonussed loans, as a group of farmers you have access to more money to make it happen but in the meantime the

competition that will come once you have your finished product and when you want to jump into the market you would face maybe some challenges in the competition those players are so big they can make you lose money for a while just to get you out of the market or just eat your shirt. I'm not saying they are badly intentional but they want to keep their market in doing it, this is how competition works sometimes. So, that is it for the industry part, how we work is and why we do green beans is because the makers we work with, we only work with only very small makers, they want to have access to the beans rather than a semi-finished product, they want to put their hands in it developing the flavors of a high end chocolate, it starts with every step at farm level but once you get the beans the impact of roasting is so important in developing your flavors, that they want to dig in that, even if the makers have access to the same portfolio of beans because we have a limited portfolio in Europe of bringing beans from mostly Belize and Guatemala and a bit of Colombia as well but it means that on the roasting profile that's how they define what product they want to make with our beans so even a smaller factory of semi-finished product would not make sense for them because they don't want liquor, they are not interested in that. They would be interested in cocoa butter, because they would add some cocoa butter to their recipe and they are not processing it because the investment isn't worth it and they have limited resources in terms of equipment and most of the time they have limited space so having 2 square or 3 square meters occupied by the press is a challenge and when you press cocoa you get on one side the butter and on the other side the powder, most of those makers have no idea what to do with their powder. It is not a huge a huge thing to use cocoa powder in the bean to bar industry, so maybe then they would hand with having cocoa butter that they don't know how to use. So ourself, we are processing some beans to transform them into powder and butter but we do that in the US and we are serving 400 customers in the world so maybe we would find in our customer range someone who would be interested in the powder. The first desire is to get butter but we will have to find customers for that powder I think we can do it, but if you are a small maker it is gonna be a challenge to do it. That's how I see it, it doesn't mean that there are no organizations locally that will not succeed in making that process... I don't know, do you speak Spanish?

Rutger ter Horst: No, unfortunately not, no.

Benjamin Figarede: Ah okay, because I could have put you in connection with a coop in Peru that's called "Norandino" and they are in the north of Peru and they are organic certified, Fair Trade, they also work with this organization that is kind of like Fair Trade. They have invested in local processing but the reason why they did that is because their market was mainly directed to semi-industrial manufacturer, one is called "Eticable" a French brand that is a coop, a business but oriented as a coop, and they serve finished chocolate bars but on the specialty part of the market because its Fair Trade and organic certified so it is a little more costly products and they didn't have the capacity to process all the beans themselves so they partner with their sourcing organization at origin so they would do the first transformation themselves. It is the case for them, they process liquor in Peru and then this liquor is exported to their customer that used to buy beans from them but since they were not processing it they had interest in that. I wouldn't be surprised that there is room for this kind of connections in the planet, but it is for specific reasons and specific connections in the business it is not just farmers or a good farmer organization that say "Oh, let's do that!" again that would have some marketing challenges, access to the market challenges and also there could be, I'm not too familiar in this area, maybe that is something for you to dig in, is the custom part of it, if you import cocoa beans in Europe there is basically a 0% tariff for the custom, but if you import chocolate of semi-finished product there could be some limits to the tariffs you can get but this is something I am not totally familiar with. So, that's how I see it.

Rutger ter Horst: Yeah, and do you think there is a, because you mentioned a different business model in Peru, do you think that maybe a different business model would work in Ghana as well? Because as you mentioned it is a big market and it is hard to get into.

Benjamin Figarede: It's possible, I think Ghana beans are kind of reputed in the West-African side and economically or politically it is a more stable country than Ivory Coast, Cameroon or Nigeria so the attract for some makers could be interesting for some makers that have access to this product. But what I see is the local regulation around the topic makes it kind of complex, even ourself, initially it was really complex to have the traceability of the beans in Ghana because everything was bought by the cocoa marketing company, the CMC and this company didn't want anyone getting involved locally, even if you want to get involved locally, you have to get a license, you can't just go to the farmers and buy their beans, you have to be a licensed operator and that operator is bringing the beans to the CMC and then there is another company that is making the export so the value chain is already very straight between the farmers, LBC, the exporter and in-between there are some regulations that makes even us, we are not an exporter, not an LBC we just have that connection to the coop locally we have to have the connection to the CMC just to explain them our business model, who we are, what we do in order to help the process it means that if you want to dig into that, locally, you have to make your way to contact to CMC to make your project "sexy" in a way, something I don't know, something that will highlight the reputation of the country or something the product and the farmers more successful but even if you have the best intention to that there also have to deal with the rest of their beans so if you're putting up from that with your factory that is producing a 1000 tonnes and this is the best from Ghana, it means the other 899 thousand tonnes are not the best? It could put them in a situation where they have to also, you have to consider the value what you bring to them might be a bit different to what you think so it is a complex environment, if you're into that, you have to dig around and connect to people, visit and bring your, what you can bring to them in terms of value, so they can see an outcome, and I am not saying a bribe or anything its just the way you organize your proposal should in my opinion reflect those aspects.

Rutger ter Horst: I see, and do you think that, OBOCFA, would be able set up a cocoa processing plant for semi-finished product, for mass, they don't have the mass, they don't sell too big, is there a solution to that? What way around that do you see? Because that is the biggest problem, right?

Benjamin Figarede: Well, it's, I only think that operators, their skills and their locations would only be able to make it if they already have the connection with the market, they know 100% of what they are going to process is in their contract with some people, industrially interested in acquiring that, that is the only way I see of how it can be run because it is not just about their access to beans, ABOCFA is also a network of two other coops that we're also starting to bring the beans and so they're a reputed operator and they have those connections to Europe, they visit sometimes, they're not an isolated player in the industry, if they want to go that way in the industry, for me, the only way to do it is already some partnership engage with an investment that would be split between those local and the European or US partners that would be interested in the product that they would bring. I can talk to, I can send an e-mail to Stephan, the manager of OBOCFA, to see if he'd be interested in having a conversation with you so you can drag your question...

Rutger ter Horst: Yeah that'd be great! Thank you!

Benjamin Figarede: I am not the best with him, because I don't know him personally, we never met, just had two online meetings because we don't bring any OBOCFA beans into Europe. I only started a couple of months ago at Uncommon cocoa but I've been in the cocoa and chocolate industry for many years, but Uncommon is new to me. Those OBOCFA beans are bought by a Crafting Market, another Dutch company that is trading cocoa beans for specialty markets, basically our competitor and we have good relationships with them as well. I can definitely dig with him, his name is Stephan Asachia. See how he reacts to that, the purpose of your research is to look for a business opportunity to develop or is it part of your academics?

Rutger ter Horst: Yeah that. Its for my thesis, I'm researching whether a cooperative can start a processing facility and what the barriers are.

Benjamin Figarede: I know for sure and operator in the Ivory Coast, a coop called Ecoquim, they were looking into that, they have people speaking English, if you have interest in other territories as well, I could make that happen.

Rutger ter Horst: I think going for Ghana is...

Benjamin Figarede: Yeah okay just Ghana.

Rutger ter Horst: Thank you though!

Benjamin Figarede: No no, I will ping Stephan today and I will let you know if he reacts to that.

Rutger ter Horst: Yeah, thank you, well I think you gave some really good answer to my questions, even though unfortunately it seems kind of a bad outcome for my research but...

Benjamin Figarede: No no! It is just that, it gives you other angles and maybe the next thing for you is, if you are able to connect to companies like Cargill or Gerkins cocoa or Cargill in the Netherlands, I know their operation is run in the office in Schiphol, I know Cargill is not the best in communicating things, but you're Dutch and most of the team is Dutch and also kind of has an interest in conversation sometimes so, I would try if I were you through LinkedIn to their trade desk maybe check on the directory who are the key people you could get in touch with, I know the head trader there is Martijn Bron.

Rutger ter Horst: B – R- O- N? Bron?

Benjamin Figarede: Yes, Bron. He's been at Cargill for the last 15-20 years. He's roughly my age, he's like 45 or something. And he could be a possible connection and maybe check the Cargill directory who would be a possible connection on this. I am sure there are people who would be keen on sharing their story on this. My goal today was to give you different directions of the sort of investing, maybe then it is more of a huddle race. This is how I see it, I think there are possibilities but under very special umbrellas, projects or products in a way. Maybe there is a way to link local investment or local processing to the carbon outcome since you are transporting between 15 to 18% less product when transporting liquor mass rather than just beans, you have the possibility to get some bonus from banks or financial players who would put another lego brick in your model that makes it more valid but there are other challenges that you can't beat when you are playing around over there. Voila.

Rutger ter Horst: I see.

Benjamin Figarede: And where are you right now? Physically?

Rutger ter Horst: In Rhenen, near Wageningen.

Benjamin Figarede: Ah Wageningen, yes! My school used to have a partnership with Wageningen.

Rutger ter Horst: Oh cool, did you study in Angers maybe?

Benjamin Figarede: Oh no, I never went but I did international business, but yeah a lot of production studies were taking classes in Wageningen.

Rutger ter Horst: Ahh okay, because I have a couple of friends from Angers who study in Wageningen.

Benjamin Figarede: Yeah yeah yeah, my school is now in Angers but it wasn't. It was in the suburb around Paris, the school moved like two years ago. A nice agricultural background in Angers.

Rutger ter Horst: Alright, well thank you very much Benjamin.

Benjamin Figarede: Yeah no problem, don't hesitate to share your publications at the end of the road, I'd be really happy to see where it takes you and I will put you in contact with Stephan in time.

Rutger ter Horst: Perfect thank you!

Benjamin Figarede: Have a nice day and enjoy your weekend!

Rutger ter Horst: Thank you too, bye bye.

Benjamin Figarede: Thank you, bye.



## Appendix 10. Transcription of the interview with Habiba Nyarko Agyemang

Habiba Nyarko Agyemang: Hi

Rutger ter Horst: Hi, hello mrs. Agyemang

Habiba Nyarko Agyemang: Hello Rutger

Rutger ter Horst: I cannot see you but this should be fine.

Habiba Nyarko Agyemang: Yeah, you can see me?

Rutger ter Horst: Oh now I can.

Habiba Nyarko Agyemang: The network is not very good so..

Rutger ter Horst: Oh no worries.

Habiba Nyarko Agyemang: The network will roast if I put on the video constantly.

Rutger ter Horst: That is no problem.

Habiba Nyarko Agyemang: But it is good to put a face to the name.

Rutger ter Horst: Yeah, exactly!

[Unimportant smalltalk]

Habiba Nyarko Agyemang: Everyone who wants to help the cocoa industry is a pleasure for me to talk to. That is the only way we will see development.

Rutger ter Horst: Glad to hear that, because I wanted to interview you my research, which I already told you briefly about, I want to see whether cocoa cooperatives in Ghana could start their own processing facility and to see what the barriers are for a facility to start something like that so I will be asking you around ten questions, related to the cocoa industry in Ghana. I hope you are able to give an answer but if you can't that is no problem. Do you want me to start or do you have any questions.

Habiba Nyarko Agyemang: Yeah just go ahead, I tend to talk a lot so maybe one question can answer all the ten questions.

Rutger ter Horst: Haha, so I only have to ask one question then!

Habiba Nyarko Agyemang: Haha

Rutger ter Horst: Okay so the first question is, vertical integration for farmers and cooperatives is a good idea so whether a farmer or a cooperative in this case could start a cocoa processing facility, what do you think the good things and the bad things are of that?

Habiba Nyarko Agyemang: Yeah so, generally integration is good for a farmer or a cooperative. Whether it is vertical or horizontal integration is still very relevant. As a stat now, the producer, the cooperatives for that matter get only about 1.6% of the value of the entire chain, see they are very weak in that sense and benefit less. So if there is a possibility to add value, whether service, provision or value addition in any way it is relevant for that. That is what we at Agriterra try to do, however, vertical integration is not always the best depending on the circumstances and environment, the political, social or what ever environmental reasons you can give of a specific context you can give. That will determine whether vertical integration is relevant or profitable, the value could be profit but also socially, generally improve livelihood. In the case of Ghana, cooperatives are a bit less advantaged when it comes to vertical integration, the policy around cocoa... how do you say this, cocoa aggregation, trade, the policy is quite strict and the government takes absolute control.

Rutger ter Horst: Do you mean in relation to COCOBOD? Where the CMC, where you need to sell the beans from the farmer to COCOBOD and you have to buy it as a cooperative?

Habiba Nyarko Agyemang: Exactly.

Rutger ter Horst: Okay. I see.

Habiba Nyarko Agyemang: Yeah but there is also the economic aspect of high labor cost, a lot of raw material cost are not available when you want to add value, machinery is always imported, so these

things could be mitigated with proper assistance but are still very challenging to do for a cooperative. Also policy wise, the government is now trying to encourage actors now for chocolate making so there is government initiatives who are trying to promote that, but you see that it is.. we have our own challenges with accessibility of policies, its benefits, sometimes contradicting with policy guidelines and implementation.

Rutger ter Horst: I see okay, and what positive or negative effects do you see when the chain is shortened like this? I think you did a study in supply chain management right?

Habiba Nyarko Agyemang: Value chain, yes.

Rutger ter Horst: Mhm, what do you see when a cooperative shortens the chain in this way.

Habiba Nyarko Agyemang: Well if a cooperative is able to do that, of course there is the economic value of getting higher price, if you like, but as to whether the market would be able to add [unintelligible] is a challenge, income wise, that's what I mean but also in terms of total production of course you are able to absorb all the beans of your members so you increase member commitment as a cooperative and once the cooperative has enough money and shorten the chain they are going to invest more in productivity increase because they know they are the ones take care of the process. Also environmentally contributes to good environmental practices, so yeah, for me, the shorter the chain the better for the farmer.

Rutger ter Horst: I see, and do you see any negative effects? Or anything else?

Habiba Nyarko Agyemang: There is a lot, so competition is high, almost political, the tendency of a cooperative collapsing is high even dangerous is high but there is also a possibility for, you know if they are not able to meet the standards that they require to get accepted by the market then they fall into real challenges, but of course, shortening the chain like this or going into processing, if not managed well, could also lead to higher, like they are more susceptible to corruption and embezzlement if they're not given right supporting systems.

Rutger ter Horst: Right, okay, do you think that happens, in what forms do you see corruption or that it could happen?

Habiba Nyarko Agyemang: So, for most cooperatives, and its not just limited to just Ghana or even Africa, for most cooperatives governance is always an issue, so there is [unintelligible] a few people taking control of the face of the cooperative and not involving the membership, it can have a beautiful case like Friesland Campina where everybody has a seat because they have a very good structure, you could also have a cooperative where a few people like the ones really making the decisions and taking control. In that sense, the potential of leaving the farmer out of the equation is higher. Also that they concentrate more of the processing, because that is where the money comes from, if the cooperative forgets about being producer oriented, becoming more processing oriented you will lose your base of supply.

Rutger ter Horst: Interesting, let me write that down. And what do you see when a cooperative starts a processing plant in Ghana so really the cooperative, all the farmers work together to set up a processing plant in Accra or Kumasi, a big factory where they make semi-finished products that are being used in the cocoa and chocolate industry in different places of the world. What challenges do you see?

Habiba Nyarko Agyemang: You're asking me for the challenges? Sorry the network is not very good here. Can you ask the question again? The challenges?

Rutger ter Horst: Yes, yes, when starting a processing company for semi-finished products.

Habiba Nyarko Agyemang: The first one everyone will talk about is finance, access to finance. But also technology and the know-how is very limited, like I said also the policy restrictions from access to beans, so that is also a challenge for most cooperatives.

Rutger ter Horst: Why do you see the access to beans as a problem? Because you need a license or other problems?

Habiba Nyarko Agyemang: Yes, you need a license and the capital outlay for that is quite high, for cooperatives now, the government is giving some room for them to aggregate. Even for aggregation it is not easy, there are just a few cooperatives. They used to only have one for 25 years, but since last season there has been a cooperative with a new licensed buying company owned by a cooperative, cooperatives are not easily able to aggregate because you need to be able... in principle you don't need a license because cooperatives are supposed to be legally registered marketing organizations. The ownership is what makes a difference between an SME and a cooperative so they are supposed to be able to aggregate but COCOBOD has some strict requirements that is not easy for the cooperatives to meet. So, that is why it's a challenge for most cooperatives, for this we are also trying to also work with some clients to explore the possibility of going to aggregation because access to beans because of the control from COCOBOD is a challenge there is also a challenge because you don't need to compete with higher or bigger buyers but also existing licensed buying companies who buy the beans. If you don't have a good relationship with your members, if you are not providing the right services, access to beans could be a challenge.

Rutger ter Horst: I see. Why do you think that the Ghanaian government makes it so hard to obtain a license? What is the reason behind that, do you know that?

Habiba Nyarko Agyemang: I can give a partial answer to that, the license to buy cocoa is not, the government has not made it difficult, the requirements are that you need to have warehouses in the areas you want to collect your beans from. Maybe because government wants to see a higher quality of the beans and to be honest if you compare the Ghanaian quality of the beans to other countries, it has higher qualities and gets a premium because of it. Maybe because of how controlled the system is.

Rutger ter Horst: They want to keep their quality high of course, that makes sense.

Habiba Nyarko Agyemang: Exactly. It has really proven to work, even though, for example input provision is controlled, seedlings are controlled, you cannot use, you are not supposed to use, as a farmer, any type of breeder there are specific approved cocoa breeds that you can use in planting and the government tries to propagate this for farmers, it is not enough but it is done. Right after you finish drying your beans, you don't own your beans again the bean belongs to government then. So then in the warehouses their quality control are both keeping the standards, like mixing the good beans with bad beans. It is paying off, it shows in the quality beans we have but in that same way, it is hampering, the progress of especially cooperatives also because government takes a lot of our money as a nation, is banked on cocoa. Cocoa is one of our biggest revenue earners. There are some other aspects I can give but these are the main reasons that come to mind.

Rutger ter Horst: Okay, and so do you think that it could become a profitable venture to start a cocoa processing plant in Ghana? For the cocoa beans. So even with all these challenges, the financial aspect, technology, access to beans, do you think it could become a profitable venture.

Habiba Nyarko Agyemang: It could be a very profitable venture if it is done right. Because we all know the Mars' and Olams who are processing in Ghana before export, it should be profitable but the way it is organized which could have a great implication on how successful and profitable it can be.

Rutger ter Horst: Yeah, do you think there could be a different business model that is more accessible to a cooperative that could work? Maybe not making semi-finished products or maybe a different business structure that could help a cooperative start something like this?

Habiba Nyarko Agyemang: Yes, but also engaging with the right stakeholders, getting the buying of the relevant access in the chain, making sure that, so the actors are not limited, but within the cooperatives themselves getting the buying of the members, higher commitment from the members could all be contributing factors.

Rutger ter Horst: yeah yeah.

Habiba Nyarko Agyemang: The internal cycle is as important as the external stakeholders to engage with, if you want to go into a venture like this. But I would also add that you need the right support, for

example, if a cooperative wants to go into a business like this, I would say definitely you would need Agriterra, because then you need someone that really guides and guards you, not just in the operational aspect of the business but also in your organizational aspects as a cooperative in the business, because that is what will guarantee your access to the beans. That is what is important, if your members are not committed, don't have good governance structures, don't have good financial management systems, if you are not able to lobby and advocate to external stakeholders as well as your members then you cannot go into a venture like this.

Rutger ter Horst: Mhm, and what can Agriterra offer to a cooperative that is starting out, those that you mentioned but also access to capital maybe? Or?

Habiba Nyarko Agyemang: Exactly that, we don't give working capital, we are a business advisory organized building, basically giving them the tools and the know-how to work, organizing their governance, human resource, financial management systems and procedures, putting.. put records together, both on farming and offer record keeping, so general business management and capacitating them to advocate and lobby for the service they provide, that's what we do. In other aspects we could also link to finance, we will not provide you the finance but we make you bankable, we put you in shape such that you are able to attract finance and all the aspects you require but in some places we may link you to markets for example. We make you attractive that you are able to be a good supplier for the market.

Rutger ter Horst: Aah, okay. Yeah, interesting. Because are there any recent projects that have been successful for cooperatives in this way? Or you have linked it to a market...

Habiba Nyarko Agyemang: You are asking what?

Rutger ter Horst: Is there a recent project that has been successful in finding a market for a cooperative?

Habiba Nyarko Agyemang: Yes, so within the cocoa sector, we have worked with, relatively new cooperatives, to supply beans to Tony's Chocolonely for example, we did not link the cooperative but we put supporting structures in place so that they're able to supply to Tony's Chocolonely. But this is a supply of beans not.. ehh..

Rutger ter Horst: Not processed?

Habiba Nyarko Agyemang: Yeah or finished product. You know there are by-products of cocoa that we call black beans, there is a Dutch company called Just Cocoa, we arranged them to link to one client, a cooperative who has been in existence for more than 25 years, but was only trading in the good beans and leaving out. The business model we created was to link them to Just Cocoa so they were able to sell. That was a recent project. But cocoa cooperatives are limited, they just rely on premiums, that is a challenge we have in Ghana, they buy the bean certification and that is where the major source of revenue comes from so, in Agriterra I should mention we are only 3 years in, so we are very young. The first 2 years were really fact-finding looking at what is in the system, getting to know what is working. Our real work started in 2020, so when it comes to the organizational management of the things we have seen a lot of improvement but not so much on business because it takes so time to get up to speed.

Rutger ter Horst: I can imagine, okay so quite a young company in Ghana.

Habiba Nyarko Agyemang: In west-Africa Agriterra was the first to start in Ghana. In East-Africa we have been there, in Ethiopia for example we've been there for over 15 years for example. In Ghana we started 3 years ago.

Rutger ter Horst: Okay and earlier you mentioned that some of the challenges, which hold back the cooperative from starting out, that finance especially is a big problem, Agriterra, but what about technology. How can they overcome the challenge of technology?

Habiba Nyarko Agyemang: So the technology I'm talking about is, the technical know-how of process, if a cooperative gets to that level, where they are able to start a farmer-lead business we are able to link

them to the right resources so yes, there could be some challenges but these are challenges that Agriterra can help surmount.

Rutger ter Horst: Well that is good to hear, and do you know if there are any cooperatives with a processing plant currently in Ghana? Have you heard of any of that?

Habiba Nyarko Agyemang: No, I can almost say there is none. There are a cocoa who have intentions and there's been external interest in this range but there is currently no cooperative processing, one of the biggest cooperatives we have in Ghana started, wanted to do this initiative, more than 7 to 10 years ago but it still has not been successful because of a lot of requirements.

Rutger ter Horst: I see.

Habiba Nyarko Agyemang: There are cooperatives that are adding value not to the bean but to other by-products of cocoa. If we are talking about value addition then yes, there are some adding value but not to the bean itself.

Rutger ter Horst: How do they add value then, in what way?

[connection stops for a second]

Rutger ter Horst: Wait I think the connection...

Habiba Nyarko Agyemang: Yes the connection is quite bad. But I hope you heard my answer, currently I don't know of any. But I know about 2 or 3 that have showed interest and tried to do this. It still has not been successful.

Rutger ter Horst: Agriterra is providing help in that way?

Habiba Nyarko Agyemang: No, all of them started before Agriterra even came to Ghana. But currently we don't have any clients that are doing so.

Rutger ter Horst: I think this could be the last question, what do you think would be better suited for starting a processing facility, a cooperative would be better...

Habiba Nyarko Agyemang: What would be?

Rutger ter Horst: A cooperative or a private owned company, to start a processing facility in Ghana, with all the challenges you mentioned, which one do you think would be better?

Habiba Nyarko Agyemang: Well, I would go for a cooperative because of course, if you are looking at the type of impact you want to create yea, a cooperative has the potential of getting a lot more, given a lot more impact, by creating raw employment or by improving the lives of the farmers, access to beans would for me relatively higher working with a cooperative than an individual, a lot more cost effective, cooperatives are not supposed to pay, there are some tax waivers for cooperatives if an investor would want to start a processing facility I would align with a cooperative. It cannot be done in vain, it should be done carefully with the proper guidance.

Rutger ter Horst: Okay well that sounds good.

Habiba Nyarko Agyemang: So an individual is a lot more costly, because then you would have to buy it at the state market, as you buy it from CMC at other processing facilities at a global market price.

Rutger ter Horst: Oh, okay, as a cooperative you can still buy it at the price you sold it to? Or?

Habiba Nyarko Agyemang: No, tax can be negotiated with the government. Yeah.

Rutger ter Horst: Okay I see. Well those were my questions to you, thank you very much. I think I got some really good insights from the industry. Thank you very much for answering my questions, if I could ever help you with anything here in the Netherlands, please let me know. I'd be happy to help you.

Habiba Nyarko Agyemang: Very nice to know, let's keep in touch, if you need any further assistance or need to talk to more people I could help you with that.

Rutger ter Horst: alright, thank you very much! We'll keep in touch, I'll let you know what the research will bring.

Habiba Nyarko Agyemang: Yes I'd be very interested in the final product.

Rutger ter Horst: Sure! I will. Have a nice rest of your day.

Habiba Nyarko Agyemang: Thank you bye bye.

Rutger ter Horst: Bye.

## Appendix 11. Transcription of the interview with Martijn Bron

[missed the introduction, forgot to press record, it captured everything of importance]

Rutger ter Horst: Wat zijn precies de problemen die zich voordoen als iemand een verwerkingsfabriek van cacao in Ghana wilt neerzetten? Aan welke problemen moet je dan denken?

Martijn Bron: Nou goed, je hebt al het nodige onderzoek gedaan toch?

Rutger ter Horst: Ja zeker, het is gewoon het deel van mijn onderzoek wordt gebaseerd op interviews die ik doe.

Martijn Bron: Ja, wat is je eigen analyse?

Rutger ter Horst: Wat het lastig maakt voor iemand om een eigen verwerkingsfabriek daar neer te zetten?

Martijn Bron: Ja.

Rutger ter Horst: Nou wat ik vooral zie is dat geld een groot probleem is natuurlijk, technologie is een groot probleem, zowel de machines als de kennis erover, naast dat heb je de licenties, he want in Ghana werken ze met COCOBOD, dus he om cacao in te kopen moet je een licentie hebben. Dus dat zijn de voornaamste problemen die aangegeven worden. Zie jij dat ook zo?

Martijn Bron: Nouja kijk, je moet effe wat dieper gaan he. Je moet je ook afvragen van, en daarom vroeg ik ook van "Wie is je opdracht gever?" maargoed dat ben je dan zelf. Dan moet je goed bij jezelf te raden gaan van, he m'n... Hoe noem je dat bij een thesis... de hypothese, right? Dus hoe kom je erop om na te denken over specifiek een cacao verwerkingsfabriek neer te zetten in Ghana. Waar komt die hypothese in eerste instantie vandaan, want in principe moet je altijd bedenken, van goh, als ik een investering wil doen, hoe kijk ik dan naar mijn rendamentsverwachtingen en m'n terugverdientijd, hoe ga ik dat berekenen. Dan moet je bepaalde inschattingen doen van de hoeveelheid capitaal die je wilt investeren om een fabriek neer te zetten en dan moet je allemaal verwachtingen aan gaan geven van je revenue stroom. Dan moet je goed bewust zijn van het feit, wat maakt zo'n fabriek nou precies, je kunt een eerste fase hebben waarbij je cacaobonen verwerkt tot cacaomassa en dat is in feite de eerste fase dan kun je die cacaomassa kun je dan verder verwerken, die kun je verpersen, dan krijg je twee stromen; dan krijg je boter en dan krijg je poeder. In feite krijg je dan cake en dat moet je dan weer verder verwerken tot poeder, dan moet je goed nadenken van oke ik heb daar die fabriek, waar zit dan mijn outlet? He, want je weet dat in Afrika dat daar zeer beperkte vraag is voor cacao producten, dat heeft te maken met klimatologische omstandigheden, het is daar erg warm, de hele distributieketen is zeer ingewikkeld en ook niet refigerated.

Rutger ter Horst: Maar heb je dat nodig voor de half-fabrikaten? Want ik kan me voorstellen voor chocolade natuurlijk, maar..

Martijn Bron: Ja als jij boter niet goed gekoeld bewaard dan gaat dat smelten en dan krijg je van die hele gore kartonnen dozen, dus dan moet je heel goed nadenken van waar bewaar je dat dan, onder HACCP. Daar heb je ook temaken met zeer gebrekkige infrastructuur maar niet alleen van wegen maar ook van elektriciteit, dus als je daar dan een warehouse hebt en de elektriciteit valt uit dan heb je ook een probleem.

Rutger ter Horst: Ja.

Martijn Bron: Dus je moet heel goed kijken van, de producten waar ga ik die dan afzetten? Waar moet je dat dan naar toe verschepen en met wie je dan gaat concurreren. Als je dan kijkt naar de raw materials zijde, dat is natuurlijk een belangrijk kosten component, je hebt je fabriekskosten, dat zijn je medewerkers dat zijn je, voor een groot gedeelte de afschrijving zijn op je fabriek, een gedeelte land use, lease en voor een groot gedeelte ook energiebehoefte, nou we hebben natuurlijk recent gezien dat dat enorm kan swingen. Je raw material, dan heb je daar een fabriek staan, dan ben je afhankelijk van Ghanese overheid, dus die zet de prijs. In feite heb je daar geen concurrentie, in feite heb je daar geen

verschillende aanbieders van cacao daar. Je hebt 1 entiteit, dat is de COCOBOD, dan sinds 2019 werken ze dan ook nog samen met de Ivoriaanse overheid waarbij ze specifiek het component van de bonenprijs hetzelfde hebben, dat is die living income differential. Dat betekend dat jij welliswaar te maken hebt met een wereldvraag en aanbod die uiteindelijk leid tot een prijszetting op de goederen termijn markt die als referentie wordt gebruikt voor de finale van je cacaobonen, maar dan nog moet jij bij de COCOBOD zijn om uiteindelijk dat contract nog te sluiten. Zij zijn gewoon een, cartel zou je dat kunnen noemen, een monopolist.

Rutger ter Horst: Ja dat is het eigenlijk, ja.

Martijn Bron: Dus je bent heel erg exposed aan 1 partij.

Rutger ter Horst: Ja.

Martijn Bron: Nou, dan hebben we nog wat anders, wat typisch Afrikaans is. Die regeringen, die zijn altijd cash-strapped, het is het ene gat vullen met het andere gat. Ja en dat kan ertoe leiden dat ze soms ook spullen verkopen die ze helemaal niet hebben, simpelweg om een contract, dan denken ze van ja God ik wil zoveel verkopen want met name in Ghana dan hebben ze contracten die ze gebruiken als onderpand bij een syndicaat van banken, en daar krijgen ze een lening tegen, maar als zij meer verkopen dan er oogst is, simpelweg om die lening vol te krijgen en uiteindelijk is er niet genoeg cacao dan hebben ze een probleem als ze het al hebben uitgegeven want vaak is het ook zo dat het aan de verkeerde dingen wordt uitgegeven. Dus je hebt een zeer difuse dynamiek waarbij je dus in het land van oorsprong bent, waarbij je geen outlet hebt voor je producten, waarbij je voor de raw material inkoop afhankelijk bent van 1 partij. Daar komt ook nog bij, als je kijkt naar de 4 a 5 grote bonenorigines, Ivoorkust, Ghana, Kameroen, Nigeria en Equador dan zie je dat Ghana de duurste boon is. Dat maakt het heel moeilijk om die prijs van die boon om die door te zetten naar je producten, want de boter die je maakt uit Ghanese bonen is niet heel anders dan de boter die je maakt uit Ivoriaanse bonen. Dan zal COCOBOD zeggen, ja maar onze kwaliteit van bonen is het beste, nou die kwaliteit is ook goed, die is ietsjes beter dan inderdaad die andere typen bonen maar eigenlijk niet zo goed dat je nou qua economics heel veel baat bij hebt met de kwaliteitspremie die je kunt vangen als jij die bonen gebruikt. Dus nou, als je dit nou zo schetst dan is dat helemaal niet zo'n aantrekkelijke locatie om een fabriek neer te zetten.

Rutger ter Horst: Cargill heeft wel een fabriek in Ghana, toch?

Martijn Bron: Jazeker.

Rutger ter Horst: En waarom hebben jullie daar dan toch wel voor gekozen om dat wel te doen, ondanks...

Martijn Bron: Nouja, kijk, wij zijn heel groot en hebben heel veel verplichtingen aan klanten en een van die Cargill guiding principles is "Our word is our bond" dat betekend dat in tegenstelling tot enkele andere partijen wij in feite altijd levering garanderen en dat doen we ook in tijden van stress en sociale onrust, en dat gebeurt regelmatig in West-Afrika en dat betekend dus dat je je hele assetbase, die wil je diversificeren. Je wilt dus eigenlijk zorgen dat als er een probleem is in land A dat je een alternatief hebt in land B, je wilt dus eigenlijk zorgen dat je in de origine landen als in de destinielanden dat je daar assets hebt zodat je kunt uitwijken als er in een van die landen een probleem is.

Rutger ter Horst: En daarom was het het voor jullie waard om daar een verwerkingsfabriek neer te zetten.

Martijn Bron: Nou, er zijn wel meer redenen maar dat is een van de redenen en kijk wat je ook bewust van moest zijn dat die industrie, net als iedere industrie, gaat door economische cycles heen. Dus het ene jaar verdien je meer dan het andere jaar dus je kunt zeggen het ene jaar is Ghana minder en het andere jaar is het heel goed, het hangt ook af van waar de specifieke vraag naar is he, dus welke origines meer in demand zijn dan andere.

Rutger ter Horst: Juist, want dat ligt wel heel specifiek voor bepaalde chocolade bedrijven?



Martijn Bron: Ja het is bekend bijvoorbeeld dat de Japanse markt die is heel erg happig op de hoogste kwaliteit bonen, dus die vragen over het algemeen producten die in Ghana zijn gemaakt.

Rutger ter Horst: Oke, ja. En zoals ik begreep dat bijvoorbeeld de grotere bedrijven die gebruiken dan juist een mix van verschillende bonen toch, om het zo stabiel mogelijk te krijgen de kwaliteit. En ik kan me voorstellen dat dat dan ook wel een probleem zou zijn voor een startende cacaooverwerker, dat het dus heel specifiek ligt met...

Martijn Bron: Ja, je hebt maar 1 boon als je in Ghana bent, want je mag eigenlijk niet vanuit andere origines importeren.

Rutger ter Horst: Dat zal met de tarieven te maken hebben, de tariffs.

Martijn Bron: Het heeft te maken met dat de eigen overheid dat niet wilt, die willen natuurlijk dat hun eigen bonen gekocht worden.

Rutger ter Horst: Precies ja, en wat zijn nou dan de voornaamste kosten als er zo'n cacaofabriek wordt opgezet?

Martijn Bron: Nouja, je moet denken aan wat komt er allemaal kijken bij een fabriek bouwen, je hebt engineers nodig, je hebt land nodig, materialen nodig en arbeiders.

Rutger ter Horst: Zou je een schatting kunnen maken qua machines?

Martijn Bron: Dat weet ik wel maar dat kan ik niet met je delen.

Rutger ter Horst: Oke ja dat snap ik. En wat weerhoudt cooperatieven, de grote Ghanese cacao cooperatieven ervan om zelf zo'n cacaooverwerkingsfabriek te starten denk jij?

Martijn Bron: Nouja die zijn er wel, er zijn allerlei initiatieven, ook allerlei lokale cacaofabrieken maar wat ik zeg, de toegang tot kapitaal is heel lastig, ook de kennis van de markt, de market access. Het gaat er vaak niet om wat jij één jaar kan doen, nee een hele grote klant zoals Nestlé of Mars die wil gewoon zaken doen die consistent leveren dus consistent qua kwaliteit en consistent door economische cycli heen, ze willen niet in een situatie terecht komen dat als de markt een keer tegen zit dat die fabriek niet levert. Er zijn natuurlijk allerlei opportunistische initiatieven ook vanuit de overheid zelf, maar dat is al opportunistisch en transactioneel. Grote afnemers zitten daar helemaal niet op de wachten. Je wilt niet kopen van een tegenpartij waarvan je weet dat als de energieprijzen omhoog gaan dat ze misschien failliet gaan of dat ze gewoon niet leveren.

Rutger ter Horst: Ja dat kan natuurlijk makkelijk gebeuren. En voor jullie maakt dat natuurlijk niet uit want jullie hebben op meerdere plekken fabrieken staan zoals je net ook al zei.

Martijn Bron: Precies.

Rutger ter Horst: Oke, en ik heb het dus vooral over cooperatieven of die zo'n fabriek kunnen starten, denk jij dat die cacao-boer cooperatieven geschikt zijn om zo'n cacaooverwerkingsfabriek te runnen?

Martijn Bron: Nee totaal niet.

Rutger ter Horst: En waarom niet?

Martijn Bron: Je moet je voorstellen, het is daar zeer, zeer, primitief allemaal. Ben je er wel eens geweest?

Rutger ter Horst: Nee ik niet.

Martijn Bron: Je kan het ook gewoon op YouTube allerlei filmpjes bekijken, maar je moet je voorstellen, het is zeer zeer primitief daar allemaal. Het zijn mensen die niet opgeleid zijn, vaak niet kunnen lezen of schrijven, uit hele simpele gemeenschappen komen en ja bij default cacao verbouwen, ergens midden in de rimboe. Het is niet zo georganiseerd als hier in Europa dat jij een, echt een grote farm hebt, het is allemaal zo met smallholders, kleine plotjes land in de jungle, in het regenwoud waarbij je vaak nieteens kunt zien wat het verschil tussen het regenwoud en de plantage is. Dan loop je ergens op een modderweg en dan is het ineens zovan "Ohja hier de cacaoplantage" het is daar allemaal heel erg primitief en die mensen zijn daar helemaal niet in staat om een fabriek te bouwen en te runnen, en nou wat ik zeg er zijn wel initiatieven geweest maar niet succesvol omdat het niet consistent is en omdat er iedere keer een probleem is met financiering, of met market access of kwaliteit.

Rutger ter Horst: Oh ja. En je noemde net ook, dat electriciteit dan ook een probleem is, de simpele dingen, hoe gaat Cargill daar dan mee om? Ik hoorde dat ze daar ook vaak gewoon nog op aggregraten runnen, dat lijkt me niet echt, dat zijn nou niet echt de ideale omstandigheden.

Martijn Bron: Nee, dat klopt, maar ja dat is nou eenmaal waar je rekening mee moet houden als je in dat soort landen een fabriek hebt, dat is de realiteit, dat is hetzelfde met internet; dat valt ook de hele tijd uit. He, dus je moet inderdaad rekening houden met plan B, plan C, plan D. En inderdaad met aggregraten en soms... We hadden een aantal maanden geleden, had Ivoorkust die had gewoon 3 maanden lang geen elektriciteit voor de industrie, moest alles dicht. 3 maanden lang.

Rutger ter Horst: Pff, zo. Dat heeft wel wat geld gekost.

Martijn Bron: Waren ze vergeten om gas in te kopen. Je moet je Nederlandse context, die moet je heel ver weg hebben. Ik weet niet of je dat boek gelezen hebt, dat is een heel goed boek van Harrari.

Rutger ter Horst: Sapiens?

Martijn Bron: Sapiens, ja, heb je het al gelezen?

Rutger ter Horst: Ik ben er mee bezig toevallig, ja.

Martijn Bron: Hoe ver ben je al?

Rutger ter Horst: Uhh, waar ben ik, over dat ze het hebben over de verschillende groeperingen en de wet van... dat alles toen heel normaal was met slaven en dergelijke.

Martijn Bron: Ja, nou kijk waar het boek over gaat, het is een van de beste boeken die ik ooit gelezen heb. De eerste honderd bladzijden die vond ik wat taai, dat ging met name nog om het niveau van de holbewonders, right?

Rutger ter Horst: Ja.

Martijn Bron: Maar along the way, als je daar voorbij bent, dan ga je heel goed begrijpen waarom bepaalde bedrijven, bepaalde personen, bepaalde maatschappijen, landen succesvol zijn en andere niet. Toen ik dat boek las, kon ik veel beter nog die context van West-Afrika begrijpen, waarom die landen eigenlijk ja zich niet ontwikkeld hebben, al die tientallen jaren niet en waarom ook heel veel ontwikkelingsgeld gewoon, ja wasted is. Dat heeft te maken met het gebrek aan die legal infrastructre, dus geen betrouwbare wet- en regelgeving, geen betrouwbaar juridisch systeem waarbij als jij een probleem hebt dat je ergens terecht kan en kunt zeggen van "Dit was mijn contract". En heel belangrijk, een extreme corruptie en een hele kleine bovenlaag, geen middenlaag en een hele grote onderlaag. Die landen en niet alleen West-Afrika maar er zijn heel veel landen in de wereld die gedreven worden door corruptie, dat wil zeggen ons-kent-ons, voor wat hoort wat, is per definitie inefficiënt, right? Kijk bij onze maatschappij is alles heel efficiënt, omdat het namelijk gaat om wie het beste product tegen de laagste prijs kan leveren en als je dat niet doet, dan ben je gewoon out of business. In die landen is dat niet zo, daar gaat het er gewoon om; wie ken jij? En wie betaald het meeste onder de tafel? Dat is per definitie een hele inefficiënte niet innovatieve economie. In dat boek Sapiens, wordt dat heel goed omschreven, dan ga je ook nadenken van, kijk nou eens naar Nederland, wat hebben wij nou? We zijn een piepklein landje, we hebben klei en we hebben water, verder niks. We hadden natuurlijk een beetje gas in Groningen. Maar de essentie is natuurlijk, we stellen niks voor, alleen we hebben een goeie locatie, we hebben steengoeie infrastructuur en wij hebben een heel efficiënte innovatieve economie die gebaseerd is op wet en regelgeving en die, waarbij ondernemers weten dat het risico wat ze nemen dat dat ook ten goede komt van hun. En dat je een overheid hebt die supportieve staat tegenover ondernemers en dat er een fair en transparant speelveld is. Dus vandaar dat Nederland over de afgelopen eeuwen natuurlijk zeer succesvol geworden is, en dat lees je allemaal in het boek van Sapiens. Als je dan weer even terug gaat naar jouw thesis, jouw scriptie, ja als je dan in Ghana bent of in Ivoorkust waar ik heel veel geweest ben, en Nigeria en Kameroen. Dan realiseer je je ineens waarom die landen nooit zullen veranderen, want een maatschappij die in feite gedreven wordt door corruptie die heeft geen incentive om daar wat aan te veranderen. Dat is natuurlijk heel pijnlijk om dat te realiseren. Maarja, dat is wel wat mijn analyse is en nouja dat zul je als je dat boek uitgelezen hebt dan zul je ook

tot die conclusie komen, mocht je ooit nog een keer naar West-Afrika gaan, dan kom je daar aan en je ziet meteen, je ziet een infrastructuur die helemaal stuk is, alles is stuk in die landen. Alles is slecht in die landen. Dat is de realiteit, en heel veel Nederlanders die realiseren zich helemaal niet, dat heel hier dichtbij, want het is maar een paar uur vliegen, dicht hierbij heb je gewoon een totaal andere wereld. De belangrijkste driver is gewoon de cultuur van corruptie en clientilisme en geen democratie. Kijk, iedereen heeft het tegenwoordig over Ukraine en Rusland, iedereen is zich meet bewust van het belang van wetten en het belang van freedom of speech en het belang van democratie, dat zie je ook in West-Afrika en de ontwikkeling die daar plaatsvindt, vindt met name plaats door bedrijven zoals wij. Natuurlijk krijgt big cocoa of big choco zoals Tony's Chocolonely het vaak zegt, krijgt heel vaak kritiek, maar de ontwikkeling die daar plaatsvindt en de werkgelegenheid die daar gecreeerd wordt en de groei over de afgelopen jaren wordt met name door bedrijven als de onze gecreeerd. Voor eigen rekening en risico. Wat vaak wordt onderschat is de extreme risico's die wij moeten nemen.

Rutger ter Horst: Dat geloof ik wel ja, zo had ik er nog niet naar gekeken inderdaad. Dus eigenlijk zeg je dat een cooperatief het heel erg lastig winstgevend kan maken, zijn er dan denk je andere business modellen die, he als je een verwerkingsfabriek op zou zetten die wel zouden kunnen werken, kleinschaliger bijvoorbeeld, ik noem maar wat.

Martijn Bron: Nee, ik denk het niet.

Rutger ter Horst: Nee?

Martijn Bron: Nee. Hey als ik jou nog een advies mag geven, ik heb een aantal maanden geleden heb ik met een aantal studenten gesproken, je hebt in Nederland heb je een opleiding en dat is volgens mij de China [connectie verbroken]

Rutger ter Horst: Volgens mij werkt mijn WiFi niet helemaal goed... Zo zou die het weer moeten doen.

Martijn Bron: Ik ga even kijken of ik het [Nogmaals connectie verbroken]

Rutger ter Horst: Zo werkt het misschien beter.

Martijn Bron: Weet je waar je naar moet kijken, het is een meisje en die heet, die kan je op LinkedIn vinden, die heet Mansju Patil. Met haar heb ik ook gesproken over een project, zij hebben ook onderzoek gedaan naar cacao en alternatieven voor cacaoboeren. Zij heeft het voor de Rabobank gedaan.

Rutger ter Horst: Ik zie het ja.

Martijn Bron: Oh ja hier kijk, "How can the Rabobank strengthen the position of African smallholders in the cocoa industry supply chain in order to integrate China into the cocoa market", nou zie je dat was het, als je nou haar een berichtje stuurt, dat je mij gesproken hebt, denk ik dat zij jou ook wel waardevolle informatie kan geven. Misschien is ze bereid dat rapport van de Rabobank met je te delen. Zij hadden ook wel vragen die een beetje lijken op wat jij nu hebt.

Rutger ter Horst: Juist, dat zou interessant kunnen zijn. Dat was ook specifiek Ghana?

Martijn Bron: Nee dat was meer West-Africa, en dan met name, hun angle was, wat kunnen de chinezen betekenen?

Rutger ter Horst: Oh, dat is zeker interessant, hoe denk jij daarover?

Martijn Bron: Nouja, ik denk dat, de chinezen, kijk die zijn heel slim en dat zie je nu ook weer met Ukraine. De chinezen zijn heel opportunistisch en heel pragmatisch. Aan de ene kant hebben ze heel veel grondstoffen nodig, ze zoeken overal in de wereld waar ze, en het maakt niet uit wie nou het regime runt, waar zij dus beschikking kunnen hebben over raw material. Hoe doen ze dat vaak? Dat doen ze vaak in Afrika met het ter beschikking stellen van kapitaal, door aanleggen van infrastructuur. Maar wat doen ze dan? Dan maken ze die mensen afhankelijk van ze, als jij een lening verschaft vinden die Afrikanen allemaal mooi en dan komt natuurlijk de afhankelijkheid meteen want het moet worden terugbetaald dan doen die chinezen heel handig, ze maken gewoon mensen afhankelijk. Maar uiteindelijk kan China ook een belangrijke rol spelen in de ontwikkeling van de vraag, want cacao is een

van de weinige commodities die bijna niet geïmpact is door China en dat heeft te maken met het feit dat de smaak van chocolade eigenlijk traditioneel niet bekend is in China.

Rutger ter Horst: Maar die vraag begint wel te komen begreep ik, he?

Martijn Bron: Ja die vraag begint wel te komen met de ontwikkeling.

Rutger ter Horst: Dat is een interessant onderzoek ja. Oke. Maar de conclusie is van de cooperatieven is, dat zie je niet gebeuren dat die een cacaooverwerkingsfabriek neerzetten?

Martijn Bron: Nee.

Rutger ter Horst: Oke dat is duidelijk. Ja, verder heb ik eigenlijk geen vragen. Ik vind het, zoals ik al eerder zei, hartstikke fijn dat je in gesprek wilde gaan en dat ik dit kan gebruiken voor mijn scriptie, ja ik zal je vertellen hoe het onderzoek verder gelopen is.

Martijn Bron: Zeker, ik ben altijd benieuwd hoe dit soort dingen aflopen. Als je nog een keer vragen hebt kun je mij altijd bellen.

Rutger ter Horst: Hartstikke bedankt!

Martijn Bron: Oke, veel succes met je werk.

Rutger ter Horst: Yes bedankt, hetzelfde. Tot ziens.

Martijn Bron: Hoi, ciao

## Appendix 12. Code system MAXQDA

Code System	Frequency
	162
Barriers	0
Barriers\Corruption internal/external	5
Barriers\Barriers - internal	0
Barriers\Barriers - internal\Internal operational aspects	1
Barriers\Barriers - internal\Cooperatives amount of owners	1
Barriers\Barriers - internal\Cooperatives amount of owners\Governance structure	1
Barriers\Barriers - internal\Pricing	1
Barriers\Barriers - internal\Food safety/ quality	5
Barriers\Barriers - internal\Enough mass / scale	6
Barriers\Barriers - internal\Know-how	11
Barriers\Barriers - internal\Marketing / finding a market	11
Barriers\Barriers - internal\Need to be mobilized	2
Barriers\Barriers - internal\Financing	18
Barriers\Barriers - external	0
Barriers\Barriers - external\Regulations	4
Barriers\Barriers - external\Tariffs for importing to mix	2
Barriers\Barriers - external\Consistency	3
Barriers\Barriers - external\High bean price	1
Barriers\Barriers - external\Dependent on government	3
Barriers\Barriers - external\Infrastructure	8
Barriers\Barriers - external\Small domestic market	4
Barriers\Barriers - external\Recipe mixture big companies	2
Barriers\Barriers - external\Competition	6
Barriers\Barriers - external\Temperature control	3
Barriers\Barriers - external\Electricity / electricity prices	5
Barriers\Barriers - external\licensing	9
Solutions	0
Solutions\solutions - internal	0
Solutions\solutions - internal\Know-how - solution	1
Solutions\solutions - internal\Marketing / finding market - solution	3
Solutions\solutions - internal\Enough mass - solution	2
Solutions\solutions - internal\Need to be mobilized - solution	1
Solutions\solutions - internal\Financing - solution	15
Solutions\solutions - external	0
Solutions\solutions - external\Regulations - solution	2
Solutions\solutions - external\License - solution	3
Solutions\solutions - external\Small domestic market - solution	2
Solutions\solutions - external\Temperature control solution	1
Solutions\solutions - external\Electricity - solution	2

Cooperative a solution?	5
Cooperative a solution?\No current coop processing facilities	2
Implementation solutions	0
Implementation solutions\Devine business structure	2
Implementation solutions\Not ran by shareholders but professionals	1
Implementation solutions\Placement of processing facility	1
Implementation solutions\Government as solution	2
Implementation solutions\Marketing implementation solution	3
Implementation solutions\Bean-to-bar	1
Implementation solutions\Organizations that help	1