



## Pricing in the cocoa value chain – causes and effects

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Cocoa farmer at harvest in Cameroon, West Africa  
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Bonn, January 2018

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## LIST OF ABBREVIATIONS

BMZ	Federal Ministry for Economic Cooperation and Development
BDSI	Association of the German Confectionery Industry
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
CRIG	Cocoa Research Institute of Ghana
EPA	Economic Partnership Agreements
EU	European Union
FBS	Farmer Business School
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
ICCO	International Cocoa Organization
LBC	Licensed Buying Company, Ghana
PPPP	Plateforme de Partenariat Public-Privé
QCD	Quality Control Division, Ghana
SAN	Sustainable Agriculture Network
UNCTAD	United Nations Conference on Trade and Development

### Currencies:

EUR	Euro
GBP	British Pound
GHS	Ghanaian Cedi
NGN	Nigerian Naira
USD	United States Dollar
XOF	West African CFA Franc

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## SUMMARY

Sustainability efforts in the cocoa sector are currently facing major challenges. Since September 2016, the cocoa price has fallen massively from just under USD 3,000 to around USD 1,900 per ton by the end of June 2017. This has direct impacts on the income situation of farmers.

The present study shows that there are concentration processes on the cocoa market among traders and processors of cocoa as well as in the food retail trade. The three largest companies alone, Barry Callebaut, Cargill and Olam International, have the capacity to process two-thirds of the world's harvest. There is no adequate counterweight on the supply side of cocoa. The majority of the world's estimated five million farmers are not organised, which severely weakens their situation in the value chain. In West Africa, where about 70 per cent of the global cocoa harvest comes from, only 30 per cent of farmers are estimated to be organised. Furthermore, there is a lack of national and international associations.

In addition, there are indications that purely speculative investors influence the cocoa price on the stock exchange.

In both areas, in addition to the points outlined in this study, more in-depth research is required to investigate the trends identified.

Farmers have no influence on world market prices. The question of whether farmers earn a living income does not play a role in shaping world market prices. The Cocoa Barometer 2015 assumes an income from cocoa of USD 0.50 per capita per day in Côte d'Ivoire and USD 0.84 in Ghana – well below the World Bank's poverty line of USD 1.90 per capita per day.

Approaches of standard-setting organisations have had little chance to change this. The premiums paid are too low to have a significant influence on farmers' incomes. Only Fairtrade sets a minimum price of USD 2,000 per ton. All standards provide for premiums. These vary between around USD 100 per ton (EUR 89) (UTZ) and USD 200 per ton

(EUR 179) (Fairtrade). However, only a certain percentage of this premium goes directly to farmers.

However, the effect of standard-setting organisations must not be seen as limited to premiums and – in the case of Fairtrade – a minimum price. Fairtrade and UTZ will retain 73 and 57 per cent of the premiums respectively at cooperative level, which they invest in agricultural training, advising farmers and organisational development.

At the same time, however, it must be noted that the widespread use of certified cocoa on the German market has only a limited impact on farmers' living conditions and the ecological consequences of cocoa cultivation.

The profit margins of those involved in the cocoa and chocolate sector do not provide any information that allows an assessment of whether there is any scope for improving farmers' incomes within the sector at all with regard to the current price level of the end products or whether higher prices of the end products are required for this.

In order to advance the debate on living incomes, much more data needs to be collected on farmers' incomes, their degree of diversification and cost structures.

This could be the basis for including human rights aspects in pricing, thus making it easier for the sector to contribute to the implementation of the UN Guiding Principles on Business and Human Rights.

This provides indications for directions of development cooperation. The proposed measures include support for investigations into the effects of concentration processes on competition in the sector and speculation on price developments. In addition, data collection on the effects of changed production practices and diversification on farmers' incomes are also required, as well as support for sustainable cultivation methods such as agroforestry systems. Another aspect is the support of farmers in setting up organisations that enable them to influence pricing.

# 1 INTRODUCTION

## 1.1 Why this research?

What mechanisms determine cocoa market prices? How does this affect the situation of cocoa farmers? And what does this mean for sustainability in the cocoa sector – not least since the cocoa price drop since September 2016?

This study, commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ), deals with these questions. The aim of the study was to analyse the state of knowledge about the development of cocoa prices and the functioning of price formation along the cocoa value chain. This included the question which factors in international financial markets have a negative or positive influence on producer prices. In addition, it should be investigated how much of the retail price is received by farmers. On this basis, the aim was to present adjusting screws and approaches along the value chain in order to enable fair prices and a continuously higher income for producers. The analysis of the situation in the producing countries focuses on the three most important countries of origin for cocoa processed in Germany, Côte d’Ivoire, Ghana and Nigeria.

# 2 CONVENTIONAL AND SUSTAINABLE CERTIFIED COCOA VALUE CHAIN

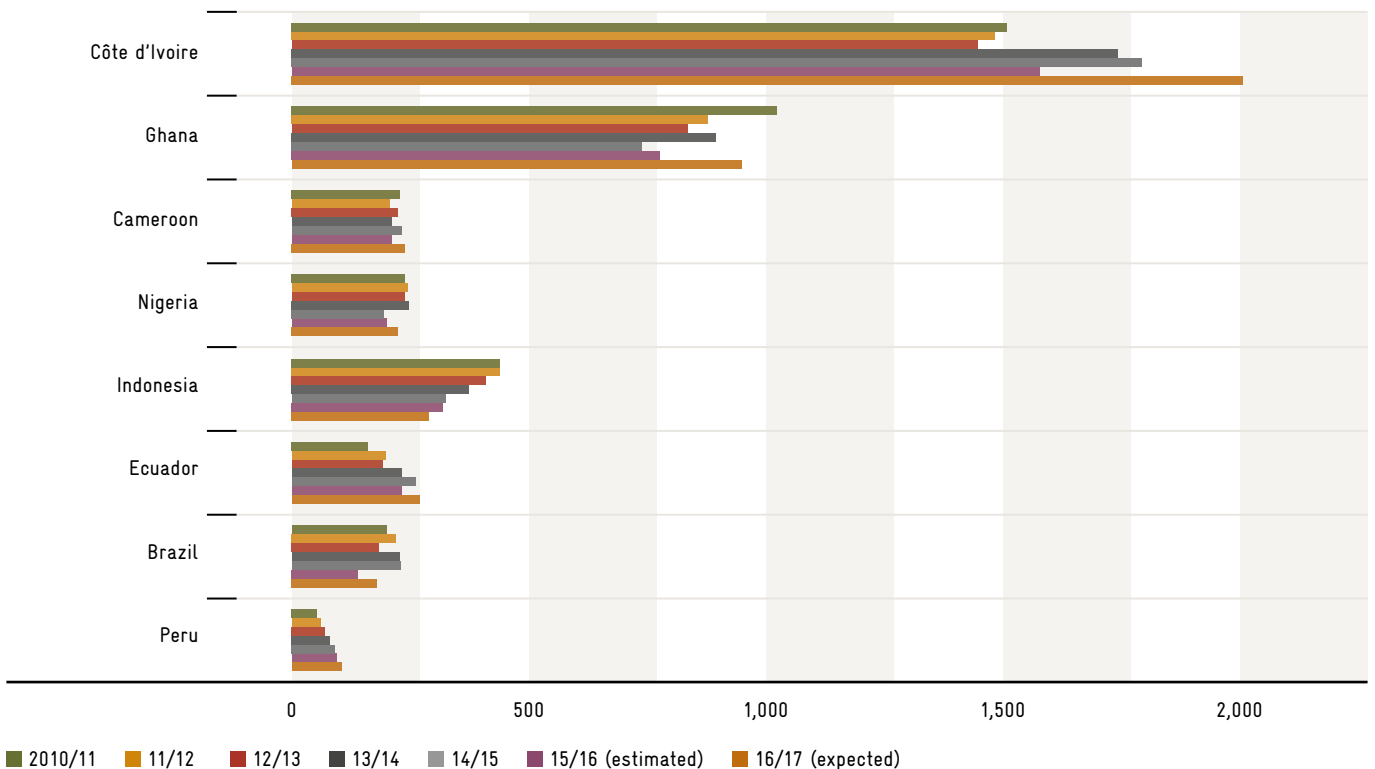
## 2.1 Where cocoa is produced and consumed

The labour-intensive cultivation of cocoa concentrates on countries along the equator that have the climatic conditions for the cultivation of this plant and a low-cost workforce. Despite all the problems associated with cocoa cultivation, cocoa has long been a comparatively lucrative source of income, especially for farmers in West Africa.

The most important producing countries are Côte d’Ivoire, Ghana, Indonesia, Ecuador, Cameroon, Nigeria, Brazil and Peru. In recent years, about 70 per cent of the world’s harvest came from West Africa. According to preliminary calculations, this figure will rise to 75 per cent in 2016/17, due to record harvests in Côte d’Ivoire and Ghana<sup>1</sup> (Figure 1).

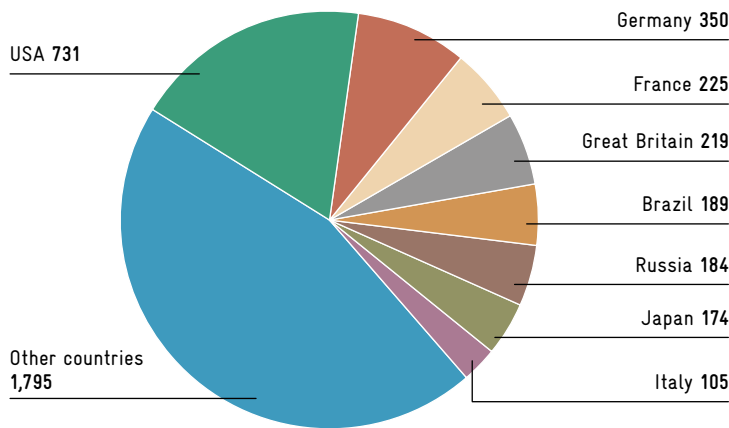
1 ICCO 2017: vii

Figure 1 Cocoa production in 1,000 tons



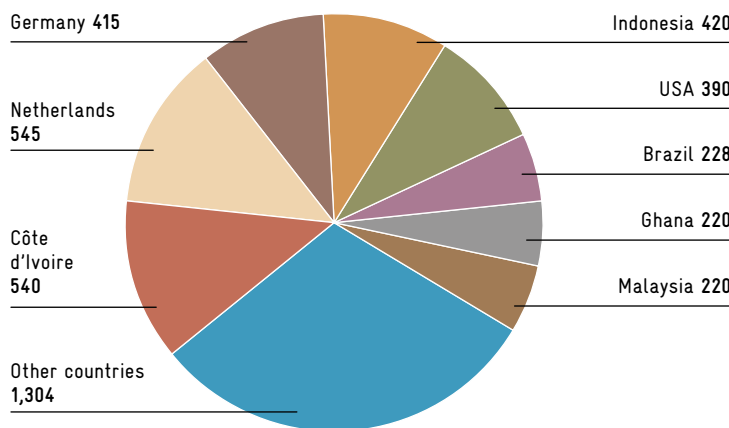
Source: ICCO 2012, 2013, 2015, 2017, in table 2 respectively

**Figure 2 Cocoa consumption 2015/16 in 1,000 tons**



Source: ICCO 2017: Table 37

**Figure 3 Cocoa grinding 2016/17 in 1,000 tons (forecast)**



Source: ICCO 2017: Table 3

**West Africa: How smuggling distorts statistics**

Different cocoa prices and fluctuating exchange rates between West African countries make cocoa smuggling especially thrive between Côte d'Ivoire and Ghana – sometimes in one direction, sometimes in the other, depending on where more can be gained<sup>2</sup> Because of the higher minimum price in Ghana compared to Côte d'Ivoire at present, there have been significant smuggling movements towards Ghana since April 2017. Smuggling distorts statistics and makes it difficult to stabilise prices.

<sup>2</sup> ICCO 2017: vii

The data published by the International Cocoa Organization (ICCO) on the use of cocoa must distinguish between information on cocoa grinding and actual consumption within a country. The most important consumer country is the USA, followed by Germany, where around nine per cent of the cocoa produced worldwide is used (Figure 2).

In addition, Germany imports cocoa beans in order to process them for export and imports intermediate products and chocolate. According to preliminary estimates, a total of around ten per cent of the world's raw cocoa crop was grinded in Germany in the harvest season 2016/17.<sup>3</sup>

Some producing countries have built up capacity to grind cocoa. Côte d'Ivoire is currently the second largest grinder of cocoa to cocoa mass after the Netherlands, closely followed by Germany and Indonesia (Figure 3).

**2.2 Market structure**

Cocoa is primarily cultivated by around 5.5 million small farmers. Only some of them have organized or formed cooperatives, in West Africa probably less than 30 per cent. There is a lack of powerful national and international associations.

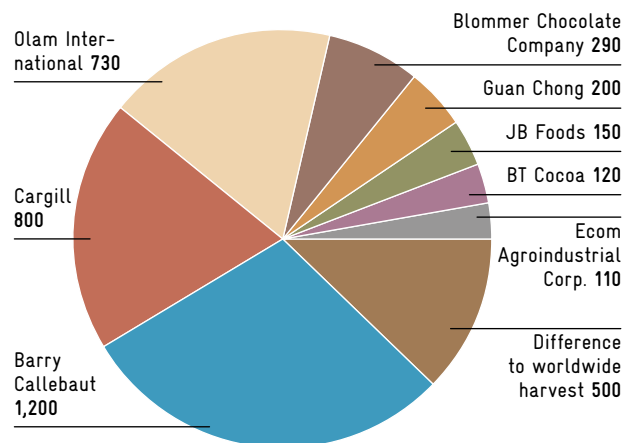
**Concentration among companies**

The large number of unorganised farmers is contrasted by a declining number of companies buying and grinding cocoa (Figure 4). The three largest companies alone can process two thirds of the world's harvest.

Concentration processes are also present in chocolate production (Figure 6).

<sup>3</sup> According to preliminary information from ICCO 2017

**Figure 4 Grinding capacities of the companies in 2015 in 1,000 tons**

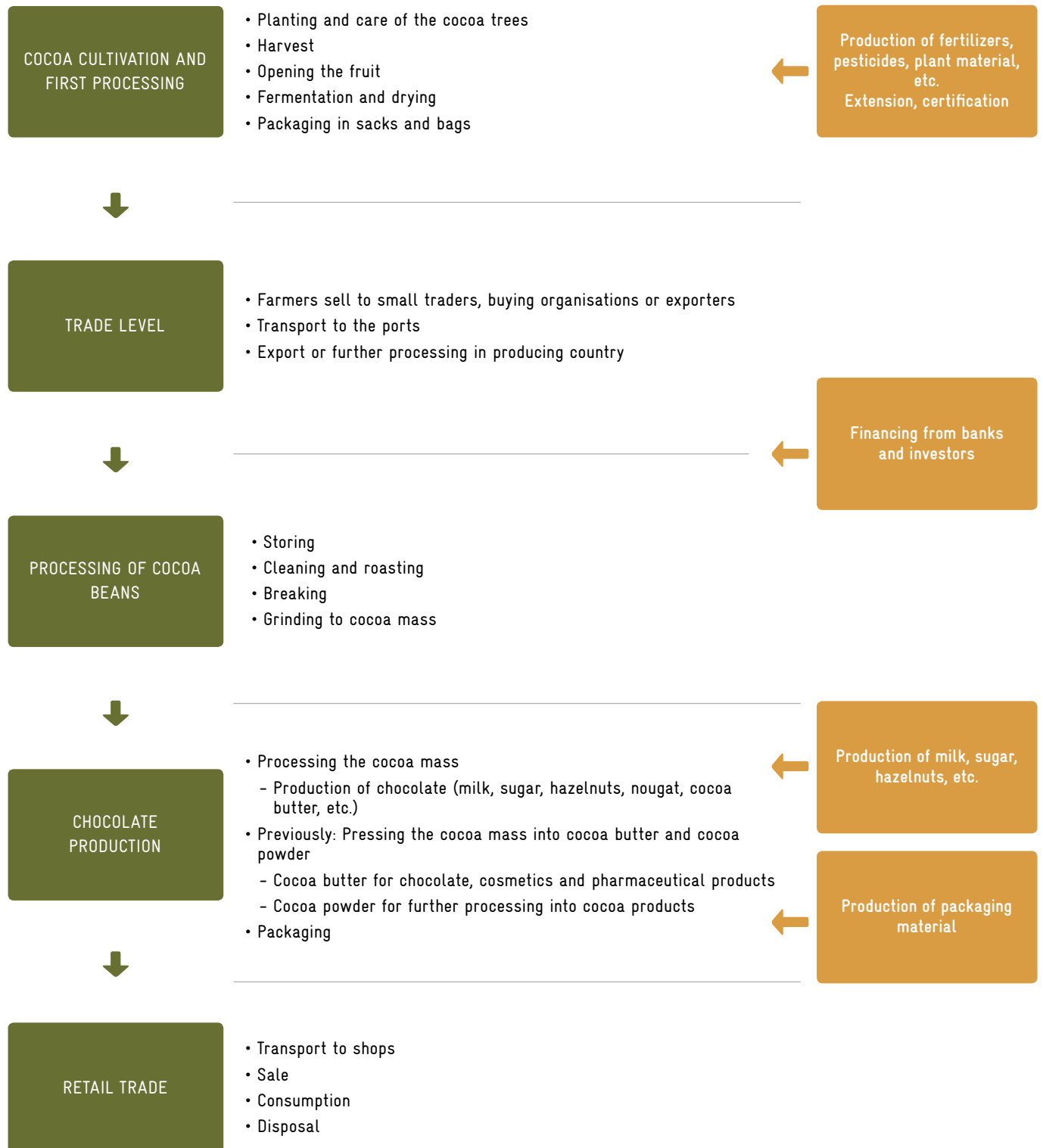


Source: Hawkins/Chen 2016: 9; ICCO 2017: Table 5

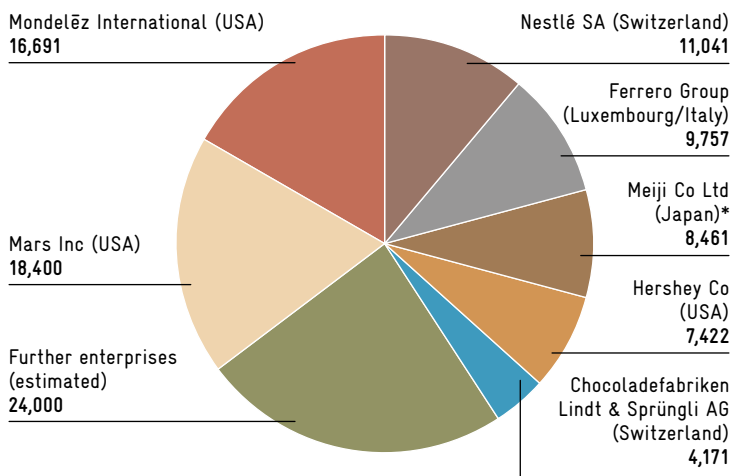


### Figure 5 Value chain: From cocoa beans to chocolate

Cocoa is mostly processed into chocolate products. Its value chain – i.e. the production chain from cultivation to processing, trade, final consumer to disposal – also includes indirect participants such as fertilizer manufacturers, transport and packaging companies as well as financial service providers.



**Figure 6 Market share of chocolate production in million USD in 2015**



Source: ICCO 2016 a (individual enterprises) as well as the candy industry (entire market)  
\*Includes the production of non-candy goods

Statistically, it can be shown that the share of cocoa prices in the sales price of products made from this cocoa has decreased steadily over the last few decades.<sup>4</sup> On the French market, for example, cocoa's share of the price of a chocolate bar was still 23 per cent in the years 1960 to 1970. In the period from 2000 to 2011 it was only ten per cent. The strongest reduction occurred in the 1980s. Accordingly, the proportion of payments made to farmers – measured in terms of chocolate prices – fell from 12 per cent per bar of chocolate to 5.6 per cent.<sup>5</sup> A similar trend can be observed on the chocolate markets in the USA and Great Britain.<sup>6</sup>

In a study prepared for UNCTAD, the authors warn against imbalances of power in the value chain and suggest that regional, national and international markets should be closely monitored for reasons of competition and anti-trust law.<sup>7</sup>

In particular, the process of concentration driven by takeovers and bankruptcies and the reduction of the number of cocoa trading companies, cocoa grinding companies and industrial chocolate manufacturers – these three steps are now often in the hands of one company – are viewed as questionable. The ever shrinking number of market participants may exacerbate existing power imbalances.

ICCO analyses indicate that there are now high barriers to the processing of cocoa. It is very difficult for market entrants to gain a foothold at all. This is due to the significant economies of scale large plants generate during the production and further processing of industrial chocolate into end products favouring prices considerably.<sup>8</sup>

The decisive factor in strengthening or weakening the competitive position of companies in cocoa processing is therefore not so much the price of cocoa or processed products, but rather the question of the costs involved in the work processes.<sup>9</sup>

### Lack of organisation among small farmers

Does this market concentration weaken the situation of farmers and does it affect prices? Experts see a great danger in the fact that non-organized small farmers are not in a position to assert their interests in the value chain and that power imbalances are even more pronounced as a result of the concentration processes.<sup>10</sup> Other studies conclude that there is no evidence that increasing concentration increases the pressure on farmers. However, some of them use standardized analysis models for a wide variety of industries.<sup>11</sup> It is questionable whether such an analysis does justice to the cocoa sector with its enormous power gap along the value chain.

### Weak governments

Finally, governments, which are important stakeholders in the main producing countries of Côte d'Ivoire and Ghana, have so far not been able to counterbalance market concentration. However, this could change. According to press reports, the governments of Côte d'Ivoire and Ghana have agreed on closer cooperation in the cocoa sector in mid-2017, including agreements on measures to combat a fall in the price of cocoa.<sup>12</sup>

## 2.3 Distribution in Germany: Concentration and special offers

In Germany, the lion's share of chocolate is sold through retail trade. Concentration processes also exist here: Four Corporate Groups (Rewe Group, Edeka Group, Schwarz Group, Aldi Group) control around 67 per cent of the German food trade.<sup>13</sup>

### Chocolate as attractant

In the highly competitive German retail market, chocolate is regarded as an "anchor product": As a special offer it attracts customers to shops where they purchase further products.

According to estimates, one third of chocolate was sold in 2015 via special offers<sup>14</sup> – with a rising tendency. Retail traders are therefore keen to offer chocolate at a lower price than their competition.

4 Barrientos 2016: 217

5 Bonjean / Brun 2016: 356 6

6 Nardella 2015: 14, 18, 22

7 Gayi / Tsowou 2015: viii

8 Nardella 2015

9 Gilbert 2009: 301

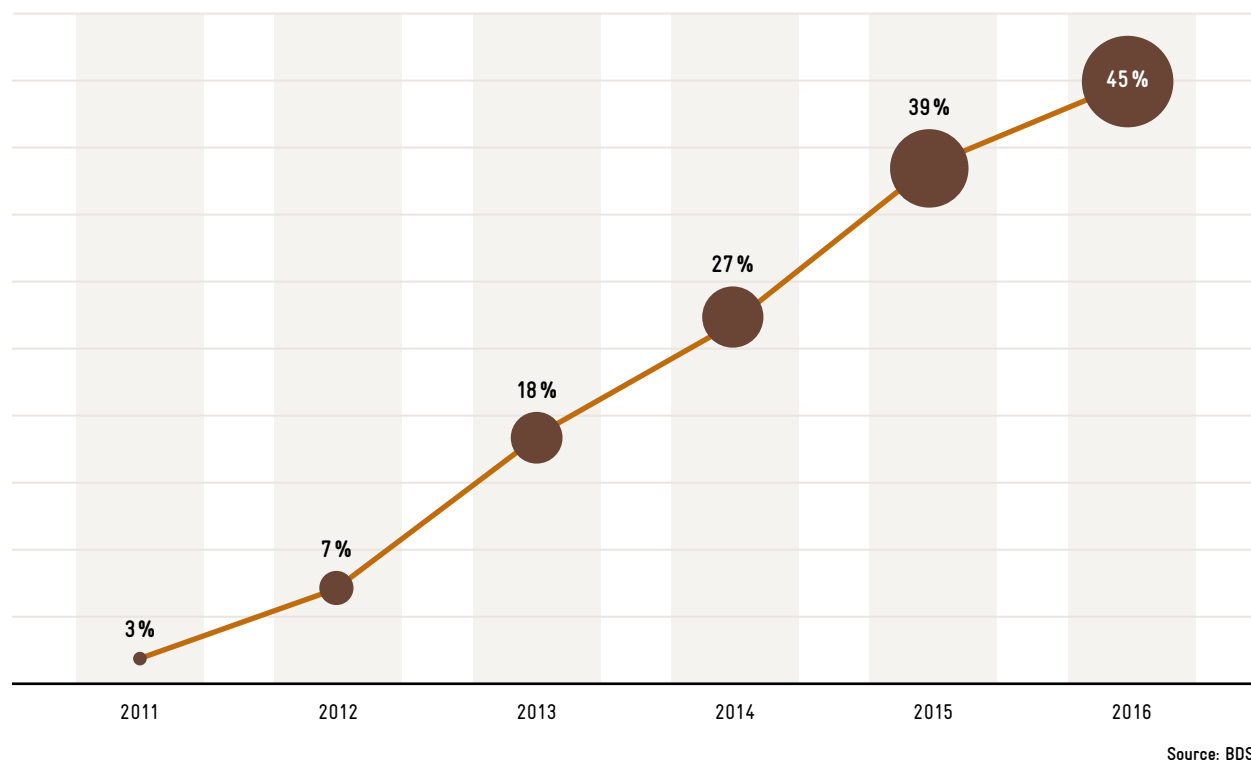
10 Barrientos 2016: 220; Gayi / Tsowou 2015: 17-18; Fold / Neilson 2016: 201

11 See particularly Gilbert 2009: 301; SEO 2017

12 <http://www.ghanaweb.com/GhanaHomePage/business/Ghana-Cote-d-Ivoire-sign-cocoa-deal-545130>; <http://www.graphic.com.gh/news/general-news/ghana-cote-d-ivoire-collaborate-to-control-prices-of-cocoa.html>

13 <https://de.statista.com/statistik/daten/studie/4916/umfrage/marktanteiler-5-groessten-lebensmitteleinzelhaendler/>

14 Kleemans 2015

**Figure 7 Proportion of certified cocoa in cocoa-containing end products sold in Germany**

### The price-stable special offer

Between 1950 and 2002, the special offer price for a 100-gramme bar of whole milk chocolate remained relatively constant at one Deutsche Mark, while the general prices in Germany rose by 322 per cent according to the Federal Statistical Office – the price for a bar should have risen to more than four Deutsche Marks<sup>15</sup>. Only with the euro did prices increase.

In 2015, an estimated 60 per cent of the chocolate sold in Germany was sold via discount stores and a third of the total sales volume was sold via special offers.<sup>16</sup> Retailers' own brands have increased their market share to around 30 per cent in recent years. The declining real price was made possible by significantly lower commodity and production costs. In addition, retail chains often do without higher trading margins if they want to attract customers with special offers.

At the same time, sales of high-quality chocolate products, including original chocolates, have increased significantly in recent years. Nevertheless, this is still only a very small market segment.

### 2.4 Standard systems and sustainably produced cocoa

In Germany, more and more cocoa from sustainable production is being sold. According to the Association of the German Confectionery Industry (BDSI), the share of sustainable cocoa in confectionery products sold in Germany in 2016 was 45 per cent (Figure 7).

This cocoa is either certified by Fairtrade, UTZ or Rainforest Alliance / SAN or comes from a company project with comparable requirements and controls.<sup>17</sup> GEPA is also present on the market with fair and organic certified cocoa.

Exact market shares of the organisations in Germany are not known. However, the largest share should come from UTZ. According to Fairtrade, about 30,000 tons of Fairtrade cocoa were sold in Germany in 2016; that is around 8.6 per cent of German cocoa consumption.<sup>18</sup> GEPA, which works with its own standard and whose cocoa is also largely certified organic, only generates just under 1,000 tons, mostly in Germany.<sup>19</sup>

<sup>15</sup> Freiberger 2010

<sup>16</sup> Kleemans 2015

<sup>17</sup> The definition is based on the sustainability definition of the Sustainable Cocoa Forum. At present, it can be assumed that the recorded quantities have been cultivated in full or at least almost completely in accordance with the standards of Fairtrade, UTZ and Rainforest Alliance / SAN and certified by these organisations.

<sup>18</sup> <https://www.fairtrade-germany.de/produkte-de/kakao/hintergrund-fairtrade-kakao.html>

<sup>19</sup> Source: Meeting with the GEPA officers on 28 June 2017.

In 2015, around 22 per cent of cocoa traded on the world market was certified by one of the major standardsetting organisations (Table 1). This does not include the small part of the world harvest (mainly from Central and Latin America), which is certified according to different organic standards with no data available on quantities actually sold. Much more cocoa was certified by the producer. However, current data does not allow for clear statements on the percentage of the world harvest cultivated in line with one of the standards. This is due to the double and triple certification of many farmer organisations. If they could not sell a larger share of their Fairtrade-certified cocoa on the conventional market, they sought for a further certification.

Considering these multiple certifications, the share of cocoa from Côte d'Ivoire is likely to be around 50 per cent; in Ghana, Nigeria and Ecuador the share is significantly lower (Table 2).

### 3 HOW IS THE COCOA PRICE CREATED AND COMPOSED?

In an optimally structured market, the cocoa price would be the result of harvest volume and demand.

The amount harvested depends, among other things, on the weather, but also on the spread of diseases and the use and costs of land, pesticides, fertiliser and transport.

The world market price is determined on a daily basis and published by ICCO. On June 29, 2017, it was USD 1,920 per ton (EUR 1,718<sup>20</sup>).<sup>21</sup>

#### How much of the price depends on producers?

The share of cocoa in the final selling price of chocolate has fallen in recent decades<sup>22</sup> and only accounts for a small share

20 Exchange rates: the following website was used for currency translation: [http://ec.europa.eu/budget/contracts\\_grants/info\\_contracts/infoeuro/index\\_de.cfm](http://ec.europa.eu/budget/contracts_grants/info_contracts/infoeuro/index_de.cfm)

21 ICCO calculates the average price on a daily basis, taking into account the stock market quotations for the next three delivery dates on the stock exchanges in London and New York. London quotations are converted into US dollars. A price is also calculated in pounds sterling, as part of the trade in London is conducted in pounds sterling.

22 Barrientos 2016: 217

**Table 1 Certified cocoa in tons**

Organisation	Certified 2009	Certified 2013	Certified 2014	Certified and sold 2014	Certified 2015	Certified and sold 2015	Certified 2016
UTZ	5,396	691,490	879,771	390,416	918,000	582,000	1,188,166
RFA/SAN	13,300	571,695	575,000	238,000	491,622	223,102	465,728
Fairtrade	106,000	176,400	218,000	70,600	252,000	93,000	No info
Organic	101,000	109,000	114,000	117,000	156,000	No info	No info
<b>Total</b>	<b>225,696</b>	<b>1,548,585</b>	<b>1,786,771</b>	<b>816,016</b>	<b>1,817,622</b>	<b>898,102</b>	<b>1,653,894</b>

Source: Fountain/HützAdams 2015: 19; Fairtrade 2017; UTZ 2017: 12; Rainforest Alliance 2017 and 2017a; SSI 2016: 75

**Table 2 Development of the cocoa certification (indicated in tons)**

	Côte d'Ivoire	Ghana	Nigeria	Ecuador
<b>Total production (2015/16)</b>	<b>1,580,000</b>	<b>778,000</b>	<b>200,000</b>	<b>232,000</b>
<b>Certified thereof</b>				
UTZ (2016)	661,876	181,365	72,955	59,626
Rainforest Alliance (2016)	300,480	86,266	No info	24,911
Fairtrade (2015)	111,300	79,700	No info	3,606
Organic (2015)	50	3,300	100	2,550

Source: ICCO 2017; SSI 2016: 124; UTZ 2017; Fairtrade 2017; Rainforest Alliance 2017a: 10

**Table 3 Cost share of raw cocoa in a bar of milk chocolate, cocoa content 30% (average, as of June 2017)**

Bar of chocolate 100 g weight, price EUR 0.89	
Cost per kilogram raw cocoa (FOB)	EUR 1.75
Cocoa mass per kilogram of raw cocoa	800 g
Share of cocoa mass in milk chocolate	30 %
Number of chocolate bars from 800 gram cocoa mass	26.7 bars
Cost of raw cocoa per chocolate bar	6.6 cent
Price share in one chocolate bar	7.4 %
Share of costs after cocoa price changes in Côte d'Ivoire	
Previous farm gate price: 1.78 EUR/kg (10/2016 to 3/2017)	6.7 cent/7.5 %
New farm gate price: 1.07 EUR/kg (from 4/2017)	4 cent/4.5 %

(Table 3). The share of farmers in the sales price for chocolate products is correspondingly low.

Nevertheless, the companies can also easily produce cheap chocolate brands with certified cocoa. The additional costs for certified chocolate are only about 1 cent per bar.<sup>23</sup>

#### What sales are there along the cocoa value chain?

Fluctuating commodity prices, modernised production technologies and changing power relations due to mergers of market participants influence the sales and profit shares of the parties involved in the value chain. The profit margins of most companies are not transparent, so that they cannot be broken down along the value chain.

By contrast, the distribution of sales for chocolate products can be calculated: Looking at the global market, manufacturers and retailers account for the largest share of turnover (Table 4). However, they do not automatically achieve high profits. The massive price war over chocolate is squeezing the margins of many companies.

**The redistribution of profits within the chain alone would not be enough to sustainably improve the situation of farmers.<sup>24</sup>**

**Table 4 Distribution of sales in the global value chain 2015**

	Retail price share
Gross income for farmers	6.60 %
Domestic transport	0.50 %
Tax/marketing authority	4.20 %
International transport	0.30 %
Costs at port of arrival	1.10 %
International traders	0.20 %
Processors & grinders	7.60 %
Manufacturers	35.20 %
Retail & tax	44.20 %

Source: Fountain/HützAdams 2015: 39

### 3.1 Pricing mechanisms along the value chain

The concentration of power in the value chain observed in cocoa trade, grinding, chocolate production and retail is creating great price pressure within the chain. When the market price is determined, farmers' production costs for cocoa and attaining a living income play no role.

**Due to a lack of negotiating power, small farmers have to accept the price they are offered - whether or not they can manage their cocoa business in a sustainable manner and secure their livelihood. Without stronger nationally and internationally networked organisations of farmers, this will hardly change.**

Even important producing countries such as Côte d'Ivoire and Ghana are unable to influence world market prices despite their high market share.

Most cocoa-purchasing companies are not prepared to pay more than the world market price level or the national minimum prices fixed in Ghana and Côte d'Ivoire in periods of low cocoa prices. Only a few companies (e.g. Taza Chocolate, Ingemann, Tony's Choclonely) are prepared to pay prices that are above the world market price level in low-price phases within the framework of direct marketing relationships, thus meeting the basic needs of farmers. They are currently trying to calculate the costs of cocoa production and, based on this, to pay a price that enables them to earn a living.

<sup>23</sup> Author's estimate for milk chocolate, cocoa content 30 per cent.

<sup>24</sup> Fountain/Hütz-Adams 2015: 41-43

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### Côte d'Ivoire: Vain attempts to stabilise prices

Between July 1987 and October 1989, Côte d'Ivoire government attempted to stabilise prices with an export ban. However, customers looked for alternative suppliers and used their inventories. This experiment brought Côte d'Ivoire high costs and losses in export income and taxes. Ultimately, this contributed to the collapse of state control of the Ivorian cocoa market.<sup>25</sup>

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### Different structures and strategies of producing countries

In response to fluctuating prices, the producing countries of West Africa have changed their marketing strategy several times over the past decades.

- After about 20 years, Côte d'Ivoire partially withdrew the complete liberalisation of its cocoa market in 2012. Since then, the national cocoa authority Conseil du Café-Cacao (CCC) regulates the market, but does not intervene directly.
- Ghana, on the other hand, has repeatedly reformed its market regulations in recent decades without abolishing the strong influence of state authorities on national cocoa trade. The cocoa export is handled by the Cocoa Marketing Company (CMC), a subsidiary of the national authority COCOBOD.
- In Nigeria, the state has not had a direct influence on cocoa trade since liberalisation in the late 1980s.

#### Côte d'Ivoire

Since 2012 the national cocoa authority Conseil du Café-Cacao (CCC) has been in charge of managing the cocoa sector and stabilising the price.

Already in the months of January to June, and thus well before the start of a harvesting season, around 80 per cent of the expected harvest volume is auctioned off in daily auctions under the supervision of the CCC. At the beginning of the cocoa season, the CCC sets an average selling price (reference) based on the sales already made, on the basis of which the fixed cocoa price from the farm will be fixed for the new season. The cocoa price for producers should be at least 60 per cent of the reference price. In 2012, the CCC set up a compensation fund to compensate for the differences between the stable domestic price and the fluctuating world market price. Many farmers work at high risk, as investments in cocoa only amortize after several years.

Additionally, farmers and intermediaries must accept what is allocated to them by the CCC.<sup>26</sup>

**Assessment:** This system protects farmers against price fluctuations during the main harvest season. However, for the low season, a price is fixed in March, which often corresponded to the high season price. However, there is no protection beyond the current season.

Many farmers work at high risk, as investments in cocoa cultivation only pay off after several years. The short time span of the price certainty is not enough to secure such investments.

In addition, farmers demand a higher share of world market prices. Producers, cooperatives and exporters criticize their frequent lack of cost-covering margins.

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### Prices under pressure: the example of Côte d'Ivoire

Thanks to rising world market prices, the minimum prices for farmers in Côte d'Ivoire have risen steadily between 2012 and 2016. But at the beginning of 2017, however, a record harvest depressed the market price below the export price expected for the harvest season 2016/2017.

This put pressure on local exporters who had bought cocoa in the previous auctions months, but had neither concluded contracts for the resale of cocoa at the old prices nor had they hedged themselves on the stock exchanges. As a result, these exporters could only have resold the cocoa with a loss. Despite contractual agreements, they did not accept large quantities and the CCC had to sell cocoa again at a lower price – presumably several 100,000 tons cocoa beans in total.

Even the approximately 20 per cent of the harvest, which the CCC had not previously sold at the auctions, only generated low revenues. In addition, several additional 100,000 tons entered the market, as the harvest was significantly better than expected.

Many cocoa traders continued to focus on falling prices and curbed their purchases. At the same time, speculators sold their call options on the stock exchange. Both pushed the price down further.

A major share of the harvest generated significantly less income than auctions did on the basis of the minimum price. In March 2017, the CCC had to reduce the minimum price paid to farmers from 1,100 CFA/kg to 700 CFA/kg (EUR 1,067)

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#### Ghana

In Ghana, the entire cocoa sector is regulated by the state-controlled Cocoa Marketing Board (COCOBOD) trying to mitigate world market price fluctuations.

To this end, a subdivision, the Cocoa Marketing Company (CMC), sells an estimated 70 per cent of the crop directly to companies or via the stock exchanges before harvesting begins. This provides an approximate estimate of how much

<sup>25</sup> Bonjean/Brun 2016: 342; Vellema et al. 2016: 232

<sup>26</sup> Details see Hütz-Adams/Huber/Knoke/Morazán/Mürlebach 2016: 23-25

is being repaid for the cocoa traded. The next step is to determine how much of this prize will be given to farmers. This minimum price from the farm gate<sup>27</sup> is set by a farmer committee, the Ministry of Finance and COCOBOD. The Committee shall take into account not only the expected quantities of food and the price obtained on advance sales, but also the part of turnover required by middlemen, transport companies, quality controls and the internal expenditure of COCOBOD organisations to cover the costs.<sup>28</sup>

In 2016, COCOBOD planned to pay 72 per cent of this price to farmers, but in previous years it was significantly less. However, COCOBOD does not take the world market price as a basis for calculating this 72 per cent, but deducts the costs incurred in advance to finance measures for farmers. These include quality controls, transport, storage, research, consulting, subsidising seedlings, fertilizers, pesticides, etc. as well as deposits in a stabilisation fund to protect against falling world market prices.

Companies that buy cocoa from producers in Ghana are controlled by COCOBOD, must deliver the cocoa to another subdivision, the Cocoa Marketing Company (CMC), and receive a fixed share of the price (approx. eight per cent recently).<sup>29</sup>

COCOBOD provides non-transparent information on the allocation of funds. Authors of an unpublished study by the World Bank suspect that shares in the state budget are higher than previously known taxes.<sup>30</sup> They also criticize mismanagement, corruption in COCOBOD and intransparent pricing structures.

In mid-2017 it was estimated that COCOBOD is indebted to around USD 2.3 billion.

**Assessment:** The pricing system in Ghana involves risks. Part of the volume that is not sold in advance is still subject to price fluctuations on the world market. The guaranteed fixed price also depends on the world market price – and is only valid for one harvest season. Another problem is the strong volatility of the local currency GHS against the US dollar. It is true that COCOBOD has so far been able to keep the minimum price in GHS stable despite falling cocoa prices in US dollars. However, COCOBOD has to accept real price losses.

Given the indebtedness of COCOBOD and the risk of hundreds of thousands of tons of cocoa being smuggled into the country while the minimum price in Ghana is substantially higher than in Côte d'Ivoire, the farm gate price could also come under considerable pressure in Ghana.

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### Increasing yields and the consequences for people and the environment

Globally increasing cocoa harvests entail land consumption and deforestation. Rising cocoa prices are an incentive to set up new plantations. It is not only a matter of increasing the area under cultivation: once the soil has been exhausted, the producing areas are relocated. Between 1960 and 2010, the forest areas of Côte d'Ivoire shrank from 16 million hectares (around 50 per cent of the country) to less than two million hectares.<sup>31</sup> It was often displaced persons from other parts of the country or migrants from neighbouring countries who established plantations on protected areas.<sup>32</sup> In recent decades, Ghana has also lost around two per cent of its forest area each year, with the expansion of cocoa cultivation being an important factor in this respect.<sup>33</sup>

### Can productivity increases solve the problem?

In order to protect forests and improve the income of families, many companies rely on projects to increase productivity. However, this can lead to excess supply and thus to price declines: for example, prices fell by more than 30 per cent at the beginning of 2017 due to an increase in global harvest volumes of just under ten per cent. This dilemma can only be solved by reducing the area under cultivation.

It is also unclear who will be able to absorb the higher amount of work involved in increasing production activity – the keyword being child labour – and whether the proceeds will cover the higher production costs.

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## Nigeria

Nigeria used to be much more important for the world cocoa market than it is today. In 1962, it provided an estimated 20 per cent of the world's harvest. Due to high taxes, lack of support for farmers and intransparent market regulations, production decreased. Following initial market reforms, the market was completely liberalised in 1986, partly as a result of pressure from donor countries. As a result, the support systems for farmers almost completely collapsed; the quality of Nigerian cocoa beans fell significantly due to a lack of controls.<sup>34</sup>

As a result of market liberalisation, the number of traders has risen significantly. In 2011, 123 export companies were registered with the Nigeria Export Promotion Council, three of which, however, already have a combined market share of around 60 per cent.<sup>35</sup> The share that farmers receive from the world market price also rose significantly. However, this is unreliable because they are based on official exchange rates that

27 Afari-Sefa et al. 2010: 3

28 Details see Hütz-Adams/Huber/Knoke/Morazán/Mürlebach 2016: 26–29

29 Quartey 2013

30 Kpodo 2017

31 Ministère des Eaux et Forêts 2015; EUREDD o. J.

32 Bitty et al. 2015: 99–102

33 Camargo/Nhantumbo 2016: 37–38

34 Details see Hütz-Adams/Huber/Knoke/Morazán/Mürlebach 2016: 32–35

35 Cadoni 2013: 13–14

have been manipulated by the government for a long time. According to the official exchange rate, the farm gate price would have represented 220 per cent of the world market price. Assuming the Naira's black market price against the US dollar, it was only up to 85 per cent.<sup>36</sup>

There are indications that cocoa trade is being used for money laundering. This could explain why individual traders offer relatively high prices.<sup>37</sup>

**Assessment:** Although a relatively high share of the world market price goes to farmers, many local actors consider the prices paid too low to turn cocoa back into a lucrative business. In addition, farmers receive almost no support from state structures, and traders suffer from chaotic tax legislation in individual states of Nigeria.

### 3.2 Pricing for certified cocoa

The cocoa price is determined by the world market. In addition to the supply/demand ratio, speculators (see below) and the already described power relations within the value chain play a role in determining the export price, while market regulations of Côte d'Ivoire and Ghana only influence the farm gate price. This applies to both conventional and sustainable certified cocoa. The only exception is Fairtrade-certified cocoa.

#### Fairtrade – a special case

Fairtrade currently guarantees a minimum price of USD 2,000 per ton. However, this is usually not enough to ensure that cocoa-producing households can live adequately from cocoa production.

For this reason, Fairtrade is currently analysing the farmers' production and living costs, income etc. in order to calculate a minimum price that will secure their livelihood.

If the export price falls below the USD 2,000 mark, Fairtrade pays the difference as a premium to farmer organisations. Organisations decide for themselves how they use the funds and whether they pay them out in full or in part to farmers. The reference to the export price points to another problem: depending on the country, the prices that farmers receive for their cocoa can be far below the export price without taking this into account. This could be avoided by orienting towards the farm gate prices.<sup>38</sup>

#### Premium for certified cocoa – but not always

In addition, different standards pay premiums to the farmer organisations when they find buyers for certified cocoa. The premiums are intended to cover additional costs incurred by producers as a result of applying the relevant standard and certification. In addition, they should enable investments into the development of their farm, rising incomes of farming

families and the employment of adult labour force instead of their own children.

In the absence of data, it is currently unclear whether the premiums only cover the additional costs of certification or lead to higher incomes.

The premium for Fairtrade is currently EUR 179 (USD 200) per ton. At UTZ and SAN/Rainforest Alliance the cooperatives negotiate the premium themselves with the customers. At UTZ, the average premium surcharge in recent years has steadily decreased from EUR 122 (2013) to EUR 89 (2016) per ton in the past few years.<sup>39</sup> SAN/Rainforest Alliance does not release figures, but premiums are expected to be at a similar level to UTZ.

However, the sale of certified cocoa is not assured. Since the supply of certified cocoa exceeds the demand, only a part of certified cocoa is traded with a premium. The remainder can only be sold over the conventional market without a premium. Some companies pay additional premiums for better quality.

#### Conventional or certified – who earns more?

For cocoa processors and retailers, profit margins (not gross margin percentages) are generally higher for certified products than for conventional products. In contrast, certification changes the income of smallholder farming families and workers on their plantations relatively little.<sup>40</sup> The premiums are very low. In addition, they will only be paid for the quantities that can be sold as certified products.

However, this result reveals only little information about the actual effect of certification. In view of the smallholder structure of the cocoa sector, the introduction of standards can have significant non-monetary effects. These include agricultural training measures connected with certification, advising farmer organisations, strengthening these organisations by paying premiums and creating greater transparency in the value chain.

Precise information on the impact of certification on the actual net income of smallholder farming families is currently not possible. To this end, it must first be clarified whether certification has increased production costs (Tables 5a and 5b).

36 Gilbert 2009: 305

37 Hütz-Adams/Huber/Knoke/Morazán/Mürlebach 2016

38 Fairtrade 2017

39 UTZ 2017: 10

40 Processors and retailers usually add a percentage profit margin to their sales. If you buy cocoa more expensive, the absolute sum of the profit will increase (And selling cocoa in Germany will also increase taxes.)



**Table 5a Direct revenue increase for farmers in euro due to certification in 2017**

	Premium/t	Premium remaining in cooperative/t	Premium paid to farmers/t <sup>1</sup> in case of 100 % sales as certified	Premium paid to Farmers/t in case of average sales
UTZ	EUR 89	57 % = EUR 51	43 % = EUR 38	EUR 21 (54 % sales)
Fairtrade	EUR 179	73 % = EUR 131	27 % = EUR 48	EUR 16 (33 % sales)
RFA	no information	no information	no information	
Organic	EUR 269	no information	no information	
FT plus ORGANIC	EUR 448	no information	no information	

<sup>1</sup>applies if cocoa is sold as 100 % certified. However, this is not the case. On average, only 54 % of UTZ-certified quantities are sold with a premium<sup>41</sup> and only 33 % of Fairtrade-certified quantities.<sup>42 43</sup>

**Table 5b Producers' revenue per ton in euro from certified and non-certified cocoa in 2017 in case of average sales**

	Côte d'Ivoire	Ghana	Nigeria
Farm gate price (euro) 2017	1,067 <sup>2</sup>	1,580 <sup>2</sup>	1,600
UTZ	1,088	1,601	1,621
Fairtrade	1,083	1,596	1,616

<sup>2</sup>fixed minimum price at farm level

Assumptions: No account is taken of indirect effects resulting from the payment of premiums to cooperatives and associated organisational strengthening / assumed world market price EUR 2,000 / farm prices based on the minimum prices in Côte d'Ivoire and Ghana as well as the average share of the world market price in Nigeria / premium per ton as specified by the standard-setting organisations.

### 3.3 Tariffs, trade agreements and taxes

#### Access to EU

Thanks to EPA (Economic Partnership Agreements) trade agreements, Côte d'Ivoire and Ghana have duty-free access to the European market – not only for raw cocoa but also for cocoa products processed in the country. Nigeria has no EPA agreement with the EU. The EU is currently charging up to 6.1 per cent customs duty on processed cocoa products from Nigeria. This is a major obstacle to Nigerian producers' access to the European market – and possibly a reason for the low capacity utilization of the processing plants in Nigeria.<sup>44</sup>

#### Taxes in producing countries

Different countries tax cocoa exports differently. Countries such as Peru, Brazil, Ecuador and Cameroon, for whose economies cocoa is of little or no importance, have little or no tax on cocoa exports. Ghana and Côte d'Ivoire, on the other hand, need export taxes as a source of revenue, since cocoa is immensely important to cover the state budget.

In Nigeria, taxation is chaotic and opaque. The central government levies only very low taxes, but there are further taxes and contributions from the federal states. Traders must fear multiple taxes to pay. To circumvent this, cocoa is smuggled out of the country. The government wants to make the market more transparent with a new cocoa organisation.<sup>45</sup>

<sup>41</sup> UTZ 2017

<sup>42</sup> Fairtrade 2017

<sup>43</sup> <https://utz.org/de/better-business-hub/nachhaltiger-einkauf/cocoa-program-performs-strongly/>

<sup>44</sup> on tariffs: <http://madb.europa.eu/madb/euTariffs.htm>; on exploitation see: Hütz-Adams/Huber/Knoke/Morazán/Mürlebach 2016: 38

<sup>45</sup> Hütz-Adams/Huber/Knoke/Morazán/Mürlebach 2016

### 3.4 Price volatility and speculation

For decades, there has been a strong correlation between inventory levels and cocoa prices: If inventories rose by one per cent, prices fell by three per cent.<sup>46</sup> But this ratio seems to be changing: After ICCO had predicted a five per cent increase in inventories<sup>47</sup>, world market prices fell by around 30 per cent between October 2016 and February 2017.

The assessments on the future development of the cocoa market vary widely. Demand has been rising relatively steadily for many years. Since 2012, it has stagnated at around 4.2 million tons – also as a result of economic crises in the emerging countries, whose rising cocoa consumption had previously driven demand.<sup>48</sup>

#### Price volatility: downward trend

Cocoa prices can fluctuate sharply in the short term. In 2016, for example, the lowest price was USD 2,167 per ton and the highest USD 3,348 per ton.<sup>49</sup> In the years 2012 to 2015, there was a gap of up to USD 800 between the highest and lowest daily price of a year.

In addition to these short-term fluctuations, there is a clear long-term trend: real cocoa prices are falling significantly. ICCO figures for the period since 1960/61 (with a strong increase in the mid-1970s) confirm this. The consulting firm LMC calculated an inflation-adjusted price decline from USD 4,000 in 1950 to around half in 2015.<sup>50</sup>

It is noticeable that sales on the chocolate market have risen in recent years: from estimated USD 83.2 billion in

2010 to USD 98.3 billion in 2016<sup>51</sup> although the quantity grinded in this period rose barely and remained almost constant from 2012 to 2016.<sup>52</sup>

#### Reasons for price volatility

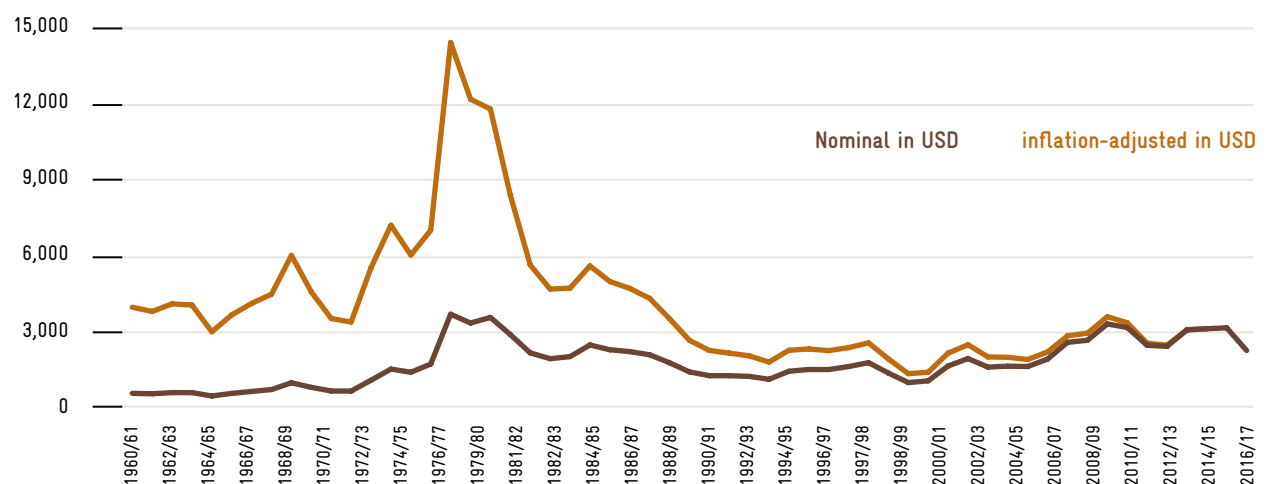
Global events have often caused demand and thus cocoa prices to collapse: for example, as a result of the wars in the main consumer region of Europe after 1860 or during the First World War. In the latter case, however, the fall in prices began before the start of the war – initially as the result of drastic increases in production – and continued through the Great Depression and the Second World War.<sup>53</sup> Droughts and forest fires in West Africa led to a price explosion in the mid-1970s. In the 1990s, increased harvest volumes, corporate mergers and better transport options depressed prices. In addition, more efficient stock market transactions made stockholding less important. Reduced storage volumes plus additional cocoa on the market resulted in lower prices.<sup>54</sup>

Production and consumption have risen massively over all short-term fluctuations for decades. At the same time, cocoa prices fell after adjustment for inflation. This could be an indication of the market imbalance between farmers as powerless participants at the beginning of the value chain and of ever-increasing concentrations in the wider value chain.

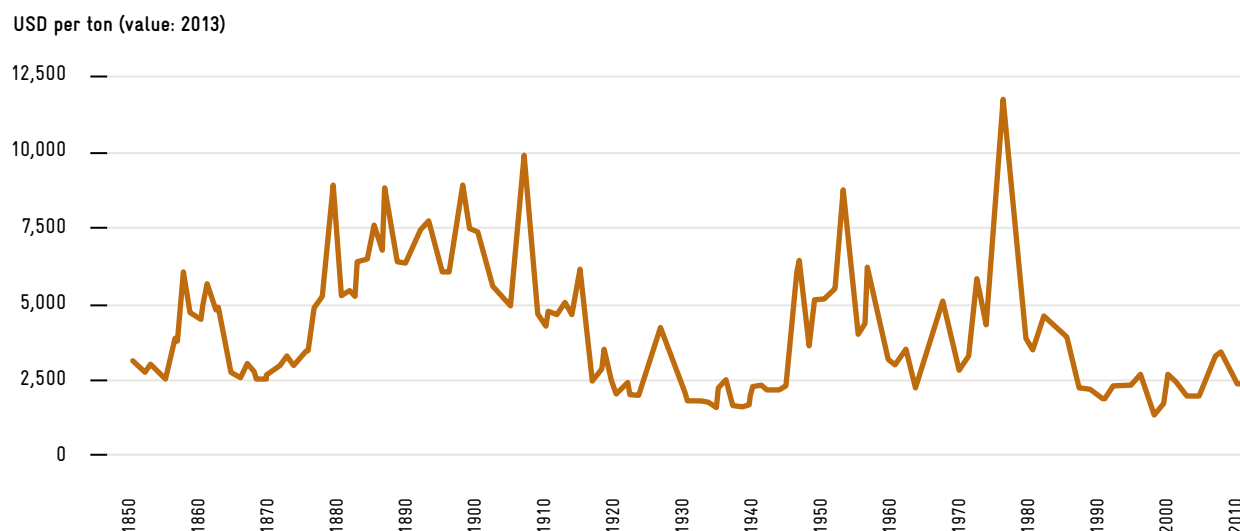
46 ul Haque 2004: 5  
47 ICCO 2017b: Table 2  
48 ICCO 2017  
49 ICCO 2017: Table 9  
50 LMC 2016

51 <http://www.candyindustry.com/articles/83849-global-chocolate-market-worth-98-3-billion-by-2016>  
52 ICCO 2017  
53 Gilbert 2016: 311; Figure  
54 ICCO 2008a: 5–7

**Figure 8 Historical development of nominal and inflation-adjusted cocoa prices in USD/t**



Source: ICCO 2016; 2017: Table 1 for 2015/16/17

**Figure 9 Inflation-adjusted development of cocoa prices since 1850**

Source: Gilbert 2016: 311

### Risks and consequences of price volatility

The high volatility of cocoa prices entails major risks for all market participants in the value chain. In addition, there is an increasing uncertainty of forecast, as demonstrated by the drastic fall in prices at the beginning of 2017, which hardly any of the market participants had anticipated.

#### *On the side of the producer*

Farmers bear the greatest risk. They have no influence on the fluctuating world market prices, but need long-term investment security. The cost of setting up a cocoa plantation at almost EUR 5,000 per hectare<sup>55</sup> is so high that, given the current cocoa prices, a net income will only be achieved after six years. After 25 years, the profit at the current cocoa price amounts to only EUR 782 per hectare.<sup>56</sup>

At low prices, farmers will have two alternatives in the short term:

- They harvest only part of the cocoa pods. The quantity of cocoa on the market is decreasing, prices are rising.
- They harvest as many cocoa beans as possible in order to compensate at least in part the drop in prices through a larger quantity sold. However, the growing supply makes prices drop even further.

If the farming families have invested in rejuvenation of their farm or new plantations, they are dependent on the revenues and can no longer adapt their supply to price fluctuations in the short term.

#### *On the side of the buyer*

Buyers of cocoa can reduce the cocoa content in their products and thus reduce the demand for cocoa. For this purpose, they can produce recipes or increase the market share of products with less cocoa with advertising campaigns.

### Commodity futures exchanges and speculation in the cocoa sector

#### *Functions of commodity futures exchanges*

Commodity futures exchanges for the trading of commodities such as coal, ore and agricultural commodities have been in existence since the end of the 19th century. They bring various advantages to producers and retailers.<sup>57</sup>

- Pricing and risk protection***  
 Commodity futures exchanges mediate between sellers and buyers. Ideally, this means that prices reflect demand and supply well. In addition, the exchange protects both parties against bankruptcy of the other party by guaranteeing the fulfilment of the contract.
- Certifying quality***  
 Goods traded on stock exchanges are subject to strict quality regulations. The associated trust in the goods facilitates price formation and trading.
- Securing supply and purchase prices:***  
 The most discussed function of commodity futures exchanges is probably price hedging in the future. Commodity futures exchanges enable producers and processors of commodities to hedge their future sales or purchase prices and thus plan reliably for months to come.

<sup>55</sup> approx. 4,840 EUR/ha including labour costs; Source: Matthes 2017

<sup>56</sup> in case of an annual harvest of 1,200 kilograms of cocoa per hectare; yield accumulated over 25 years (accumulated net cash value); Source: Matthes 2017

<sup>57</sup> Shahidur, 2015: 1

### *Price hedging instruments*

In principle, commodity prices can be hedged with two financial instruments: futures and options.

- Futures are binding contracts.
- Options leave the option (s) open to implement the option to buy or sell an asset or not to do so.

An option is more flexible in terms of time than a future because it is not tied to the five annual settlement dates of the cocoa future trading system.

### **Futures**

Futures can be purchasing or sales contracts. A purchase contract obliges the buyer to purchase a fixed quantity of a commodity at a certain price at a certain point in time (stock exchange language: long). A sales contract obliges to sell a certain quantity at a certain time at a certain price (stock exchange language: short).

The stock exchange issues a corresponding sales contract for each purchase contract. Towards the end of the term, both are usually closed off, i.e. there is no physical delivery, but only the price difference between the contracts is cleared.

### **How does futures trading work?**

The functioning of futures can be illustrated using two examples.

A player who wants to sell physical cocoa wants to secure a future selling price. For this purpose, he acquires sales contracts for the next due date on the commodity futures exchanges in New York (ICE) or London (NYSE-LIFFE).

When the contract is due, the seller's physical goods change hands at the current world market price. If the price increases, the seller receives more for his goods than originally expected. At the same time, however, he loses money on the closing of his sales contract, which has lost value in the meantime.

However, if the price of cocoa has fallen by the due date of the contract, the seller must sell his goods cheaper than planned. In return, they can make a profit from their sales contracts, as they can settle them more favourably.

If a speculator had bought the same contracts as the speculator without owning the physical commodity he would have suffered a loss in the first case and generated profit in the second one.

There are many ways in which traders and speculators have contradictory market assessments for the same maturity dates and accordingly enter into opposing positions. The two options described above are outlined below (Figure 10).

### **Options**

There are also two options, the call and put options. They work like insurances for the owner.

- A call option insures the buyer of merchandise against rising prices.
- A put option insures the seller against falling prices.

Thus, a trader who wants to buy a certain amount of cocoa buys a call option on a certain future price on a certain day. In doing so, he acquires the right not to pay more than the fixed amount for the capital increase.

If the price of the futures rises above this limit, the counterparty, the holder of the put option, must step in and pay the call option holder the difference between the actual and the hedged price. However, if the price remains at or below the hedged level, the call option expires and its holder has only paid a fee to the other party.

Buyers can use an option to hedge against rising prices. Producers can hedge against price swings downwards. For this purpose, they acquire put options with which they can demand financial compensation from their counterparts if the cocoa price on the future market falls below a certain limit at a certain point in time.

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### **Price hedging instruments for small farmers?**

Can better access to such security instruments for small farmers or small-scale cooperatives contribute to the fight against poverty? In principle, this type of hedging does not protect against price fluctuations per se, but theoretically makes it easier to deal with price fluctuations through a hedged price risk. State cocoa authorities in Côte d'Ivoire and Ghana already use such instruments to secure prices in the interests of their farmers. In Ghana, stable prices have been guaranteed for many decades and in Côte d'Ivoire since 2012 for the main harvests.

Admittedly, there are approaches to make price hedging usable for much smaller market players as well: for example, with free-of-charge hedging instruments where the farmer only waives his profit if the price rises above a certain threshold. Contracts with major customers can also include price hedging. However, these approaches require considerable know-how, time and financial flexibility from small producers.<sup>58</sup>

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### **How commodity futures exchanges influence the cocoa price**

In theory, the future price should follow the physical price, as futures prices should be based on an assumption of the future physical price and both should converge as the fulfilment date approaches.

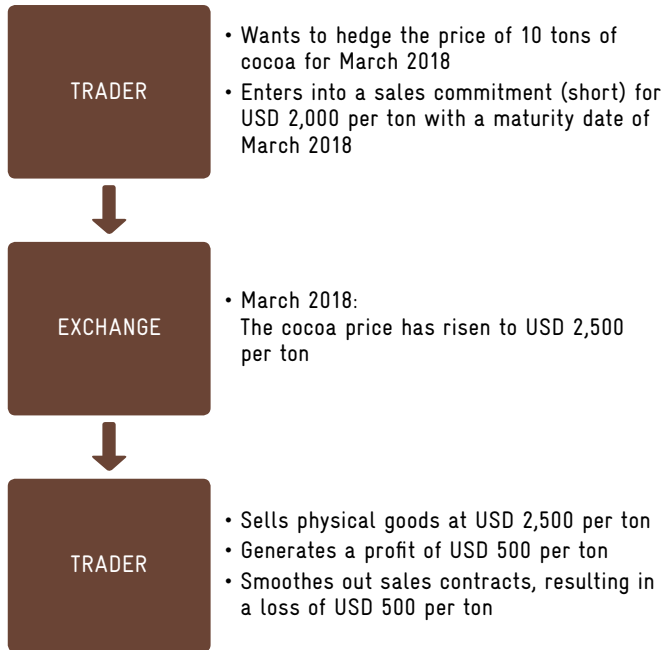
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58 IISD 2008: 23

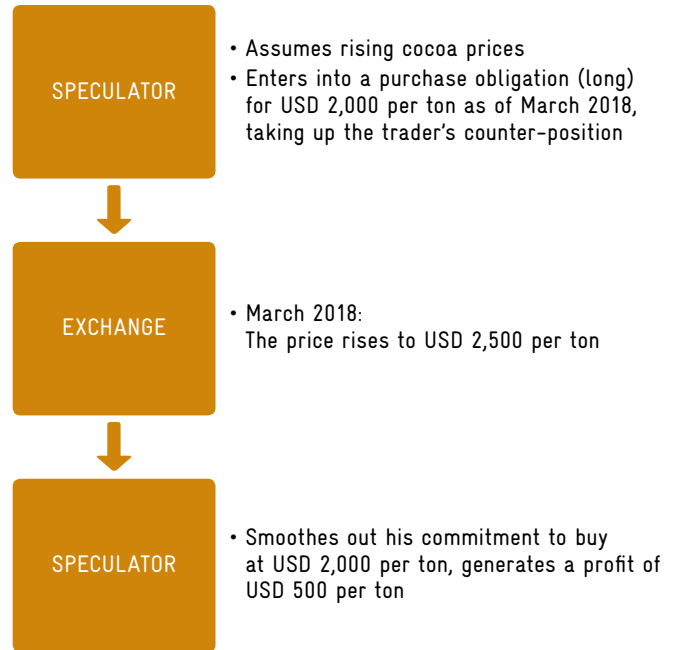
**Figure 10 Hedging transaction scenarios**

**Case 1: Profit on the spot market offset by loss on the commodity futures exchange**

**The cocoa merchant**

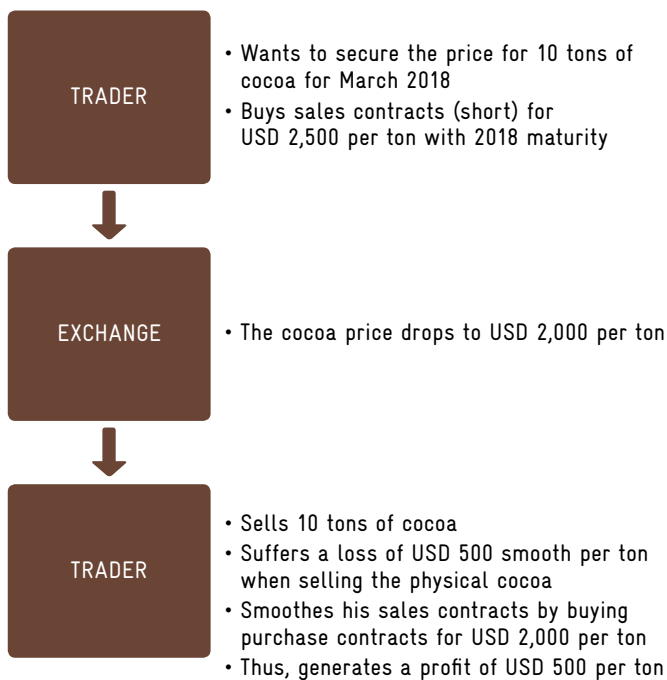


**The speculator**



**Case 2: Loss on spot market offset by profit on commodity futures exchange**

**The cocoa merchant**



**The speculator**



Note: Cocoa is traded on the stock exchanges in 10-ton increments. Prices in the graph refer to one ton at a time.

Source: Own graph

Instead, however, the futures price seems to have a major influence on the physical price of commodities traded on commodity futures exchanges. The main reason for this is the lack of transparency of the physical price: there is **not one cocoa price**<sup>59</sup>, but many purchase contracts with inscrutable conditions between producers, processors and traders. Future prices, on the other hand, are published daily on commodity futures exchanges in New York and London. In this way, they act as a guide for all market participants, including physical operators.

Why is this particularly true of the cocoa price? In Côte d'Ivoire and Ghana, the physical cocoa price for cocoa farmers is guaranteed by the state. Both countries base their calculations on the price of the futures markets. Since the two countries together supply around 60 per cent of the cocoa harvest, the prices formed on the future markets have a significant influence on the producer price.

This price is the starting point for calculating the price paid to cocoa farmers for physical goods, i.e. the spot price for cocoa in these countries. Since these two countries together account for around 60 per cent of the world's cocoa harvest, it can be assumed that the world market prices formed in the future markets will have a significant influence on the producer price. However, there is a time shift for future market cocoa price increases to reflect on the price from the farm gate.

The authors of the SEO study conclude that, depending on the country of origin, it can take between 35 and 73 days for an increase in the farmers' futures price to become noticeable as rising farm gate price. If the state controls the cocoa trade as it did in Côte d'Ivoire, the period is even longer, which also means that farmers there are longer protected from falling prices.<sup>60</sup>

In this study, we therefore assume that the price formed on the future markets has a significant influence on the cocoa price. To what extent can these markets be affected by disturbances?

#### 1) Manipulation by hoarding

There are many examples of price manipulation in the history of commodity futures exchanges. They were mostly caused by hoarding of goods, combined with the purchase of purchase contracts, the price development of which is known to the manipulator through its secret hoarding. This misuse can be counteracted by limiting positions (quantities traded) and greater transparency of the positions of groups of exchange participants. In 2010, such hedges are missing on the London Stock Exchange. An individual trader could influence the market price under an intransparent stock exchange regime that knew neither disclosure requirements nor position limits. Both these issues were addressed by the European directive for financial markets MIFID II, in force since January 2018.

#### How the London Stock Exchange was manipulated in 2010

Against the backdrop of a lack of certified cocoa in the London Stock Exchange's warehouses, a trading house<sup>61</sup> purchased large quantities of futures obliging the counterparty to sell cocoa in July 2010. Unnoticed by the stock exchange, the trading house acquired so many purchase contracts that it practically dominated the market. When the contracts became due, the owners of sales contracts sold large quantities of stored certified cocoa to the company that had the corresponding purchase contracts. However, the tight stock levels on the stock markets were not sufficient. Some owners of sales contracts were therefore forced to settle their sales positions through financial compensation with the purchase contracts. However, as these purchase contracts were predominantly under one roof, their owners were able to drive up the price for compensation. In July, a trading company now owned a large quantity of cocoa in the warehouses, which had to be sold in the foreseeable future. There was thus a risk that the cocoa price would collapse. In order to prevent this, the trading company sold a large number of sales contracts for September 2010 and thus fixed the price at a relatively high level for itself.<sup>62</sup>

#### 2) Potential influence of financial investors

Since a deregulation shortly after the turn of the millennium, institutional investors (hedge, pension and commodity funds) can also participate in commodity futures exchanges. Some experts assume that this large influx of (speculative) capital can disrupt the price formation on commodity exchanges. This has been investigated in numerous studies for exchange-traded foodstuffs, however, without any clear result to date. Two studies examined, for example, whether the rapid, sharp rise in wheat and corn prices between 2004 and 2008 was due to the increase in market speculation. One of the two investigations found no connection<sup>63</sup>; the other concluded that prices rose temporarily due to increasing speculation.<sup>64</sup>

#### Why commodity futures exchanges were opened for financial investors

Why were commodity futures exchanges opened for speculative capital of financial investors? The reason for this deregulation was a study according to which commodity prices behave counter-cyclically with regard to equities and fixed-income securities. Accordingly, investments in commodities on commodity markets could offset losses from shares and bonds.<sup>65</sup>

59 SEO 2017: 31

60 SEO 2017: 33

61 According to newspaper reports, it was the trading company Amajaro by Anthony War, see e.g. <http://www.tagesanzeiger.ch/wirtschaft/unternehmen-und-konjunktur/Die-unheimliche-Macht-von-ChocFinger-/story/14256830>

62 ICCO 2010: 1-2

63 Irving/Sanders 2010: 13

64 Robles/Torero/von Braun 2009: 6

65 Gorton/Rowenhorst 2005: 20ff

In view of the increase in speculative capital, experts emphasise that the price of cocoa is particularly affected by speculation, since it is traded only to a small extent physically compared with other foodstuffs.<sup>66</sup> However, there is no scientific investigation concerning the influence of financial investors on the price of cocoa so far.

**Speculations with computer algorithms?**

In mid-June 2017, the prices of cocoa and other commodities moved downwards in parallel to the oil price. It is possible that this parallelism in price development can be attributed to the fact that both are included in commodity indices. Many institutional investors invest in these indices. If there are major purchases or sales, these can have an equal effect on all commodities held in the index in the form of falling or rising prices, completely detached from the supply and demand situation on the physical markets.<sup>67</sup>

*3) Speculations on the physical cocoa market*

The German Cocoa Trade Association, an association of German companies involved in the cocoa market, has for several years seen an increase in price fluctuations and attributes this to the growth of speculatively motivated trade. According to the association's estimates for 2001, 12 times the current annual cocoa harvest was traded on the stock exchange, but by 2013 and 2014 it was 25 or even 30 times. At the same

time, the amount of cocoa available for stock exchange trading was halved.<sup>68</sup>

Other analysts come to similar conclusions.<sup>69</sup> It is worth mentioning that the physical harvest of cocoa now accounts for only around three per cent of the quantities traded on the stock exchange (see Figure 11).

Immediately after the beginning of the 2016/17 yearly harvest, there was a price decline, the intensity of which surprised many market participants. According to good harvest forecasts, they had only experienced a fall in prices to between USD 2,600 and 2,700, but not less than USD 2,000. In the view of some market participants, the following price hikes may also have been caused by activities of financial investors, since the physical market would not have justified such price movements.<sup>70</sup>

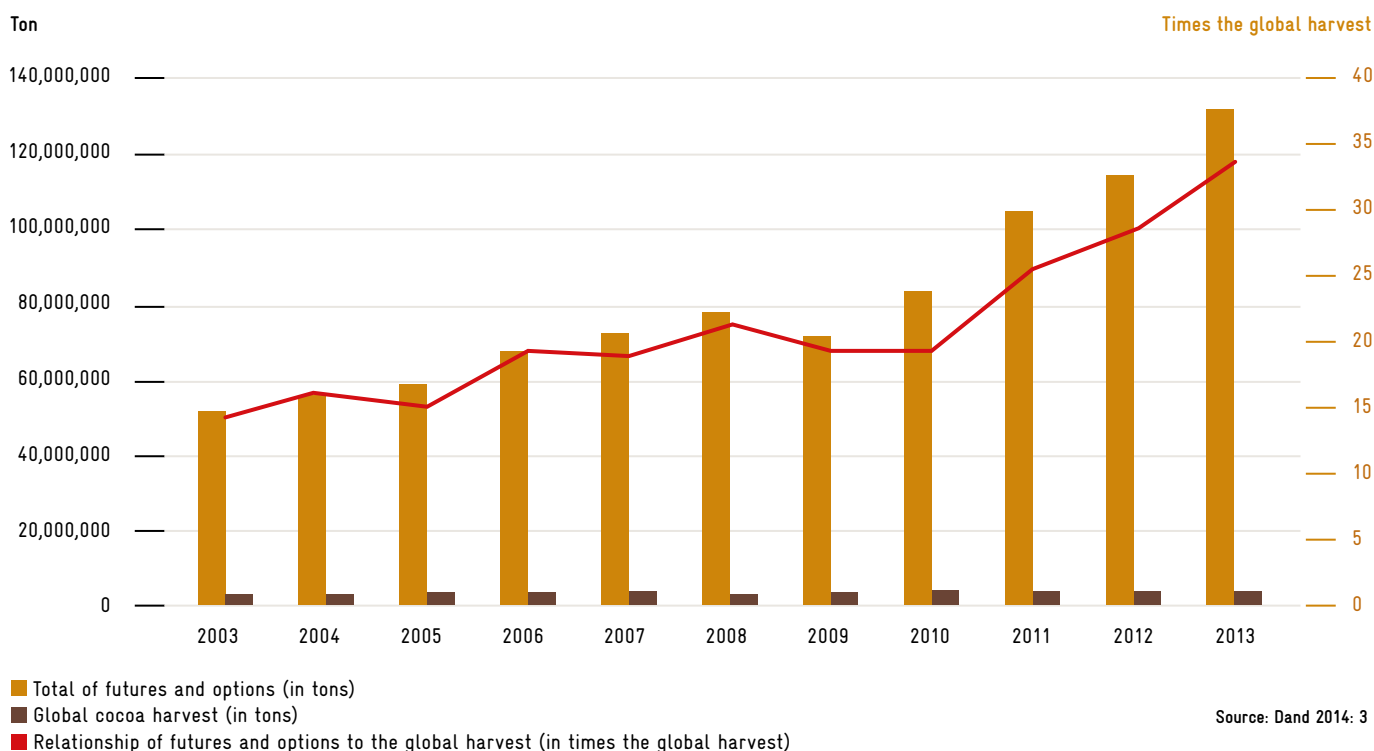
Assessments in this respect vary. Some consider more capital as positive with higher cash funds on the market fostering a more adequate pricing.<sup>71</sup> Others fear that, due to speculation, the price will detach from cocoa – leading to price distortions.<sup>72</sup>

Can price leaps be attributed to speculation – and can conclusions be drawn from the relationship between the quantity actually harvested and the quantity traded on the stock

66 Götte 2009: 16  
67 Terazono 2017

68 Verein der am Rohkakaohandel beteiligten Firmen e.V. 2015: 49  
69 Talks by Friedel Hütz Adams with market participants in January, March and June 2017.  
70 Talks by Friedel Hütz Adams with market participants in January, March and June 2017  
71 SEO 2017  
72 Verein der am Rohkakaohandel beteiligten Firmen e.V. 2015 and 2016

**Figure 11 Global cocoa harvests in relationship to futures and options**



exchange as to the extent of speculation? To answer these questions, we compare the long-term price development of cocoa and other commodities.

First of all, we compare the cocoa price with that of wheat and corn, which were affected by the jump in prices in 2008, which is often attributed to the influx of financial capital into the markets. Secondly, the price of tea and bananas, both of which are not traded on exchanges. Speculative capital is therefore hardly a factor in their pricing.

Figure 12 shows that all three commodities traded on the stock exchange since 2002 – the beginning of the influx of financial investors into the commodity markets – show significantly higher price swings than before. The cocoa price also followed the (possibly co-caused by financial investors) rise in the price of corn and wheat in 2008, albeit at a later date and to a lesser extent.<sup>73</sup>

By contrast, a comparison with prices for bananas and tea (Figure 13), which are not quoted on the stock exchange, shows that their price development follows a significantly different pattern from the exchange-traded commodities cocoa, wheat and maize.

Tea is less volatile from 2003 to 2008, but it will be in the following years. Bananas, on the other hand, are extremely volatile until 2010, after which the curve flattens out. This is due to the specific market situation of this commodity. In 2008, both tea and bananas also recorded strong price increases in line with the listed commodities.

73 Robles, Torero, von Braun (2009): 5f

This different volatility in the prices of cocoa, wheat and maize on the one hand and bananas and tea on the other could be an indication that the influx of capital has led to stronger price fluctuations on commodity futures exchanges.

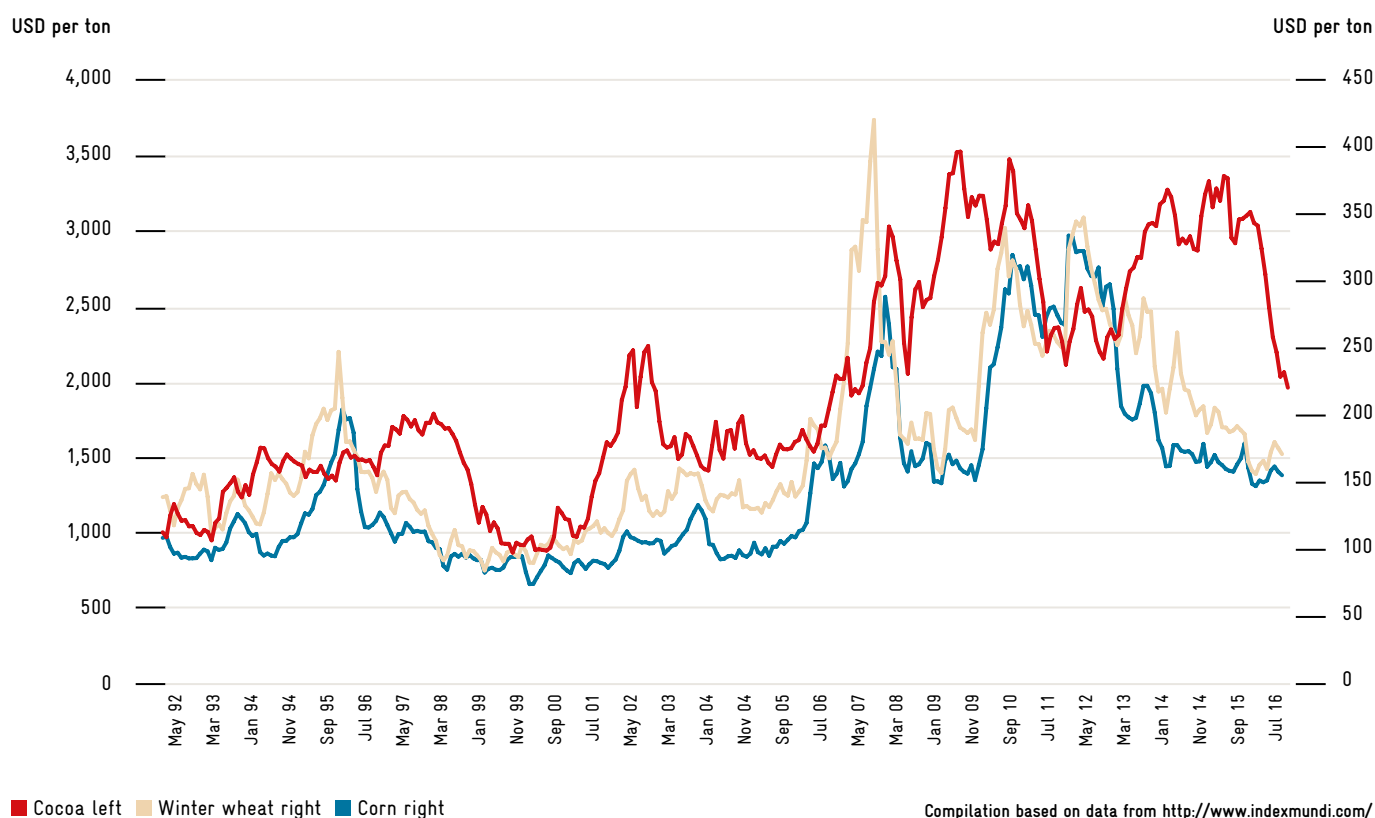
However, the assumption that price swings in cocoa could be greater due to its low physical trading volume is not confirmed here. During this period, the price impacts of cocoa are not significantly higher than those of corn and wheat. However, this could simply be due to the fact that commodity funds, which are used preferentially by financial investors, contain no or only a few cocoa futures.

### Impact on producers

Increased volatility causes uncertainty for farmers about price developments, higher costs to secure their prices and has an immense impact on their incomes.

In order to make more reliable predictions, it would be necessary to correlate price developments with harvest volumes and demand, taking into account political factors such as developments in the main producing areas. In addition to mathematical model calculations (see SEO-study), connections should be investigated empirically. Market participants should be questioned about this. It must also be borne in mind that cocoa cultivation ties up farmers' capital in the long term.

Figure 12 Cocoa, wheat and maize price curves 1992–2017





### Regulation of commodity futures transactions by MIFID II

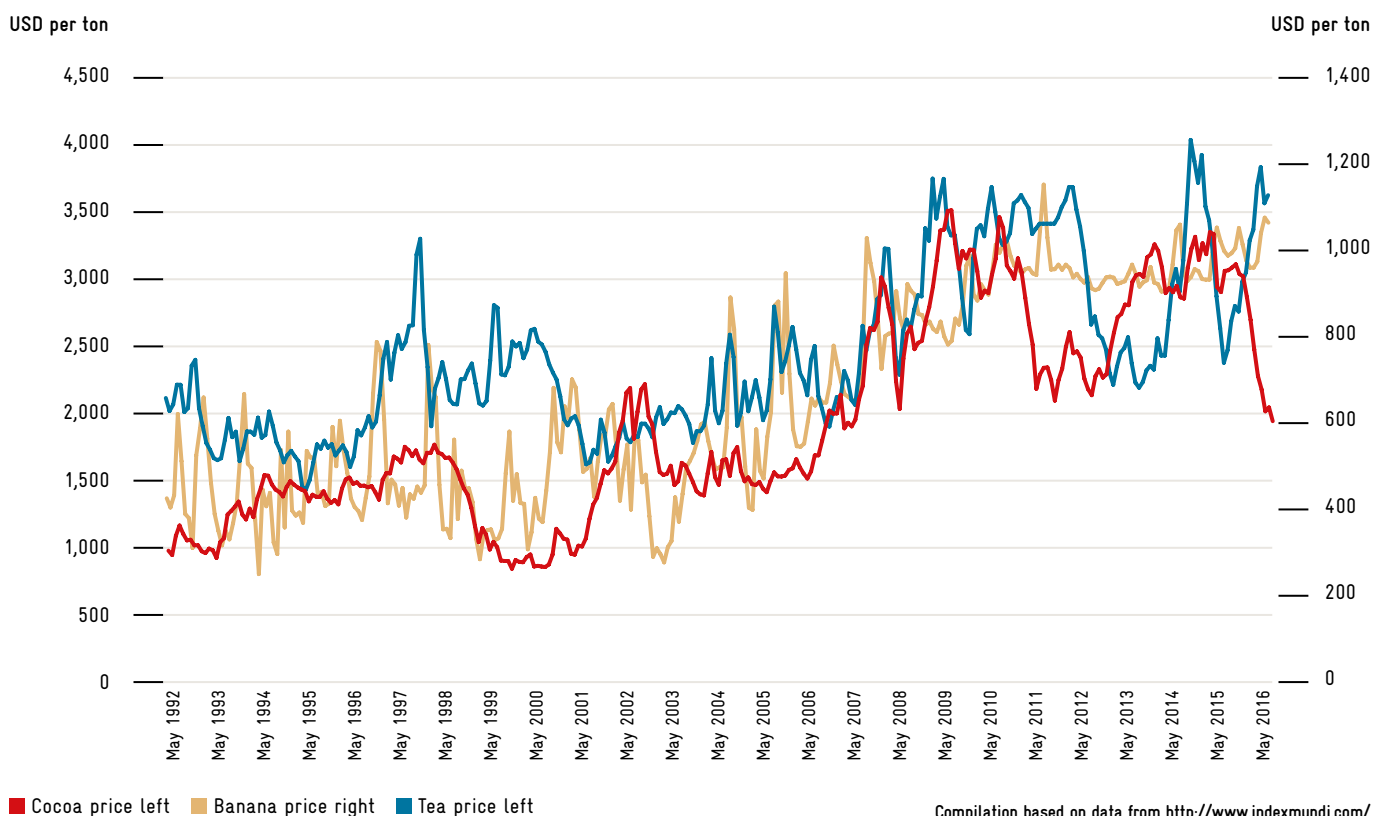
The European Union has reacted to accusations of disturbed pricing on the European commodity futures exchanges and has set up new rules for them within the MIFID II regulation. These relate, on the one hand, to the transparency of what is happening on the stock exchanges and, on the other hand, to the amount of positions that an individual exchange participant and individual trading house may hold.

In the future, European stock exchanges will have to publish aggregated weekly reports with their open positions, i.e. all future positions and options that are not neutralised by countertrade. This is done according to groups of stock market participants, i.e. those who trade physically in commodities (hedgers), those who speculate in commodities off the stock markets and want to hedge these positions (swap dealers) and institutional investors (managed money). They shall also indicate these groups' percentage share in the total number of open positions and the number of traders in each group as well as the positions of the largest traders.

In addition, the European Commission introduced position limits. Traders are only allowed to buy futures contracts on goods up to a certain amount. This upper limit applies not only to contracts concluded on the stock exchange, but also to those entered into between financial market players outside the stock exchange. The limit can be adjusted to some extent by the national supervisory authorities. The base value is around 25 per cent of the deliverable quantity and open contract items. For foodstuffs, the limits can be set much lower by the competent authorities. These limits apply from the beginning of 2018, except for non-financial entities. They can request that hedging transactions be excluded from the position calculation if they demonstrate that hedging of their physical business is involved.<sup>74</sup>

74 Barth 2015: 34-36

**Figure 13 Cocoa, banana and tea price curves 1992-2017**



Compilation based on data from <http://www.indexmundi.com/>

## 4 FAIR PRICES, INCOMES AND WAGES

How high should fair prices for cocoa and fair incomes of cocoa farmers be? To answer this question, data on the real situation of families active in cocoa cultivation would be needed. However, such data are rarely accessible to the public, because of different survey periods and target groups rarely comparable, and often leaving important factors unconsidered.

For the calculation of a fair price, however, one can fall back on findings from the discussion about living wages. These include sufficient nutrition, clean water, shelter, education, health care, transport, clothing and other necessities, and the ability to save for unexpected expenses.

However, the situation is more complex for *income* than for *wages*. This is because the income of self-employed farmers must not only cover their livelihoods, but also the costs of inputs (fertilizer, seeds, etc.), investments in the plantation and possibly living wages. The costs may vary depending on the use of labour, fertiliser, pesticides, etc. It must also be borne in mind that self-employed farmers generally have additional incomes – for example from the sale of foodstuffs or from wage labour – and often also grow their own foodstuffs.

In the Cocoa Barometer 2015, an attempt was made to calculate, on the basis of available data, the amounts available to families in cocoa cultivation per capita on average. It took into account the share of other sources of income and the costs of cocoa cultivation. The study came to the conclusion that cocoa producers in Côte d'Ivoire have an average of USD 0.50 per capita per day, compared with an average of USD 0.84 per capita in Ghana, according to calculations.

The study commissioned by Barry Callebaut showed similar results. Before the collapse of cocoa prices, families working in cocoa cultivation had an average of CFA 568 (EUR 0.86) per capita at their disposal. The poverty line defined by the government is CFA 737 (EUR 1.12) and thus still far below the poverty line of the World Bank.<sup>75</sup>

Surveys of farmers in Côte d'Ivoire participating in the PRO-PLANTEURS project of the German Initiative on Sustainable Cocoa concluded that farmers receive an average of EUR 2,349 from cocoa trade or EUR 6.50 per family per day with an average of ten family members. In addition, it was found that families in this region have an average additional income of EUR 3,098 from other activities.<sup>76</sup>

However, it remains to be seen how high farmers' costs are. In addition, the calculation is based on a price of CFA 1,000 per kilogram of cocoa (harvest season 2015/16), which has now fallen to CFA 700.

Some small companies are already trying to implement living incomes in the cocoa sector. This has not yet found resonance on the mass market. The exception is Tony's Chocolonely, which is now the second-largest chocolate brand in the Netherlands in terms of sales.

### 4.1 What can standard-setting organisations achieve?

In addition to striving to improve the situation of farmers, standard systems are an important way to make the cocoa value chain more transparent. Standard-setting organisations such as Fairtrade, UTZ, Rainforest Alliance/SAN and several organic standards guarantee the traceability of at least part of the cocoa traded on the world market. This creates a much closer link between the members of the value chain.

All three standard systems in the cocoa sector belong to the Global Living Wage Coalition and have adopted living wages and incomes as a goal in their standards. However, there are transitional periods, and the promise is only valid where living incomes are already calculated. This does not apply to cocoa.

### 4.2 Calculation of living incomes is being advanced

From 2013 to mid-2016, the cocoa price was usually around USD 3,000 per ton. Despite this price, which is well above the current level of around USD 2,000, a large number of studies document the poverty of farmers.

For example, the study, which was commissioned by Barry Callebaut and cited above, concludes that the incomes of EUR 0.86 per household member at the time of the study must be more than doubled in order to reach the World Bank's poverty line.<sup>77</sup> Since this calculation, the world market price for cocoa has fallen significantly.

At present, it is unclear whether it is sufficient to reach the poverty line at all to generate living incomes. To date there are no recognised calculations on income levels necessary for farmers to secure their families' existence. In order to define a common benchmark for a wide range of commodities and production areas, standard-setting organisations have established the Global Living Wage Coalition<sup>78</sup>, which in turn works with development cooperation organisations, research institutions, government agencies and companies.

75 Balineau/Bernath/Pahuatini 2017: 18-21

76 Como Consult 2016: 9-11

77 Balineau/Bernath/Pahuatini 2017: 18-21

78 See <https://www.isealalliance.org/get-involved/our-work/global-living-wage-coalition>

## 5 CONCLUSIONS AND RECOMMENDATIONS FOR ACTION

A research project is currently underway calculating living incomes for cocoa producing households in Côte d'Ivoire and Ghana by September 2018.

Without anticipating these calculations, it can be concluded from a large number of studies that income from cocoa cultivation and household incomes must rise significantly in order to achieve living incomes. Barry Parkin, Head of Global Procurement at Mars and Chairman of the World Cocoa Foundation, admitted in an interview that there is a huge gap between the living incomes of cocoa-producing households and current incomes. In the spring of 2016, i.e. before the fall in cocoa prices from September 2016 onwards, he estimated that farmers' incomes would have to be tripled or even quadrupled in order to enable sustainable cocoa cultivation.<sup>79</sup>

It is true that the incomes of cocoa-producing households could also be increased by increasing productivity, improving quality and diversifying into other products. However, for all these measures farmers need investment funds; and if productivity increases, there is a threat of an increase in excess supply combined with a further decline in cocoa prices.

The immense poverty of farmers suggests that a price level that would secure their livelihoods must be well above USD 3,000 per ton in the current production conditions, as this price has not been sufficient in recent years to enable families to escape poverty.

Several market participants from companies have made the assessment that not only the export price, but also farm gate price is moving towards USD 3,000 per year in order to create a sustainable cocoa sector.<sup>80</sup>

This study shows that on the cocoa market, farmers have no influence on cocoa prices and thus on a considerable part of their income.

In the main producing countries of Ghana and Côte d'Ivoire, there are state mechanisms to stabilise cocoa prices for the current or at least a substantial part of a current season, which, however, come under pressure in the event of sharply falling prices. In Nigeria, where there is a free cocoa market, the actors estimate that the price of cocoa is too low.

In the global and German markets there is a strong concentration of traders, grinders, chocolate producers and retailers. The consequences of this increasing concentration are controversial. However, it is clear that there is no counterweight on the part of the farmers.

In 2015, sustainable cocoa (certified according to Rainforest Alliance, UTZ, Fairtrade or an organic standard) accounted for around 22 per cent of the cocoa traded worldwide. In Germany, the figure is currently 45 per cent. However, certification alone cannot guarantee that farmers will be able to secure their livelihoods. Certified cocoa is also subject to market mechanisms, the effect of the world market price is currently higher than the effect of the sustainability premium through certification. Their direct influence on farmers' incomes is currently relatively low.

Short-term volatility in the global cocoa price is especially problematic for farmers, as they have to make long-term investments with their cocoa trees.

The influence of speculation has not yet been conclusively clarified. Economic analyses and observations of market participants result in very different assessments.

Data on real and living incomes exist, but have been collected unsystematically, are not comparable and in some cases are not openly accessible. This will change in the near future because, based on surveys by the Global Living Wage Coalition, concrete data should be available by the end of 2018, at least for Côte d'Ivoire and Ghana.

<sup>79</sup> Quoted in: Nieburg 2016

<sup>80</sup> Talks by Friedel Hütz-Adams with market participants.

The results of the study therefore indicate the following needs for action:

- **Anchoring human rights as a basis**

The UN Guiding Principles on Business and Human Rights call on entrepreneurs to respect human rights and not to profit from government failures to implement them.

The German Federal Government should therefore support companies in preventing human rights violations in the cocoa and chocolate value chain, including abusive forms of child labour, malnutrition, the payment of non-living wages and the generation of non-living incomes.

In order to promote this, human rights issues should be anchored in the German Initiative on Sustainable Cocoa, for example, but also at European and international level, as the basis for corporate action. Legislative provisions on specific human rights issues currently under discussion or being implemented in other countries, including the Netherlands, France and the United Kingdom, should also be considered.

In addition, human rights requirements should also apply to commodity futures exchanges and financial investors, in order to increase the pressure towards more sustainability in the cocoa supply chain.

- **Identifying fair prices and livelihoods**

Governments of producing countries and businesses should identify the current average income of cocoa-producing households, determine living wages and incomes and publish these data for greater transparency for cocoa farmers and consumers.

- **Enhancing transparent pricing**

Governments of consumer and producing countries could work together to develop a price information system that would allow farmers' organisations to have current access to cocoa prices. They could also support research into the price trends of cocoa in order to ensure greater transparency in the cocoa sector as a whole.

- **Strengthening producer organisations**

Farmers and their organisations do not currently have a voice in the cocoa price negotiations.

In order to change this, they would have to form strong organisations and existing organisations would need strengthening.

The governments of producing countries should support the establishment of functioning, efficient and transparent producer organisations with legal requirements, training and financial incentives. This includes good management of the organisations, business management knowledge, but also the

development of own storage capacities in order to be able to offer the best possible service. In addition, producer organisations need more access to credit in order to obtain working capital. If farmers' market power is significantly strengthened in the value chain, they can enter into long-term supply relationships and enforce living incomes.

- **Advancing certification systems**

Standard-setting organisations must further develop their standards and make living incomes a prerequisite for certification. In order to exclude cocoa being traded on the market, which originated from protected areas, or from plantations with inhumane working conditions, transparency on the origin of cocoa must be improved.

- **Stopping deforestation**

Many farmers currently see no alternative to cocoa cultivation. Once soils have been depleted, production areas will be relocated, because the conversion to sustainable production does not promise any compensatory increases in income in the short term. In many cases, intact rainforests were destroyed by such plantations, such as in protected areas in Côte d'Ivoire.

Governments of producing countries should reform land rights for cocoa farmers and, together with companies, create incentives for sustainable production on existing, recognized agricultural land. Lighthouse projects that prevent the purchase of cocoa from protected areas and promote sustainable cocoa agroforestry systems could be piloted and integrated into national policies.

- **Strengthening the agricultural sector in producing countries**

The German Federal Government should support the governments of producing countries in providing the necessary infrastructure for farmers to implement sustainable cultivation methods.

In addition, an exchange of experience between Germany and the EU with market control elements for the agricultural sector could take place in order to stabilise cocoa prices and strengthen an agricultural policy geared to diversification approaches. In view of the massive problems caused by the developments in world market prices, both for farmers' incomes and for the agricultural sector as a whole government revenue should be more focused on a comprehensive agricultural policy of the producing countries rather than concentrating exclusively on cocoa.

- **Observe the market concentration**

Due to the high concentration within the cocoa trading sector and the further processing of cocoa, the cartel authorities should closely monitor the market in order to be able to intervene in the event of a possible abuse of power. In the producing countries, the antitrust authorities are generally weak and hardly able to detect the abuse of power by individual cocoa traders. These authorities should therefore be strengthened in the producing countries.

- **Investigating the role of speculations**

The influence of speculation should be investigated empirically, in addition to the analyses applied so far using economic models, by means of surveys of market participants. A separate study should investigate the major contradictions between the results of studies and the assessments of market participants. It should also be investigated whether the limits on trade positions in the cocoa sector are sufficient. In addition, it should be clarified whether a stock exchange turnover tax could reduce the volatility of turnover.



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