

Challenges and Perspectives of Local Cocoa Transformation in Côte d'Ivoire: A Case Study on the Cocoa Industry in Different Production Areas

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Abstract

Since independence in 1960 to the present day, Côte d'Ivoire's economic model has been primarily based on agriculture, particularly the cocoa sector. Indeed, Côte d'Ivoire is the world's leading cocoa producer, with an estimated production of over 2.25 million tons in 2021. However, nearly half of the raw cocoa beans are exported, while the rest are processed into semi-finished products. This naturally results in a significant loss of value for the sector, as it loses out on added value in the upstream production chain. The development of the local cocoa industry would be a major step towards the government's goal of becoming an emerging country by 2030. In this regard, the Ivorian government is considering the establishment of three new industrial units with the aim of locally processing the entire cocoa production of the country by 2030. This article aims to explore the challenges and prospects of local cocoa processing in Côte d'Ivoire. To this end, our study focused on six small local cocoa processing units located in the cities of Daloa, Issia, Bouaflé, Oumé, and Abidjan. We employed a qualitative method for the exploratory nature of our research, which involved the use of an interview guide and conducting semi-structured interviews with the leaders of the studied facilities. The results obtained highlight the significant role that small local cocoa processing units can play, as well as the numerous challenges they face, such as obtaining financing, acquiring more efficient equipment, production capacity, and the lack of Ivorian culture in chocolate consumption.

Keywords

Cocoa Supply Chain, Local Processing, Challenges, Côte d'Ivoire

1. Introduction

The economic development of Côte d'Ivoire relies heavily on the agricultural sector, which includes various crops such as rubber, cotton, cashews, pineapples, coffee, and cocoa. In the cocoa industry, Côte d'Ivoire is the world's leading producer, with a production of 2.25 million tons in 2021 (Ruf, 2022). However, the Ivorian economy's dependence on an agricultural sector vulnerable to climate uncertainties and fluctuations in commodity costs can pose a risk to the country's economic stability. Therefore, Côte d'Ivoire would benefit from locally processing its agricultural production. In this regard, the cocoa sector has received special attention from successive governments. Despite being the world's leading cocoa producer, nearly half of the beans are exported in raw form, while the rest are exported as semi-processed products. This results in a significant loss of value for the sector, as it misses out on added value in the upstream production chain. With this in mind, the Ivorian government has announced the establishment of three new factories with the aim of locally processing 100% of the country's production by 2030¹.

The Ivorian cocoa sector is composed of several actors, including producers, cooperative societies, trackers, buyers, transporters, exporters, bankers, insurers, third-party holders, traders, processors, stevedores, charterers, shipowners, consignees, freight forwarders, shippers, and the Coffee-Cocoa Council (Initiative-cacaoforet.ci²). In the context of local processing, some large groups such as CEMOI, CARGILL, and GCB Cocoa have engaged in these efforts, while some small businesses and cooperatives are beginning to follow suit. However, according to the Ivorian Prime Minister, "the capture of added value and local processing remains insufficient." Cooperatives, which are integral parts of the cocoa supply chain in Côte d'Ivoire, can contribute to the country's objectives. Several studies on the cocoa sector in Côte d'Ivoire focus on agroforestry (Vroh, Abrou, Gone Bi, & Adou Yao, 2019), the social impact of the liberalization of the sector (Bonjean & Chambas, 2001), cocoa replanting practices (Konaté, Assiri, Messoum, Sékou, Camara, & Yao-Kouamé, 2016), and agronomy (Ban, Ouattara, Karou, Tagro, Nemlin, & Diopo, 2013). There are few to no studies on local cocoa processing in Côte d'Ivoire, particularly regarding the challenges faced by local cocoa processing in Côte d'Ivoire. This observation leads us to ask the following question: What challenges do small-scale local cocoa processing units face in Côte d'Ivoire? The objective is to highlight the challenges and prospects of local cocoa processing in Côte d'Ivoire for these small-scale processing units. To achieve this objective, we focused on six local processing units that are part of the cocoa supply chain in Côte d'Ivoire.

In the first section, we present the literature before detailing the research methodology used in the second section. The study's findings are presented in the third section, and we conclude with a discussion and conclusion in the fourth section.

¹En Côte d'Ivoire, la filière cacao passe à la vitesse supérieure (lemonde.fr).

²<http://initiativecacaoforets.ci/la-filiere-cacao-en-cote-divoire/>.

2. Literature Review

2.1. The Place of Cocoa in the Ivorian Economy

Scientifically known as “Theobroma cacao,” cocoa was introduced to Côte d’Ivoire during the second half of the 19th century by French colonists Arthur Verdier and Amédée De Brétignières in Aboisso, in the southeastern region of Côte d’Ivoire, before spreading to other areas. However, it was only in the 1930s, during the country’s time as a French colony, that the cocoa sector truly began to develop. The foundations of its growth model were laid in the 1950s and have led to a rapid increase in supply since independence in 1960, particularly in the 1970s, with an average annual growth rate of over 8% (Tano, 2012; Losch, 2001). Over the decades, cocoa production in Côte d’Ivoire has experienced significant growth, rising from 258 tons in 1913 to over 1.7 million tons in 2019. In the 1960s and 1970s, the country became a major player in the global cocoa market, surpassing Ghana in terms of production and quality. Despite challenges such as inadequate harvests, crop diseases, and a decline in the world cocoa price in the 1980s and 1990s, cocoa production in Côte d’Ivoire continued to increase (Losch, 2001).

Cocoa, the main export product and primary source of foreign currency for Côte d’Ivoire, is the livelihood for over a third of the Ivorian population, approximately 6 million people. Since gaining independence in 1960, cocoa has become a cornerstone of export-oriented agriculture and the national economy. In a speech, Prime Minister Patrick Achi stated that cocoa remains the most significant crop for income generation in Côte d’Ivoire, accounting for 40% of national export revenue, contributing 20% to the gross domestic product, and involving nearly two million producers (abidjan.net, 2021).

Since its independence in 1960, Côte d’Ivoire has adopted a policy of economic liberalism that has placed agriculture at the core of its development. The coffee-cocoa sector was liberalized in the 2000s before being reformed in early 2012 to ensure that producers receive a fair price representing at least 60% of the international price (Sika Finance, 2022). However, the sector faces several challenges such as traceability, sustainability, adherence to purchase prices at the field level, international market price requirements, and local processing of the production (World Bank, 2019)³.

2.2. Local Cocoa Processing in Côte d’Ivoire: A Major Challenge

Local processing refers to the process of transforming raw materials into finished products within the country where the raw materials were produced, rather than exporting the raw materials to be processed in other countries. In Côte d’Ivoire, regarding the cocoa sector, this involves the manufacturing of products such as chocolates, cocoa powders, spreads, etc., directly instead of simply exporting raw cocoa beans. As early as the 1960s, Côte d’Ivoire established a bean

³L’État de l’économie ivoirienne: pourquoi il est temps de produire un cacao 100% inclusif et responsable (banquemondiale.org). Page viewed on 08/08/2023.

grinding industry as part of a commercial and industrial promotion strategy (Losch, 2001).

The first advantage is that processing can reduce the volatility of cocoa prices, which can be attributed to the smoothing effect. This means that short-term price fluctuations can be mitigated as companies can store semi-finished products for a longer period before selling them. The smoothing effect allows for better risk management in the face of cocoa price fluctuations in the global market.

The second advantage is that processing can enable companies to negotiate better with global cocoa industry players. By transforming cocoa beans into semi-finished products, companies can add value to their production and gain greater bargaining power when selling these products to other industry players. This allows them to negotiate better prices and sales conditions, which can be beneficial for their profitability (Losch, 2001).

In this context, larger companies have managed to diversify and expand by entering into primary processing activities. For example, companies like Cargill and Archer Daniels Midland (ADM), which were initially cereal producers, expanded their operations by investing in cocoa, processing, and other related sectors. Similarly, certain chocolate companies, such as Kraft Jacobs Suchard and Nestlé, invested in primary processing activities in the 1980s (Losch, 2001).

Local cocoa processing is crucial for increasing the value added in the sector. However, Côte d'Ivoire currently receives only between 5% and 7% of the profits generated by this industry, which represents a market of nearly \$130 billion in annual revenue, according to the World Bank. The major challenge is to increase the rate of local cocoa transformation into finished and semi-finished products, which currently stands at around 33% despite the Ivorian government's stated commitment⁴. Since the 1980s, although being the leading producer of cocoa beans, Côte d'Ivoire has processed less than half of its production. During the period 2013-2021, the quantity of beans processed increased on average by 5% per year (Sika Finance, 2022). While the majority of the economic value, 80%, associated with the chocolate industry comes from two specific stages of the supply chain: chocolate manufacturing and retail sales (Crandall, 2017).

According to the World Bank (2019), despite the complexity of the cocoa value chain, three transformation stages are significant. The first stage is the grinding of cocoa beans to transform them into cocoa paste or liquor. The second stage is industrial chocolate manufacturing, and the third stage is the production of confectionery items such as chocolate bars, candies, truffles, and pralines. Unfortunately, the second transformation and the manufacturing/distribution of finished chocolate products account for the largest share of the overall value added in the global value chain, controlled by major companies such as Mars, Mendez, Nestlé, Ferrero, Meiji, Hershey, and Lindt.

Côte d'Ivoire holds only 13% of the total value added. In order to address this ⁴https://www.gouv.ci/_actualite-article.php?recordID=14084. Page viewed on 31st July 2023.

situation, the Ivorian government embarked on a project in 2021 to expand a grinding plant in the industrial zone of Yopougon, west of Abidjan, with the aim of promoting the industrialization of the cocoa sector. This plant is expected to become the largest cocoa bean processing unit in the world, with a production capacity of 170,000 tons⁵. Additionally, the GCB Cocoa processing plant was inaugurated in July 2023 in San Pédro. This Malaysian-owned plant is capable of processing 240,000 tons of cocoa beans into semi-finished products and chocolate ingredients each year. The establishment of these processing plants will provide an opportunity to fight poverty and reduce the unemployment rate by creating jobs for the youth⁶. The ambition to transform half of the local production represents a real opportunity for farmers, growers, and stakeholders in the local sector.

Côte d'Ivoire has a multitude of opportunities to enhance the local transformation of cocoa. Its use in various sectors such as chocolate manufacturing, pharmaceuticals, and cosmetics is significant. Additionally, cocoa residues can be utilized for bioenergy production, providing an additional value to the industry. Furthermore, the growing demand for cocoa-based products from Asian countries such as Japan, China, South Korea, and India presents an attractive potential for growth. However, it should be noted that few "Made in Côte d'Ivoire" chocolate brands have managed to establish themselves in the domestic market. Imported, high-end chocolates remain inaccessible to a large portion of the population due to their high prices and are more focused on niche markets. For example, a 90 g bar of "Mon Choco" costs 5.20 euros, while a 100 g bar of Ivorian Chocolatier costs 8.40 euros, which is a significant amount considering the country's minimum wage, which is 115 euros⁷.

The local transformation of local products in West Africa faces several challenges in terms of organization, technical aspects, and the connection between supply and demand (Grandval, Broutin, & Delmas, 2012). Indeed, technical and skills challenges are related to the sanitary quality of products placed on the market, improving the productivity of transformation activities through enhanced technologies that reduce labor-intensive operations and introduce innovations in processes and products, product presentation, and the lack of quality labeling and packaging to attract local consumers. Additionally, the connection between supply and demand faces challenges in terms of distribution networks, communication, and promotion of products. Furthermore, the organizational challenge is linked to a lack of dialogue between producers, medium and small enterprises, and traders in the value chain. Moreover, limited access to financial credit is a significant barrier for small and medium enterprises seeking to purchase necessary transformation equipment (Grandval, Broutin, & Delmas, 2012).

⁵Afrique Magazine—Agriculture: Le défi de la transformation.

⁶<https://www.afrique-sur7.ci/494079-inauguration-de-lusine-de-transformation-gcb-cocoa-en-cote-d-ivoire-opportunités-et-défis>. Page viewed on 23rd July 2023.

⁷En Côte d'Ivoire, la filière cacao passe à la vitesse supérieure (lemonde.fr), page viewed on 10th May 2023.

According to [Crandall \(2017\)](#), the local chocolate industry in West Africa faces high manufacturing costs. Factories need to import ingredients and lack stable electricity, preventing them from operating at full capacity. The transportation costs for shipping chocolate to consumer markets are high and require specific transport conditions. Additionally, a factor limiting the development of the chocolate industry in West Africa is the low local consumption. If the demand for chocolate is low among the local population, it means there are fewer opportunities for local chocolate companies. Chocolate is too expensive for Africans. For example, a box of Ferrero Rocher costs XOF 9000 (\$16.42) in Abidjan, which is 10% of the minimum wage. Local chocolate bars are more affordable in Ghana and Côte d'Ivoire but have a small market share.

In conclusion, it is appropriate to emphasize the notable inadequacy of the literature review addressing the challenges related to local cocoa processing in Côte d'Ivoire, thereby fully justifying the execution of this study.

3. Methodology

Our research focuses on examining the challenges of local cocoa transformation in Côte d'Ivoire's small-scale processing units. To this end, we have employed a qualitative methodology ([Giordano, 2003](#)) that traditionally emphasizes exploration ([Miles & Huberman, 2003](#)). We have chosen the case study method, which aims to investigate one or more cases ([Giroux, 2003](#)) because we are studying a contemporary phenomenon over which we have no control ([Yin, 2003](#)). Therefore, we interviewed six processing units located in Issia, Daloa, Oumé, Bouaflé, and Abidjan ([Table 1](#)), consisting of three cooperatives, two startups, and one association. Primary data were collected through semi-structured interviews ([Giordano, 2003](#)) conducted via Google Meet and Zoom, and the interviews were fully recorded before being transcribed. Secondary data were obtained from press articles⁸, websites of the respective cases, and documents provided by some cases. We also employed a manual analysis using the method of summary synthesis, which constitutes a straightforward form of interview analysis ([Gavard-Perret & Helme-Guizon, 2018](#)).

These six small processing units are located in the region known as the “cocoa loop” of Côte d'Ivoire. Moreover, the number of local cocoa processing units in Côte d'Ivoire is limited.

4. Analyses and Results

4.1. Transformation

4.1.1. Transformation at SCOOPS-SOCOPLAN

SCOOPS-SOCOPLAN owns 470 hectares of plantations and processes 24 tons of cocoa per year. The beans, sourced from the farmers' fields, enter the storage facility and go through all the stages of processing. The first phase involves

⁸Afrique Magasine, n° 143 mai 2023,

<https://afriquemagazine.com/viviane-kouamechocolat-haute-couture>.

Table 1. Case studies, Source: Generated by the author.

Name	Presentation	Location	People surveyed	Date of interview	Duration
SOCOPLAN SCOOPS Cooperative	<p>The Simplified Cooperative Society Chocolat du Planteur (SCOOPS-SOCOPLAN) was legally established on March 14, 2019.</p> <p>SCOOPS-SOCOPLAN's main activities include the production, collection, storage, processing, and marketing of agricultural products, particularly cocoa derivatives. It is located in Issia, in the Haut Sassandra region. The cooperative has 200 member producers and employs 13 staff members.</p> <p>SCOOPS-SOCOPLAN has an annual turnover of XOF 20 million. It markets its products under the brand "Chocolat des Planteurs" (Planters' Chocolate).</p>	Issia	Chairman of the Board of Directors Cooperative Director	30/05/2023	1 hour
CHOCOVI	<p>CHOCOVI is a Limited Liability Company created in 2021 that employs around forty people, including six permanent employees.</p> <p>It is part of the minority of professionals, accounting for 3% worldwide, that operates under the "Tree to Bar" model. CHOCOVI has complete control over the entire production chain, from cocoa plantation in San-Pédro to chocolate manufacturing in Abidjan. This company specializes in luxury chocolates. Its full mastery of the value chain places it within the exclusive circle of chocolatiers in 2021. CHOCOVI has obtained the FAIRTRADE certification, which ensures that the consumer is purchasing a product from fair trade. Its turnover since the beginning of 2023 amounts to XOF 23 million.</p>	Méagui/ Abidjan	Chairman and CEO	30/05/2023	58 minutes
SCOOPS SAHS Cooperative	<p>The Simplified Cooperative Society SABARIKAGNI of Haut-Sassandra (SCOOPS SAHS) has been in existence since 2007 and has 3500 producers. SCOOPS SAHS plays a crucial role in the collection and sale of cocoa from its members and ensures the quality of the beans through the COCOA LIFE quality certification, which it has obtained and maintained since 2010. It is certified by FAIRTRADE and RAINFOREST ALLIANCE. SCOOPS SAHS has a turnover of XOF 2,983,734,820 for 6000 metric tons of cocoa beans collected and sold. Additionally, it has a turnover of XOF 58,780,000 for its brand "Chocolat de Daloa," (Daloa chocolate) with over 30,000 products sold.</p>	Daloa	Director	05/06/2023	1 hour 16 minutes

Continued

COVIMA Cooperative	The Cooperative Society of Women for the Production, Processing, and Marketing of Agricultural Products in Marahoué (COVIMA) is a women's organization established in 2005. This cooperative has 2776 members organized into 49 sections in the Marahoué sub-prefecture. In 2016, COVIMA ventured into purchasing cocoa and cashew nuts to increase the income of women producers. The cooperative produces over 1000 tons of cocoa beans annually and sells them to the FERRERO group through the exporter ETG-CI. COVIMA has 432 tons of certified cocoa and 500 tons of regular cocoa. COVIMA is certified by Rainforest Alliance and UTZ. It markets its products under the brands "Cacao N'zué" for cocoa juice and "Marachoco" for chocolate. Its turnover was XOF 639,200,251 million in 2020.	Bouaflé	Director, Chairman of the Board, Sales Manager	07/06/2023	56 minutes
EPRODIS	Ebony Production Distribution Service (EPRODIS) is a Very Small Enterprise established in 2015 and operates under a trade register. It consists of 5 individuals. The company is engaged in the production and distribution of two agricultural products: soybeans and cocoa. EPRODIS has a turnover of XOF 2,500,000. The company markets its chocolate under the brand name "Orum."	Daloa	Chairman and CEO	04/08/2023	1 hour
Women's Union Oussoton Yaakè d'Oumé)	The Union of Women in Oumé (UWO) is a women's association established in 2015. It comprises 5000 women, including 160 permanent members, and is located in the city of Oumé in the central-west region of Côte d'Ivoire, in the Gôh region. Its main activity is the production of cocoa butter. It has a turnover of XOF 11 million. The Union of Women in Oumé markets its product under the brand name "CAO-Houm-Saka," which means the good cocoa butter. Its motto is the empowerment of women.	Oumé	Chairman and CEO	10/08/2023	30 minutes

winnowing the cocoa to remove impurities and small beans that cannot be processed in the system. This is followed by roasting, grinding, and winnowing stages.

The second step is cocoa grinding. There are two options depending on the desired end product. Either the obtained cocoa mass is directly placed in a press to extract natural cocoa butter, resulting in cocoa cake that will later be processed in another machine to extract the powder. Alternatively, the mass goes directly to the cocoa kitchen. In the kitchen, compositions are made to produce 100% dark chocolate, 70% dark chocolate, milk chocolate, and 100% sugar-free dark chocolate. SCOOPS-SOCOPLAN produces three types of chocolate, with on-site processing without chemical stabilizers and with a very high cocoa content.

The “*Chocolat des Planteurs*” tablet, weighing 28 g, is priced at XOF 350, (€0.53). However, for the purchase of three tablets, a preferential rate of XOF 1000 (€1.50) is applied.

4.1.2. Transformation at SCOOPS SAHS

SCOOPS SAHS has a dedicated department for the processing of cocoa into semi-finished and finished products, namely the chocolate factory, which was established in 2021. However, at this stage, only 10% of the annual production, which is 600 tons, is processed. SCOOPS SAHS markets 100% natural chocolate under the brand “*Chocolat de Daloa*.” SCOOPS SAHS sources its cocoa from its member producers. SCOOPS SAHS has the advantage, for its finished product brand, of being its own raw material supplier and controlling the desired quality from the field edge. The processing process involves several key steps: 1) the collection of cocoa beans, 2) cleaning to remove impurities, 3) roasting, 4) cracking and grinding, 5) addition of flavors and ingredients, 6) butter extraction, 7) molding and packaging, and finally 8) final packaging. It should be noted that steps 2 to 8 are carried out by a subcontractor.

SCOOPS SAHS markets chocolate bars with raisins, cashews, puffed rice, coffee, and almonds. It also sells raw cocoa powder, milk chocolate powder, and natural dark chocolate. The selling price of products marketed by SCOOPS SAHS varies depending on their size. A 100 g chocolate bar is priced at approximately XOF 1500 (around 2€), while a 5 g bar is priced at XOF 100 (0.15€), and a 15 g bar is offered at a price of approximately XOF 200 (0.30€).

4.1.3. Transformation at COVIMA

The aging of the fields and the diversification of farmers’ income led COVIMA, in November 2021, to turn towards processing by producing cocoa juice and chocolate through a pilot project with its partners. Cacao N’zué is made from pressed cocoa bean pulp. Cacao N’zué, which had little value in rural areas, now enjoys great success in the national and international markets due to its novelty. COVIMA’s specialty, Cacao N’zué, has a shelf life of one year and numerous health benefits. Its production is carried out using a solar-powered rolling press. In addition to Cacao N’zué, COVIMA manufactures chocolate bars, chocolate candies, cocoa butter, cocoa powder, dark chocolate, milk chocolate, ginger chocolate, coconut chocolate, and cashew chocolate. A 33 cl bottle of Cacao N’zué costs XOF 500 (0.79€), while the 60 cl format is priced at XOF 1000 (1.52€). An 80 g chocolate bar costs XOF 1500 (2.28€) and a 120 g bar is priced at XOF 2000 (3.04€).

4.1.4. Transformation at UWO

The main activity of this Union is the transformation of cocoa into cocoa butter. This activity started between 2016 and 2017. The raw materials are sourced from women, with 80% being cocoa growers and 20% from the city of San-Pedro. UWO, following training from a micro-fertilizer doctor, has implemented a

process that allows them to produce high-quality refined cocoa butter. UWO's cocoa butter has attracted the curiosity of American and Indian foreigners. The steps involved in cocoa butter production are as follows: 1) harvesting cocoa pods, 2) breaking the pods, 3) fermentation, 4) drying, 5) roasting, 6) grinding the beans to obtain cocoa mass, 7) extracting cocoa oil, 8) cooling, and 9) refining or filtering.

UWO markets its product in universities in Côte d'Ivoire, cosmetic centers, households, etc. Additionally, in addition to cocoa butter, they present roasted cocoa beans at agricultural shows, fairs, and major exhibitions, for example, which can be consumed as whole beans.

Cocoa butter is sold in 1 kg format for XOF 5000 (8€), ½ kg for XOF 2500 (4€), and 100 g jars for 1000 XOF (1.52€).

4.1.5. Transformation at EPRODIS

EPRODIS sources its cocoa from cooperatives but sometimes faces the issue of cocoa bean quality, which requires additional work. EPRODIS manufactures cocoa mass, cocoa powder, cocoa butter, chocolate bars and chocolate tablets. The cocoa transformation is carried out using a manual mill. The production of chocolate bars is done in an artisanal manner: 1) roasting, 2) grinding, 3) refining, 4) conching, 5) molding, and finally 6) labeling that is subcontracted.

A 1 kg cocoa butter costs XOF 4000 (6.09€). A special 35 g chocolate tablet is priced at XOF 200 (0.30€). A 250 g cocoa powder costs XOF 2000 (3.04€). Bulk cocoa powder, sold in 1 kg quantities, is priced at XOF 2500 (4€). Bulk cocoa powder is used in pastry making.

4.1.6. Transformation at CHOCOVI

CHOCOVI sources its cocoa locally in the Bas-Sassandra region. It has cocoa plantations for its raw materials and also procures from cooperatives. CHOCOVI is one of the few chocolatiers that has complete control over the entire value chain process, from planting trees under environmentally friendly conditions to chocolate manufacturing. The cocoa transformation process at CHOCOVI is illustrated in **Figure 1**. The steps of harvesting, breaking the pods, fermentation,

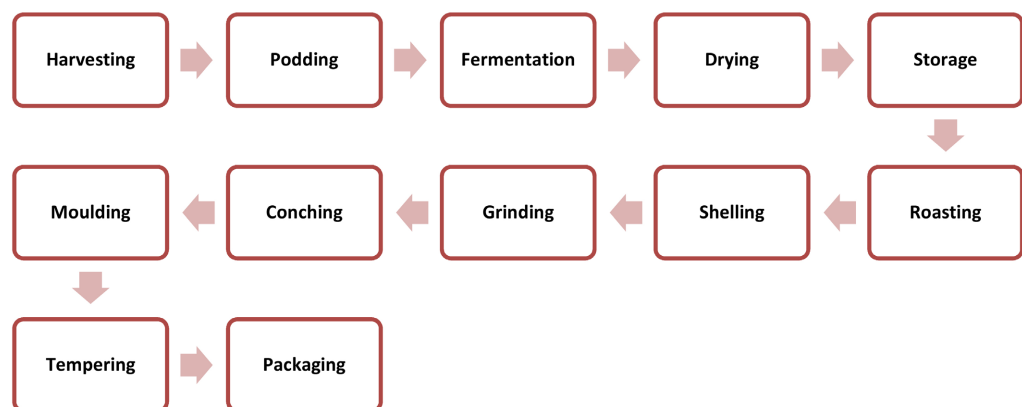


Figure 1. Local cocoa processing process at CHOCOVI. Source: Generated by the author.

drying, storage, roasting, and husking are carried out in the plantation areas in San Pédro. The steps of pre-grinding, grinding, conching the final product, molding, tempering, and packaging are done at the processing unit located in Abidjan. CHOCOVI brings to the market exceptional finished chocolate products made without coloring, added flavors, or additives. They produce a variety of chocolate ranges, including milk chocolate, dark chocolate, white chocolate, and sugar-free chocolate. Additionally, CHOCOVI has a complete unit that allows them to produce cocoa mass, cocoa butter, cocoa powder, and cocoa infusion as derived products. The 100 g chocolate tablet is sold for XOF 2500 (€4).

4.2. Distribution

4.2.1. Distribution at SCOOPS-SOCOPLAN

SCOOPS-SOCOPLAN has a sales department consisting of three sales representatives who are responsible for distributing chocolate to customers. SCOOPS-SOCOPLAN has a customer portfolio that includes both regular and diverse customers. Regular customers include health clubs, convenience stores, wholesalers, and Canal+ agencies. Diverse customers include public and private administration services such as the police, gendarmerie, universities, tax offices, pharmacies, religious establishments, medical clinics, and more. Their products are also exhibited at trade shows. The quantities of processed cocoa are currently distributed in the domestic market without any difficulty. Deliveries are made through intercity transport companies. SCOOPS-SOCOPLAN exports its products to Morocco, Burkina Faso, Senegal, Mali, and France through its partners. Additionally, their products are sold in California through their partner, the American NGO Project Hope and Fairness.

4.2.2. Distribution at SCOOPS SAHS

SCOOPS SAHS caters to a diverse clientele, including resellers, chocolatiers, pastry chefs, bakers, private companies, and e-commerce customers. Its products are marketed in Côte d'Ivoire, Burkina Faso, and France. The company relies on a distribution network consisting exclusively of resellers, such as supermarkets and gas stations, which they actively prospect. Deliveries are made using their own refrigerated truck.

4.2.3. Distribution at COVIMA

COVIMA has two sales representatives who visit offices for sales purposes. COVIMA does not sell its products in large supermarkets. Through trade shows, fairs, seminars, and conferences, COVIMA promotes its cocoa juice. Marketing is done through word of mouth, targeting businesses, embassies, various ministries, and the prime minister's office. COVIMA has a stand at the "Boutique paysanne" in Abidjan and multiple distribution points throughout the country for cocoa juice. Product distribution is done on foot for local deliveries within the city and through intercity transport companies for national deliveries. Orders are delivered within 24 hours in different cities across Côte d'Ivoire. The

cooperative promotes its products through various social media platforms.

4.2.4. Distribution at UWO

Home delivery is carried out through intercity transport means. Orders can be placed via phone call or Short Message Service (SMS). Fast and spontaneous deliveries are available every day until 8 pm. UWO has a retail shop in Abidjan. The promotion of UWO's cocoa butter is done through social media, mass media, and some Ivorian and American television channels.

4.2.5. Distribution at EPRODIS

EPRODIS sells its products in universities, hospitals, pharmacies, to wholesalers, and in various cities in Côte d'Ivoire such as Abidjan, Yamoussoukro, Soubré, Méagui, Dabakala, and more. They also sell their products in neighboring countries such as Benin and Cameroon. Their marketing strategy relies on word-of-mouth.

4.2.6. Distribution at CHOCOVI

CHOCOVI specializes in producing "Excellence" grade chocolate, targeting a diverse clientele that includes hotels, grocery stores, businesses, and national and international trade shows. The company employs two distribution options to sell its finished products: for individual orders, they outsource the delivery to specialized firms, while for hotel and business orders, the sales department handles the distribution. CHOCOVI is in the process of completing the installation of a boutique located in Riviera 3, Abidjan, which will enable direct sales of their chocolates.

4.3. Challenges

4.3.1. Challenges at SCOOPS SOCOPLAN

SCOOPS-SOCOPLAN is facing a series of challenges that hinder its development. Firstly, the low transformation rate of only 6% of the cocoa production from its member farmers is attributed to a lack of financial resources. The company has limited means to purchase equipment and new high-capacity processing machines, as well as to recruit the necessary personnel.

Additionally, SCOOPS-SOCOPLAN aims to enter the large supermarket market but faces difficulties in meeting their high demands. This results in the loss of attractive business opportunities. The distribution of the company's chocolate products within the national territory is also a major challenge due to the lack of a "chocolate consumption culture" among Ivorians, who do not fully appreciate the virtues of cocoa-derived products.

Furthermore, SCOOPS-SOCOPLAN faces a lack of technical training for its staff in the operation of machinery, limiting operational efficiency. Communication difficulties on social media and the absence of a functional website impede the company's advertising efforts, while the lack of physical stores poses an additional obstacle.

Lastly, SCOOPS-SOCOPLAN also faces sustainability challenges that require careful attention to ensure its long-term viability.

4.3.2. Challenges at SCOOPS SAHS

SCOOPS SAHS faces several major challenges, including the slow payments from its resellers, the volatility of input prices, and the need to be listed with major distribution groups such as PROSUMA, TOTAL, and CARREFOUR. Additionally, the company encounters difficulties in obtaining financing from banking institutions to acquire the necessary equipment for cocoa processing. This situation forces them to outsource, resulting in significant costs.

4.3.3. Challenges at COVIMA

COVIMA requires high-capacity equipment to meet the growing demand for large quantities of cocoa juice. However, the current manufacturing equipment is artisanal and only partially meets this demand (one press for 54 sections), resulting in stock shortages. The limited production capacity prevents fully satisfying the demand. As a result, only a quarter of the production is processed, while the rest is sold to the exporter, since the press can only produce between 10 and 20 liters per pressing. This limited production capacity prevents COVIMA from securing contracts with large retailers who wish to place significant orders that the company cannot fulfill even over an entire year. There is a financial resource deficit for acquiring transportation and delivery means such as refrigerated trucks, as well as purchasing multiple presses to cover the 54 sections. The limited availability of presses is a constraining factor, further exacerbating the need for resources to address this situation.

Additionally, COVIMA has a mixer with a capacity of 1 kg, which requires a 24-hour timeframe to obtain the final product. Therefore, it is imperative for COVIMA to acquire a mixer with a considerable capacity to meet orders within the given deadlines. Furthermore, the cooperative requires a pasteurizer with a capacity of 1000 liters to pasteurize multiple quantities of cocoa juice.

4.3.4. Challenges at UWO

UWO is facing issues with the supply of raw materials from San-Pedro. The lack of suitable transportation for cocoa poses a major challenge for UWO. Despite high demand, the distribution of products is difficult.

Additionally, the fixed costs are substantial. The absence of high-capacity equipment and financial resources for repairs, such as the cold storage room, further complicates the situation. Despite these challenges, UWO continues its cocoa butter manufacturing activity out of pure passion. Furthermore, the lack of awareness of cocoa butter among Ivorians presents an additional obstacle.

4.3.5. Challenges at EPRODIS

EPRODIS is facing multiple challenges at all levels of its development. The lack of financial resources hinders the progress of the company, keeping it at an embryonic stage of its operations. Due to very limited financial means, EPRODIS

does not have the necessary funds for acquiring expensive equipment, hiring qualified personnel, establishing a strong marketing strategy, or addressing fixed costs such as renting a larger space for cocoa processing. Additionally, EPRODIS is compelled to outsource the labeling of its products, which incurs substantial costs.

4.3.6. Challenges at CHOCIVI

Despite its determination to promote the excellence of Ivorian chocolate, CHOCIVI faces numerous challenges. Firstly, the company encounters a lack of chocolate consumption culture among Ivorians. This situation makes public awareness and education essential for developing the domestic market.

Moreover, accessing financing from banks for acquiring higher-capacity equipment is extremely difficult. This financial constraint limits CHOCIVI's ability to invest in modern and efficient equipment necessary to increase production and meet the growing demand.

Lastly, exporting and marketing Ivorian chocolate in international markets pose a significant challenge for CHOCIVI. International competition, regulatory requirements, complex logistics, and building a strong global brand are all obstacles to overcome. However, CHOCIVI is determined to address these challenges and promote Ivorian chocolate on the international stage.

4.4. Prospects

The perspectives of the different cases are presented in **Table 2**.

5. Discussion

This research, as a reminder, aims primarily to understand the challenges faced by small local cocoa processing units in Côte d'Ivoire. The results of this research show that the Ivorian government's commitment to achieving 100% local cocoa processing is well-received by small processing units. The analysis of the interview corpus leads us to six main observations:

- ✚ The availability of raw materials facilitates the supply.
- ✚ The process of local cocoa processing is common among the studied processing units.
- ✚ A variety of products derived from local cocoa processing exist in the market and are performing well despite the lack of chocolate consumption culture among Ivorians.
- ✚ Product distribution is done through intercity transport companies without difficulties.
- ✚ The price of chocolate derivatives is affordable for Ivorian consumers.
- ✚ 50% of the studied processing units have a fairtrade certification.
- ✚ Several challenges confront these small processing units: financing, equipment, Ivorian chocolate consumption, slow payments from distributors, low promotion of local brands, and limited production capacities.

Table 2. Perspectives of the different cases, Source: Generated by the author.

Local transformation units	Prospects
SCOOPS-SOCOPLAN	SCOOPS-SOCOPLAN plans to market a range of chocolates including ginger, peanuts, and cashews following several successful tests. With this in mind, the company aims to open a shop in Issia, followed by major cities in Côte d'Ivoire, in order to build a formal clientele and acquire a vehicle for product transportation. To achieve this goal, SCOOPS-SOCOPLAN is making every necessary effort to expand its customer portfolio. Additionally, SCOOPS-SOCOPLAN is considering integrating sustainability into its activities to establish a position in the global market.
SCOOPS SAHS	SCOOPS SAHS has the ambition to equip itself with high-capacity equipment in order to ensure timely supply to its national and international customers and secure advantageous contracts for the group. Furthermore, the company is in the process of setting up a processing plant in the Daloa region to produce high-quality chocolate.
COVIMA	COVIMA plans to establish various distribution networks, obtain the necessary documents for cocoa juice exportation, produce cocoa juice in canned packaging to facilitate transportation, and undertake a soap manufacturing project using cocoa butter.
UWO	UWO plans to establish a communication service to promote its cocoa butter and open multiple retail outlets nationwide.
EPRODIS	EPRODIS plans to improve its marketing strategy, find ways to increase its production capacity, and rent larger premises.
CHOCOVI	With the aim of transitioning from artisanal production to semi-industrial production while preserving the typical Ivorian nature of its products, CHOCOVI is considering acquiring a significantly larger space. This expansion will also enhance the international reputation of its premium chocolate brand, known as "Excellence." To achieve this goal, the company intends to participate in more international trade fairs and seek partners to enlarge its factory located in Abidjan.

The availability of raw materials can have a significant impact on production costs. When raw materials are readily available, it often leads to lower production costs. When raw materials are readily available, production and transportation costs are often lower. Moreover, sufficient availability of raw materials enables economies of scale and production efficiency through a constant and reliable supply of raw materials. This is a significant advantage for local transformation units.

The chocolate manufacturing process in these small processing units is internationally recognized. The chocolate produced by these units is diverse and made from carefully selected local ingredients. The local cocoa processing is carried out under optimal conditions to ensure impeccable quality of the chocolate produced. The mastery of the value chain ensures rigorous traceability and a commitment to sustainability. The offering of multiple flavors and varieties of chocolate is a testament to the exceptional skills and special expertise demonstrated by small local processors in cocoa transformation.

It is worth noting that most of the local processing units are recognized by international organizations such as FAIRTRADE, RAINFOREST ALLIANCE, UTZ,

and COCOA LIFE, which ensure product quality and fairtrade practices. This recognition is a significant advantage for these units, allowing them to position themselves in the international market. It is important to highlight that these labels are the result of exemplary work carried out by these units to evolve and differentiate themselves from the competition posed by large chocolate corporations.

The distribution of the produced chocolate proceeds without any major difficulties. Despite a modest culture of consumption among Ivorian consumers, the chocolate produced sells very well in the market regardless of the price. The prices of local brands are lower than those of foreign brands, which works to the advantage of these local processing units despite a lack of product promotion.

The challenges identified in this study, such as the difficulty in obtaining financing from banking institutions, the lack of consumption culture among Ivorians, and the limited promotion of local brands, align with the findings of [Grandval, Broutin, & Delmas \(2012\)](#) and [Crandall \(2017\)](#).

Furthermore, this research has identified the challenge of slow payments from distributors. This can significantly impact the working capital of these units, as they may no longer be able to cover ongoing expenses and meet their financial obligations, potentially leading to bankruptcy.

5.1. Theoretical Contributions

There are few studies on small local processing units in the cocoa industry in Côte d'Ivoire, particularly regarding the challenges they face. This research complements a few studies already conducted on local cocoa processing. The majority of the cocoa industry lies in the transformation into semi-finished and finished products, but these production units struggle to fully benefit from this share. For many, it is challenging for these local cocoa processing units to establish a presence in the international market. The challenges identified in this study, such as the difficulty in obtaining financing from banking institutions, the lack of consumption culture among Ivorians, and the limited promotion of local brands, align with the findings of [Grandval, Broutin, & Delmas \(2012\)](#). Indeed, it is evident that these difficulties persist even a decade later.

This study adds to our knowledge of local cocoa processing in Côte d'Ivoire. It may contribute to a better understanding of the factors that influence and slow down local processing. This research also enriches the cocoa value chain by specifically examining local cocoa processing in the context of small units.

5.2. Managerial Contributions

Indeed, this research holds significant importance in the context where Côte d'Ivoire is committed to achieving 100% local cocoa processing by 2030. Identifying and analyzing the specific challenges facing the Ivorian cocoa industry in terms of local cocoa processing can enable the relevant authorities to take appropriate measures to address these challenges. This includes aspects such as fi-

nancing for the acquisition of high-capacity processing equipment and machinery, weak promotion and marketing strategies. Additionally, the prospects for these small processing units are promising despite the difficulties, as the demand for cocoa-based products continues to increase.

In addition, this research provides valuable information for decision-makers to better understand the specific challenges facing small units and to make appropriate decisions.

5.3. Recommendations

Following the contributions, we make the following recommendations:

- ✚ To address the financial challenges, the government can implement a supportive policy. Indeed, the government can establish policies and tax incentives to encourage investments in small local processing units by reducing or eliminating taxes, providing grants, or offering low-interest or zero-interest loans for the acquisition of high-capacity processing equipment. Furthermore, the government can facilitate access to financing by establishing partnerships with financial institutions to provide loans tailored to the needs of local processors.
- ✚ Training and technical assistance are also crucial. The government can establish training and technical assistance programs to enhance the skills of workers and entrepreneurs in the field of cocoa processing.
- ✚ The government should also promote certifications and quality labels to enhance the credibility of local products in the international market.
- ✚ The government can support awareness and marketing campaigns that highlight the virtues of chocolate to promote locally processed cocoa products.

6. Conclusion

The Ivorian government's commitment to achieving 100% local cocoa processing by 2030 is welcomed by cooperatives and small businesses, who are striving to align themselves with this goal. Despite a slow start, local cocoa processing shows promise due to the exceptional quality of the produced chocolate, which has a good chance of finding a market internationally. Ivorian chocolate is already present in neighboring countries, demonstrating its quality and commercial potential. However, the six local processing units studied highlight the difficulties faced by local cocoa processing in Côte d'Ivoire, challenges that could be addressed with support from banks and the government. Although there is still a long way to go, the ambition of local cocoa processing in Côte d'Ivoire to capture more added value is achievable.

It would be wise for the Ivorian government to encourage, assist, and support existing local processors, who are important links in the value chain, in order to achieve the ambitious goal of 100% local processing. The government should focus on small processing units and provide financial assistance by implementing strategies to facilitate access to financing from banking institutions since financial resources are crucial for the development of local cocoa processing in

Côte d'Ivoire. Additionally, the funding will help strengthen local processing capacities and adopt cutting-edge technologies. The low consumption of chocolate by Ivorians can be addressed through public awareness and education to develop the domestic market.

7. Limitations and Future Research

Although limited, our study focusing on a small number of local processing units can provide valuable insights and initial perspectives on the challenges related to local cocoa processing. Indeed, with only six studied processing units, the sample may not be representative of the entire local cocoa processing sector in Côte d'Ivoire. The results and conclusions of the study may not be generalizable to the entire industry. The six selected small local processing units may not represent the complete diversity of the cocoa processing sector. There could be other small units with different characteristics, challenges, and perspectives that were not included in the study. Given the small size of the sample, it can be challenging to generalize the results of the study to the entire industry or draw definitive conclusions.

To obtain a more comprehensive picture of the local cocoa processing industry in Côte d'Ivoire, it would be beneficial to expand the sample to a greater number of small processing units. This would provide a better understanding of the sector's challenges. Furthermore, a comparison of Côte d'Ivoire's experiences with other cocoa-producing countries that also pursue local processing objectives could provide valuable insights. This would help identify best practices, lessons learned, and opportunities for collaboration between countries.

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Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

References

- Abidjan.net (2021). *Le cacao contribue pour 20% au PIB de la Côte d'Ivoire (PM)*. <https://news.abidjan.net/articles/699723/le-cacao-contribue-pour-20-au-pib-de-la-cote-divoire-pm>
- Ban, K. L., Ouattara, G. H., Karou, T. G., Tagro, G. S., Nemlin, J. G., & Diopoh, J. K. (2013). Impacts de la fermentation du cacao sur la croissance de la flore microbienne et la qualité des fèves marchandes. *Agronomie Africaine*, 25, 159-170.
- Bonjean, C. A., & Chambas, G. (2001). *Impact du mode d'organisation des filières agro-alimentaires sur la pauvreté: La filière cacao en Côte d'Ivoire*. CERDI, Etudes et Documents.

- Crandall, V. (2017). *The Challenges Facing West Africa's Chocolate Industry*. <https://www.howwemadeitinafrica.com/challenges-facing-west-africas-chocolate-industry/59799/>
- Gavard-Perret, M. L., & Helme-Guizon, A. (2018). Choisir parmi les techniques spécifiques d'analyse qualitative. In *Méthodologie de la Recherche en Sciences de Gestion* (3rd ed., pp. 241-272). Pearson
- Giordano, Y. (2003). *Les spécificités des recherches qualitatives*. In *Conduire un projet de recherche. Une perspective qualitative* (pp. 11-39). Éditions Management & Société.
- Giroux, N. (2003). Les spécificités des recherches qualitatives. In *Conduire un projet de recherche. Une perspective qualitative* (pp. 40-84). Éditions Management & Société.
- Grandval, F., Broutin, C., & Delmas, P. (2012). Introduction aux enjeux de valorisation des produits locaux en Afrique de l'Ouest. *Grain de Sel*, 58, 12-14.
- Konaté, Z., Assiri, A. A., Messoum, F. G., Sekou, A., Camara, M., & Yao-Kouamé, A. (2016). Antécédents culturels et identification de quelques pratiques paysannes en replantation cacaoyère en Côte d'Ivoire. *Agronomie Africaine*, 27, 301-314.
- Losch, B. (2001). Problématiques générales La libéralisation de la filière cacaoyère ivoirienne et les recompositions du marché mondial du cacao: vers la fin des «pays producteurs» et du marché international? *Oléagineux, Corps Gras, Lipides*, 8, 566-576. <https://doi.org/10.1051/ocl.2001.0566>
- Miles, M. B., & Huberman, M. A. (2003). *Analyse des données qualitative* (2nd ed.). De BOECK.
- Ruf, F. (2022). Covid-19, Différentiel de revenu décent et baisse des revenus des producteurs de cacao en Côte d'Ivoire." *Cahiers Agricultures*, 31, 1-14 <https://doi.org/10.1051/cagri/2022022>
- Sika Finance (2022). *Investir dans la transformation du cacao en Côte d'Ivoire*. https://www.sikafinance.com/marches/investir-dans-la-transformation-du-cacao-en-cote-divoire_38275
- Tano, A. M. (2012). *Crise cacaoyère et stratégies des producteurs de la sous-préfecture de Méadji au Sud-Ouest ivoirien*. Ph.D. Thesis, Université de Toulouse Le Mirail.
- Vroh, B. T. A., Abrou, N. E. J., Gone Bi, Z. B., & Adou Yao, C. Y. (2019). Système agroforestier à cacaoyers en Côte d'Ivoire: connaissances existantes et besoins de recherche pour une production durable. *Revue Marocaine des Sciences Agronomiques et Vétérinaires*, 1, 99-109.
- World Bank (2019). *Au pays du cacao, comment transformer la Côte d'Ivoire* (9th ed., pp. 1-64).
- Yin, R. K. (2003). *Case Study Research, Design and Methods* (3rd ed.). Sage Publication.