THE LIVING INCOME DIFFERENTIAL FOR COCOA: FUTURES MARKETS AND PRICE SETTING IN AN UNEQUAL VALUE CHAIN

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CONTENT

ABOUT THIS STUDY

This study looks into the way cocoa is traded from farmer to consumer, through its various intermediaries. Specific attention goes to the Ghana and Côte d'Ivoire Living Income Initiative, which was announced in 2018. It was first implemented during the harvest season of 2020-21 as a "Living Income Differential" (LID) of 400$ per ton on top of the export price of cocoa. The reaction of market participants exposed the real drivers of cocoa trade and brings insights and recommendations into the course of action for governments, companies and civil society to make cocoa truly sustainable.

OXFAM'S MAIN HIGHLIGHTS

- **Chocolate companies outsource the responsibility for (fair) prices paid to farmers to their suppliers**. The latter work on much tighter margins and are not willing to take up that responsibility. The result is widespread poverty in the supply chain, with numerous social impacts (child labor, hunger, ...) and environmental impacts (deforestation, monoculture).
- **Chocolate companies didn't change their purchasing practices after their promise to "pay the Living Income Differential (LID)"**, a pricing scheme installed by the Government of Ghana and Cote d'Ivoire in 2020 to ensure their cocoa farmers receive a higher income. This stimulated cocoa traders to negotiate down country differentials as a compensation for the LID. These country differentials turned negative, whereas they are meant to reflect the quality of the cocoa beans.
- **Cost of production, cost of living and human rights are irrelevant criteria in the current functioning of the cocoa market.** One example of that was the inability of market participants to "hedge" the LID on the Intercontinental Exchange (ICE), which is the undisputed place where prices are defined.
- **The significant rise of country differentials before the introduction of the LID in October 2020 indicates that many companies decided to increase their cocoa stock significantly.** The drop in demand for cocoa during the 2020-21 crop season – and the drop of country differentials - may have been an immediate effect of this corporate strategy, ultimately undermining the LID-initiative.
- The experience with the LID confirms a larger pattern in which **new voluntary premiums are often discounted from previously existing ones**, thereby confirming the power imbalance and the price status-quo.
- **Futures markets** allow for considerable price and supply risk reduction for participants of the market. **However, the high entry barriers and at the cost of heightened volatility of the cocoa price, which is not in the interest of cocoa farmers nor consumers**.

OXFAM'S MAIN RECOMMENDATIONS:

- **Chocolate companies** must set up a value chain for which they are in direct contact with the farmers. They must publish farm gate prices and premiums to prove that they pay a price that allows a living income for the majority of farmers. The existence of the futures market, the phenomenon of hedging and the use of intermediaries are no excuse not to fulfil duty to respect human rights.
- **Consumer governments** should impose regulations that prohibit companies from buying below cost of production. The EU now has a variety of tools to enforce respect of human rights, and protect forests in supply chains, such as the Corporate Sustainability Due Diligence Directive (CSDDD) and the EU-Deforestation Regulation (EUDR). The Unfair Trading Practices Directive (UTP) allows to protect farmers and suppliers rights in negotiations with buyers. The implementation must be strictly supervised.
- **Producing countries** have an opportunity to strengthen their cooperation in terms of supply management, such as building buffer capacity, imposing export quota and limiting production in order to enforce higher prices from the cocoa industry that only seems to take responsibility when they are technically constrained.

FOREWORD

Eva Smets
Executive Director –
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At the time of writing , the world cocoa price has surpassed the symbolic (and hard to believe) 10.000$ per ton mark, about four times the price it was just a year ago. The trigger of this price explosion was the drop in cocoa volumes produced due to the El Niño phenomenon that caused changed weather patterns in West-Africa. This was combined with the structural cause of low input use by farmers due to low cocoa prices and the fact that specifically in Ghana cocoa farmers have been abandoning their plantations and sell it to gold miners.

Unfortunately price increases in agro-commodities only seem to be possible when (natural) catastrophes lead to massive shortages and trading partners are constrained to pay them. A changed rain pattern accomplished what the governments of Côte d'Ivoire and Ghana couldn't do when they introduced the "Living Income Differential" (LID) in 2018. Even though companies had formally agreed to pay the $400/MT premium, they did nothing to change their buying practices. The result was a drop of country differentials for these country, almost canceling the effect of the LID entirely.

This study shows that despite public commitments, chocolate companies didn't take responsibility to maintain country differentials beside paying the LID. They rather let international markets determine the price they were willing to pay. Cocoa traders – 4 of which buy and sell at least 60% of cocoa – didn't take responsibility either because they work with slim margins. Their business model is intricately linked with the futures stock market where they "hedge" every purchase they do. This business model seemed to be incompatible with sustainability premiums, because no buyer on the futures market was willing to cover the LID on top of pre-LID country differentials.

The study lays out clearly that there is no lack of promises, but a blatant lack of responsibility. The "system" that governs cocoa price setting does not provide protection of human rights and safeguards for cocoa producers. Moreover, the entry barriers to be an active participant in the cocoa trading business are very high – which clarifies the tremendous concentration in cocoa trading.

The current cocoa trading system works well if you are a chocolate company that doesn't want to take responsibility for the lives and livelihoods of the people producing the raw materials. It also works well for you if you're a trader with massive capital assets – which allows you to hedge your cocoa and speculate on the futures market. It's also a great system when you're a speculator with good intel. It's not a great system when you're a cocoa producer. We should therefore not be surprised that an increasing number of farmers in Côte d'Ivoire and Ghana are selling their lands, often for goldmining and thereby continuing the vicious cycle of exploitation and natural degradation.

Back in 2017, when cocoa prices dropped below 2.000$, we heard few voices in the industry calling for a revision of the cocoa trading system. These voices are starting to be heard when the price hits 10.000$. It's a good time to have the conversation, not only with companies, but also with lawmakers. Every chocolate company has a responsibility to fix the system at their own level. We also need a legal framework which makes sure that the respect for human rights does not depend on the individual ethics of a company.

Eva Smets Executive Director – Oxfam België/Belgique

LIST OF ABBREVIATIONS

FOB	Free on Board
CCC	Conseil du Café-Cacao, Côte d'Ivoire
CIF	Cost, Insurance, Freight price
CMC	Cocoa Marketing Company, Ghana
COCOBOD	Ghana Cocoa Board
FCC	Federation of Cocoa Commerce
FFC	Fine or flavour cocoa
GHS	Ghanaian Cedi (currency)
ICCO	International Cocoa Organization
LBC	Licensed Buying Company, Ghana
MT	Metric Tonne
UNCTAD	United Nations Conference on Trade and Development
CFA	West African CFA Franc (currency)

EXECUTIVE SUMMARY

COCOA PROVIDES INCOME FOR MORE THAN
5 MILLION FAMILIES

Cocoa is a smallholder crop. According to estimates, it provides income for more than 5 million families. West Africa today accounts for 70% of the global production. For some decades now, inflation-adjusted prices for cocoa were volatile, but as an overall trend the price decreased substantially. In 2000, when cocoa prices reached an all-time low, debates on farmers' livelihoods intensified. Up to 2 million children worked on cocoa plantations in Côte d'Ivoire and Ghana at that time.

Efforts to improve the livelihoods of cocoa farming families have not produced much impact. Most of the cocoa farming families in the two leading producing countries, Côte d'Ivoire and Ghana, earn far less than a living income, child labour is still widespread. The close relationship between cocoa price, income and human rights abuses as well with severe ecological damages in the cocoa producing areas is obvious.

The governments of Côte d'Ivoire and Ghana, are at the forefront of these sector-wide debates. Cocoa prices have a great influence on the lives of West Africans, as well as in other cocoa producing countries. Additionally, the governments of Côte d'Ivoire and Ghana are highly dependent on tax income from cocoa exports and the foreign currency earned by these exports.

The chocolate market grew significantly over recent decades and despite the decreasing inflation-adjusted cocoa price, the turnover of the sector continues to rise. The growing of the market for the final product chocolate goes along with a massive concentration process in some parts of the value chain.

Yet, much of the cocoa agriculture is carried out by millions of non-organised small-scale farmers. The farmers have little voice within the supply chain, having no influence on market prices, nor any power to enforce higher prices if their costs rise. Meanwhile, companies further down the value chain have much more bargaining power, with the ability to raise prices if their costs increase.

Cocoa sector regulations in Côte d'Ivoire and Ghana are unable to change the power imbalances in the sector and achieve higher prices for the farmers. Based on forward sales, both countries can stabilise the price for at least the main crop season and in some years, one complete harvesting year. But the achieved price depends on price levels in the futures market, not on the needs of farmers. Farmers are dependent on cocoa income and due to long term investments in their farms they cannot react to price fluctuation in the short term. The confectionery industry is far less vulnerable to price volatility, as cocoa is only a small part of their cost structure. Additionally, they can cushion price increases easily by changing recipes and reducing the content of cocoa.

70%
OF THE GLOBAL PRODUCTION IN WEST AFRICA

Cocoa is traded on the commodity futures exchanges in London and New York, which is owned and operated by the Intercontinental Exchange (ICE). Well managed, hedging protects cocoa traders from the risks of price volatility. The profit model of traders does therefore not depend so much on the price fluctuations of the cocoa price. Profits or losses of a trader depend to a large extent on the price differential below or above the market price that they were able to buy for at origin and they were able to sell for to manufacturers. Therefore the "country differential" is crucial in the business model of cocoa traders.

Cocoa farmers cannot hedge cocoa prices to protect them from price fluctuations, which makes public stabilization schemes highly relevant. Even cooperatives and smaller companies active in cocoa export do not have the financial and personal skills to use the futures market for hedging. The prices set at the futures market serve as guideline for the physical trade.

The governments of Côte d'Ivoire and Ghana tried to increase the farmgate price of cocoa and founded the Côte d'Ivoire Ghana Cocoa Initiative (CIGCI). The aim of the CIGCI is to strategically align forces and to implement a mechanism which guarantees more stable and higher cocoa prices. Much deliberation took place, and in 2018 the governments decided to add an extra premium of US$400, the so-called Living Income Differential (LID), on every ton of exported cocoa.

After its implementation, companies found a way to bypass the additional differential. They paid the US$400 on top of the futures price, but they reduced significantly the so-called country differentials, which usually are paid on top of the cocoa price according to country of origin. The country differential even turned negative for Côte d'Ivoire and Ghana.

Overall, cocoa prices did not rise as much as expected in Ghana and Côte d'Ivoire and the targeted farmgate price could not be reached. Reform processes for the LID are underway. If companies would have trusted each other, it would have been possible to set up agreements along the value chain the guarantee that the LID had to be paid in addition to the average origin differential of the years before the implementation of the LID. This would have generated extra income for cocoa farmers in Côte d'Ivoire and Ghana during the pandemic and helped them to cope with inflation.

Increased pressure to improve the situation of cocoa farmer is coming from international standards and legislation. The United Nations "Guiding Principles on Business and Human Rights" set a framework for companies. Governments have started to translate the UN Guiding Principles on business and Human Rights into legislation, including in Germany, the most important cocoa market in Europe.

With the Corporate Sustainability Due Diligence Directive (CSDDD), the EU is also preparing a due diligence legislation focused on negative impacts on human rights and environment in value chains. An EU Regulation on Deforestation-free Products (EUDR) already entered into forced last year, covering a number of import products including cocoa. The Corporate Sustainability Reporting Directive (CSRD), which regulates reporting obligations of companies, is also already in effect. All major cocoa and chocolate companies will have to report under this initiative and need more information about the value chain to do so. Additionally, the EU is preparing a ban on the import of goods produced from forced labour. All regulations stress that value chains must be transparent.

RECOMMENDATIONS

The cocoa sector will have to invest significantly in transparency along the value chain, in measures to support farmers and reduce human rights violations, and to pay a price that allows a living income for cocoa farmers. This means no less than a change in the way cocoa is traded. This change must include higher prices for cocoa farmers. A reformed LID could be a starting point. To improve the impact, the governments of Côte d'Ivoire and Ghana should align the policies with other cocoa producing countries, including discussions on necessary prices to achieve a living income and measures to avoid oversupply of cocoa.

REGULATIONS ON THE FUTURES MARKET HAVE THE POTENTIAL TO HAVE A MASSIVE INFLUENCE ON SUSTAINABILITY IN THE COCOA SECTOR

In the highly competitive cocoa and chocolate sector, regulation implemented by governments in cocoa consuming countries plays a crucial role. Governments must adopt the UN-Guiding Principles on Business and Human Rights into their national legislations and include the obligation to pay prices which allow for a living income for cocoa farmers and the payment of a living wage to workers on the farms.

Chocolate companies must guarantee to cover additional payments above the market price, which would help to support farmers by increasing the farmgate price. Retailers should reward chocolate companies that produce their private brands as well as all the other chocolate companies that want to sell their products on the shelves of the supermarket for investing in a sustainable value chain by paying a price that covers extra costs. The financial sector, shareholder, or business owner should support the creation of a more sustainable cocoa sector even if this leads to lower dividends.

Chocolate brands could take over the responsibility for the value chain by purchasing the cocoa and allowing intermediaries, including grinding companies, to act as service providers – rather than owners of the cocoa. This can also be achieved by retailers, who could buy all the cocoa they need for their private brands. This would create a transparent value chain with clear responsibilities for livelihoods of farmers.

The futures market has presently no mechanisms to guarantee that farmers can at least cover their costs and earn a living income. The futures exchange only facilitates the reduction of risk for those able to participate in the futures market, and it does not consider the needs or situation of the farmer. However, regulations on the futures market have the potential to have a massive influence on sustainability in the cocoa sector.

The ICE should change trading rules so that cocoa cannot be hedged if it does not have a country differential. In relation to Côte d'Ivoire and Ghana, cocoa should not be hedged if the LID was not paid in addition to the country differential. The exchange should set human rights and ecological obligations as a precondition for trading cocoa.

1. INTRODUCTION

"I've never seen a situation anywhere in the world where anyone who produces 75 percent of a commodity is just a price taker ... this must change and it's about how smart you interface the global market."

Akinwumi Adesina, President of the African Development Bank, August 2017[1]

Originally, cocoa was produced and consumed in Middle and South America. The colonial powers brought it to Africa and Asia, where today, West Africa accounts for 70% of the global harvest. Cocoa is a smallholder crop that according to estimates provides income for more than 5 million families in the tropics, most of this production are from those living in West Africa. The average farm size is below 5 hectares (ha), and most families work on plantations smaller than 3 ha.

1.5 MILLION CHILDREN
STILL WORK ON THE FARMS IN CÔTE D'IVOIRE AND GHANA

Most of the cocoa grown is used to produce chocolate. Whilst the fruit is an essential raw material for the prospering multibillion global luxury chocolate industry, most of the farmers producing cocoa live in poverty. During the last few decades, inflation-adjusted prices for cocoa were volatile, but as an overall trend the price substantially decreased (see Graph 2, p.17).

Since spring 2023, cocoa prices rose significantly caused by supply deficits. However, this is unlikely to change the overall trend towards lower inflation-adjusted prices. In the long run, the market has always reacted to increasing prices by reducing demand, whilst farmers might increase supply.

In 2000, the discourse around the livelihoods of farmers intensified, when cocoa prices reached an inflation-adjusted all-time low. Farmers desperately tried to reduce production costs by trimming their expenditure on labour relating to weeding and harvesting (International Institute of Tropical Agriculture 2002). Media reports and studies analysed the consequences of this on child labour rates for the most deprived farming families. According to studies, up to 2 million children worked on cocoa plantations in Côte d'Ivoire and Ghana at the beginning of the new millennium. There were even reports of children coming from neighbouring countries to work on cocoa plantations in Côte d'Ivoire, partly as slave labour (Payson Center 2007, 2008, 2009, 2010; Off 2006).

Since then, the debate regarding the livelihoods of cocoa farmers has greatly intensified amongst many stakeholders, with many companies and governments starting projects, mostly focused on good agricultural practices and higher productivity, to improve the situation and standard-setting organisations certifying more and more farmers. Despite these efforts, the measures have not produced much impact (Fountain and Hütz-Adams 2020; Hütz-Adams et al. 2017; Kuit, Tijdink, and van der Meer 2021; Fountain and Hütz-Adams 2022). Most of the cocoa farming families in the 2 leading producing countries, Côte d'Ivoire and Ghana, earn far less than a living income (CIRES 2018; Smith and Sarpong 2018; Tyszler, Bymolt, and Laven 2018a, 2018b). According to recent research results, 1.5 million children still work on the farms in Côte d'Ivoire and Ghana (NORC 2020), and many more in other cocoa producing countries.

While NGOs, research institutions, and governments of the leading countries of production are aware of the relationship between the decrease of the real cocoa price and the human

1 Source: https://www.reuters.com/article/cocoa-afdb/african-development-bank-to-finance-ghana-ivory-coast-cocoa-plan-idUSL5N1KP00F

rights abuses and massive ecological damages in the cocoa producing areas, most companies have tried to avoid any discussion about cocoa pricing. Their programmes have focused on increasing productivity and the diversification of cocoa farmers, promising to improve the socio-economic situation of cocoa farming families by this (Fountain and Hütz-Adams 2022, 2020, 2015). However, the promise that the net income of cocoa farming families improves with the increase in productivity and diversification is disputed (Hütz-Adams 2022; Kuit, Tijdink, and van der Meer 2021).

AFTER IMPLEMENTATION OF THE LID, COUNTRY DIFFERENTIALS FOR GHANA AND CÔTE D'IVOIRE EVEN WENT NEGATIVE.

The governments of the two biggest cocoa producers, Côte d'Ivoire and Ghana, are at the forefront of these sector-wide debates. Cocoa prices have a great influence on the lives of West Africans, with around 1 million cocoa farming families in Côte d'Ivoire, 800,000 cocoa farming families in Ghana, and millions more in other cocoa producing countries. Additionally, the governments of Côte d'Ivoire and Ghana are highly dependent on tax income from cocoa exports and the foreign currency earned by these exports.

The last short phase of higher cocoa prices (before the rise starting in 2023) was observed between 2013 and August 2016. After this, prices declined rapidly from the yearly average, US$3000 per metric tonne (MT), to US$2100 per MT in 2016/17 (ICCO 2023c). Consequently, the income of cocoa farming families was reduced by around 1/3, with the loss of export revenues amounting to nearly $3 billion for Côte d'Ivoire and Ghana.

These developments motivated Côte d'Ivoire and Ghana to gain influence on the cocoa price by founding the Côte d'Ivoire Ghana Cocoa Initiative (CIGCI - https://www.cighci.org/). The aim of the CIGCI is to strategically align forces to implement a mechanism which guarantees more stable and higher cocoa prices. Much deliberation took place, and in 2018 the governments decided to add an extra premium of US$400, the so-called Living Income Differential (LID), on every MT of exported cocoa. This was welcomed by many companies as it was a pre-competitive price increase that aimed to benefit farmers directly, reduce poverty levels, and help to combat child labour. However, it must be noted that the LID was not based on living income calculations, and it is far too low to cover the gap between present income and living income. Nonetheless, it served as a first step towards a living income for many cocoa farmers.

After its implementation, the LID was under massive pressure. While companies paid the US$400 on top of the futures price, so-called country differentials, which usually are paid on top of the cocoa price, were reduced significantly and even turned negative for Côte d'Ivoire and Ghana. Overall, cocoa prices did not rise as strong as expected in Ghana and Côte d'Ivoire and the targeted farmgate price could not be reached.

The following report will explore how the cocoa market reacted on the LID. In Chapter 2, the report will describe the objectives and the approach of the study. Chapter 3 summarises how cocoa volumes developed during the last couple of decades and which companies dominate the sector today. This is followed by a description of the functioning of cocoa markets, the development of prices, and the role of market concentration, government interventions, and price volatility in the sector (chapter 4). As futures markets played a crucial role during the implementation of the LID, the functioning of the futures markets, instruments of price hedging, and specifically the role of differentials will be explained in further detail (chapter 5). This serves as an introduction and explanation for the functioning of the Living Income Differential, which allows the report to question how differentials influenced the impact of the LID (chapter 6). After this, the report considers the potential changes on the cocoa market, including the upcoming regulation in the EU on human rights and deforestation (chapter 7). The study closes with recommendations for the sector (chapter 8).

2. OBJECTIVES AND APPROACH

2.1 OBJECTIVES AND SCOPE OF THE RESEARCH

The main objectives of this study are to analyse the structure of the cocoa market and the price-setting activities within the sector, with a focus on the recent developments in Côte d'Ivoire and Ghana. To do this, it is essential to understand how the cocoa market is structured, which power relations exist in the sector, and what influence the futures market has on the physical trade of cocoa. The research will provide clarity on who sets prices, how prices are set, what role the futures market plays, and how speculators might influence the price setting. Thus, the central question framing this research is: how have market-leading companies reacted to the implementation of the Living Income Differential (LID) by Côte d'Ivoire and Ghana?

THIS REPORT EXPLORES WHETHER THE FUTURES MARKET LIMITS THE NEGOTIATION POWER OF COCOA PRODUCING NATIONS.

This report will also include information on price developments after the implementation of the LID, alongside a description of the responsibility of companies and futures markets for the decrease in country differentials. This decrease led to the lower-than-expected price increase for cocoa exported from Côte d'Ivoire and Ghana after the implementation of the LID. This research will interrogate the role that stocks, market power, and developments in Côte d'Ivoire and Ghana have played in this context, combined with an in-depth look into the functioning of the futures market. Here, the report will explore whether the futures market limits the negotiation power of cocoa producing nations.

This project is closely aligned with other research and discussions regarding price setting in the cocoa sector, which includes published or ongoing studies on the Côte d'Ivoire Ghana Cocoa Initiative (CIGCI) markets and pricing.

In a second step, the author developed a questionnaire for semi-structured interviews and a list of persons to be interviewed was set up. The interviews served to triangulate the results of the desk research. Further triangulation was possible due to comments of scientists working on the cocoa sector and an online workshop with these scientists which took place in September 2023.

2.2 DESIGN OF THE RESEARCH AND METHODOLOGY

This paper aims to analyse the developments in the cocoa market after the implementation of the LID through literature analysis. Interviews with relevant organisations were also undertaken to cross-reference the information found through the literature analysis.

The developments described in the paper were watched closely by academia, politicians, and NGOs as the LID was a new approach to improve the income of cocoa farmers. This has led to a significant quantity of newspaper articles, studies and grey literature available on the subject. When initially searching for literature, a keyword search was used via Google

Scholar and the publications of relevant authors were evaluated. After this, further literature was found through snowballing.

The focus of the analysis are the developments within the cocoa sector in Côte d'Ivoire and Ghana over the last 5 years. Thus, recent publications were given preference. However, since market developments in the cocoa sector began decades ago (such as concentration and the strong role of the futures market), older studies were also considered. This included monographs, anthologies, standard works, papers, publications by non-governmental and governmental organisations and foundations, journal articles and interviews.

Based on this, the author analysed:

- the development of global cocoa sector;
- the development of cocoa price;
- the role of the LID on the market;
- market power within the cocoa sector and its influence on prices;
- influence of futures market on spot market prices.

The volatility of the cocoa market is due to fluctuating prices, political ambitions of governments, and strategic decisions of companies. Due to this, the data and research results were crosschecked and triangulated through interviews.

Interviews were undertaken with stakeholders involved in the global cocoa trade and scientists who work on the cocoa sector. This helped to incorporate perspectives from different stakeholders working for a variety of organisations including companies, the EU, research institutions, and NGOs etc. It also provides an update to existing research. All stakeholders, and specifically employees of companies, were able to speak confidentially ("Chatham House Rules"). Yet, despite the offer of confidentiality, some barriers for exchanging sensitive information still existed. In particular, companies were reluctant to exchange information and data as this was seen as potentially valuable information to competitors.

Additional interviews were conducted in Côte d'Ivoire, specifically to cross-check the information of companies with governmental organisations and research institutions. The researcher contacted potential stakeholders of interest. Face-to-face interviews were offered; but despite the guarantee of confidentiality, many stakeholders who are employed by companies were not prepared to talk.

Despite these problems, 21 people were interviewed, with some of them being interviewed multiple times. The data was sufficient to cross-check the studies on the developments in the cocoa sector after the implementation of the LID. In addition, market experts were able to respond to questions from the author by email.

2.3 ACKNOWLEDGEMENTS

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3. KEY FEATURES OF THE COCOA SECTOR

Cocoa is a perennial crop. The special characteristics of the plant mean that only a relatively small number of regions along the equator are suitable for the cultivation of cocoa as it requires good soils, an average monthly temperature between 24 and 28 °C, a humidity of 80-90 %, and at least 1,500 mm of rainfall evenly distributed throughout the year. The older varieties prefer to grow in the shade, under other taller trees. Newer varieties thrive under direct sunlight. At present, these varieties are often preferred for new plantings, as more trees can be grown per hectare. However, they require significantly more care, fertiliser, and sprays (Durry and Schiffer 2011). A cocoa pod is usually 15-30 cm long, 7-10 cm thick, and weighs 300-700 g. Each fruit contains 25-50 cocoa seeds. The average yield varies depending on the condition of the plantation, the availability of nutrients, and prevalence of pest and diseases. In exceptional cases, farmers can produce over 1,000 kg of cocoa beans per hectare, but for the vast majority of plantations, the yield remains lower than 500 kg on average (Fountain and Hütz-Adams 2022).

Newer varieties become productive after 3 years and can produce cocoa pods for decades, although harvests usually decrease after 20 to 25 years. Ideally, trees should then be replaced, but due to a temporary loss of income, high labour demand for replanting, and necessary financial investments for inputs (e.g. seedlings, shadow spending plants, fertiliser, hired labour), many farmers work on plantations with overmatured tree stocks. Consequently, average yields remain low.

It is estimated that five to six million smallholders grow cocoa trees, providing a livelihood for 40 to 50 million people. More than 90 % of the total production comes from smallholder farms, and the size of the plantations is usually less than five hectares (Anga 2016).

Growing cocoa is a tedious task. Farmers weed, prune, apply fertiliser and pesticides, harvest, collect, transport and break cocoa pods, and ferment and dry cocoa beans. All these pre-processing steps require mostly physical work. After the cocoa beans leave the farm, multinational companies take over a highly concentrated and mechanised market.

FIVE TO SIX MILLION SMALLHOLDERS GROW COCOA TREES, PROVIDING A LIVELIHOOD FOR

40 TO 50 MILLION PEOPLE.

GRAPH 1: THE VALUE CHAIN OF CHOCOLATE

STAGE OF THE CHAIN	CONTENT OF THE SHARE OF VALUE
Retail	- margin - payment of income tax & net VAT - financial expenses - annual payroll of employees (personnel of chocolate/confectionery section as well as mutualized personnel in stores & headquarters) - real estate costs (stores and offices) - other costs (central procurement, storage and logistics from regional distribution centres to local shops, advertising)
Finished product manufacturing	- margin - payment of income tax & net VAT - financial expenses - annual payroll of employees (chocolate/confectionery sales force as well as mutualized personnel in headquarters, R&D...) - advertising costs - Industrial costs (moulding, packaging...) - other costs (logistics. Research & Development...)
Cocoa processing (grinding, pressing, chocolate couverture manufacturing)	- margin - payment of income tax & net VAT - financial expenses - annual payroll of employees - costs of logistics and processing - amortization of machinery & buildings
Non cocoa-based ingredients	- processed sugar - processed milk (when relevant) - other processed ingredients (palm oil, wheat flour, when relevant)
Collection & export	- margin - payment of income & cocoa tax - financial costs to cover foreign-exchange risks - other financial expenses - annual payroll of employees - costs of warehousing and logistics (road & sea freight) - other costs (packaging...)
Cocoa Cultivation	- margin (when income is above farmers' family needs for a decent life) - family income - wages and social contribution of seasonal or permanent workers - costs of fertilizers & pesticides

Source: Le Basic 2022: 36

Besides the core participants, farmers, cocoa/chocolate companies and retailers, many more actors are involved in the production network, including producers of inputs, extension agencies, banks and other financial institutions, the producers of other ingredients of chocolate and last but by no means least, transport companies (see Graph 1).

3.1 GLOBAL PRODUCTION AND CONSUMPTION OF COCOA

When Europeans colonised America, they witnessed local cocoa consumption and brought the first beans to Europe. At the end of the 19th century, several companies developed new processing methods and began to produce chocolate. Subsequently, the demand for cocoa increased dramatically. It was mainly European companies that brought cocoa cultivation to the colonial areas on the African continent and to Indonesia at the end of the 19th century. Therefore, the cultivation of cocoa does not have a long tradition in Africa, and cocoa is consumed there only to a very small extent. The producers are almost entirely dependent on the export of their harvest.

This is different in Latin America. Brazil has a significant local consumption, and has become a net cocoa importer. Other Latin American countries, specifically Peru, Colombia and Ecuador, also have a high local consumption. Comparatively to the rest of the world, Latin American countries produce much more fine or flavoured cocoa. The market share of these varieties is low, but some farmers are able to produce for prices much above market rate for bulk cocoa (Fountain, Hütz-Adams, and Campos 2022).

The labour-intensive cultivation of cocoa is concentrated on countries along the equator that have suitable climatic conditions for its cultivation, as well as a low-cost workforce. Despite the problems associated with cocoa cultivation, cocoa has long been an important cash crop for domestic income, especially for farmers in West Africa. For decades, production and demand for cocoa has increased by about 2% per year (Table 1).

TABLE 1: GLOBAL COCOA BEAN PRODUCTION IN 1,000 MT

1960/61	1,172
1970/71	1,557
1980/81	1,695
1990/91	2,506
2000/01	2,865
2010/11	4,309
2020/21	5,245

Source: ICCO 2023c

Today, the most important producing countries are Côte d'Ivoire, Ghana, Ecuador, Cameroon, Nigeria, Brazil, Indonesia, and Peru. Since 1990/91, global production of cocoa has doubled, and the dependency on four West and Central African countries (Côte d'Ivoire, Ghana, Cameroon, and Nigeria) has increased further. During these three decades, production of these 4 countries rose from 1.37 million MT to 3.5 million MT. While production in this region more than doubled, the production in the rest of the world increased at a much lower rate (Table 2). Additionally, cocoa production from smaller West and Central African countries like the Democratic Republic of the Congo, Uganda, Sierra Leone, and Liberia also increased in volume. In 2021/22, 74 % of the world's harvest came from Africa. (ICCO 2023c).

TABLE 2: WORLD COCOA BEAN PRODUCTION IN 1,000 MT

	Côte d'Ivoire	Ghana	Cameroon	Nigeria	Indonesia	Ecuador	Brazil	Peru	Global
1990/1991	804	293	115	160	150	111	368	11	2506
1995/1996	1200	404	135	158	285	103	231	15	2915
2000/2001	1212	395	133	177	392	89	163	24	2865
2005/2006	1408	741	171	210	585	118	162	31	3811
2010/2011	1511	1025	229	240	440	161	200	54	4309
2011/2012	1486	879	207	245	440	198	220	61	4095
2012/2013	1449	836	225	238	410	192	185	70	3943
2013/2014	1746	897	211	248	375	232	228	81	4370
2014/2015	1796	740	232	195	325	261	230	92	4251
2015/2016	1581	778	211	200	320	232	140	105	3994
2016/2017	2020	969	246	245	290	300	174	116	4768
2017/2018	1964	905	250	250	240	287	204	135	4647
2018/2019	2154	812	280	270	220	322	176	141	4794
2019/2020	2105	771	280	250	200	342	201	151	4735
2020/2021	2248	1047	293	290	170	365	200	156	5244
2021/2022 Estimate	2121	683	295	280	180	365	220	170	4826
2022/23 (Forecast)	2180	680	290	280	180	440	220	170	4953
difference 1990/2023	1376	387	175	120	30	329	-148	159	2447
difference 2000/23	968	285	157	103	-212	351	57	146	2088
difference 2010/2023	669	-345	61	40	-260	279	20	116	644
difference 2020/2023	-68	-367	-3	-10	10	75	20	14	-291

Source: ICCO data and own calculation

By far the biggest growth in cocoa production was achieved by Côte d'Ivoire. Since 2010/11, the country added nearly 700,000 MT to its already 1.5 million MT of yearly production, as much as the present production of the second biggest producing country, Ghana. The second country with a significant increase of production, albeit from a much lower level, was Ecuador, which more than doubled its production since 2010/11. Ecuadorian cocoa production rose from 161,000 MT to 400,000 MT, adding 240,000 MT to its volume (Table 2).

OVER 80 %
OF THE GLOBAL COCOA INDUSTRY IS DEPENDENT ON WEST AND CENTRAL AFRICA FOR BULK COCOA

Production figures in Côte d'Ivoire have a significant impact on price developments. The jump in production figures in 2016/17 immediately led to a massive price decrease on the world market. The dependency on West and Central Africa for bulk cocoa is even higher than these figures suggest. For example, the combined domestic consumption of Middle and South American countries is more than 400,000 MT. This volume is not available for the world market. Some producing countries in Asia, specifically Indonesia, also have a rising domestic consumption (ICCO 2022). Additionally, some high-quality varieties of cocoa are traded in different ways than bulk cocoa. As such, over 80% of the global cocoa industry is dependent on West and Central Africa for bulk cocoa. Growth of cocoa production, with the exception of Ecuador, is in the poorest of the cocoa producing countries. Côte d'Ivoire is by far the largest cocoa producer, followed by Ghana. The two of them produce 60 % of today's global harvest volumes. Especially in Ghana, production has been going down in recent years with spreading diseases and the rise of gold mining in cocoa areas as one of the main causes.

Most cocoa is exported as unprocessed cocoa beans, travelling to countries in the European Union to be grinded. Yet, in recent years, Côte d'Ivoire has become the biggest grinder of cocoa due to a government policy that was used to attract companies to set up factories. Despite the recent withdrawal of subsidies (which consisted of price reductions for domestically processed beans, combined with tax exemptions), processing capacities are increasing. Meanwhile, not at least due to high costs, grinding volumes in Ghana have stagnated, with indirect subsidies and tax exemptions doing little to improve the situation.

A decade ago, supported by its tax policy, Indonesia significant investments in grinding facilities, and today the country imports huge volumes of cocoa from West Africa and Latin America (ICCO 2023c).

Cocoa grinding takes place in large factories with a very low value addition. Cocoa beans, cocoa mass, cocoa butter, and cocoa powder can be easily transported, whilst chocolate is much more sensitive to high and fluctuating temperatures during transport. Due to this, most chocolate production occurs near the important consumption markets. Therefore, the biggest net importers of cocoa and cocoa products are also the biggest producers of chocolate and the main consumption markets (Table 3).

SINCE 2010/11, CÔTE D'IVOIRE ADDED NEARLY 700,000 MT TO ITS ALREADY 1.5 MILLION MT OF YEARLY PRODUCTION

TABLE 3: 25 LEADING COCOA GRINDING COUNTRIES IN 1000 MT

	2021/22 (Estimates)	2022/23 (Estimates)
EU	1553	1535
Côte d'Ivoire	710	770
Netherlands	610	600
Indonesia	460	450
Germany	440	435
Malaysia	375	364
USA	380	350
Ghana	295	280
Brazil	223	251
France	140	140
Turkey	100	100
Canada	100	100
Spain	100	100
Belgium	95	95
Singapore	95	90
United Kingdom	85	85
Cameroon	80	85
Italy	86	84
Peru	67	67
Mexiko	60	60
Switzerland	55	55
Russia	55	55
Japan	50	50
Ecuador	38	42
Columbia	42	40
Nigeria	40	40

Source: ICCO 2023c

As for other products, the market is split into different segments. Nearly half of the cocoa annual crop is consumed in Europe. Cocoa consumption in most Western European countries remains on a high level with only low growth rates, while Eastern European markets grew significantly during the last decades. North America also is a big market for cocoa (ICCO 2023c). 15 years ago, it was projected that a massive growth of cocoa consumption in China and India would occur. However, the reality today is very different, with cocoa consumption growing slowly in both countries (Table 4).

TABLE 4: LEADING NET IMPORTER OF COCOA/COCOA PRODUCTS, BEANS EQUIVALENT, IN 1000 MT

	2020/21	2021/22
United States	811	740
Germany	520	454
Belgium	321	401
Italy	218	240
France	138	194
Canada	178	169
United Kingdom	193	157
Poland	179	152
Turkey	178	150
Spain	138	143
China	119	116
Mexico	83	115
Japan	108	114
Estonia	112	102
Russian Federation	165	99
India	74	97
Australia	61	65
Netherlands	105	54
Singapore	50	54
Argentina	47	51
Ukraine	36	38
Egypt	40	36
Switzerland	36	35
Austria	35	35
Thailand	30	33

Source: ICCO 2023c

Germany is the biggest exporter of chocolate and chocolate products, followed by Belgium, Poland, the Netherland, Canada, and Italy. On the other hand, the United States is the biggest importer, followed by France and Germany. All leading chocolate importing and exporting states are countries in the Global North, and most of the chocolate trade is taking place between them. This shows the close linkages between the location of factories and main markets. Brazil is the only exception, as the country both grows significant volumes of cocoa and consumes it in the local market (Table 5).

TABLE 5: CHOCOLATE TRADE 2021/22: TOP 12 EXPORTER/IMPORTER

Exports of chocolate and chocolate products	in 1000 MT
Germany	944
Belgium	727
Poland	444
Netherlands	441
Canada	431
Italy	407
United States	335
France	331
Turkey	251
Mexico	223
United Kingdom	181
Switzerland	181

Imports of chocolate and chocolate products	in 1000 MT
United States	787
France	549
Germany	506
United Kingdom	475
Netherlands	338
Belgium	260
Poland	252
Canada	246
Spain	164
Italy	129
Russian Federation	127
China	107

Source: ICCO 2023c

3.2 MARKET STRUCTURE

There are approximately 5.5 million farmers worldwide who grow cocoa, but they are largely not organised in cooperatives or other organisations. The cocoa they produce is bought by a decreasing number of companies as there have been significant concentration processes in the industry.

Traditionally, the value chain included the farmer, who sold cocoa to a local trader or cooperative. They then sold the cocoa on to either local medium traders or purchasing companies owned by multinationals. After this, the cocoa is exported to international trader, and these companies sell cocoa to a grinder. The grinding companies delivers cocoa products to the chocolate corporations. After processing, most of the cocoa is sold to the retailers, who sell the final chocolate product to the consumer.

During the last few decades, there have been waves of concentration processes in the value chain of chocolate production, with many companies either leaving the market or being bought up by competitors. Today, a small group of companies is buying most of the harvested cocoa, grinding and processing it, and even producing ready-made chocolate mixtures for the chocolate companies down the line. The six biggest trader-grinders are responsible for at least 60% of the global cocoa trade and grinding. However, exact figures are not available due to internal trading within the marketplace, which causes a doubling of the figures (Table 6).

THE SIX BIGGEST TRADER-GRINDERS ARE RESPONSIBLE FOR AT LEAST

60%

OF THE GLOBAL COCOA TRADE AND GRINDING

TABLE 6: MOST IMPORTANT COCOA USING COMPANIES IN 2021 [1]

Trader/Grinders	MT [1]
Olam	1,019,400
Barry Callebaut (2)	988,000
Cargill (3)	875,000
ECOM	800,000
Sucden (2) (4)	525,000
Touton	328,513
Blommer/Fuji Group	200,000
Cocoanect	102,000
Cemoi	80,000
Chocolate Producers	
Mondelēz International (7)	400,000
Nestlé	391,000
Mars	365,000
Hersheys (6)	220,000
Ferrero (2)	208,000
Lindt and Sprüngli	144,784

(1) using ICCO conversion rates: Cocoa butter 1.33, Cocoa paste/liquor 1.25, Cocoa Powder and cocoa cake 1.18
(2) fiscal year 2020/21
(3) fiscal year 2020/21, Cargill reported to have sourced between 750,00 - 1 million MT, this is the middle of that range
(4) Sucden reported to source 450,000 - -600,000 MT per year, we took the middle of that range
(5) 100% of the grinded beans are traceable to cooperative level and 45% of the grinded beans are traceable to farm level, but due to additional volumes needed to produce chocolate the percentage is reduced to respectively 87% and 38%"
(6) Hersheys reported to source 200,000 - 240,000 MT per year, this is the middle of that range
(7) Estimates by the authors

Source: Fountain and Hütz-Adams 2022

Very few chocolate companies work from bean to bar. Most factories buy ready-made chocolate or at least cocoa liquor and butter from the grinder. The six biggest chocolate companies use roughly 1.7 million MT of cocoa for their final products. Having said this, it is obvious that the chocolate sector is also strongly concentrated, but not as much as trading and grinding cocoa. Mid-range companies do survive on the market, with some of them are global players (e.g. Ritter Sport), or market leaders in their home country (e.g. Tony's Chocolonely in the Netherlands). On the main markets in industrialised states, the chocolate sector is confronted with a shrinking number of large supermarket chains which have a significant market power (for details see next chapter).

THE SIX BIGGEST CHOCOLATE COMPANIES USE ROUGHLY 1.7 MILLION MT OF COCOA FOR THEIR FINAL PRODUCTS

3.3 THE CHANGING ROLE OF TRADER AND GRINDER

Traders are in the middle of a highly saturated market, which means they must work with low profit margins. To cope with the low margins, many companies have tried to increase volumes and choose the path of vertical integration along the value chain. Today, most cocoa buying companies also grind cocoa, and one might call this step of the value chain trader-grinders (Staritz et al. 2022).

Trader-grinders have taken over competitors within their part of the value chain, namely companies who transport, store, and trade cocoa or provide services for cocoa production. Meanwhile, a small number of large chocolate companies have bought up more and more brand names (van Huellen and Abubakar 2021).

This development resulted in two highly concentrated market segments: trader-grinders and chocolate companies. A similar concentration process can be observed in the retail sector, which has led to the tripolar governance of the sector (Staritz et al. 2022). Many chocolate companies now concentrate on strengthening their brand, and have stopped buying cocoa beans and grinding (Staritz et al. 2022). This process is ongoing (Interview 02 2023). Most of the big chocolate brand, for example Mars, Mondelez and Nestlé, depend nearly completely on trader-grinders for their chocolate supply.

Meanwhile, the financial valuation of branded chocolate companies changed. Decades ago, 80% of the value was in form of assets and 20% was the value of the brand; however, today, it is vice versa, with the protection of the brand name being the most important mission for chocolate companies today (Interview 01 2023).

This led to a change of the role of trader-grinders. Specifically, vertically integrated companies like Olam, Barry Callebaut and Cargill, concentrate much of the know-how of the value chain, the purchasing of cocoa beans, transportation, exportation, grinding, and even the production of ready-made chocolate (Staritz et al. 2022; Interview 02 2023; Interview 05 2023; Le Basic 2022). Many trader-grinders are powerful stakeholders within the value chain of cocoa, as they connect the physical market with their activities in the futures market. They have a deep knowledge of the sector and access to financial resources. In the concentrated cocoa market, as with other commodities, a small number of companies retain an oligopsonistic position (Staritz et al. 2022).

MANY TRADER-GRINDERS ARE POWERFUL STAKEHOLDERS WITHIN THE VALUE CHAIN OF COCOA, AS THEY CONNECT THE PHYSICAL MARKET WITH THEIR ACTIVITIES IN THE FUTURES MARKET.

But due to their capital-intensive large-scale operation, they need customers who will buy in high volumes. The chocolate companies are aware of this requirement and use this to their advantage in the bargaining process. Therefore, some of the big trader-grinders have set up their own divisions to sell cocoa products in smaller volumes to small customers, as this generates higher profit margins compared with selling to big brands (Interview 01 2023).

Some of the major players in the sector detected an additional business opportunity. To reduce their risk concerning raw materials prices, they usually hedge most or all the cocoa they trade (see chapter 5). Additionally, "they now increasingly offer financial services (e.g., price and quantity risk insurance products) to other members of the supply chain, including commodity producers. At the same time, their market dominance provides them with an information advantage, which they use for speculative trading" (van Huellen and Abubakar 2021).

4. MARKET CONCENTRATION, GOVERNMENT INTERVENTIONS AND PRICE DEVELOPMENTS

A small volume of cocoa is traded as fine or flavour cocoa (FFC), partly at significantly higher prices than bulk cocoa (Hütz-Adams, Campos, and Knoke 2022). Most of the cocoa is of standard quality. Inflation-adjusted figures show that over time prices have decreased. But there were strong fluctuations in both directions with a record low in 2000 (see Graph 2).

SHARE OF COCOA IN A CHOCOLATE BAR WAS 23% IN 1960-1970, WHILE IN 2000-2011 IT WAS ONLY
10%

4.1 EFFORTS TO STABILIZE OR INCREASE COCOA PRICES

According to an analysis written for the United Nations Conference on Trade and Development (UNCTAD), during the period from 1961 to 2001, the author observed a "statistically significant long-term declining trend in the price of 2 per cent per year" (ul Haque 2004).

The farmers in the cocoa sector, except for a small group producing high quality beans, sell a low-value bulk product. "The long run equilibrium in such a market is one of zero economic profit, measured as total revenue minus the sum of explicit costs and opportunity costs." (Bensch, Kaestner, and Vance 2023)

There have been efforts on an international level to stabilise prices by supply management. The most comprehensive action was led by the International Cocoa Organization (ICCO), which was founded in 1973. The members of ICCO are the most important cocoa exporting and importing countries. One task of the ICCO was the implementation of the International Cocoa Agreements (ICCA), which were agreed within the framework of the International Cocoa Conferences of the United Nations in 1972, 1975, 1980, 1986, 1993, 2001 and 2010. Its mandate is to build a socially, economically, and ecologically sustainable cocoa economy. The latest, seventh cocoa agreement, which was adopted in June 2010 and entered into force in 2012, stated as its goal to achieve fair prices for farmers.[2]

2 For details and documents see: https://www.icco.org/who-we-are/agreements/

GRAPH 2: LONG-TERM COCOA PRICE TRENDS

*2022/23 refers to average for October 2022 to 15 August 2023
Source: ICCO, email to the author, 17.08.2023

Early ICCAs included measures to manage supply and by this to stabilize prices. To achieve this, buffer stocks and export quotas were set up. As Waarts and Kiewich (2021) write, "in the 1980s a chronic surplus occurred, which the agreements from 1980 and 1986 could not address as the export quotas were removed because of opposition from OECD countries. Keeping buffer stocks as the only supply management measure without exports quotas resulted in the oversupply of cocoa. (...) The history of the ICCA underlines the importance both to balance demand and supply of cocoa and to align measures between different actors to be effective" (Waarts and Kiewich 2021).

However, attempts to implement a new supply management plan have failed, and the last set of agreements did not try to establish one. After the collapse of the efforts to stabilize price, the price decreased significantly (Waarts and Kiewich 2021; Koning and Robbins 2005).

In response, both Ghana and Côte d'Ivoire have attempted to use their market power to raise prices on national level. Ghanaian farmers went on strike in 1930/31 and 1937 and tried to achieve higher prices, by burning part of the harvest to put pressure on cocoa buying companies. In 1937, they tried to set up own export companies. However, the British colonial government intervened and regulated the market. In 1940, they established the West African Produce Control Board. The aim was to control the trade and set prices for all British ruled West African countries. The institution is the predecessor of the still existing COCOBOD (Hütz-Adams et al. 2017).

The government of Côte d'Ivoire tried to influence the cocoa price between 1987 and 1989 by removing their cocoa from the export market. Yet, this had little effect, as potential buyers of cocoa sought alternative suppliers or used up their stocks. The attempt to influence prices resulted in high costs and losses of export revenues and taxes in Côte d'Ivoire, which ultimately led to the collapse of state governance of the Ivorian cocoa market (Bonjean and Brun 2016; Vellema et al. 2016).

> *"The Ivorian Caisse de stabilisation (CAISTAB) engaged the French trader SUCDEN to store 200,000 tonnes of cocoa. However, most buyers anticipated this very costly stockpiling and waited until Côte d'Ivoire lifted the blockage in 1989, drawing on their own stocks or turning to other producer countries, such as Malaysia or Indonesia. Ivorian producers were the 'forced funders' of the embargo, given that they sold their beans at lower prices"*
> *(Staritz et al. 2022).*

4.2 CONCENTRATION PROCESS

The influence of the concentration of the cocoa market on farmers and prices is disputed. Yet, many have observed the powerless situation of smallholders, who are not in a position to assert their interests in the value chain. These power imbalances are reinforced and exacerbated by market concentration processes (Barrientos 2016; Gayi and Tsowou 2015; Fold and Neilson 2016).

The percentage share of the raw cocoa price in the final sales price of chocolate has continued to fall in recent decades (Barrientos 2016). On the French market for example, the share of cocoa in the price of a chocolate bar was 23 % between 1960-1970, while for 2000-2011, it was only 10 %. The greatest reduction occurred in the 1980s. Correspondingly, the share paid to farmers in relation to the price of chocolate fell from 12 % per bar of chocolate to 5.6 % (Bonjean/Brun 2016: 356). A similar development can be observed in the chocolate markets in the USA and the UK (Nardella 2015).

In a study written for UNCTAD, the authors warn of power imbalances in the value chain and suggest monitoring the market very closely at the regional, national, and international levels to ensure compliance with competition and antitrust law (Gayi and Tsowou 2015).

Other studies conclude that there is no evidence that increasing concentration puts more pressure on farmers. However, it must be taken into account that these figures are partly based on mathematical analysis models that can be applied in a standardised way to a wide variety of industries (e.g. Gilbert 2009; Oomes et al. 2016). It is questionable whether such an analysis does justice to the cocoa sector with its enormous power imbalance along the value chain.

Analyses by the International Cocoa Organization (ICCO) points out, that there are high barriers to entering cocoa processing. Due to the considerable economies of scale, which favour large plants for the grinding and production of industrial chocolate and its further processing for end products, it is very difficult for market entrants to gain a foothold at all (Nardella 2015). The price for bulk cocoa is about the same for all companies, as world market prices are transparent, and hedging secures against volatility (see chapter 5). Meanwhile, the efficiency of companies in their buying operations, transport, warehousing, grinding, and chocolate production is determined by the ability to invest in a very efficient handling of their part of the value chain. In the bulk cocoa sector, efficiency usually comes with the scale of the operation.

The determining factor in strengthening or weakening the competitive position of companies in the processing of cocoa is therefore not so much the price of cocoa or its processed products, but the question of the costs incurred in the work processes (Gilbert 2009).

4.3 INFLUENCE OF THE RETAIL SECTOR

Based on the concentration process of supermarket chains in many main cocoa consuming countries, retailers can put a lot of pressure on chocolate brands. Additionally, many retailers have private labels to compete against other traditional chocolate companies. These private labels usually include very cheap "price entry" chocolate, mid qualities, which directly compete with brands like Milka or Ritter Sport, and even premium chocolate. The discounter Lidl even owns a chocolate factory. Due to their market power and private brands, European retailers have deep insights into calculations of their suppliers and are in a strong bargaining position.

IT IS ESTIMATED THAT MORE THAN
70% OF COCOA PRODUCTS
CONSUMED IN NORTH AMERICA AND EUROPE ARE SOLD BY RETAILERS

It is estimated that more than 70% of cocoa products consumed in North America and Europe are sold by retailers, and the retail sector is highly concentrated. In Europe, the 10 biggest companies, 4 of them based in Germany, "represent almost 57% of all food retail sales" (Le Basic 2022).

Markets differ from country to country. In Germany, more than half of the market is dominated by the three brands Milka, Ritter Sport, and Lindt & Sprüngli. 28% of all chocolate tablets sold are private labels of the retailer. Place on the shelves of supermarkets is limited and chocolate brands compete for the best locations. There are often disputes between brands and retailer on prices. A consequence of these disputes is that big chocolate brands are temporarily unavailable at certain supermarket chains (Le Basic 2022).

While the German market is dominated by milk chocolate, dark chocolate is most important product in France. Additionally, the market share of private labels is lower in France and the tax systems are different (Le Basic 2022; FAO/Le Basic 2020). This causes significant differences between the two markets concerning price setting and margins. In Germany, the highest margins were earned by the retailer in 2020. The "retailers & discounters generate 10% of net margin over their selling price to consumers, the brands & finished goods manufacturers generate 6% of margin, the cocoa & chocolate processors generate 3%, the traders & collectors 4%. Upstream, the cocoa farmers generate almost no margin, when accounting for the costs that the latter face to achieve a decent living for their families" (Le Basic 2022). A similar calculation for the situation in France in the year 2018 showed that brands had a higher margin than retailer (FAO/Le Basic 2020).

Nevertheless, some conclusions from the studies on the situation in France and Germany are possible. While most farmers do not earn a living income, all other steps in the value chain earn significant margins. On the German market, the highest margins are owned by the supermarket chains. Expensive premium chocolates are more profitable, and margins are exceptionally high if organic chocolate is sold. The situation for the manufacturers is mixed. Those who produce private label chocolate usually have much lower margins than the brands (Le Basic 2022).

The situation in other major chocolate consuming countries like Great Britain, Spain, Italy, the US, or Brazil might be very different. The role of supermarkets and the price setting for cocoa is still under-researched. More knowledge of the power relations in the sector is necessary. Presently, the retailer can hide behind this missing knowledge. Despite their important role in the price setting along the value chain, they usually do not take part in the discussions on international level on how to improve the situation of cocoa farmers.

4.4 CHOCOLATE SALES AND THE INCREASE OF PROFIT MARGINS

Meanwhile, chocolate sales have increased significantly over the years. It is estimated that the sector grew from US$83.2 billion in 2010 to US$98.3 billion in sales in 2016 (Hütz-Adams and Schneeweiß 2018), although the amount of cocoa grinded increased only slightly over this period and remained almost constant between 2012-2016 (ICCO 2023a). This is an indication that sales of cocoa-derived products have grown significantly, although inflation-adjusted figures are not available.

Despite the Covid-19 crisis starting in 2020 and the global inflation after the Russian attack on the Ukraine in 2022, the chocolate market kept growing. Some agencies put its expected valuation in 2030 as high as US$200 billion.[3]

DESPITE THE COVID-19 CRISIS AND THE RUSSIAN ATTACK ON THE UKRAINE, THE CHOCOLATE MARKET KEPT GROWING. SOME AGENCIES PUT ITS EXPECTED VALUATION IN 2030 AS HIGH AS

US$200 BILLION

Some of the most important companies in the cocoa business, for example Cargill, Cemoi, Mars and Ferrero, are not publicly listed. For other companies, including Barry Callebaut, Fuji oil, Olam, Mondelez, Hershey, Nestlé, Lindt and Meiji, figures on gross profits are available. The comparison of dividends paid as a percentage of gross profits over different decades leads to a striking result. For all companies, dividends as percentage of gross profits in the 1990s were (partly massively) lower than in the 2010s (van Huellen and Abubakar 2021).

> *"Not coincidentally, listed companies are based in financial centres. For US companies, institutional investors are the most dominant shareholders, holding just under 80 % of total shares. The weight of institutional investors is much lower for companies based elsewhere, showing national differences. For all listed companies, shareholder pay-outs in the form of dividends have steadily increased over the last three decades, indicative of financialisation of objectives. Interestingly, pay-outs by US and Swiss companies, which are dominated by institutional investors, are substantially larger than for other companies"*
> *(van Huellen and Abubakar 2021).*

4.5 GOVERNMENT REGULATION IN CÔTE D'IVOIRE AND GHANA

In response to fluctuating prices and inefficient market systems, cocoa-producing countries in Africa have changed their national cocoa strategy several times over the past decades. Not least due to pressure from structural adjustment programs imposed by the International Monetary Fund (IMF), cocoa-producing countries liberalised their cocoa markets from the late 1980s onwards.

In Cameroon and Nigeria, there is hardly any state influence on the cocoa trade since its liberalisation. The same can be said for the smaller African cocoa producing countries. Meanwhile, Côte d'Ivoire partially reversed its liberalisation in 2012. Ghana, on the other hand, reformed its market a couple of times but never completely abolished the strong state influence on the national cocoa trade.

3 See https://market.us/report/cocoa-chocolate-market/request-sample/; https://www.enterpriseappstoday.com/news/cocoa-and-chocolate-market-is-encouraged-to-reach-usd-235-8-billion-in-2032-at-a-cagr-of-4-2-market-us.html; and https://www.vantagemarketresearch.com/industry-report/chocolate-market-1456

4.5.1 Côte d'Ivoire: CCC

After the cocoa sector had been fully liberalised for about 20 years, a national cocoa authority, the Conseil du Café-Cacao (CCC), was re-established in Côte d'Ivoire in 2012. The authority is responsible for managing the cocoa sector, including price stabilization, but the CCC - different from of the COCOBOD in Ghana - does not buy and own cocoa. Its role is only to regulate the market.

At the heart of the CCC's pricing is a system of advance sales of the harvest. The CCC organises auctions in which interested parties can purchase cocoa. Exporters indicate the price at which they want to sell the cocoa, the export price is then determined from the average of these indications.

> *"For the forward sales, exporters acquire permits from the Council to source a specified quantity of cocoa beans on the domestic market at harvest time for delivery in an agreed month. The forward sales price reached in these transactions fluctuates over the six months, and is the sum of two components. One is the current quotation for cocoa at the London futures exchange, the ICE Futures Europe, which is the exchange for cocoa from West Africa. The second price component is an 'origin differential,' a price premium that reflects country-level differences in expected cocoa bean quality and supplier dependability. This premium is negotiated in a live fashion by the Council and exporters"*
> *(Bensch, Kaestner, and Vance 2023).*

Through this mechanism, the CCC facilitates the selling of 70 - 80 % of the expected main crop months before the harvest starts, with the selling price being based on the buyers' expectations of the future price development and thus on the futures on the ICE (for details see chapter 5). The rest of the harvest is sold during the crop season.

> *"In Ivory Coast, the difference between the set-price and spot market price is balanced with a price stabilization fund. When market prices are higher, exporters transfer the difference to the fund. When market prices are lower, exporters are compensated by the stabilization fund. This system allows exporters to pay the fixed price throughout the season."*
> *(Aidenvironment and Sustainable Food Lab 2018)*

Around 1st of October, the beginning of the new harvest year, the CCC calculates the average cocoa price achieved, as well as the CIF price still to be achieved for the rest of the harvest. Of this CIF price, 61 % should reach the farmer (Bensch, Kaestner, and Vance 2023). The difference of 39% is made up of the taxes to be paid to the state, as well as the margins that are granted to cooperatives, intermediaries, transporters, and warehouses; all costs from farm to shipment must be covered. A small part of the CCC's revenues, which results from differences between the export price and the world market price, is earmarked to build up a security fund at the central bank against falling cocoa prices. While farmers demand a higher share of world market prices, other participants in the value chain, including cooperatives and exporters, criticise the margins they are granted as too low. They state that these are partly insufficient to cover their costs, let alone to be able to afford investments. The system ideally protects farmers in Côte d'Ivoire against price fluctuations during the harvest season. Moreover, compliance with the payment of minimum prices by the buyers from the farmers is monitored by the CCC. Although farmers are now protected against short-term

price fluctuations, they are not yet covered beyond the current harvest season at the price setting. Additionally, it has to be stressed that the price system does not reflect the needs of a farmer, with the developments of cocoa prices at the futures market (Hütz-Adams et al. 2017, 23-25 and Annex 5-15).

The fragility of the situation became obvious in spring 2017. Due to a massive decrease of the world market price, the CCC had to reduce the farmgate price from 1,100 CFA to 700 CFA (1.067 euros) per kilo. The effect of global price crash exposed weaknesses within the system set up by the CCC, which put additional pressure on prices (Aidenvironment and Sustainable Food Lab 2018).

In the following years, it became regular practice for the CCC to reduce farmgate prices mid-season with the beginning of the mid-crop harvest. This was sometimes based on market developments, but also because the mid-crop is of lower quality than the main crop.

Additionally, there are many reports that some of the buyers pay less than the minimum price. Specifically, in remote areas, farmers often depend on certain buyer as nobody else is active in the region. This gives the buyer a very strong bargaining position. Additionally, transport costs from remote locations are high and cocoa quality can be below average (Bensch, Kaestner, and Vance 2023).

4.5.2 Ghana: COCOBOD

In Ghana, the COCOBOD is a state-controlled institution that is responsible for regulating the entire cocoa sector. Including its predecessor organisations, COCOBOD can look back on an 80-year history. The institution has several sub-divisions.

Buyers of Ghanian cocoa require a licence from COCOBOD. All companies that buy cocoa are inspected by a subdivision of COCOBOD and must deliver the purchased cocoa to another subdivision, the Cocoa Marketing Company (CMC). The companies that buy the cocoa from the farmers are required by COCOBOD regulations to maintain a network of buying stations. They receive a fixed percentage of the export price to cover their costs for their services in collecting, paying for, and transporting the cocoa.

However, the information from COCOBOD on the distribution of the net Free on Board price (FOB) is non-transparent. Although COCOBOD often speaks of the FOB price as the basis for pricing, the authority does not take the FOB value paid on the world market but calculates a "net-FOB". This price is based on the FOB achieved in the advance sale, from which several expenses intended to benefit the sector as a whole are deducted. These include, among other, expenses for pesticides given to farmers or large-scale spraying campaigns organised by COCOBOD, the purchase of jute bags and, depending on the course of the harvest season, payments into the stabilisation fund (Hütz-Adams et al. 2017).

In a paper which summarises the calculations for the harvesting season 2022/23, figures on expenses for different steps of the cocoa handling and Ghana add up to a sum well above 100 % of the export price. It is unclear what happens to the part not covered by sales.[4]

4 Source: Documents seen by the author.

The COCOBOD tries to cushion price fluctuations on the world markets. It is estimated that 70 % of the expected cocoa harvest is sold to companies before the start of the harvest season. For a large part of the harvest, the agency knows precisely in advance what price it achieved. This price is then used to calculate a minimum price that all cocoa buyers must pay to the farmers.

Additionally, forward sales contracts are used to secure a syndicated loan placed on the international financial market. This puts a lot of pressure on the COCOBOD to sell as much cocoa as possible long before the harvest started (details see Box 2).

However, this price still depends on the present market price and cannot be freely chosen by the government. Moreover, this price is only valid for one harvest season. In the past, even when world market prices fell, the COCOBOD could hold the nominal minimum price stable. This was supported by the depreciation of the GHS against US Dollar, British Pound, and Euro. But the price paid to the farmer was stable only in nominal figures, as Ghana has had high inflation in recent years. Since prices are set in the local currency Ghanian Cedi, GHS, real price losses due to inflation can be concealed by unchanged prices in some crop years. However, maintaining nominal prices have meant real price losses.

COCOBOD has the goal of paying out 72% of the net-FOB. The difference is used to pay for running costs of quality controls, transport, storage, research, advisory services, and the subsidisation of inputs (seedlings, fertiliser, pesticides). In addition, a small part of the income should go into a stabilisation fund, which serves as a security against falling world market prices. If the cocoa price rises during a season, COCOBOD can make additional profits on the sale of cocoa that has not already been sold in advance. These should either be paid out to farmers as a bonus or lead to a price increase within the current harvest season, which has also happened in some harvest years.

The minimum price is set by a committee (Producer Price Review Committee - PPRC) in which farmers, ministries and COCOBOD are represented. The committee estimates the size of the upcoming harvest, as well as the likely FOB price to be achieved. But price setting always has its political dimensions (Staritz et al. 2022). There are considerable risks in setting the price. These concern not only the part of the volume that has not been sold in advance and remains subject to price fluctuations on the world market. Further problems arise from the high volatility of the exchange rate of the local currency GHS against the US dollar. Processing companies working for the local market in Ghana are running a great risk, as they must pay for the cocoa beans in US dollars. The depreciation of the GHS is a major problem for them. This makes it very difficult to set up a locally based business with a focus on the national or regional market (van Huellen and Abubakar 2021).

4.5.3 Farmgate prices in Côte d'Ivoire and Ghana

Comparison between the farmgate prices of Côte d'Ivoire and Ghana are difficult, as the economic environment in both countries differs. The CFA in Côte d'Ivoire is coupled with the Euro. This means, that its value against the US dollar might be volatile, but the volatility rates are far lower than Ghana with its free-floating GHS. Additionally, inflation rates in Côte d'Ivoire are much lower than in Ghana. Nominal change of minimum prices set by CCC and COCOBOD differed massively over the years. Côte d'Ivoire saw a peak in the season 2016/17, afterwards prices decreased. Meanwhile, the farmgate price in Ghana increased in nominal terms significantly. Due to the high inflation rate, this price increase in GHS might mean that for many years the inflation-adjusted income per kilogram of cocoa will decline for the farmer.

Nevertheless, farmers in both countries received in local currency (and converted in US dollar) a significant price increase in the season 2020/21 after the implementation of the LID. Afterwards, prices decreased significantly in West African CFA franc (Côte d'Ivoire's local currency), with their prices for the mid-crop being significantly lower than for the main season. In Ghana, prices in GHS were stable, partly due to the COCOBOD subsides, but also based on the significant inflation and devaluation of the GHS.

TABLE 7: FARMGATE COCOA PRICE

Year	Côte d'Ivoire in CFA ($) per Kg / Main Season	Ghana in GHS ($) per kg
2013/14	750 CFA ($1,54)	3,392 Cedis ($1,55)
2014/15	850 CFA ($1,45)	5,520 Cedis ($1,71)
2015/16	1,000 CFA ($1,70)	6,800 Cedis ($1,79)
2016/17	1,100 CFA ($1,84)	7,600 Cedis ($1,91)
2017/18	700 CFA ($1,22)	7,600 Cedis ($1,74)
2018/19	750 CFA ($1,34)	7,600 Cedis ($1,56)
2019/20	825 CFA ($1,40)	8,240 Cedis ($1,52)
2020/21	1,000 CFA ($1,80)	10,560 Cedis ($1,80)
2021/22	825 CFA ($1,45)	10,560 Cedis ($1,83)
2022/23	900 CFA ($1,33)	12,800 Cedis ($1,25)
2023/24	1,000 CFA ($1,61)	20,943 Cedis ($1,82)

Source: Brudney and Taylor 2023, for 2023/24 websites of COCOBOD and CCC

The impact of the price rally starting in spring 2023 has not influenced farmgate prices for the season 2023/24 as strongly as farmers hoped. The governments of both countries sold at least half of the harvest in the months before the price rally started. At this time, this seemed to be an efficient way to profit from prices which were already higher than the year before. However, on reflection, it appears that they sold the 2023/24 crop too early. Leeway for further price increases over 2023/24 might be low due to several factors. Firstly, very low harvest volumes are expected due to a combination of adverse weather conditions and price hikes for fertiliser which caused a decrease in use amongst farmers, will impact prices. Alongside this, rates of inflation and already record low cocoa prices will continue exacerbate the situation. The predicted low yields are an indicator that despite the increase of farmgate prices, the overall income of farmers is not expected to rise in the season 2023/24. Famers might get more for their cocoa, but they will harvest at lower volumes.

4.6 REASONS FOR PRICE VOLATILITY

Historical events have always had an impact on cocoa prices, as a study of long-term trends since 1850 shows. The decline in prices has often been caused by a collapse in demand due to global events. This was evident, for example, in the phase after 1860, when there were several wars in the main consumption region of Europe, as well as during the First World War. However, the price decline began before the outbreak of the First World War, not least due to a drastic expansion of production, especially in Ghana. This price decline continued beyond the First World War, as the Great Depression and the Second World War followed shortly afterwards (Gilbert 2016).

But other variables have also influenced prices. Droughts in West Africa combined with devastating forest fires, especially in Ghana, led to the price explosion in the mid-1970s. Furthermore, the cause of the price decline in the 1990s was caused not just by increased harvest volumes, as company mergers, improved transport facilities and modern communication technology all played a role, but so did more efficient futures market transactions that reduced the need for stockpiling in warehouses. The reduction in stockpiles led to falling prices due to the additional cocoa brought to the market (ICCO 2008).

From 2000 onwards, the volatility of the cocoa price was fuelled by the political crisis in Côte d'Ivoire. There were at times significant price increases when many market participants feared a disruption of exports from Côte d'Ivoire, this led to rising prices despite forecasted supply surpluses. In March 2011, for example, the price of cocoa briefly stood at US$ 3,730 per MT. The following calming of the situation in Côte d'Ivoire combined with a record harvest in the 2010/2011 harvest season subsequently led to a massive price collapse to US$ 2,197 in December 2011.

Relatively low crop yields, especially in the 2015/16 season when global weather phenomena affected the cocoa trees, led to a temporary stabilisation of prices at around US$3000 per MT, before the prospects of a very good harvest and a surplus of cocoa on the world market of around 400,000 MT led to a massive drop of nearly US$1000 in prices from September 2016 onwards.

In 2016/17, most market participants were surprised by the sudden price decrease. An unexpectedly high harvest in Côte d'Ivoire sent prices down, not at least due to production starting in many plantations in illegally deforested areas, which were set up during the Civil War (Interview 01 2023).

Prices remained on a relatively low level below US$2500 as an average annual price for nearly 6 years. Supply deficits in the seasons 2021/22 and 2022/23 led to a slight upward trend, which accelerated after spring 2023 due to the weather conditions in West Africa. Crop forecasts for 2023/24 indicate that there will be third season with a supply deficit in a row (ICCO 2023c, 2023a).

Inflation-adjusted figures from the International Cocoa Organization (ICCO) show that the price of cocoa tended to fall as an overall trend since 1960/61. Nonetheless, there are significant differences between the decades. Cocoa prices increased massively in the mid-1970s. In the period from 1980/81 to 1999/2000, the price fell to US$ 1,548, before more than doubling until 2009/10 to US$4297. During the months October 2022 to mid of August 2023, the inflation-adjusted average price was US$2635. Despite short-term fluctuations, there is a clear long-term trend towards falling cocoa prices (see graph 2).[5]

Stocks

Publicly available information on cocoa stocks comes from the ICCO. The institution publishes figures on stocks based on the difference between surpluses or deficits of cocoa in the balance of production and consumption. These figures are based on available figures of production and grinding.[6] This means, that the figures are not measured, but rather calculated from existing data. Over the years, figures reported to the ICCO might not have

5 Personal communication with the ICCO, email from Michele Nardella, 16.08.2023.
6 Personal communication with the ICCO, email from Michele Nardella, 16.08.2023.

always been correct and this has become a significant problem for all stakeholders who do not have the financial means to collect own market data on stocks.

Over decades, it could be observed that there was a close proportional link between the level of stocks and the price of cocoa. For the period between 1961 and 2001, it was calculated that a 1% increase in stocks resulted in a 3 % drop in prices (ul Haque 2004).

But this ratio seems to have increased, at least in certain years: After ICCO had predicted a five per cent increase in stocks, world market prices fell by around 30 per cent between October 2016 and February 2017.

On the other hand, a record low of stocks during the season 2022/23 of 32.2% did not lead by itself to the significant increase of cocoa prices. The last time when stocks were as low was in the harvesting season 1984/85. Inflation-adjusted prices in this season were at an average US$5991. Average price level in 2022/23 was far less than half of that.[7]

One reason for this could be, that figures on stocks do not reflect real volumes. Only the commercial sector might know what the exact figures are regarding stored volumes.

Another reason might be, as mentioned above, that due to more efficient transport, handling and trade (ICCO 2008), and the increased transparency in the sector due to consolidation and vertical integration, the involved companies do not see lower stocks as a potential indicator for production disruptions in a way they did decades ago.

4.7 CONSEQUENCES OF HIGH VOLATILITY

Low prices can have two possible effects on supply. On one hand, they can lead to farmers harvesting only a part of the fruit, which decreases the amount of cocoa available for the market and can lead to a shortage of cocoa coupled with rising prices; or farmers do not invest in replanting, fertiliser and pesticides which leads to lower production volumes. On the other hand, it is possible that farmers harvest a maximum amount of cocoa beans to compensate for the price decline at least partially by increasing the volume of cocoa sold. However, this potentially leads to a further fall in price. Farmers face a substantial challenge. They need a long-term planning horizon if they want to invest in maintaining cocoa plantations, as establishing a new cocoa plantation requires significant investment. At the time of investment, farmers have no indication of how cocoa prices will develop, even in the next two or three years. Once they have invested in rejuvenating cocoa plantations or planting new ones, they are not able to reduce their supply in the short term if prices fluctuate, as their dependence on cocoa income has become too significant. This makes it very difficult for governments to set up supply management systems.

The governments of Côte d'Ivoire and Ghana depend on cocoa sales to earn hard currencies for imports and as a source of tax income. A decline in the cocoa price leads to serious problems within producing countries. For example, the price reduction in 2016/17 forced the Ivorian government to cut spending by roughly 10% (Fountain and Hütz-Adams 2018).

7 Personal communication with the ICCO, email from Michele Nardella, 16.08.2023.

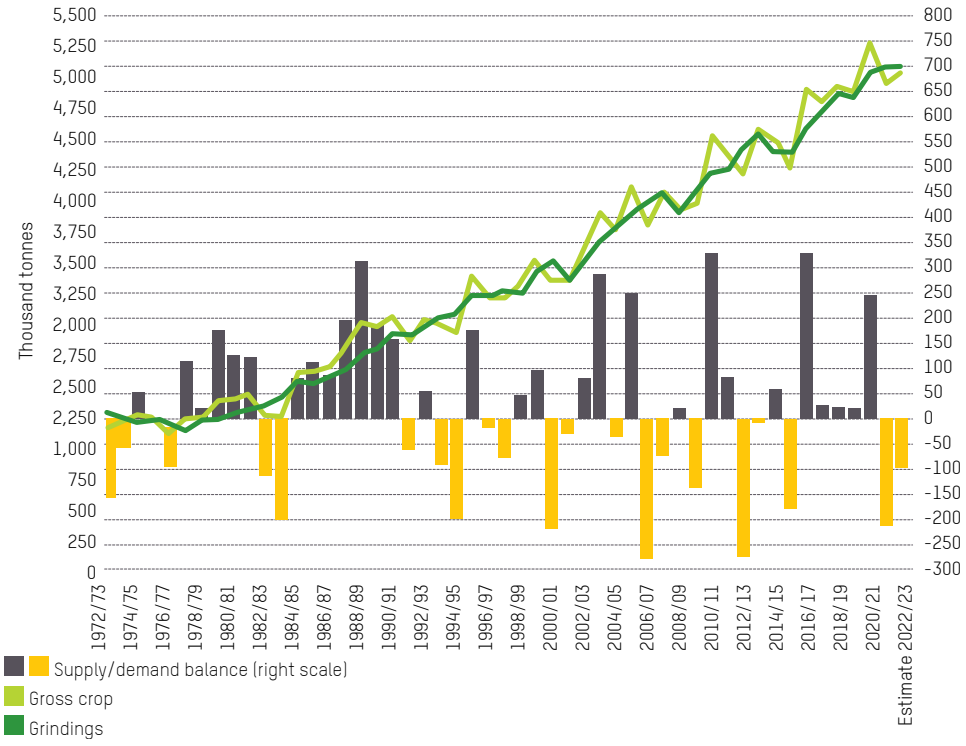
Cocoa and chocolate companies have different options to react. They must distinguish between short-term volatility and long-term price developments. Against short-term volatility, they can use hedging without all price risks.

Long-term rising prices have led some chocolate producers, or other facilitators of cocoa, to change recipes or to promote products with a lower cocoa content, in order to reduce demand for cocoa and switch to a higher proportion of cheaper raw materials in their products. Additionally, they can use cheaper lower quality cocoa.

This ability of chocolate companies to reduce cocoa demand is reflected by the significant decrease in grinding after the cocoa price rally in summer 2023.[8]

Overall, compared to farmers whose income is highly dependent on cocoa, companies are far less vulnerable to the volatility, because cocoa is only a small part of the cost structure (FAO/Le Basic 2020; Le Basic 2022).

GRAPH 3: WORLD COCOA BEAN PRODUCTION, GRINDINGS AND SUPPLY/DEMANDE BALANCE



Source: ICCO 2023c

Cocoa farmers who are heavily dependent on the income made by selling cocoa have no influence on world market prices, and therefore cannot enforce a price that would cover their operating costs to secure themselves a subsistence level. They perceive market pricing as non-transparent and are unable to plan investments on a realistic basis (Hütz-Adams et al. 2017; Oomes et al. 2016).

8 See: https://www.barchart.com/story/news/21833833/cocoa-prices-underpinned-by-tight-supplies

All in all, supply of cocoa "is extremely price inelastic: the corresponding short- and long-run estimates are 0.07 and 0.57 respectively. (....) The price elasticity of global cocoa demand also falls into the extremely inelastic range: the short- and long-run estimates are -0.06 and -0.34 respectively" (Tothmihaly 2018; Boysen et al. 2023; Gaia Cacao B.V. 2021). This is reflected by the overall market trend, as production and consumption of cocoa grew over the decades despite with price fluctuations (ICCO 2023c; see graph 3).

The only option farmer has this to change from cocoa to other crops. They might do this, but cutting down cocoa trees means to lose the investment made and the present source of income, while not knowing of other crops allow a higher income.

5. ROLE AND FUNCTION OF THE COCOA FUTURES MARKET

Since the end of the 19th century, commodity futures exchanges were established, trading in large volume financial instruments such as energy, metal, or agricultural commodities. These exchanges have theoretical advantages for producers and traders of commodities. Firstly, they facilitate price discovery, due to the large number of players who participate in them. Secondly, they simplify trade by certifying the quality of commodities and storing them centrally, allowing prices to be hedged in the future.

In the cocoa sector, futures markets play a significant role, as cocoa prices are highly volatile. Price risks are different for the actors along the cocoa value chain. In unregulated markets, farmers are not able to protect themselves against price volatility. Even in the regulated markets of Côte d'Ivoire and Ghana, farmers have at most only a relatively high security for a half year (Côte d'Ivoire) or one year (Ghana) respectively. But, on a season-to-season base, volatility can be very high (see chapter 4). Meanwhile, all major companies in the cocoa sector use the futures market to hedge against the price volatility.

5.1 ROLE OF FUTURES EXCHANGES FOR COCOA

Cocoa is traded on the commodity futures exchanges in London and New York, which is owned and operated by the Intercontinental Exchange (ICE), a publicly listed company. The commodity cocoa, together with others such as maize, soy, sugar, cotton, and coffee, are agricultural commodities or "soft commodities". The ICE itself is the result of mergers and takeovers of trading platforms, clearing houses, and data services active in USA, Canada, and Europe. Turnover in 2022 was nearly US$10 billion.[9]

Small physical trade volumes

Only a very small percentage of the futures trade leads to the physical delivery of cocoa. This is mirrored by the volume of the stocks which are used to secure the availability of potentially physically traded cocoa hold by the ICE. Approximately 250,000 MT are currently in warehouses (Interview 09 2023), 5% of global physical harvest and only a very small fraction of the trade volumes taking place at the futures market. This indicates that the role of the futures market is not the delivery of physical cocoa, but is a tool to secure companies against price fluctuations.

9 For details see https://www.morningstar.com/stocks/xnys/ice/financials

Nevertheless, it is estimated that due to hedging at least 3 million MT of cocoa, 60% of global production is directly connected to the futures market, and indirectly it is even more (Interview 08 2023).

IT IS ESTIMATED THAT DUE TO HEDGING AT LEAST 3 MILLION MT OF COCOA, `

60%

OF GLOBAL PRODUCTION IS DIRECTLY CONNECTED TO THE FUTURES MARKET.

Facilitation of price formation

Commodity futures exchanges act as intermediaries between sellers and buyers of the traded financial products. In this capacity, they provide a platform for commodity trading, where a variety of players meet. Ideally, this leads to the establishment of prices that reflect supply and demand. A variety of stakeholders take part in exchange events, which has a balancing effect on price formation. Participants who speculate on rising prices are opposed to those who bet on falling prices. Price reactions that are not comprehensible in view of the supply and demand situation can thus be prevented.

In addition, the exchange protects both parties in the cocoa sector against the bankruptcy of the other counterparty, because it guarantees the fulfilment of the contract. For this guarantee, the exchange requires security deposits ("initial margin"), the amount is based on the trading volume of the exchange participants. This deposit secures the market position against price fluctuations.

A trader who wants to sell cocoa at the futures market, must deposit the "initial margin", which secures the exchange. In the cocoa sector, this is usually 10% of the value of the cocoa that underlies the futures contracts. Even if the seller defaults, the margin should allow the exchange as a clearinghouse to cover potential losses, which might occur for the buyer who now must buy cocoa from elsewhere at the present market price.

If futures prices go up, the exchange requires the buyer of the futures contract to top up the security deposits. These so-called "margin calls" (calculated based on the difference between entry price and current futures price for the traded lot) guarantee that the seller of cocoa can deliver, even if prices rise above the original level. If the trader cannot pay the margin call, the position will be liquidated by the exchange (Interview 01 2023; Interview 08 2023; Interview 09 2023; Interview 07 2023). If prices go down, the seller of the future must do the margin call.

To be able to pay margin calls at any time, each exchange participant must set up a corresponding account from which the amounts due can be debited at any time. In times of strong fluctuations of cocoa prices, these margin calls can be significant. This is particularly significant in the present situation in autumn 2023 where cocoa price at the futures market suddenly increased within months by nearly US$1000. A company which, a year ago, sold cocoa at the futures market with a maturity date of December 2023, would have had to pay the difference of US$1000 per MT, due to these market fluctuations. For traders moving high volumes, these adds up to millions of dollars.

Quality certification

Alongside other institutions, the ICE has its own grading system. The process follows strict regulations to guarantee that each delivery of cocoa has a guaranteed quality (Interview 09 2023). Goods physically stored in the warehouse of the futures exchanges are subject to strict quality regulations. To determine quality on the cocoa exchange, the beans are thoroughly examined. Before admission to the exchange is granted, the proportion of foreign bodies and the size and homogeneity of the beans are checked (Dand 2014).

MARKET PARTICIPANTS CAN BUY OR SELL COCOA NEARLY 2 YEARS IN THE FUTURE

Futures contracts are based on prices for standard quality. If the delivered cocoa is of a better quality than standard cocoa, the price difference based on its quality must be covered, this is in addition to any country differentials that are added to the futures price.

Grading is not only done by the ICE. For example, in Ghana, the COCOBOD also controls quality, and Ecuador also has a control system. For the US market, the Cocoa Merchants Associations of America (CMAA) is responsible for the certification process of cocoa. In the EU, this is undertaken by the Federation of Cocoa Commerce (FCC). Roughly 80 % of the global trade of cocoa is based on contracts and rules coming from the FCC, as these are used for all exports from West Africa (Staritz et al. 2022).

The regulations ICE and FCC are slightly different from each other concerning quality criteria and premiums (Gaia Cacao B.V. 2021). Both institutions also set up contracts for their respective markets, with exchange participants being offered standardised contracts for the purchase or sale of a fixed quantity of a commodity in certain months. Contracts for "lots" of cocoa (one lot is 10 MT) are traded at the ICE.

Hedging of selling and buying prices

Commodity futures exchanges enable producers and processors of commodities to hedge their future sales or purchase price and thus to plan with certainty. The quality assurance and the associated confidence in the commodity facilitate pricing and trading.

All participants in the market must decide how long the contract will run and what "maturity date" they choose. There are five important "maturity dates" for the cocoa sector every year, occurring in March, May, July, September, and December. These months are the possible contractual expiration dates. Cocoa can be traded up to 10 contract maturity dates[10] in advance, meaning that market participants can buy or sell cocoa nearly 2 years in the future.

GRAPH 4: DEVELOPMENT OF FUTURE PRICES

ICE US Futures at the London closing time

Source: ICCO 2023b

10 On 05.10.2023, latest available hedge date was September 2025

All futures prices are transparent, as the exchange publishes the prices on its website. Usually, prices are updated with a 15 minute delay, and the exchange charges for real-time data. Traders can purchase access to a trading data system where information is updated by the second (Interview 09 2023).

When a contract to buy or sell a lot of 10 MT of cocoa is issued, its price is determined every time it is traded on the exchange until its final maturity. The trading of futures can be triggered by new information on the supply and demand situation for a commodity, this influences the price. For example, news about a particularly good cocoa harvest will lower the price, whilst news about the spread of pests and diseases in the growing region or political unrest in an important cocoa producing country will tend to raise it. But also, a speculative motive can lead to a trade and the corresponding price change. Therefore, even prices at the futures market are volatile (see Graph 4).

Entry Barriers

Large companies with the financial means can hedge their position in the marketplace, whilst smaller traders are higher risk due to a potential lack of capital (Staritz et al. 2022) and financial services. Therefore, this trading system has substantial barriers to entry. If, for example, cocoa trading companies in Côte d'Ivoire or cooperatives with an export licence want to use the futures market, they need significant amounts of money to start hedging. They have to be prepared to pay security deposits and have flexible bank accounts, particularly if there is a margin call. For an average cooperative, this is far out of reach. For example, if they hedged 10,000 MT of cocoa last year at the price of US$2400 per MT with the maturity date of December 2023, the value of this cocoa comes in at US$24 million. An initial margin of 10% would mean that the co-operative would have to put approximately US$2.4 million in the account at the exchange. If cocoa prices increase, for example, by US$1000 per MT before the end of the contract, the co-operative will have to pay an additional US$10 million on the account due to margin calls.

For trading companies based in cocoa producing countries, but also for most multinationals, the fluctuation of currencies is another risk. In Côte d'Ivoire, the CFA is connected to the Euro. But the futures trading in Europe, by far the most important market for Ivorian cocoa, takes place in British Pounds, while the US Dollar is compulsory on the US market. Cooperatives or local traders from Ghana, who want to use the futures market, are confronted with a high volatility and, during recent years, a strong devaluation of the GHS against the US Dollar, British Pound, and Euro. Multinational companies have the financial means and the knowledge to balance the currency risk by hedging these.

This leads to another entry barrier in which very specific knowledge is required to use the futures market. The multinationals hire very experienced traders, who handle the hedging of the cocoa price and the currencies they work with. For a cooperative in Côte d'Ivoire or a Ghanaian LBC which is not owned by a multinational company, these hurdles have been impossible to overcome until now. Even smaller companies in cocoa importing countries have difficulties, as experienced traders are very well paid and a significant financial turnover is needed for the collection of necessary market information on expected trade volumes, developments on the consumption markets, potential price developments, and so on, for the trade at the exchange.

LARGE COMPANIES WITH THE FINANCIAL MEANS CAN HEDGE THEIR POSITION IN THE MARKETPLACE, WHILST SMALLER TRADERS ARE HIGHER RISK DUE TO A

POTENTIAL LACK OF CAPITAL

Even the CCC and COCOBOD do not try to hedge cocoa. Due to the high volumes produced in both countries, hedging would require significant financial means. Additionally, the volatility in the market is high, and has recently risen (see chapter 4). This increases hedging costs, and makes price developments less predictable (Staritz et al. 2022; van Huellen 2015; Interview 09 2023).

5.2 THE INSTRUMENTS OF PRICE HEDGING

Prices for commodities, but also for shares or share indices can in principle be hedged through two types of financial instruments: futures and options. Futures are unconditional, binding contracts. The sale or purchase promised therein must be fulfilled by the owner. Options, on the other hand, give the owner the right, but not the obligation, to buy (call option) or sell (put option) on the underlying futures market. For this right, the buyer must pay the seller a premium on the option.

Futures

Futures consist of buy (long) and sell (short) contracts. In the case of the purchase contract, the owner guarantees to purchase a specified quantity of a commodity at a fixed price and at a specified time. The sell contract, on the other hand, obliges the owner to sell a specified quantity at a specified time and at a fixed price.

Towards the end of the term, these two positions are usually closed out, i.e. there is no physical delivery. Instead, the owner of the sell contract will enter into a corresponding buy obligation, while the owner of the buy contract will buy a corresponding sell contract. The price difference between the purchase of the contract and the close-out accounts for the trader's profit or loss on the exchange (not on the physical market), with sell contracts losing value when the price of the underlying asset rises, while buy contracts gain value when the value of the underlying price rises. Since the exchange issues a corresponding (same maturity, same quality, same exchange location) sell contract for each buy contract, it does not have to offset any losses itself (Hütz-Adams and Schneeweiß 2018).

Options

There are also two variants of the option, the call and the put option. Options function like insurances for the holder. A call option insures the buyer of goods against rising prices. A put option insures the seller against falling prices. For example, a trader who wants to buy a certain amount of cocoa buys a call option on a certain futures price on a certain day and thereby acquires the right to not have to pay more than the fixed price for the cocoa futures. If the price of the futures rises above this limit, the counterparty – the holder of the put option, also known as the writer – must step in and pay the holder of the call option the difference between the actual price and the hedged price. If, on the other hand, the price remains at or below the hedged level, the call option expires and its holder has merely paid a fee, a quasi-insurance fee, to the writer. Compared to cocoa futures, an option has the advantage that it allows for hedging to be more flexible in terms of time.

When using price hedging via options, the seller or buyer will have to choose the price level he hedges with care. If he hedges his price at a relatively high (seller) or low level (buyer), the insurance fee to be paid will be quite high. This is because few speculators will be willing to hedge a price level that is reasonably or even highly likely to be under- or overshot. However,

SINCE THE EXCHANGE ISSUES

A CORRESPONDING SELL CONTRACT FOR EACH BUY CONTRACT,

IT DOES NOT HAVE TO OFFSET ANY LOSSES ITSELF

hedging at a level, that in all probability will not be undercut or exceeded, is cheap, but possibly also unnecessary. Similarly, the price of an option is usually higher with longer durations of the hedge. An option on the price of cocoa for one month is much cheaper than one that hedges the price over six or more months. Options thus provide the trader or producer with the opportunity to protect himself from medium price fluctuations in the short to medium term for a fee that increases with the risk taken by the counterparty.

COUNTRY DIFFERENTIALS
ARE A RESULT OF NEGOTIATIONS

5.3 THE ROLE OF DIFFERENTIALS

A differential is a premium, which is added up on the price for average cocoa traded at the futures markets. Usually, the differential is positive: cocoa traders often pay more than the price at the futures market. Differentials can become negative, an example of this is when cocoa comes from a country that is known for low quality production.

Quality is not the only criterium

The differential for cocoa is influenced by different factors. There are many reasons traders might be prepared to pay a premium for cocoa beans with a better-than-average quality. This includes

- The specific flavour of the cocoa is one reason to pay an additional premium. These premiums are usually not connected to countries, but to specific cocoa varieties and organic certification, which are usually limited to certain regions of the cocoa producing country.
- More important for the country differential is the yield, which grinding companies gain from the beans. Buyers test how much cocoa mass, powder, and butter they get from the beans. Beans from certain countries might be known for bigger bean size, which reduces losses during grinding. Other countries, like Ghana, are known for a high fat content and low moisture levels (Interview 01 2023).

Usually, quality plays a significant role for setting the differential. Ghana for example, did get a significant differential above the ICCO prices for decades due to its known and guaranteed good quality of bulk cocoa. As a result of increasing cocoa quality in Côte d'Ivoire after 2012, the country also received a relatively stable country differential. Between 2000 and 2018, "export prices to the EU were 12% and 6% on average, respectively, higher for Ghana and Côte d'Ivoire compared to Nigeria and Cameroon" (Staritz et al. 2022).

Differentials are a result of negotiations

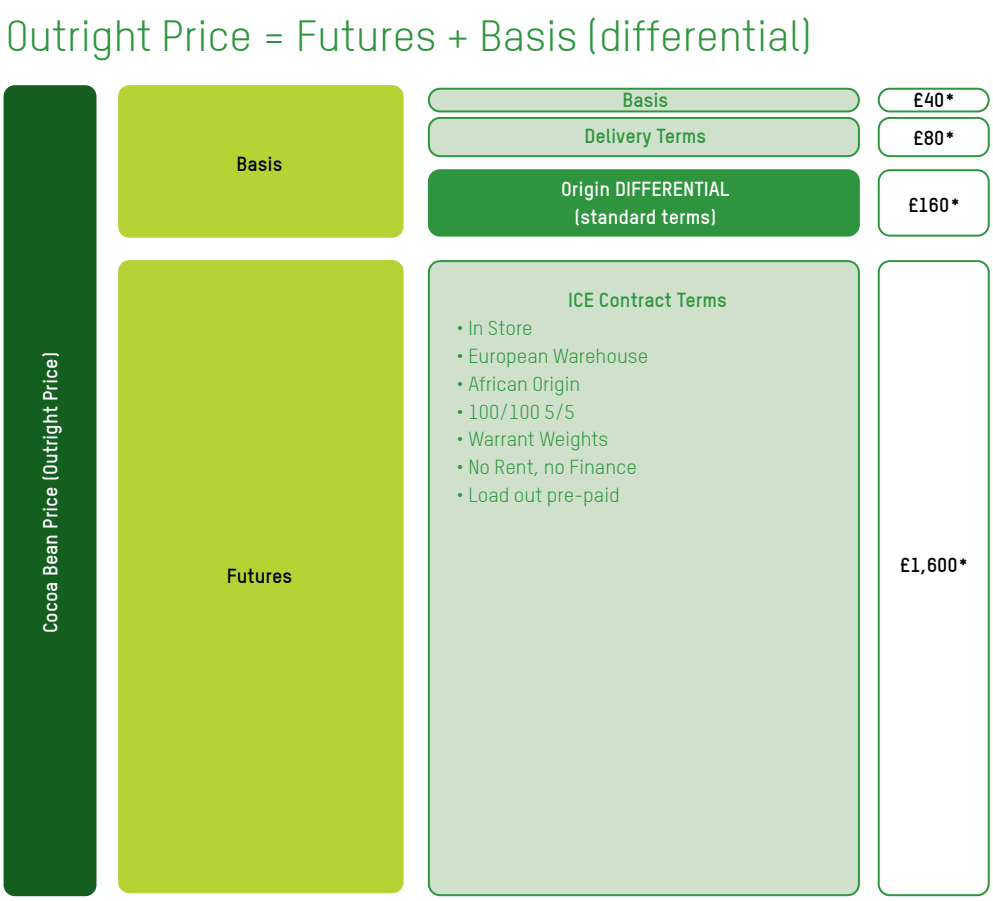
Beside quality, there are many other factors which have an influence on the country differential. Factors influencing the country differential include: availability of a crop, political and economic situation, cost of production, regional currencies, competition among suppliers, and competition among origin countries (Interview 02 2023; Gaia Cacao B.V. 2021). Other influencing factors are futures prices and forward structure of the cocoa sector. Differentials might, for example, be reduced despite unchanged quality, if futures prices are lower than the present price. Cocoa traders anticipate that they will not be able to get the present market price in the future. Therefore, they reduce the country differential they offer now to avoid a situation where they have to sell cocoa in the future below their present buying price (Interview 01 2023; Interview 02 2023; Interview 05 2023; Interview 08 2023).

Differential not part of futures price

At the futures markets, traders distinguish between the futures price for the cocoa beans and other costs, including origin differentials. These other costs cannot be hedged and are called "Basis". The futures only cover the price for cocoa beans of a standard quality and a specific volume. The numbers on the Basis are, contrary to the futures price, not publicly available. They depend on the negotiations between sellers and buyers of physical beans (see example in Graph 5).

FUTURES
ONLY COVER THE PRICE FOR COCOA BEANS OF A STANDARD QUALITY
AND A SPECIFIC VOLUME

GRAPH 5: PRICE COMPOSITION AT THE FUTURES MARKET



*Figures are shown as an example and **NOT** indicative of real value.*

Source: ICE

5.4 DIFFERENTIALS AND FUTURES

There are numerous ways in which traders and speculators trade at the futures exchange. One potential scenario is outlined below (see Graph 6; for more details see: Gaia Cacao B.V. 2021, 89–92):

A cocoa trader buys from origin, when the origin wants to sell (it is never the trader's decision). On the 15th of February 2023, the COCOBOD/CMC wants to sell 10'000 MT of cocoa and signs a sales contract with a trader. The cocoa trader buys the 10'000 MT of cocoa at US$ 2300 per ton for delivery on 1st December 2023, which is roughly the price for futures price for contracts that mature in December. The cocoa trader does not know how the world market price of cocoa will be in December 2023. He wants to avoid any risk due to unforeseeable market development. Therefore, he needs to "hedge" his purchase of physical cocoa versus

the ICE Cocoa Futures market in London. The cocoa trader immediately sells 1'000 lots of Futures (the equivalent 10'000 MT cocoa) for US$ 2150 per ton, which is the Futures price currently traded at the ICE in New York Cocoa December 2023 contract.

By doing this, the trader locks in a Buying Differential of "plus US$ 150 per ton", which is the difference between the purchase of physical cocoa at US$ 2300 and the sale of ICE New York Cocoa Futures at US$ 2150. The trader now owns 10'000 MT of cocoa hedged at "plus US$ 150 per ton". He now needs to sell at a differential of at least "plus US$150 per ton" to cover cost, or at a higher differential to make a profit.

The Cocoa trader sells to the industry, when the industry wants to buy (it is never the trader's decision). Due to a very good harvest, prices dropped significantly. On the 1st of July 2023, the industry wants to buy 10'000 MT for December 2023 delivery and signs a purchase contracts with a trader. The cocoa trader sells these physical 10'000 MT of cocoa at US$ 1800 per ton for December 2023 delivery.

At the same time, and to "hedge" his sale to the industry, the trader buys 1'000 lots of Futures (the equivalent of 10'000 MT) at US$1600 per ton, which is the Futures price currently traded at the ICE London Cocoa December 2023 contract. By doing this, the trader locked in a Sales Differential of "plus US$200" (= the difference between the sale of physical cocoa at $1800 and the purchase of ICE London Cocoa Futures at US$1600.

The trader now knows that he has for sure earned US$ 50 per ton, because he bought cocoa from origin at "plus US$150", which he managed to sell to the industry at a more expensive Differential at "plus US$200". The trader's focus is always and only on the Differentials, while the outright price level of its purchase (important for the origins) or of its sale (important for the industry) does not mean anything to him. Only the Differentials matter to him.

THE TRADER'S FOCUS IS ALWAYS AND ONLY ON THE DIFFERENTIALS,

WHILE THE OUTRIGHT PRICE LEVEL OF ITS PURCHASE (IMPORTANT FOR THE ORIGINS) OR OF ITS SALE (IMPORTANT FOR THE INDUSTRY) DOES NOT MEAN ANYTHING TO HIM.

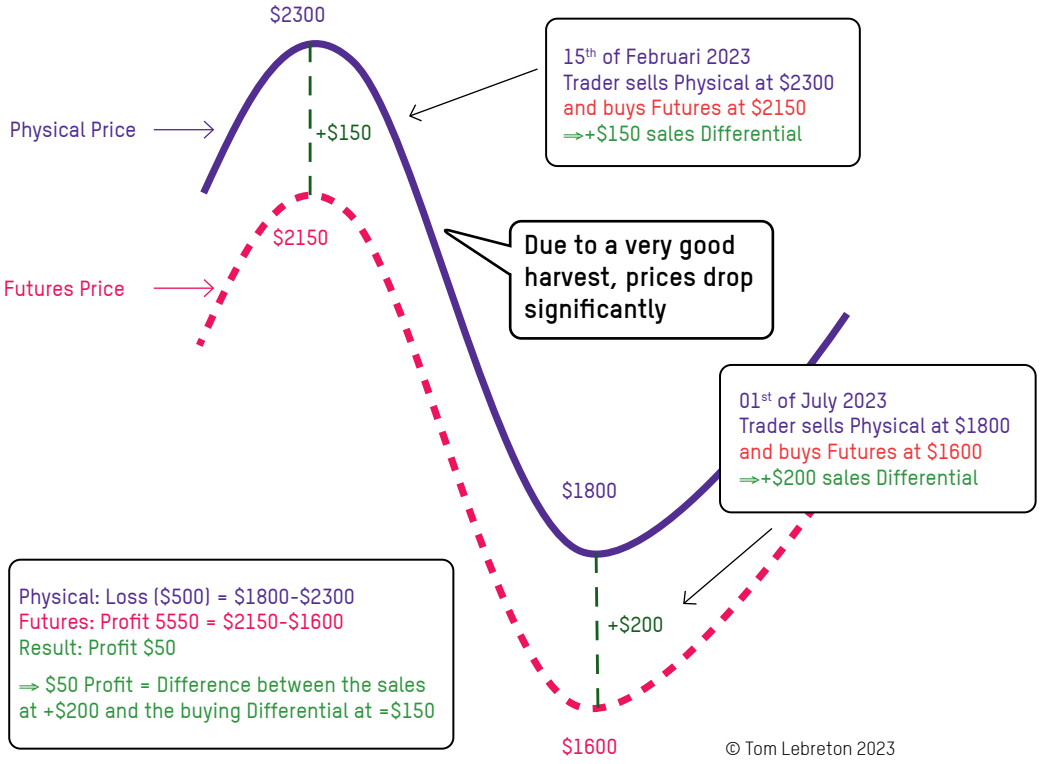
Summary:

- The trader purchased "expensive" physical cocoa from origin at US$ 2300 per ton, which he immediately hedged by selling equivalent quantity of "expensive" Futures at US$ 2150 per ton, locking in a buying Differential of "plus US$150 per ton".
- The trader sold "cheap" physical cocoa to the industry at US$1800 per ton, which he immediately hedged by buying the equivalent quantity of "cheap" Futures at US$1600 per ton, locking in a sales Differential of "plus US$200 per ton".
- The trader, having bought "expensive" cocoa from origin at US$ 2300 per ton and sold "cheap" cocoa to the industry at US$1800 per ton, occurs a loss of US$ 500 on the physical side.
- The trader, having hedged the "expensive" physical purchase by selling "expensive" Futures at US$ 2150 per ton and hedged the "cheap" physical sale by buying "cheap" Futures at US$ 1600, occurs a profit of US$ 550 per ton on the Futures side.

Financial results for the trader:

- Loss of US$ 500 per ton on the physical side – total loss US$ 5.0 million on 10'000 MT.
- Profit of US$ 550 per ton on the Futures side – total profit of US$ 5.5 million on 10'000 MT.
- Net profit of US$ 50 per ton – total profit of $ 0.5 million.
- Every extra US$ 10 per ton is worth $ 0.1 million for the trader. He will always "fight" for every US$ on the Differentials, they are his only risk management tool and earnings' driver.

GRAPH 6: CONNECTION OF PHYSICAL AND FUTURES MARKET



Trader float

Most physical cocoa traders, grinders, and chocolate producers do not want any price risks concerning cocoa. They try to secure their deals at the futures market in a way that causes them to neither gain nor lose out on changing cocoa prices. "The use of futures reduces these risks to differential risks - the difference between the premiums or discounts around futures prices in buying and selling transactions" (Tröster and Gunter 2022).

MOST PHYSICAL COCOA TRADERS, GRINDERS, AND CHOCOLATE PRODUCERS DO NOT WANT ANY PRICE RISKS CONCERNING COCOA.

The traders want to make a profit on the differential, and they try to buy physical cocoa at a lower differential, which they then sell to the industry. Therefore, traders negotiate hard with other participants on differentials in the production countries and with customers (Interview 01 2023; Interview 02 2023).

Asymmetric information plays a crucial role in the negotiations. The party which is better informed on upcoming harvests is in a powerful enough position to put pressure on the other side. Not much is known about these negotiations. "Since the price level is set by the exchange, only the premium is left for negotiations. Those negotiations are strictly private and terms are undisclosed" (van Huellen 2015).

The number of companies is decreasing (see chapter 4), which means that the CCC and COCOBOD are confronted with a shrinking number of powerful multinationals. The trading partners for the CMC for example, once more than 100 companies, decreased to 11 within 20 years until 2013 (van Huellen 2015).

Since then, the concentration process continued. With Armajaro and ADM, even two of the most important cocoa traders in 2013 sold their cocoa business to competitors.

For vertically integrated cocoa trader-grinders, the profit from the differential is only a part of the margin. As described in chapter 4, they have additional margins for transporting, handling, and grinding cocoa. Some of them produce not only cocoa mass, cocoa butter, and cocoa powder, but deliver readymade chocolate to the chocolate factories (Gilbert 2022).

Profit margins from all the steps along the cocoa value chain are relatively predictable. The integrated multinationals can, if cleverly managed, make profits during every single step. Even though raw material cocoa remains a risk concerning profit margins with its volatile prices - well hedged, this risk is diminished.

5.5 INFLUENCE OF FUTURES ON COCOA PRICES

There is an academic debate regarding the influence of cocoa futures prices on the physical price, i.e. the price agreed between producer and trader/grinder for physically traded commodities, and whether the price on the physical market determines the futures price. In theory, the futures price should follow the developments on the physical market. Futures prices are, in this sense, a presumption about the future physical price, and the closer the settlement date, the more closely this presumption aligns with the actual transaction price of the physical commodity.

FUTURES PRICES ACT AS A GUIDE FOR ALL MARKET PARTICIPANTS, INCLUDING THOSE FOR WHOM PHYSICAL TRADING IS THE MAIN FOCUS.

However, there are good reasons to believe that the reverse is often true, and that the futures price has influence on the physical price of commodities traded on the commodity futures exchanges. The central argument here is that the spot price is not transparent. It consists of individual purchase contracts between trader-grinders and local cocoa exporter, the terms of which are unknown. Futures prices, on the other hand, are determined and published openly by the exchanges in New York and London. In addition, stocks, and the positions of the most important groups of exchange participants are known. Futures prices thus act as a guide for all market participants, including those for whom physical trading is the main focus. "Hence there is no single spot price for cocoa. There are many transaction prices which all use the price of cocoa futures as their point of reference. This central role of the exchanges is typical for all futures-traded commodities" (Oomes et al. 2016).

Speculation and price

A literature study on the influence of price speculation shows, that depending on the methodology of the analysis, scientists come to different results. Also, the type of speculative investors, such as index investors or hedge funds and there different trading strategies have an influence on the outcome (Tröster and Gunter 2022).

It is undisputed that the deregulation of investment banks and funds during the last decades has made it a lot easier to become much more involved in speculation than before. During a time of low interest rates, the motivation to participate in a volatile agricultural markets is even higher. Many authors agree that “new types of speculators in commodity markets fuelled price volatility and speculative bubbles, [which] escalat[ed] into two world food crises in 2007-08 and 2010-11” (van Huellen and Abubakar 2021). Yet, other studies come to different results (Hütz-Adams and Schneeweiß 2018).

Interviews with market participants came to mixed results, but according to their point of view, the challenges for hedging have increased, as there is a higher speed, more complexity, and short-termism in the market. Yet, some of them see this as an opportunity for hedging physical cocoa. Nonetheless, one interviewed grinder/trader made the observation that "things happen in cocoa prices that fundamentally make no sense - algorithms make that happen" (Staritz et al. 2022).

Some trader-grinders as Cargill and Olam profit from the complex situation by having their own divisions that offer financial services or by establishing hedge funds (Staritz et al. 2022).

6. THE LIVING INCOME DIFFERENTIAL (LID)

A short phase of higher cocoa prices (before the rise starting in spring 2023) was observed in 2013 to September 2016. After this, prices declined rapidly from US$3000 as a yearly average to US$2100 per MT in the season 2016/17 (ICCO 2023c). A very good harvest in Côte d'Ivoire led to an oversupply of the market and was followed by a massive price correction. Consequently, the income of cocoa farming families was reduced by roughly 1/3. This led to major problems for cocoa farmers worldwide, most of whom already lived in poverty even before the price decline (Fountain and Hütz-Adams 2018).

Due to their high dependence on the tax income from cocoa and the availability of foreign exchange from the cocoa exports, Côte d'Ivoire and Ghana faced massive problems. On a year-on-year basis, the two countries with a cocoa production of roughly 3 million MT lost nearly US$3 billion income. In the following years, prices remained at a level below US$2500 per MT.

The CCC in Côte d'Ivoire reduced the farmgate price in 2017 massively, while COCOBOD at least stabilised the price in GHS. Subsidising the cocoa price, which continued for some years after 2017, and was disastrous for the financial reserves of COCOBOD. The institution accumulated billions of US dollar in debt, most of these after 2016. With the exception of the year 2021, the losses of the last years were not caused by a negative operating profit margin, but by financing costs (International Monetary Fund 2023). The COCOBOD borrowed huge amounts of money, partly on the local market, even though interest rates in Ghana were as high as 32 % (Adombila 2023).

6.1 INITIATION OF THE LID

In spring 2017, the Ivorian President Alassane Ouattara and the Ghanaian President Nana Akufo-Addo initiated meetings to discuss the common cocoa policy and signed the "Abidjan Declarations" in March 2018. The governments wanted to achieve higher farmgate prices by increasing the export price. Côte d'Ivoire and Ghana wanted to introduce a price floor of US$2600 per MT for the exports based on FOB terms (Boysen et al. 2023). These US$2600 FOB are necessary to support a farmgate price of US$1820, as 70 % of the FOB should reach farmers.

IN SPRING 2017, THE IVORIAN PRESIDENT ALASSANE OUATTARA AND THE GHANAIAN PRESIDENT NANA AKUFO-ADDO INITIATED MEETINGS TO DISCUSS

THE COMMON COCOA POLICY

AND SIGNED THE "ABIDJAN DECLARATIONS" IN MARCH 2018.

Many familiar with the situation claim that industry players convinced the governments that a floor price was a bad idea, by stressing that such a floor price would disturb markets as higher prices could lead to higher production and in a fixed price system the overproduction puts massive pressure on prices.

Calculations for the coffee sector show that the combination of oligopolistic global market structures and non-organised small-scale farmer can lead to a situation where the price level of a product is depressed by market power. The minimum price would increase prices to a level which mirrors the real supply-demand equilibrium. If this is the case, a minimum price would not encourage farmers to significantly increase production and cause oversupply (Sachs et

al. 2019). Government interventions could be a way to prevent oversupply. But presently, the governments of cocoa producing countries do not have financial means and infrastructure to control supply of cocoa (Interview 01 2023). In the discussions with the governments of Côte d'Ivoire and Ghana, companies demanded a more flexible system than a floor price. In the end, both sides agreed on the implementation of the LID (Interview 08 2023).

Additionally, the business models of these companies are based on hedging the price risk. This would be much more complicated and perhaps even not possible in a system with a minimum price in the two most important cocoa producing countries. If a minimum price existed for 60% of the global cocoa volume, and the world market price goes below this minimum, market participants who want to hedge cocoa bought in countries other than Côte d'Ivoire and Ghana would not be able to do this in the market as it exists today.

> *"Several sector experts interviewed indicated that international buyers resisted a minimum export price delinked from futures prices; thus, at technical meetings during the summer 2019 between government officials and international buyers, including the top four grinder-traders - Barry Callebaut, Cargill, Olam and ECOM - and chocolate manufacturers such as Hershey and Mars, it was agreed that export prices would be determined as before - based on futures prices and 'origin differentials', but that buyers would pay an additional LID of USD 400 per ton, starting in the 2020–2021 season"*
> *(Staritz et al. 2022).*

After meeting with industry representatives, the governments decided to implement a Living Income Differential of US$400 per MT added to the cocoa price. The LID started in July 2019 and was added to the cocoa pre-sales for the 2020/21 season. This mechanism is a mixture of floor price and premium. Part of the system is a price stabilization fund. If prices go above US$2900 per MT, payments above this benchmark go into a stabilization fund. These resources can be used up, if FOB-prices, including the LID, go below US$2600 (FCC 2019).

Some things around the LID remain unclear. This includes the question of which levies are deducted from the export price. Should the US$400 go to the farmer or will there also be a 30 % reduction for taxes? At the beginning, it was obvious that there would be no fund to stabilise the $1820 price at the farmgate level in times of declining world market prices (Boysen et al. 2023).

The system was criticized for different reasons. One argument was that the risk still lies with the cocoa producing countries. "A representative of a farmer-based organisation in Ghana noted: 'First it was said that buyers pay at least 2,600 [USD per ton]. Now it is 'business as usual' plus 400, and COCOBOD (and) CCC pay the potential gap'" (Staritz et al. 2022)

Others said that the system was set up by people who did not fully understand the functioning of the futures market. They foresaw the pressure on the country differentials after the implementation of the LID (see below).

The cocoa and chocolate industry promised to support the system "and its commitment to improving the living conditions of cocoa farmers and the associated willingness to pay prices above the international market level. This voluntary element is crucial, as otherwise the LID would resemble an export tax or a levy and correspondingly result in lower rather than higher farmgate prices" (Boysen et al. 2023).

THE COCOA AND CHOCOLATE INDUSTRY PROMISED TO SUPPORT THE SYSTEM "AND ITS COMMITMENT TO IMPROVING THE LIVING CONDITIONS OF COCOA FARMERS AND THE ASSOCIATED

WILLINGNESS TO PAY PRICES ABOVE THE INTERNATIONAL MARKET LEVEL.

There might have been different motivations for the public support of the system by companies. The chocolate industry is involved in many sustainability initiatives in Côte d'Ivoire and Ghana for which they require the support of CCC, COBOBOD and government institutions. Additionally, some multinationals have invested in the creation of buying companies that are active in both countries. On the other hand, the governments of Côte d'Ivoire and Ghana depend on the income and the foreign currencies coming from cocoa trade.

BOX 1: CCC AND COCOBOD SENT A LETTER TO THE FCC TO EXPLAIN HOW THE LID SHOULD FUNCTION – AN EXCERPT:

"MECHANISM FOR THE LID

- All sales contracts will include a fixed LID of US$400 per tonne.
- The LID of US$400 would be applied on all categories of cocoa bean contracts from CCC/CMC irrespective of the terminal market level.
- The LID is exclusive of the generic Premiums of the respective countries.
- A minimum of 70% of the achieved average Gross F.O.B. price of US$2600 FOB, as the Farmer floor price would be legislated and paid to farmers in both countries.
- When the Achieved Average Gross F.O.B. price at the end of the Cocoa Season is between the minimum price level of US$2600 and US$2900, the farmer would be entitled to Bonus payments and other investments in the cocoa sector. The amount and application of such bonus payment and other investments will be determined by each country.
- When the Achieved Weighted Average for the season (inclusive of the LID) is above US$2900 Gross FOB, the excess value will be placed in Stabilisation Funds to be set up under the Ghana-Côte d'Ivoire Cocoa Initiative Secretariat.
- The Achieved Weighted Average would be reported by the external auditors of both countries to the Secretariat to determine the value of payments to be made into the Stabilisation Fund." (FCC 2019)

Gap to living income not closed by LID

The target price that the governments of Côte d'Ivoire and Ghana wanted to achieve with the implementation of the LID was not based on living income calculations. The farmgate price of US$1820, calculated on the base that farmers get 70% of the FOB price of US$2600, is not sufficient to close the gap to a living income in the present production system. These gaps were calculated in 2018 (CIRES 2018; Smith and Sarpong 2018). They might have widened in the year afterwards due to stagnating cocoa prices, which started rising only in 2023 and particularly in Ghana due to high inflation rates.

6.2 PRESSURE ON DIFFERENTIALS

The introduction of the LID led to a situation where cocoa from Ghana and Côte d'Ivoire was significantly more expensive than cocoa from other cocoa producing countries. In a highly competitive market, this will lead to a price reduction of cocoa from these two countries until the price combined with the LID reaches the same level as for cocoa from the rest of the world. This did not happen fully, as Côte d'Ivoire and Ghana produce huge volumes of cocoa

which cannot be delivered from other regions. A mixture of different potential scenarios took place.[11]

From a company perspective, LID and country premiums have the same effect: they are on top of the futures price. In 2020, the relatively high combined differential (LID and country premium) met a complicated market. At the beginning of the year, companies expected supply risks due to the upcoming Covid-19 crisis. But shortly afterwards it became obvious that supply remained more or less stable (Gaia Cacao B.V. 2021).

In the next months, the prevalence of lockdowns made companies fear that chocolate consumption might decrease. Subsequently, there was a dip in grinding. The shrinking market and a good harvest led to an oversupply of cocoa. Companies did not want to buy cocoa at the price that would be necessary to stabilise a country differential and the LID. This put a lot of pressure on the country differentials. If there was an existing oversupply in the market, then there was a high risk that CCC and COCOBOD might not be able to sell all cocoa harvested. As a result, country differentials for Côte d'Ivoire and Ghana decreased significantly (Interview 01 2023; Interview 02 2023; Interview 08 2023; Aboa and Angel 2019; Gaia Cacao B.V. 2021).

Country differential reduction "logical step"

There are many indicators that there was a lot of pressure on Côte d'Ivoire and Ghana on different levels, this was due to several reasons. Firstly, companies could prepare for the implementation of the LID as it was announced long before the extra payment became due. They could fill their stocks, make contracts at the futures market without an LID, or buy cocoa in other producing countries. This significantly reduced the potential effect of the LID (Boysen et al. 2023). Some companies put direct pressure on the LID. Alongside this, "Some buyers are also slowing 2020/21 cocoa purchases, because they are betting the LID will be scrapped after Ghana and Ivory Coast hold general elections toward the end of next year" (Aboa and Angel 2019).

In November 2019, the CCC accused companies (Olam, Mars and Hershey) of reducing the volume of cocoa purchased from Côte d'Ivoire and Ghana on the spot market to avoid the LID (Chandrasekhar 2021). According to newspaper reports, Côte d'Ivoire only managed to sell 85% of the main crop by end of 2020. Between 200,000 and 250,000 MT of cocoa of the main crop was not sold. Additionally, at least 90 % of the mid-crop was not pre-sold. Traders and grinders were not buying as prices including the LID might be significantly higher than prices for cocoa from other regions or at the futures market. The CCC reduced the country differential from roughly US$200 to US$53 (Aboa 2020), and this was only the beginning of a series of reductions (see below).

Ghana was also under massive pressure, not at least because the COCOBOD had to sell forward quickly in spring to get access to a syndicated loan (see Box 2).

11 For a detailed discussion of scenarios see: (Boysen et al. 2023).

BOX 2: GHANA – COCOBOD – SYNDICATED FOREIGN CURRENCY LOAN

The Cocoa Marketing Company, which belongs to the COCOBOD, manages the forward selling system, which enables COCOBOD to get access to US Dollars. Based on the target of forward selling 70 % of the projected crop, a loan is placed on the international market, usually in September. This loan is secured with the forward contracts signed by international buyers, which allows the COCOBOD to get access to international loans with relatively low interest levels. The US dollar is transferred to the Bank of Ghana. In a next step, the Bank of Ghana converts the US dollar to GHS, which COCOBOD uses to pre-finance licensed buying companies (van Huellen and Abubakar 2021).

"However, the use of forward contracts as collateral for offshore borrowing limits CMC's negotiation position vis-à-vis buyers. The conventional loan syndicate calendar restricts CMC's selling window, and hence, prevents it from optimally timing its spot sales. Market participants are aware of CMC's constraints and factor this into their sourcing plans" (van Huellen and Abubakar 2021).

Additionally, there is pressure on the COCOBOD to oversell, as the government is desperate for foreign currency (van Huellen and Abubakar 2021). All in all, the syndicated loan in Ghana limits the ability of the COCOBOD to choose sales times freely (Staritz et al. 2022).

Regarding the futures price levels on the global cocoa market, this reduction of country differentials made sense from a trader's perspective. The two main producing countries added a significant additional differential on their cocoa. Cocoa traders do not differentiate between the differentials. For them, it is not important why a new differential was introduced. They simply add up the LID to the existing country differential.

IN THE END, THE LID WAS OFFSET BY NEGATIVE COUNTRY DIFFERENTIALS, AS WAS PREDICTED TO HAPPEN IN AN OPEN MARKET ECONOMY.

The problem was that cocoa traders couldn't be sure if they would be able to cover the differentials (LID plus country differential) by selling cocoa months or even years later from their stocks. At the futures market, prices went down due to the expected oversupply. Companies could buy cocoa much cheaper at the futures market than cocoa from Côte d'Ivoire and Ghana on the physical market with the extra LID-differential.

The two governments had not expected this. In their explanation of the mechanism of the LID, they state: "The LID is exclusive of the generic Premiums of the respective countries" (FCC 2019).

Nevertheless, traders were not surprised. "In the end, the LID was offset by negative country differentials, as was predicted to happen in an open market economy. The problem is that there is no level playing field, if a critical mass of cocoa-producing countries will not join the cartel formation" (Gaia Cacao B.V. 2021).

People familiar with the market call the development a "logical step" of price finding. The cocoa market had not changed important parameters, e.g. by a new supply management, new storage facilities, etc. Therefore, there was a high risk that market mechanisms would reduce the impact of the new price component LID, so that the overall cocoa price falls back to the level without an LID. One potential change would have been a decline of the overall cocoa price. This did not happen, as the market share of Côte d'Ivoire and Ghana is so significant that the total world market prices did not come under pressure. Still, other

regions became more competitive. Therefore, differentials as a price component came under pressure (Gilbert 2022).

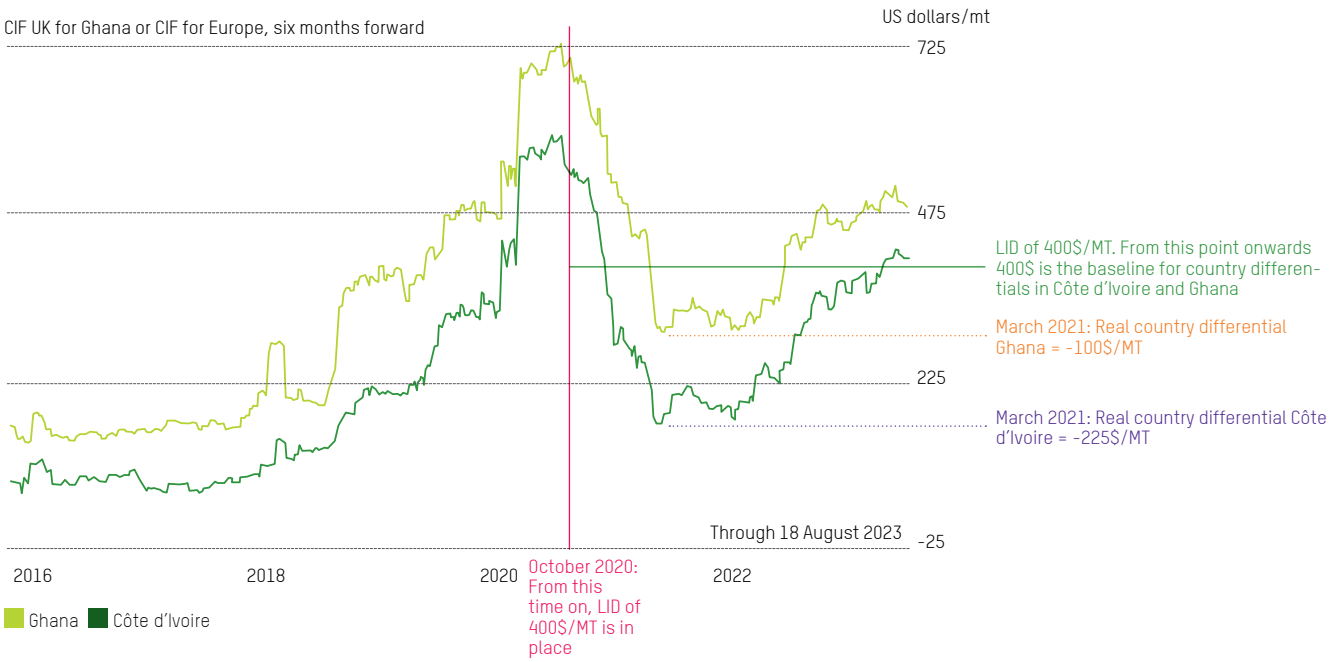
6.3 DIFFERENTIALS MIRROR REDUCED PAYMENTS

Country differentials, as explained above, are not fixed, while the LID has a fixed amount of US$400 per MT. From a trader's perspective, the two have one important thing in common: they both cannot be hedged at the futures market.

For a long time, the amount of the differentials was not publicly discussed. This changed with the implementation of the LID. Since 2022, the CIGHCI publishes average differentials for Côte d'Ivoire and Ghana on its website.[12] Additionally, companies specialised in providing market information collect data on average differentials. One of these is Commodities Risk Analysis LC. Their data shows the development of the differentials and the impact of the LID on origin differentials. In the European market, between 2016 and mid-2018, Ghana achieved an origin differential between 150 and US$200, and the differential for Côte d'Ivoire fluctuated between 65 and US$140. Differentials for Cameroon and Nigeria were much lower, while Ecuador was on a level close to Ghana (see Graph 7).

The announcement of the LID had a massive impact on differentials. They went up for all countries, as suddenly, buying cocoa below the differential of US$400 became attractive. This influenced the differentials of all cocoa producing countries, as sellers in these countries realised that there was a massive indirect differential increase for cocoa originating from Côte d'Ivoire and Ghana. Based on this, sellers from other origins bargained hard to receive increased differentials.

GRAPH 7: EUROPEAN DIFFERENTIALS



Note to interpret the graph: From October 2020 on, the LID of US$400 had to be paid for cocoa from Côte d'Ivoire and Ghana. Therefore, to know the "country differential" for Ghana and Côte d'Ivoire, one should reduce the number that appears by US$400 as of October 2020
Source: KnowledgeCharts LLC™

12 See : https://www.cighci.org/publication-of-cocoa-origin-differentials-for-cote-divoire-and-ghana-june-2023/

The peak of the differentials was reached around August/September 2020. Cocoa from Ghana was traded at the differential of around US$710 per MT, which is even more than differentials before mid-2018 plus US$400 for the LID. Differentials for other countries also peaked in this month. For cocoa coming from Ecuador, Cameroon and Nigeria, differentials rose, partly significantly, above the level of US$400 per MT.

The steep increase of the differentials was caused by the run of companies to buy as much cocoa as possible before the implementation of the LID and in spring 2020 by fears that the Covid-crisis would interrupt supply. During the next couple of months, a massive decrease of differentials could be observed across all countries (see Graph 7).

As Côte d'Ivoire and Ghana had a significantly positive origin differential before the implementation of the LID, it can be calculated that without the pressure on the origin differential the overall differential (origin differential paid in spring 2018 plus US$400 for the LID) should have been US$500 for Côte d'Ivoire and US$600 for Ghana.

For Côte d'Ivoire and Ghana, the differentials reached the lowest level spring 2022. The differential of US$183 per MT for Côte d'Ivoire (January 2022) means, that the origin differential was negative at a level of US$217, for Ghana with a differential of US$301 (March 2022), and it was negative by US$99.

A significant increase of differentials for all cocoa producing countries started in autumn 2022. Despite these increases, differentials for Ghana and Côte d'Ivoire are still significantly below the levels they should have if the origin differential is to be at the same level as in 2016/17.

Impact of the LID on Farmgate price

Data shows that market fundamentals and exchange rates had an influence on cocoa prices after the implementation of the LID. Nonetheless, calculations concluded that farm-gate prices for Côte d'Ivoire and Ghana rose above the level they would have without the implementation of the LID. The same happened with cocoa prices for other West African regions (Gilbert 2022; Gaia Cacao B.V. 2021).

In the season of 2020/21, Côte d'Ivoire and Ghana realised significant price increases for farmers. The LID of US$400 more than offset the reduction of the country differential. In the 2021/22 season, this effect nearly diminished. Meanwhile, Cameroon, Nigeria, and Ecuador received higher differentials than before the implementation of the LID (Gilbert 2022).

An analysis of the import prices for the EU and the US shows that cocoa prices rose more strongly in the EU. But in 2022, prices dropped (Gilbert 2022).

The effect on farm-gate prices was stronger in Ghana, where COCOBOD at least stabilised the cocoa price in GHS – yet this was due to high inflation not the real value. Whilst in Côte d'Ivoire, the negative country differentials reduced the influence of the LID on the price level to near zero (Gaia Cacao B.V. 2021).

The higher impact in Ghana may have been funded by subsidies. "In fact, COCOBOD claimed in 2022 that it subsidises the sector with 400 million US dollars a year, which would correspond to around 400 US dollars a ton, but sufficiently recent audit data is not available to assess such financial flows" (Bensch, Kaestner, and Vance 2023).

6.4 COMPANIES PROMISED IMPROVEMENTS

In July 2022, the governments of Côte d'Ivoire and Ghana signed an agreement with many companies from the cocoa sector. Hershey, Mars, Blommer Chocolate, Nestle, Sucden, Mondelez, Touton, Barry Callebaut, Cargill, Ferrero, Olam and Ecom Trading agreed to pay the LID.[1] Media reported that "Buyers will also pay a country premium that will enable cocoa regulators in both countries to reach a target floor price of $2,600 per tonne which should allow farmers to earn a minimum of 70% of the target floor price" (Aboa 2022). However, this statement is contested by some companies and the agreement was never put out in the public domain.

All major companies could have supported the LID from the beginning by a guarantee to pay it in addition to the origin differential. A major chocolate company could, for example, approach the trader/grinder it buys from and sign a contract guaranteeing that it would pay the LID in addition to the typical country premium and the futures price.

> *"The effect of the LID depends on the chocolate manufacturers' response. It is hardly conceivable that manufacturers would pay an LID premium in the long run if they did not get marketable benefits in return. Given the increasing awareness of consumers regarding human rights and sustainability issues in the chocolate supply chain, these could come in the forms of child labour-free, deforestation-free, or living income-paid guarantees or in improved institutional infrastructure and regulation which, in turn, support the manufacturers' efforts towards the traceability and monitoring of such issues and reduce the costs of their own sustainability programmes. For this, the board-governed market structures in Côte d'Ivoire and Ghana could have a valuable advantage compared to other cocoa-producing countries"*
> *(Boysen et al. 2023).*

The governments of Côte d'Ivoire and Ghana wanted to achieve a certain price level by introducing the LID. Companies agreed to support this undertaking, but while the LID had to be paid, the country differentials were floating freely. None of the major companies in the sector could be sure if competitors would pay the LID in addition to the country differentials at a level they had before the implementation of the LID. The missing level playing field was a problem for the whole value chain including the major chocolate companies. If some of the biggest companies would have agreed to pay the LID in addition to the country differentials they still might have lost market share to other players, as the big 6 companies (Nestlé, Mondelez, Mars, Lindt & Sprüngli, Ferrero, Hershey) in the end only cover 50 % of the global chocolate market, but there's still 50 % which is not covered by them (Interview 01 2023). In this situation, none of the big cocoa trader-grinders was prepared to run any price risk compared to the behaviour of competitors, as they did not know, if the chocolate companies are prepared to pay for the additional spending. The opportunistic behaviour was driven by the fear that competitors behave opportunistically.

Yet acting differently would have come at a relatively low cost. A model calculation on the costs of the LID premium per bar of chocolate came to the result, that the extra US$400 per MT would add 1.5 % on the price of milk chocolate and 2 % on the price of dark chocolate sold on the French market (FAO/Le Basic 2020). The value chain could have absorbed this easily with a very small reduction of the profit margins.

The upward trend cocoa prices and differentials during the year 2023 was not driven by willingness of companies to achieve living income for farmers, but once again purely by market forces.

A MODEL CALCULATION ON THE COSTS OF THE LID PREMIUM PER BAR OF CHOCOLATE CAME TO THE RESULT, THAT THE EXTRA US$400 PER MT WOULD ADD

1.5 %

ON THE PRICE OF MILK CHOCOLATE AND

2 %

ON THE PRICE OF DARK CHOCOLATE

6.5 VOICES FROM CÔTE D'IVOIRE

Interviews in Côte d'Ivoire revealed that many Ivorians are disappointed by the impact of the implementation of the LID.

Lack of transparency

NGOs in Côte d'Ivoire are aware that the implementation of the LID came under massive pressure from the market. They criticise the governments for not taking the dynamics of the global market into account (Interview 12 2023; Interview 15 2023). Stakeholders in the cocoa market in Côte d'Ivoire understand there are 3 reasons why the system did not work as expected: "(1) price instability on the international market, (2) the willingness of companies to apply this differential, and (3) factors such as COVID-19 or climate which have had and may have an impact on international cocoa price variations. Therefore, the LID approach cannot be the solution to decent income" (Interview 15 2023; similar: Interview 16 2023; Interview 17 2023).

Those interviewed from NGOs also criticise the lack of transparency on its feasibility and implementation (Interview 12 2023; Interview 13 2023; Interview 14 2023; Interview 17 2023).

Most of the discussions on the LID are between the CCC (regulator) and the multinationals. Other stakeholders, in particular farmers and NGOs, are hardly involved. They feel marginalized in the debate and approaches to implement the LID (Interview 15 2023).

Concerning the situation of farmer, things seem to be stagnating with no hope on the horizon. Many people, from cooperatives to NGOs, have no deeper knowledge of the initiative (Interview 13 2023; Interview 16 2023).

Farmers were also not included in the process. The approach to the setup of the LID was top-down. "We need to sit down and rediscuss cocoa production and marketing policy in Côte d'Ivoire. We need to review them with the players. Because when you make a policy and exclude the players, it's not a good policy" (Interview 13 2023).

There are many constraints and parameters that were not taken into account in its implementation, such as inflation and the high cost of living in producing countries (Interview 15 2023).

But interviewed stakeholders also see weaknesses within the system in Côte d'Ivoire. "Merging the LID with the purchase price of cocoa makes it difficult to trace this financial flow, and this may lack transparency for multinationals who certainly want to be reassured that this resource does not end up in the state coffers but goes directly to the producers" (Interview 15 2023).

Company interests rule

According to people familiar with the process in Côte d'Ivoire, it was never the main interest of the companies involved to establish a system to sustainably improve the income of the farmer. This has led to the call for a different system: "What concerns the multinationals is maximizing their profits. We need to define a stable, guaranteed price for producers that protects them from the insertions of the international market regulated by the London and New York futures exchanges, but also from the pressure and leakage of capital due to the multiple intermediaries" (Interview 15 2023).

Some of the companies were reluctant to support the differential. The mechanisms for applying the differential were not very successful in previous years. Hopes are therefore pinned on the October 2023 campaign for the implementation of this differential. Stakeholders in the sector are aware that Côte d'Ivoire and Ghana are committed to working together to strengthen their strategies with regard to market price-setting mechanisms, in particular the price-setting mechanism, which has suffered from some actions that they must work to correct in order to offer decent incomes to producers. The companies want a transparent system that allows farmers to benefit from the differential, and that is accountable and traceable (Interview 16 2023).

Nonetheless, observers think that the system is going to stay. "It will be difficult for countries to modify their futures market systems if multinationals do not put the search for decent income for farmers at the heart of their strategies. For the CCC, the differential is now an integral part of the cocoa marketing system, and will remain so for a long time to come, even if there are a number of difficulties to be overcome in its implementation." (Interview 17 2023)

The government of Côte d'Ivoire needs to think about developing storage and other infrastructure. In this way, it will be able to control the value chain and financial flows, thereby reducing the pressure of intermediaries on financial resources that could benefit farmers (Interview 19 2023).

More is needed

Observers see the risk, that farmers decide to leave the sector. Nothing protects farmers from general inflation and the high cost of living in different countries. The risk in the medium and long term is that farmers will leave cocoa for other, more profitable agricultural products that provide them with better incomes. This is already happening in the coffee and rubber sectors. To avoid this, they have called for a minimum price with a risk insurance approach based on a guarantee fund to cushion the risks associated with international price variations and the associated shocks, which are ultimately paid for by the farmers themselves (Interview 17 2023).

Beside the LID, there is an effort to implement the differential to achieve living income starting in October 2023 campaign in the Nawa, Soubré, and San-Pedro regions (Interview 10 2023).

6.6 REFORMS OF THE LID PLANNED

The CIGHCI realised that the reforms are necessary to increase the impact of the LID. A roadmap was developed, and a process started. Since fall 2022, working groups have been implemented. The first working group was on "Price and Markets" and developed recommendations until summer 2023. More working groups on "Traceability and Standards", "Accountability and Monitoring", and "Cost of Sustainable Cocoa" started their work activities during the year 2023.

The aim of the CIGHCI is to develop the process, which is supported by all stakeholders in the sector, and which will combine higher prices, traceability, the accountable use of money, and the calculation of prices based on transparent figures and costs of sustainable cocoa farming.

Discussions on supply management in Côte d'Ivoire and Ghana, and if possible, in other leading cocoa producing countries, will be another crucial factor to support higher prices in the cocoa sector.

6.7 RISING PRICE A WINDOW OF OPPORTUNITY?

The price rally in the second half of the year 2023 was unexpected by many stakeholders in the sector. On reflection, CCC and COCOBOD sold huge volumes of the 2023/24 harvest too early already in spring 2023. The two agencies are now confronted with the accusation that the minimum price is very low compared to the present market price. Nonetheless, for the CCC and COCOBOD it was common practice to sell as much cocoa as possible early in the year. Prices in spring were already higher than in the years before.

Present farmgate prices for 2023/24 in Côte d'Ivoire are lower than the $1.82 per kilo, which were the target when the LID was implemented, and reach that level in Ghana (see table 7 in Chapter 4.6.3).

Both countries might be confronted not only with low harvest volumes due to weather, climate conditions, and low fertiliser use in the last years, but also of smuggling into neighbouring countries where cocoa prices are significantly higher.

Nevertheless, the situation might also be seen as a window of opportunity. Both countries can already start to sell part of the cocoa harvest for 2024/25. Futures prices for the next two years indicate that the price for cocoa will stay above the targeted level of US$2600 F.O.B..

7. POTENTIAL INFLUENCE OF LEGISLATION

7.1 UN-CALL FOR SUSTAINABILITY

A sustainable cocoa sector should be structured according to the simple definition of sustainability defined by the United Nations in the Report "Our common future. The Report of the World Commission on Environment and Development", also called Brundtland Commission, in 1987:

> *"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:*
> - *the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and*
> - *the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs."*

(United Nations 1987).

Many chocolate companies advertise their chocolate as sustainable. However, a deeper look into what's happening on the ground shows that the sector is far from being sustainable as defined above. The cocoa sector is still struggling with massive human rights violations and ecological problems. The situation for many farmers has further deteriorated since the implementation of the LID, as farm gate prices stayed low until October 2023 despite a massive inflation specifically in Ghana, but also on a lower level in Côte d'Ivoire. The price increases in the season 2023/24 are inflation-adjusted, but not by enough to improve the situation of farmers.

Additionally, harvested volumes per hectare are under pressure, but not only due to weather and climate turbulences. Cocoa yields might further decrease, as the Russian attack on Ukraine in 2021 led to a massive increase of the prices for fertiliser (Bermudez et al. 2022)

7.2 LEARNINGS FROM THE LID-IMPLEMENTATION

Most of the companies in the sector promised to support governments to pay a higher price to improve the livelihoods of farmers. But the way the market is presently set up, this works differently.

Markets do not respect the livelihood of the farmer

Due to the oversupply at the end of 2020, companies were able to put pressure on the country differential, and consequently, significantly reduce the impact of the LID. For the those responsible for trading within companies, it was a logical step to apply pressure despite the negative impact on the livelihoods of farmers.

Traders within companies usually only focus on securing position of the company in competition with others. From their perspective, securing a position means buying cheaper or the same price level as their competitors.

Traders acquire bonuses if they are able to successfully secure a cocoa price months or two years in the future at a price that beats the market, thus saving money for the company compares to the expenses of competitors. The internal company system does not reward different behaviour, and the situation of the farmer plays no role in their daily business (Interview 01 2023).

A different position is possible

Nevertheless, companies can pay more for cocoa. There are examples of some companies operating in niche markets, but also of leaving the niche market and becoming a multinational brand (such as Tony's Chocolonely), proving that it is possible to build direct and long-term connections with cocoa producers and pay higher prices independent from the development of price levels on the physical and futures market.

To set up a system reliable for all participants of the value chain, all stakeholders need to change their business models. Long-term contracts could create the security that investments into higher prices and other measures to reduce human rights violations and ecological damages are financed by the whole value chain.

The LID could have served as a starting point for a different value chain. If companies would have trusted each other, it would have been possible to set up agreements along the value chain from trader to grinder, to chocolate companies, to retailer, with the guarantee that the LID had to be paid in addition to the average origin differential of the years before the implementation of the LID. This would have generated significant extra income for cocoa farmers in Côte d'Ivoire and Ghana during the pandemic and help them to cope with inflation. But the companies relied on existing market mechanisms. These mechanisms did, according to market logic, not allow them to pay more than competitors, despite the needs of farmers and governments of producing countries. The moment companies were afraid that competitors put pressure on country differentials, they did the same despite the promises they made in the LID was implemented and despite the acknowledged necessity to increase farmer income.

THE LID COULD HAVE SERVED AS A STARTING POINT FOR A DIFFERENT VALUE CHAIN. IF COMPANIES WOULD HAVE TRUSTED EACH OTHER

7.3 POTENTIAL ROLE OF REGULATION

While "the market", including voluntary sustainability programmes of companies and certification, and interventions of cocoa producing countries including the implementation of the LID by Côte d'Ivoire and Ghana, could not change the sector profoundly, increased pressure is coming from international standards and legislation.

The United Nations analysed the existing human rights violations in value chains and in 2011 published the "Guiding Principles on Business and Human Rights" (United Nations 2011). These were immediately included in the "OECD guidelines for multinational Enterprises", (OECD 2011) and also in the updated version in the year 2023 (OECD 2023). This means that since 2011, guidance by the UN and guidelines of the OECD, in which member countries most of the companies of the cocoa and chocolate sector are based, exists.

First governments translated the UN Guiding Principles on business and Human Rights into legislation, including in Germany – the most important cocoa market in Europe.[13] The EU is also preparing a due diligence legislation focused on human rights in value chains.

In a parallel process, the EU implemented a legislation on deforestation which covers a number of import products including cocoa (European Union 2023). This legislation forces for companies to implement transparent value chains. This will put pressure on the cocoa buyer to set up lasting business relations with producers, which could facilitate measures to improve the income of farmers.

Also already in effect is the Corporate Sustainability Reporting Directive (CSRD), which regulates reporting obligations of companies.[14] Many of the major cocoa and chocolate companies will have to report under this initiative and need more information about the value chain to do so.

Additionally, the EU is preparing a ban on the import of goods produced from forced labour. This also might affect the cocoa sector, as there are reports regarding forced labour on plantations.

All regulations stress that value chains must be transparent. This transparency is the precondition to do a risk analysis concerning human rights and deforestation. Therefore, cocoa markets will have to change within the next years. Having said this, the existing trading system will be under pressure. The system:

- does not guarantee transparency down to farm level,
- has a price setting system which does not consider minimum safeguards for farmers concerning living income, as a precondition to reduce human rights violations like child labour and the exploitation of sharecropper or hired labourer,
- allows anonymous trade at the futures market.

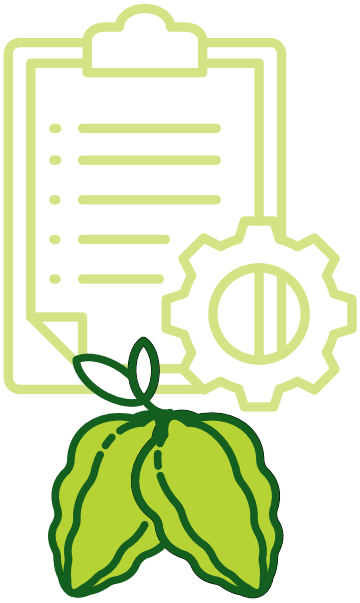
The cocoa sector will have to invest significantly in transparency along the value chain, measures to support farmer and, if this is not sufficient reduce human rights violations, pay for cocoa a price that allows a living income at least for the majority of farmers. This might lead to changes in the way cocoa is traded (see next chapter).

THE COCOA SECTOR WILL HAVE TO INVEST SIGNIFICANTLY IN TRANSPARENCY ALONG THE VALUE CHAIN, MEASURES TO SUPPORT FARMER AND, IF THIS IS NOT SUFFICIENT REDUCE HUMAN RIGHTS VIOLATIONS, PAY FOR COCOA A PRICE THAT ALLOWS A LIVING INCOME AT LEAST FOR THE MAJORITY OF FARMERS.

THIS MIGHT LEAD TO CHANGES IN THE WAY COCOA IS TRADED

13 See Supply Chain Due Diligence Act, 16/07/2021, Federal Law Gazette 2021 Part I No. 46, pp. 2959–2969.
14 See Corporate Sustainability Reporting Directive (CSRD), hi https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32022L2464

8. RECOMMENDATIONS



In 2000, press reports and studies demonstrated the occurrence of widespread child labour and even forced labour in the sector. 10 years later, the discussion regarding the responsibility of the sector for deforestation specifically in West Africa intensified.

The cocoa sector faces a huge variety of problems. Each of these problems must be addressed in a specific way. Studies have come to the conclusion that holistic approaches are necessary (e.G. (Aidenvironment and Sustainable Food Lab 2018; Gaia Cacao B.V. 2021); (Hütz-Adams et al. 2017).

Despite numerous conferences, where stakeholders including companies talked about the human rights violations and deforestation in the cocoa sector, not much changed over the last two decades. Often all stakeholders in the debates agree that significant investments in the cocoa sector are necessary. However, most farmers are not able to invest into their farms and improve their financial situation, which is necessary to reduce human rights violations and deforestation in the sector.

The industry often calls for more development cooperation, but in a sector where most of the involved companies are highly profitable, and where in Côte d'Ivoire and Ghana the governments tax the sector heavily, it will be very difficult to mobilise significant amounts of taxpayer's money in consuming countries.

LID COULD HAVE BEEN AND COULD STILL BE A STEPPING STONE TO A DIFFERENT PRICING SYSTEM, ONE THAT ALLOWS FARMERS TO IMPROVE THEIR LIVELIHOOD AND THUS SUPPORTS COMPANIES IN FULFILLING THEIR HUMAN RIGHTS AND DEFORESTATION REQUIREMENTS

8.1. LID INTENSIFIED PRICE DEBATE

After two decades of focus on productivity and diversification, it is clear that a discussion regarding prices is necessary. Companies involved in the cocoa sector are aware that volatile and inflation-adjusted low cocoa prices in recent years make it very difficult for farmers to finance investment in a better future.

Prices in themselves are not the silver bullet for all the problems in the sector. Many farmers produce low volumes of cocoa, and they will not achieve a living income by selling cocoa alone even if cocoa prices rise significantly. Additionally, paying a farmer a decent price for cocoa to guarantee his or her living income does not mean that people employed on the farm earn a living wage.

Yet, it is clear that the market is structured in a way that does not reflect the negative impact of price volatility and low prices on human rights and deforestation. Presently, the way cocoa is traded does not incentivise investment for sector improvement. On the other hand, the market structure enables all large companies to hedge their cocoa demand and work without price risks.

The implementation of the LID was an attempt of Côte d'Ivoire and Ghana to increase export price and the farmgate price in a pre-competitive way. The LID could have been and could still be a stepping stone to a different pricing system, one that allows farmers to improve their livelihood and thus supports companies in fulfilling their human rights and deforestation requirements.

8.2. FARMERS

On the present cocoa market, like many other agricultural value chains, farmers have no negotiation power to pass along costs through the value chain or to insist on a price that guarantees them a living income.

The same is true for farmer organisations and cooperatives. For standard cocoa quality, they are unable to negotiate with the cocoa buyer for a price higher than average market price or premium. The benchmark for the price setting is supply and demand on the global market, and there is presently no mechanism to include production costs and a living income in the price setting. This is a clear indicator that the market is not working properly for the farmer, as covering costs including a living income would be essential for functioning market.

- **The LID has the potential to have a significant impact on the livelihood of the farmer, as all farmers in Côte d'Ivoire and Ghana receive it and the system leads to additional income.**

To improve the situation, the farmer needs stronger supporting organisations, such as cooperatives, farmer owned companies, or NGOs. This is a precondition for a strong voice for the interest of farmers in the cocoa sector. It is also a precondition for farmers to influence government policies.

- **All efforts to improve the situation of farmers should include support for farmer to get organized and set up strong organisations.**

8.3. GOVERNMENTS OF CÔTE D'IVOIRE AND GHANA

The CCC and COCOBOD, and with them the governments of Côte d'Ivoire and Ghana, overestimated their own influence and underestimated the power of market mechanisms when they implemented the LID. In the negotiation process around the country differentials in combination with the LID, it became obvious that even a market share of 60% of global production is not enough to influence the market as strongly as they wanted towards the US$400 premium on top of average country premiums.

- **The governments of Côte d'Ivoire and Ghana should align cocoa policies with governments of other cocoa producing countries. This would improve their bargaining position concerning the LID and country differentials.**
- **In a second step, governments should think about implementing a LID that is high enough to guarantee that most cocoa farmers earn a living income.**
- **Another approach could be to agree with other cocoa exporting countries on a minimum price.**

This should be accompanied by a policy which promotes supply management.

- **Future production targets of governments and accompanying support policies should reflect the demand of the cocoa sector and aspire to create a situation where supply control leads to a good bargaining position and higher prices.**
- **Governments of cocoa producing countries could manage supply by supporting farmer to diversify stronger into other products, specifically in West Africa into food production for the local market.**

- **Support of governments for projects financed by development cooperation should consider that a rising supply will reduce cocoa prices and increase poverty levels in the sector.**

CCC and COCOBOD are responsible for organising the cocoa sector within their respective countries. Both institutions could act more efficiently and transparently.

- **Money flows and decision-making within the CCC and COCOBOD must become more transparent.**
- **Additionally, they need to develop stronger policies not only to increase farmgate prices, but also to fight illegal deforestation and deal with the risk of increasing volumes of produced cocoa after a price increase.**

8.4. GOVERNMENTS OF COCOA CONSUMING COUNTRIES

It is clear that without a transparent trade and a price that will enable a living income for many farmers, human rights violations and deforestation in the sector will persist.

- **In the highly competitive cocoa and chocolate sector, regulation implemented by governments in cocoa consuming countries plays a crucial role to create a level playing field in the sector for investments into more sustainability.**

Globally, governments must adopt the UN-Guiding Principles on Business and Human Rights into their national legislations.

- **Human rights violations and environmental problems in the cocoa sector will only decrease if farmers have a living income. In that sense, lack of living income and living wage should be considered as a root cause of different negative impacts on human rights and the environment. Therefore, governments in consuming countries and the EU should, based on the core human rights obligations referred to in the UN Guiding Principles on Business and Human Rights, include the obligation to guarantee a living income and living wages in any legislation on corporate human rights and environmental due diligence.**
- **Governments in consuming countries should support processes to calculate updated living income benchmarks for major cocoa producing countries.**
- **As a reduction of human rights violations will only be possible if farmers earn a living income and agricultural workers receive a living wage, price developments must be closely supervised.**

In Europe, where half of the global harvest is consumed, the already existing Regulation on Deforestation-free products (EUDR) and the upcoming Directive on Corporate Sustainability Due Diligence (CSDDD) have the potential to massively influence the cocoa sector.

- **The EU should insist on complete transparency on the origin of cocoa imported into the EU as this is a precondition not only to combat deforestation, but also for a risk analysis on human rights issues which must become mandatory for companies.**
- **The implementation of the LID showed the crucial role of the futures market. Therefore, the financial sector must be included in all legislative obligations.**

- **The implementation of legislation on deforestation and the upcoming CSDDD will require the right structures in place to ensure effective implementation and enforcement. This includes independent national authorities equipped with supervisory powers to oversee the implementation.**

8.5. COMPANIES

The LID was supported by nearly all major companies in the cocoa sector. Nonetheless, at the end of 2020, the trading departments within these companies reacted based on the oversupply on the market, combined with pressure on country differentials, limited the effect of the US$400 premium significantly. This was caused by the free rider problematic, as each participant in the sector could not predict how their competitors would act. The reactions of companies on the implementation of the LID showed the influence of uncertainties.

- **Trader-grinders need contracts with the chocolate companies, which will guarantee that they pay all costs for cocoa that are on top of the futures market price.**
- **Chocolate companies must guarantee to cover additional payments above the market price, which would help to support farmers by increasing the farmgate price.**
- **Retailers should reward chocolate companies delivering the private brands and chocolate companies which want to sell their products on the shelves of the supermarket for investing in a sustainable value chain.**
- **The financial sector, shareholder, or business owner should support the creation of a more sustainable cocoa sector even if this leads to lower dividends.**

The present business model is based on price and quality and not on a sustainable value chain, meaning that it requires a complete revision. Changes in the cocoa sector with the aim of increasing the income of farmer via implementing higher prices are not possible without different business models. A shared responsibility for the well-being and income of farmers, as well as the risks associated with this, are part of a solution.

- **Companies must set up a value chain for which they are in direct contact with the farmers.**
- **The EU legislation on deforestation (EUDR), and the upcoming corporate sustainability due diligence legislation (CSDDD), require and incentivize industry active on the EU-market to increase transparency in their value chains.**
- **Companies should publish farm gate prices and premiums to prove that they pay a price that allows a living income for the majority of farmers. In so doing, they prove that they fulfil EU and national government requirements concerning human rights law.**
- **Chocolate brands could take over the responsibility for the value chain by purchasing the cocoa and allowing intermediaries, including grinding companies, to act as service providers – rather than owners of the cocoa. This can also be achieved by retailers, who could buy all the cocoa they need for their private brands. This would create a transparent value chain with clear responsibilities for livelihoods of farmers.**
- **Additionally, companies should lobby the exchange to allow a futures market that includes differentials and premiums that would aim to improve the income of farmers.**
- **Companies along the value chain should fix the responsibility to pay a price which allows the living income for the majority of farmer into their contracts with supplier and customer. Prices oriented at the needs of farmer wouldn't be as volatile as they are now.**

8.6. FUTURES EXCHANGE

The futures market has no mechanisms to guarantee that farmers can at least cover their costs and earn a living income. The futures exchange only facilitates the reduction of risk for those able to participate in the futures market, and it does not consider the needs or situation of the farmer. However, regulations on the futures market have the potential to have a massive influence on sustainability in the cocoa sector.

- **The ICE should change trading rules so that cocoa cannot be hedged if it does not have a country differential. In relation to Côte d'Ivoire and Ghana, cocoa should not be hedged if the LID was not paid in addition to the country differential.**
- **The exchange should set human rights and ecological obligations as a precondition for trading cocoa.**

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