

A close-up photograph of a wooden tray filled with cocoa beans. A single, bright yellow cocoa pod is placed on the right side of the tray. The background is a dense field of cocoa beans.

# **Cocoa Barometer**

## **Latin American Baseline**

*September 2022*

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# 1 Introduction

## It all began on the American continent

The history of cocoa consumption and of cocoa cultivation began in South and Central America. There, the shade-loving plant grew in the forest, and thousands of years ago people discovered that food could be prepared from its beans. Exactly when this happened is controversial, as is the question of where the use of cocoa spread and who was responsible for it. Presumably, the tree originally came from the forests in the Orinoco and Amazon river systems, i.e. the north and northwest of South America.

Genetic distribution and archaeology studies prove the domestic and religious use of cocoa by the Mochicas and Alto Amazonas cultures in the region which is now Peru. Similar stories about the use of cocoa beans come from current Mexico and from other regions of Central America.

Many positive properties were attributed to cocoa, and it was therefore used not only as food, but also as a medicine, in barter transactions, and in religious ceremonies.

It was probably the Olmecs who began cultivating cocoa in their empire in what is now Mexico around 1500 BC. They called the tree "kakawa", which gave rise to the term cocoa.

The legend of Quetzalcoatl shows how important cocoa was in Aztec culture. The legend states that Quetzalcoatl, the winged serpent god, secretly brought cocoa from the divine world to earth so that humans could also enjoy it. As punishment for this he was banished from paradise.

## Cocoa travels around the world

When the Spanish invaded Mexico and destroyed Tenochtitlan, the capital of the Aztecs, in the 1520's, they were introduced to the cocoa drink and brought the beans back to Europe as war booty. In Central America, Dominican monks in particular developed new recipes and added cinnamon and cane sugar to the cocoa drink. This sweet, exotic drink was appreciated at the Spanish royal court and became a favourite delicacy of the Spanish aristocracy, spreading to other European countries around 100 years later. Demand increased and plantations were established, partly worked on by slaves.

The invention of machines that could produce long-lasting chocolate changed consumption patterns and the quantity demanded. From the middle of the 19th century, what was once a luxury step by step became a mass product.

The colonial powers developed the idea of cultivating cocoa in other climatically suitable regions. Plantations were established in West Africa in particular, but also in Indonesia and other Asian countries. Within a few decades, production areas were massively expanded, and West Africa became the most important origin of cocoa.

## A culture of cocoa

This background distinguishes the Americas from other cocoa growing regions: the cultivation and consumption of the cocoa plant looks back on a history that goes back thousands of years. All other current cocoa regions started cultivation much later. Especially in West Africa, where about three quarters of the world's harvest comes from today, there is no tradition of consuming cocoa.

## A diverse cocoa and chocolate sector

The structure of the cocoa and chocolate sector in the Americas is incredibly diverse. In Ecuador and Peru, and from a much lower starting point Nicaragua, harvest volumes have increased significantly in the past fifteen years. Mexico, on the other hand, imports large quantities of cocoa for processing and exports significant volumes of chocolate. The Dominican Republic specializes in organic cocoa. Brazil has become a net importer of cocoa due to the large chocolate consumption in the country. The entire region is known for high-quality cocoa, but in Ecuador in particular as well as in Peru and Colombia, the lower quality hybrid CCN 51 variety is strongly on the rise.

A still life composition featuring cocoa beans and pods. In the center, a pile of light brown cocoa beans sits on a coarse burlap sack. To the right, a large, vibrant red cocoa pod lies horizontally. Below it, a yellowish-brown pod is cut open, revealing a cluster of white, fleshy cocoa beans. Another yellowish-brown pod is positioned to its right. In the foreground, two more yellowish-brown pods rest on a dark, weathered wooden board. The background is a textured burlap sack, and the overall lighting is warm and natural.

# Production Volumes and Trends

## 2 Production volumes and trends: an overview

The northern regions of South America were the leading cocoa producers for a long time before Brazil took over. Later, from the 1870's onwards, the colonial powers brought cocoa to West Africa. Especially in Ghana, production grew very fast; between 1921 and 1978, the country was the world's largest exporter of cocoa. Since then, Côte d'Ivoire took over, and it presently produces more than two times the volume of cocoa grown in the Americas.

### West Africa grew faster

Roughly 75% of the global cocoa production comes from West Africa currently, less than 20% from the American continent. This does not mean that cocoa production in all American countries declined. The growth in West African states was simply much faster. This is specifically true for the Côte d'Ivoire. From 2005/06 the harvest season the total production in Cote d'Ivoire rose by roughly 700,000 tonnes to a total of 2.2 million tonnes in 2021/22. This increase in tonnages is not much lower than the cocoa production of the whole American continent in 2021/22 which adds up to 939,000 tonnes (ICCO 2022: vi).

Without the significant increase of the cocoa sector in Ecuador and Peru, the African dominance would be even much greater. Both countries more than tripled the production since 2005/06. Ecuador is now the third biggest cocoa producer worldwide, but still harvests less than half of the cocoa volumes of Ghana and less than one fifth of the volumes of Côte d'Ivoire.

During the last 15 years, cocoa production in other leading cocoa producing countries of the Americas - Brazil, Colombia, the Dominican Republic, and Nicaragua - also increased. Elsewhere, Indonesia saw a decline by two thirds (Table 1).

Growing cocoa trees is one thing, having a cocoa and chocolate industry is something else. Latin American countries have very different characteristics in this regard. Ecuador is by far the biggest cocoa producer but grinds less than 10% of its harvest within the country.

On the other end of the spectrum, Brazil has become the only leading cocoa producing country which is a net importer of cocoa. The Brazilian market consumes so much chocolate that the national production is not sufficient to satisfy the demand. Peru and Colombia also have both significant local grinding industry as well as local chocolate consumption. The Dominican Republic exports more than 90% of

**Table 1: Cocoa bean production**

in 1000 tonnes

	Cote d'Ivoire	Ghana	Ecuador	Cameroon	Nigeria	Indonesia	Brazil	Peru	Colombia	Dominican Republic	Mexico	Global
2005/06	1408	741	118	171	210	585	162	31	37	46	34	3808
2006/07	1229	615	124	169	220	545	126	31	30	42	33	3430
2007/08	1382	729	113	185	230	585	171	34	38	45	28	3737
2008/09	1223	663	135	224	250	490	157	36	36	55	23	3592
2009/10	1242	633	150	209	235	550	161	43	40	58	27	3634
2010/11	1511	1025	161	229	240	440	200	54	35	54	21	4309
2011/12	1486	879	198	207	245	440	220	61	43	72	28	4095
2012/13	1449	836	192	225	238	410	185	70	48	68	28	3943
2013/14	1746	897	232	211	248	375	228	81	49	70	30	4370
2014/15	1796	740	261	232	195	325	230	92	51	82	28	4252
2015/16	1581	778	232	211	200	320	140	105	53	80	27	3994
2016/17	2020	969	300	246	245	290	174	116	55	57	27	4768
2017/18	1964	905	287	250	250	240	204	135	55	85	28	4647
2018/19	2154	812	322	280	270	220	176	141	59	75	29	4794
2019/20	2105	771	342	280	250	200	201	151	64	75	29	4735
2020/21*	2248	1047	365	290	290	170	200	158	70	75	30	5226
2021/22**	2200	822	370	280	280	180	210	150	67	80	28	4955

\* estimate

\*\* forecast

Source: ICCO

**Table 2: Production, exports and imports of cocoa, semi-finished products and chocolate 2020/21**  
in tonnes

	Ecuador	Brazil	Peru	Colombia	Dominican Republic	Mexico
Production Beans	370,000	210,000	150,000	67,300	80,000	28,000
Exports cocoa beans	323,407	556	51,480	10,950	69,367	153
Exports cocoa paste/liquor	21,351	6,480	2,828	1,136	130	930
Exports cocoa powder and cake	4,097	21,386	9,810	1,405	152	1,524
Exports cocoa butter	4,689	27,526	15,723	5,251	1,355	7,492
Exports chocolate and chocolate products	1,582	33,354	5,229	16,285	1,067	200,744
Imports cocoa beans	103	52,968	100	394	75*	34,995
Imports cocoa paste/liquor	6	610	1,415	123	60	9,410
Imports cocoa powder and cake	623	41,464	2,494	4,041	744	31,865
Imports cocoa butter	27	369	1,523	4	1	9,330
Imports chocolate and chocolate products	8,976	17,158	9,239	10,776	6,249	81,637
Domestic Consumption (2018/2019)	6,800	187,700	25,200	40,500	4,800	73,000
Consumption per capita (in kg)	0.393	0.893	0.776	0.803	0.466	0.577

\* 2019/20

Source: ICCO

its production. Nicaragua also strongly depends on exports, but much of this goes to neighbour countries. Mexico is different from any of these, as it imports much more cocoa than it produces (Figure 1).

Though there are differences between the Latin American countries, there are also similarities, with the exception of Brazil, which seems to be very different from the rest of the continent. It is the sheer number of people living in Brazil (214 million) which makes them a giant in chocolate consumption. On the other hand, per capita cocoa consumption of nearly 900 Grams per capita per year (chocolate measured in bean equivalents) is

not much higher than in Colombia and Peru - and still much lower than in developed countries (Table 2). Germany for example has per capita consumption of 4 kg per year.

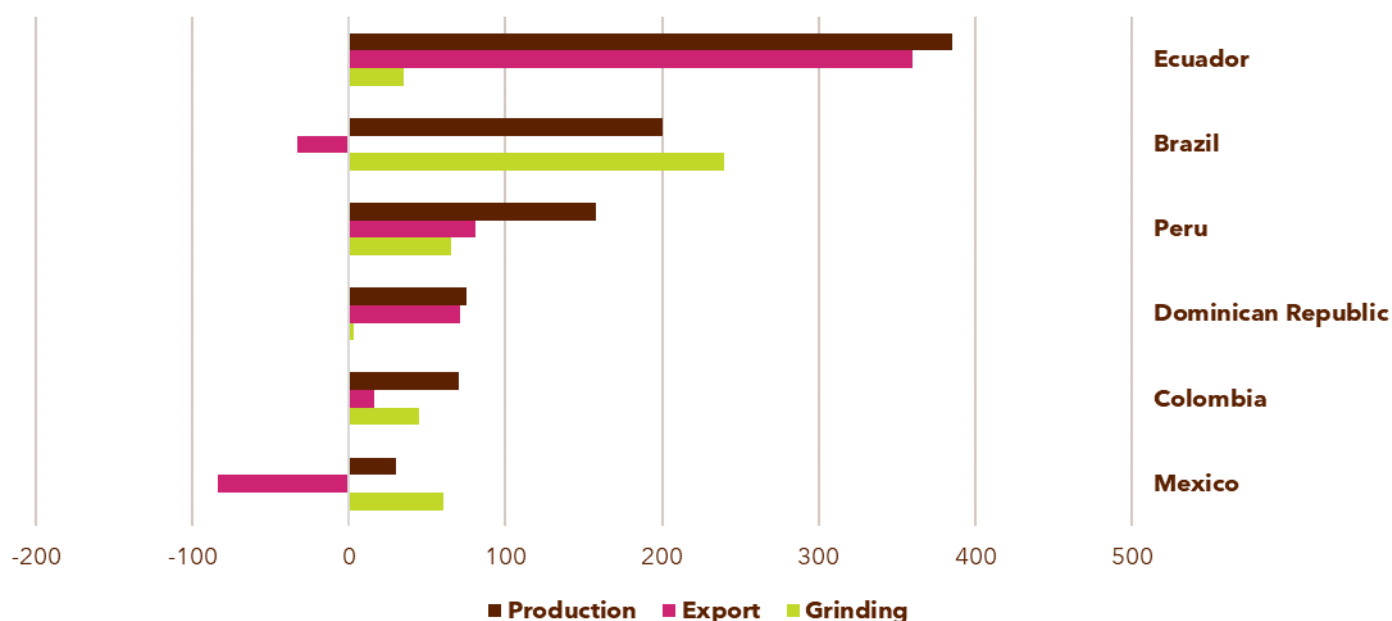
### Local production and consumption

A significant national consumption is a factor which supports the establishment of a cocoa and chocolate industry. Grinding and the production of chocolate becomes much cheaper if big factories are used and an efficient transport infrastructure is available.

Having no significant national market, West African cocoa producing countries attracted

**Figure 1: Latin American Production, Export, Grinding of Cocoa 2020/21**

in tonnes



the cocoa grinding industry by direct and indirect subsidies. This was partly successful as the Côte d'Ivoire grinds nowadays as much cocoa as the formerly leading nation Netherlands. But this comes with costs. For example, in the case of Ghana it is disputed if the subsidies for multinational companies are justified since modern factories do not create many jobs (Mulangu/Miranda/Maiga 2015: 23). In Indonesia, the government attracted investments into grinding factories by charging higher taxes for the export of raw cocoa beans than for intermediate products (Hütz-Adams et al 2016).

Most value is added by producing and selling chocolate. Setting up a chocolate industry is much easier if the country has a large chocolate loving middle-class, because this leads to high domestic consumption. This is the case in Brazil.

Mexico is different due to its neighbourhood to the USA and their trade agreements. The country exports roughly 200,000 tons of chocolate and chocolate products per year (details see country profiles).

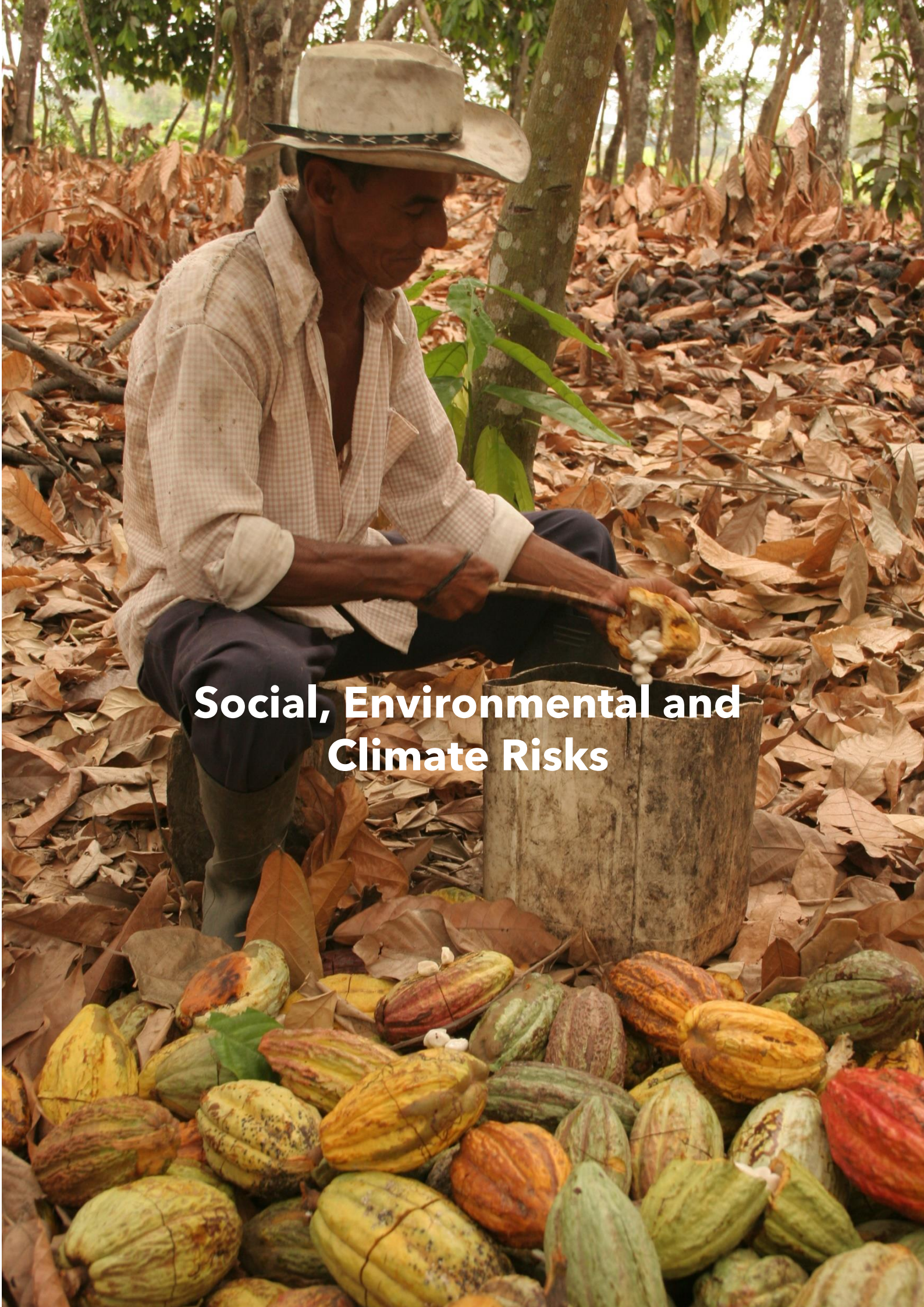
Some countries rely on the export of raw beans (Ecuador, Dominican Republic) while others have a differentiated value chain of chocolate products either for the local market (Brazil) or for export (Mexico). Others are situated in between.

Brazil can be considered a cocoa consuming nation, and Mexico a big producer of chocolate, but the market is still dominated by the United States and Europe. Globally, in the cocoa season 2018/19, Brazil ranked place 6 in domestic consumption, and roughly half of the global cocoa production is consumed in member states of the EU (Table 3).

**Table 3: Leading cocoa consuming countries (2018/19)**  
in 1000 Tonnes

1. United States	817
2. Germany	343
3. France	226
4. United Kingdom	223
5. Russian Federation	203
6. Brazil	188
7. Spain	125
8. Italy	102
9. Canada	89
10. Mexico	73

Source ICCO



**Social, Environmental and  
Climate Risks**



### 3 Social, environmental, climate risks - and cadmium

The availability of (cheap) land and labour are preconditions for cocoa plantations, and the social and environmental problems of cocoa are therefore often interlinked.

#### The social dimension

The biggest social challenge in Latin America cocoa production is that of labour rights, especially for hired labour. Many farmers use hired labour; large plantations even depend on it. Most of the Latin American countries are known for problems concerning labour rights and the freedom of association. Annually, the International Trade Union Confederation (ITUC) publishes an analysis on labour rights violations. Brazil, Colombia, and Ecuador are rated with “No guarantee of rights” (category 5, worst possible rating), Peru with “Systematic violations of rights” (4), Mexico with “Regular violations of rights” (3) and the Dominican Republic with “Repeated violations of rights” (2). Nicaragua is not rated. In the 2021 ITUC-report, Brazil and Colombia are on the list of “The world’s 10 worst countries for workers (ITUC 2021).

Despite these major challenges around labour rights, there are no studies proving further widespread massive human rights violations in the cocoa sector of the Americas such as are witnessed in West Africa. However, this does not mean that American cocoa production is without its problems. Many of the farmers in Peru, for example, work on very small plantations and their income from cocoa is often very low (Technoserve 2015). In Brazil, courts are investigating the responsibility of multinationals concerning cases of child and slave labour in the cocoa sector.<sup>1</sup>

#### The environmental dimension

De facto, all land that is currently for cocoa production was once tropical forest. In the Americas, cocoa is largely grown under a range of shade canopies (Table 4). However, cocoa is also a driver of deforestation, but due to the much smaller areas used in Latin America, the damage has not been as significant as in West Africa. Calculations for the time from 2001-2015 show that in some regions of Brazil, Peru and Ecuador cocoa was

responsible for up to 6% of the deforestation (Goldman et al. 2020: 14).

On the other hand, cocoa grown in agroforestry systems can become a tool for the restoration of degraded (grass)land, such as is happening in coastal Ecuador and some regions in Peru and Nicaragua. However, this is only a small portion of all cocoa production in Latin America (Orozco-Aguilar et al. 2021: 9).

The governments of Peru, Colombia and Brazil have established national platforms to protect the Amazon region, and to combine sustainable cocoa production with forest conservation. They have connected their national initiatives in the Tropical Forest Alliance (TFA). Discussions with Ecuador are underway to integrate this country in the project as well (TFA 2022: 5, 16). Governments from Mexico, Nicaragua and the Dominican Republic are not actively engaged in these zero deforestation platforms yet

Environmental risk in the cocoa value chain is also caused by the use of pesticides and non-organic fertilizer. Many pesticides banned in Europe are still available in the Americas, however there is no data available which shows the dimensions of these problems.

#### Climate change

Cocoa trees are very sensitive to climate fluctuations, and climate change is already a reality in all cocoa producing countries. Droughts and increased rainfall; changes in temperature and solar radiation; increased humidity; these all have a direct impact on the overall health of the trees, disease incidence,

**Table 4: Proportion of shaded cacao cultivated under agroforestry systems in Latin America**

Country	Area (ha)	Shade (%)	Sun (%)
Brazil	720,053	93	7
Ecuador	537,410	20	80
Colombia	173,016	75	25
Dominican Republic	152,261	100	*
Peru	125,580	90+	*
Venezuela	64,462	90+	*
Mexico	58,734	90+	*
Haiti	26,975	100	*
Nicaragua	9,310	90+	*
Guatemala	4,333	90+	*
Costa Rica	4,000	100	*
Honduras	1,889	90+	*
El Salvador	941	85	15

\*areas in full sun insignificant  
Source: Somarriba/Lopez-Sampson 2018: 7

<sup>1</sup> See: <https://www.reuters.com/article/us-brazil-labor-cocoa-exclusive-idUSKBN2FD1DO>

and their ability to set flowers and produce fruit. All of these directly affect productivity.

Large parts of the West African growing regions, from which 75% of the world's harvest comes today, will gradually become unsuitable for growing today's cocoa varieties by 2050 if no adaptation measures are taken (Schroth et al. 2016). Cocoa production in the Americas is also already affected by climate change. The regular weather phenomena La Niña and El Niño lead to droughts and/or short-term heavy rainfall, and there is evidence that they are becoming more frequent and more severe (Bunn et al. 2018).

In Ecuador for example, due to the rapid recurrence of unusual weather phenomena, rainfall in some coastal regions increased fivefold in some years (Macias Barberan 2019). This could threaten up to 60% of the current cocoa growing areas in Ecuador, which in turn could lead to cocoa having to migrate to higher altitude areas, away from the coast. In contrast, other studies predict that cultivation in mountainous areas will become particularly difficult (Schockaert 2020: 21). Similar shifts might happen in Middle America. Some areas presently used might become unsuitable for cocoa while other regions might become attractive (de Souza et al. 2019).

To counteract this, either new cocoa varieties would need to be bred or impacts of weather and climate change would need to be at least partially mitigated through modified farming practices, such as agroforestry systems.

At the same time, diversified cocoa cultivation has the potential to counteract advancing climate change. Large amounts of CO<sub>2</sub> are stored in the biomass of cocoa and shade trees. A diversified agroforestry system has its own microclimate, which makes the cultivation more resistant to climatic changes. The low input (e.g., no or little mineral nitrogen fertilizer) avoids other emissions such as nitrous oxide (European Commission 2022).

In all cocoa growing regions, much research is still needed for better forecasts. Cultivation systems should be made climate-sensitive and, in parallel, cocoa varieties need to be bred that are less susceptible to weather

extremes. Central America is one step ahead in this regard, since an open-access climate smart cacao farming platform was created in 2020 to support decision making on the future suitability of land to grow cocoa<sup>2</sup>. In turn, farmers must be given access to these varieties and at the same time sufficient financial resources to be able to restructure their plantations. (Ceccarelli et al. 2021).

### The cadmium problem

By far the biggest market for cocoa and cocoa-based products is the EU, which has specifications for the composition and levels of a residues allowed. This includes pesticide residue, for residues of fungi (ochratoxin A is particularly relevant to cocoa), contamination with petroleum products (PAHs), microbiological contamination, and, of great importance to the cocoa sector in South America, the maximum levels of cadmium content allowed.

The cadmium content is a controversial point, as the cadmium is usually absorbed via the soils, where it is present to the natural composition of the soils in Latin America, not due to an external input. In the case of imports from Latin America, the cocoa is repeatedly objected to the EU borders and in some cases entire cargoes are destroyed because the cadmium levels are too high. Critics of the permitted guideline values complain that immensely high quantities of cocoa would have to be eaten before there could even be a minimal risk to human health. In addition, cocoa is usually mixed with other products such as milk, sugar or cocoa from other, non-Latin American regions. As a result, the cadmium levels in the final product are far lower than would be the case with 100% chocolate made from contaminated Latin American beans. Committees of various associations, especially within the International Cocoa Organisation (ICCO)<sup>3</sup>, deal with the issue. On the one hand, it is a question of whether the limits are justified, but on the other hand, it is also a question of whether the intake of cadmium can be reduced by changing cultivation methods (see, for example, Ramtahal 2017, Meter et al. 2019).

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<sup>2</sup> See <http://cci.alianza-cac.net/>

<sup>3</sup> The ICCO is a sub-organisation of the United Nations, bringing together all major cocoa

producing and - with the exception of the United States, Turkey and Japan - consuming countries.

The image shows two large, elongated cacao pods hanging from a dark, textured tree branch. The pods are a vibrant reddish-purple color with prominent green longitudinal veins. The background is a soft-focus forest floor covered in dry, brown leaves and some green foliage. The text "Fine/Flavour Cacao" is overlaid in white, bold font across the center of the pods.

**Fine/Flavour Cacao**

## 4 FFC or not FFC

Latin America is well renowned for its specialty cocoa. Some countries have their own varieties with a high reputation on the market. Indeed, some cocoa is traded at significant higher prices than standard cocoa. But the market for Fine or Flavour Cocoa (FFC) is challenging. One crucial point is the question how cocoa can achieve the classification as FFC. A second point of interest is the question why so much FFC is traded at the same price as standard cocoa. This leads to the third point: do farmers profit from producing FFC cocoa?

### ICCO sets criteria for FFC

The ICCO's "Ad hoc Panel on Fine or Flavour Cocoa" has formulated the FFC criteria and classifies the percentages of cocoa of FFC per country. At first glance, this process seems clear, but there are no single, hard criteria to define FFC. One of the most important factors is the genetics of the cocoa trees. However, the post-harvest treatment of the cocoa beans and the resulting quality, special flavours and, last but not least, the price achieved, also play a role in determining whether a cocoa is recognized as FFC or not.<sup>4</sup>

The last definition of FFC is from April 2018 and it leaves a lot of room for interpretation:

#### Working definition of Fine or Flavour Cocoa

1. As the names "Annex "C": Producing countries exporting exclusively or partially fine or flavour cocoa" and the related Ad-Hoc Committee imply, there are two categories of cocoa under consideration, "Fine Cocoa" and "Flavour Cocoa". The following definitions are meant to serve as clarifications in the effort to create a working definition that is part of an ongoing process towards a more meaningful and impactful Annex "C".

#### Fine Cocoa

2. Fine cocoa is defined as cocoa that is free of defects in flavour while providing a complex flavour profile that reflects the expertise of the producer and the "terroir", or sense of the particular environment where the cacao is grown, fermented and dried. Fine

cocoa meeting these basic criteria may also offer important genetic diversity, as well as historical and cultural heritage.

#### Flavour Cocoa

3. Flavour cocoa is defined as cocoa that has little to no defects in flavour and provides valuable aromatic or flavour characteristics that have been traditionally important in blends. Flavour cocoa that meets these basic quality criteria may also offer important genetic diversity, as well as historical and cultural heritage<sup>5</sup>.

#### Different varieties

**Criollo** is the variety that was used by the Mayan and Aztec civilizations. It remained the predominant variety until the 18th century. Usually, Criollo varieties taste different than other cocoa; they have a more fruity, flowery, and mild aroma. Criollo can achieve high prices as high-quality specialty chocolate can be produced from it (Durry/Schiffer 2012: 36). However, this variety is more difficult to cultivate than others.

European colonisers brought other cocoa varieties from different parts of Latin America to today's main cultivation areas. Descendants of these so-called **Forastero** varieties are usually more disease-resistant and productive than Criollo. They were brought to West Africa and formed the basis of cocoa cultivation there.

Criollo and Forastero were later crossed and the **Trinitario** variety was created, named after its origin in Trinidad. This variety is more resistant to diseases than Criollo and at the same time tastes better than many Forastero varieties (Leissle 2018: 163-164).

There are many more varieties, and classifications are controversial. According to one study, Nacional - the most famous variety from Ecuador - descended from Forastero but is nevertheless considered as FFC (Villacis/Alwang/Barrera 2019: 6). However, another study concludes that Nacional was bred on the basis of Criollo and has similar characteristics to it (Durry/Schiffer 2012: 329).

#### Non-genetic qualities

<sup>4</sup> Source: <https://www.icco.org/fine-or-flavor-cocoa/>

<sup>5</sup> Source: <https://www.icco.org/wp-content/uploads/FFP-5-2-Rev.1-A-Working-Definition-of-Fine-or-Flavour-Cocoa-English.pdf>

Genetically, there is a huge number of cocoa varieties and all of them can be crossed with each other (Motamayor et al. 2008, Durry/Schiffer 2012: 38). However, it is not only the genetic variety that defines good cocoa.

Sometimes, it's a region where the cocoa comes from, which defines its different taste and causes the classification as FFC. In other regions, standard cocoa of a rare taste caused for example by specific soils might achieve a high price, and the high price leads to qualification as FFC.

Harvesting at the optimal time, good fermentation and the drying process have a huge influence on the taste of FFC. Furthermore, a good treatment of standard cocoa beans can lead to relatively high-quality cocoa.<sup>6</sup>

### Growing volumes of FFC?

All in all, the market is not transparent. Chocolate companies can achieve higher shelf prices by claiming the chocolate is FFC, even if the quality of this cocoa is not better than standard cocoa and the chocolate is only of average taste.

The ICCO regularly publishes what percentage of a country's harvest may be considered FFC. According to the latest determination in December 2020, the cocoa from 18 countries is fully or partially recognised as FFC. In Ecuador the most important cocoa producer in the region, according to this classification, 75 % of total cocoa production is FFC (Table 5).

Many market participants do not consider these classifications reliable, however. This has to do with the sometimes very elastic definitions of what is counted as FFC, but also with political pressure within the bodies. After all, the classification is valuable for exporting nations. Processors, in turn, can claim that chocolate made from FFC has a higher quality. This can lead to higher prices along the value chain, especially downstream on the shelf of the supermarket.

At first glance, the amount of FFC cocoa on the world market has increased significantly. The figures of the ICCO can be extrapolated to a

harvest volume of around 730,000 tonnes, about 14 % of the global cocoa harvest of just over 5 million tonnes.

For the year 2014, a comparison between the ICCO quotas of FFC beans and the quantities actually exported as FFC with significant higher price concluded that in many countries only a relatively small and sometimes even only a vanishingly small part of the total harvest was marketed as FFC (Abbott et al. 2018: 19-20).

One reason for this may be that the companies buying the cocoa are not prepared to pay a premium for FFC and the cocoa must therefore be sold by the producers at the price of standard cocoa.

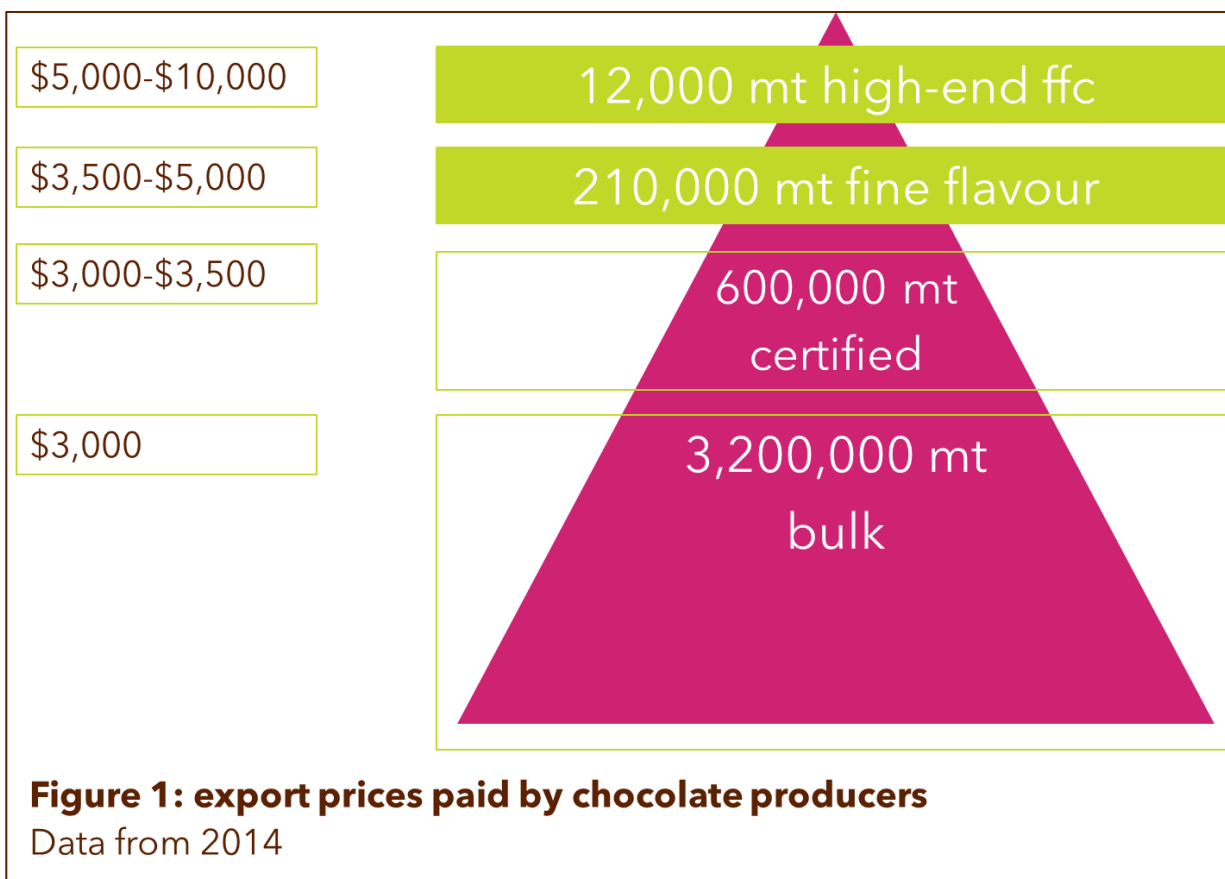
Another possible reason is that the ICCO's percentage figures are not correct. This could be the case in Ecuador and Peru, for example, where the real share of FFC in the total harvest is below the 75 % indicated: experts estimate that it's in volumes in Peru less than 60% and in Ecuador less than 30%. Brazil is another special case, since according to ICCO statistics, 100% of the exports can be classified as FFC, but the country has been exporting only very small amounts of cocoa for many years, if at all (for details see country chapters).

**Table 5:**  
**Percentage of exports classified as FFC**

Brazil	100%
Colombia	95%
Costa Rica	100%
Dominica	100%
Dominican Republic	60%
Ecuador	75%
Grenada	100%
Guatemala	75%
Haiti	4%
Indonesia	10%
Jamaica	100%
Madagascar	100%
Nicaragua	80%
Panama	50%
Papua New Guinea	70%
Peru	75%
Saint Lucia	100%
Trinidad and Tobago	100%

Source: ICCO Council December 2020

<sup>6</sup> See for example <https://cocoaflavormap.cacaomovil.com/>.



### FFC often sold at price of standard cocoa

As FFC is not traded at the commodity exchange, there is little transparency in prices of certain qualities. Only a small amount of world harvest of cocoa is defined as fine cocoa and even much lower percentage is high-end fine cocoa (Figure 1)<sup>7</sup>. Additionally, it has to be kept in mind that this pyramid shows the export price and not the farmgate price. Farmers specifically in remote areas might receive much lower prices for the cocoa.

From the farmer's perspective, sticking to FFC means more labour, lower productivity, but often not a higher price. Traders often pay the same price for FFC as they pay for CCN 51. In Ecuador, Peru, and Colombia, much of the replanting of old plantations or planting on new plantations took place by using the hybrid variety CCN 51; cocoa farmers are moving away from traditional FFC production.

In the case of Peru this situation reversed after 2011.<sup>8</sup>

### FFC and the supply management discussion

In parallel, Ecuador and Peru plan to increase the cocoa production significantly. This takes place at a time when West African countries are starting to discuss production and supply management. Due to the low cocoa prices since the end of 2016, negotiations are taking place on how the two main producing countries, Côte d'Ivoire, and Ghana, can stabilise and increase world market price, among other means by talking about preventing a further increase in production. An expansion of production in Ecuador and Peru could undermine these efforts. Ecuador's position in the talks, on the other hand, seems to be that it has nothing to do with the mass market for cocoa because of its high share of FFC (75 %). It claims this cocoa does not compete with the quantities from West Africa and therefore cannot be co-responsible for the falling prices. This is seen differently in West Africa since most of Ecuador's cocoa production is traded similarly to mass cocoa or even as mass cocoa.

<sup>7</sup> Source: [Confectionery News](#) 2016. It is not possible to compare these figures to present prices as the world market has significantly gone down since.

<sup>8</sup> Between 2011 and 2016 the interventions of the Peru Cacao Alliance funded by USAID, contributed to an increase of cultivated areas of FCC from 44% to 60% (see <http://www.alianzacacaoperu.org/en/>)

A photograph of a man with a mustache, wearing a red polo shirt and grey trousers, standing in a field of brown, dried leaves. He is holding a large, vibrant red chili pepper that is out of focus in the foreground. The man is looking directly at the camera with a serious expression. The background shows green foliage and a wooden trellis structure. The text "Country Profiles" is overlaid in white on the image.

## Country Profiles

## 5 Country profiles

This paper aims to set a spotlight on major developments in and differences between the main Latin American cocoa producing nations.

### Ecuador

The cocoa sector in Ecuador has undergone many changes over time. Spanish colonialists controlled cocoa trade for centuries, then investors and large-scale plantations tried to govern the market before the production mainly went back to small-scale farmers. In between, some plantation owners and traders formed the financial and political elite in the country. But at the beginning of the 20<sup>th</sup> century, the cocoa sector ran into problems. For a long time, it was not in the focus of agricultural politics.

#### Reforms after 2007

At the beginning of the 21<sup>st</sup> century, the cocoa sector in Ecuador was characterized by a system mainly relying on small-scale farmers who worked in agroforestry systems with low yields. Most cocoa trees were old Nacional variety and yields per hectare were low.

Though high-quality Nacional formed the backbone of the high reputation of cocoa coming from Ecuador, most of the harvest was not sold at prices usually paid for high quality cocoa. Part of the problem was low uptake of the market, but other problems derived from bad post-harvest treatment on the farms as well as traders who mixed beans of low and high quality (ACDI/VOCA 2008: 1; Jano/Mainville 2007: 5-6).

In 2007, a new government started a reform of the sector. One framework condition for the reforms in the cocoa sector was the new constitution, which came into force in 2008 and followed a concept originating from indigenous culture, the *sumak kawsay* (Spanish: buen vivir, Engl.: good life). This led to a stronger commitment to the development of strategies that followed social and ecological principles. The aim was to preserve ecosystems and biodiversity, and to promote poverty reduction, solidarity, and social justice (UNCTAD 2015: 7). The government specifically targeted small-scale farmers to support them escaping poverty.

Among other things, productivity was to be increased and the value chain improved. For this purpose, advisory services, technical

assistance, loans, investments in infrastructure, support in marketing and the promotion of the degree of organisation of the farmers were advanced (Troya Rocha 2013).

The government aimed to increase production volumes, specifically of FFC, as they saw a growing future market for high quality cocoa. A comprehensive approach was initiated to improve quality, traceability, post-harvest management and segregation of varieties during transport. Within ten years, according to the government plan, 284,000 ha of cocoa cultivation areas were to be rejuvenated and 70,000 ha newly planted, the latter on degraded pastures and fallow land.

Part of the program was the breeding of better and higher-yielding cocoa varieties and a credit program for farmers. In addition, capacity was built to provide training in good agricultural practices. The goal was to reach at least 60,000 producers and at least 50 producer associations. In addition, a competitive industry for high-quality semi-finished products and chocolate was to be promoted. Furthermore, the national government, partly with the support of local autonomous governments, expanded infrastructure to improve post-harvest processing opportunities, such as storage facilities and collection points for the sale of cocoa beans, which improved quality and farming opportunities for medium and small-scale producers (USDA 2015: 7; CEPAL n.d.: 5-6).

Most of these programs took place between 2012 and 2014. Within a short period of time, crop yields increased on large areas through improved tree pruning, fertilization, and shade management. However, on many plots the trees were so old that the measures were not sufficient, and trees had to be replaced (Hütz-Adams et al. 2016).

In 2018, a new plan to improve cocoa production in Ecuador was implemented (*Plan de Mejora Competitiva del Cacao - PMC*). The intention is to double cocoa production, which might increase the overproduction which already exists on the world market. The PMC aims to promote the cultivation of certified cocoa, improve quality and efficiency in the sector, increase the share of FFC, and expand the production of processed products. In addition, the farmers' organizations were to be strengthened. Thus, the objectives of the plan



partly coincided with previous programs. A total of 600 million US dollars is available for the period 2018-2030, which is to be supplemented by a similar amount of private funds (Wiegel et al. 2020: 10). Different organizations engaged in the development corporation support the government in the cocoa sector.

In Ecuador, cocoa is grown by about 120,000 farms. The data on the areas differ from one another. In a recent study, the harvested area is given as 467,000 ha. This means that each farm, on average, has just under 4 ha of cultivated cocoa land (Wiegel et al. 2020: 2), however, a considerable proportion of farmers cultivate significantly smaller areas than this mean value. More than a fifth of the farms are larger than 10 ha, some of them even more than 100 ha (Table 6).

**Table 6: size of cocoa farms**

Area	Average in ha	
< 5 ha	52%	2.3
5,1-10 ha	26%	7.47
> 10 ha	22%	24.23

Source:  
Ministerio de Agricultura y Ganadería 2020

Most cocoa in Ecuador is grown in the coastal provinces Guayas, Los Ríos, Manabí and Esmeraldas (CFN 2020: 10-9). Farmers sell their harvest either to small-scale traders or to subsidiaries of multinational companies. Especially in remote areas, farmers strongly depend on traders and have little or no bargaining possibilities. According to estimates, only 20% of the farmers are organized in cooperatives. Cooperatives are able to support farmers in many ways, including price negotiation. Some cooperatives additionally ferment the cocoa for farmers.

### Yields per hectare

The yields per hectare in Ecuador differ strongly between provinces and depend on the planted variety. Some provinces that mostly grow CCN 51 (see below) report average yields of more than 1 ton per hectare, while average yields in other regions that mostly depend on old tree stocks of Nacional are below 200 kg per hectare. The figures are not fully comparable, as CCN 51 is mostly

grown in full sun systems with many trees per hectare, while Nacional usually grows in agroforestry systems with a much lower number of cocoa trees per hectare (Ministerio de Agricultura y Ganadería 2020; Villacis/Alwang/Barrera 2019). The dominance of CCN 51, which is not suitable for agroforestry systems, leads to a focus on full sun systems which lead to lower biodiversity and need more inputs.

### Reputation

Cocoa from Ecuador still has a high reputation, but markets are changing. Companies that are interested in high quality cocoa complain that FFC beans are either not properly fermented and therefore of lower quality, or that they were mixed with CCN 51 which is not classified as FFC. These quality problems create a market where companies are less prepared to pay high prices for Ecuadorian cocoa.

Additionally, some of the companies which formerly paid prices significantly above the world market price for bulk cocoa learned that many customers do not taste the difference anyway. Subsequently, they have changed from high-priced good quality FFC to either lower qualities of FFC or even to cocoa that is still declared to be FFC but may contain significant volumes of CCN 51 or other bulk varieties.<sup>9</sup>

### CCN 51

This development is driven by the dominance of CCN 51 which was developed in the 1960s in Ecuador. It is a crossbreed of different cocoa varieties, including FFC components. Usually, cocoa pods and cocoa beans are CCN 51 are bigger than the usual varieties. This reduces the workload during the harvest of the pods and the post-harvest treatment of the beans. Additionally, the trees are more resistant against diseases. Data from Ecuador show that many farmers achieve an average yield of 1 ton per hectare with CCN 51. All in all, CCN 51 can be an efficient choice for farmers as it increases productivity and has the potential to reduce costs. On the other hand, new varieties of FFC can also lead to significant higher yields per hectare.

Adopted fermentation and drying processes can lead to CCN 51 beans of relatively high

<sup>9</sup> Based on interviews with market participants. For details see: Hütz-Adams/Campos/Knoke 2022.

quality (Boza et al. 2014: 228; Abbott et al 2018: 193-194). Many exporters and traders prefer CCN 51, as the beans are bigger and usually of a similar size which facilitates grinding (Abbott et al 2018: 196-197).

10 years ago, it was estimated that most of the cocoa exported from Ecuador was still FFC, but CCN 51 has become popular for farmers who have replanted plantations or set up new ones (USDA 2015: 3; CEPAL o.J.: 2-3). In the past ten years, the volume of CCN 51 beans has risen significantly, and it has become the most important variety. German importers estimate that nowadays two thirds of the exports of Ecuadorian cocoa consist of CCN 51 beans (Kakaoverein 2021: 30). A study commissioned by the EU comes to a similar conclusion. The authors estimate that nowadays 57% of the planted area uses CCN 51 and that 72% of the production comes from this variety (EU Commission 2022).

This does not mean, that the production of Nacional measured in tons is declining; the growing volumes of CCN 51 come into a fast-growing market.

### Dependency on export of raw beans

Ecuador only has a very small grinding industry. Overcapacities of grinding factories on the global market make it difficult to establish such an industry and run it with profit. The national chocolate market is small due to the relatively small population and the low per capita consumption of cocoa. This makes it

less lucrative to set up a large-scale chocolate manufacturing industry. Local grinding and chocolate production is low compared to neighbouring states, as less than 10% of harvest are processed in the country (Table 2). The Ecuadorian cocoa sector depends on exports.

### Export destinations changed

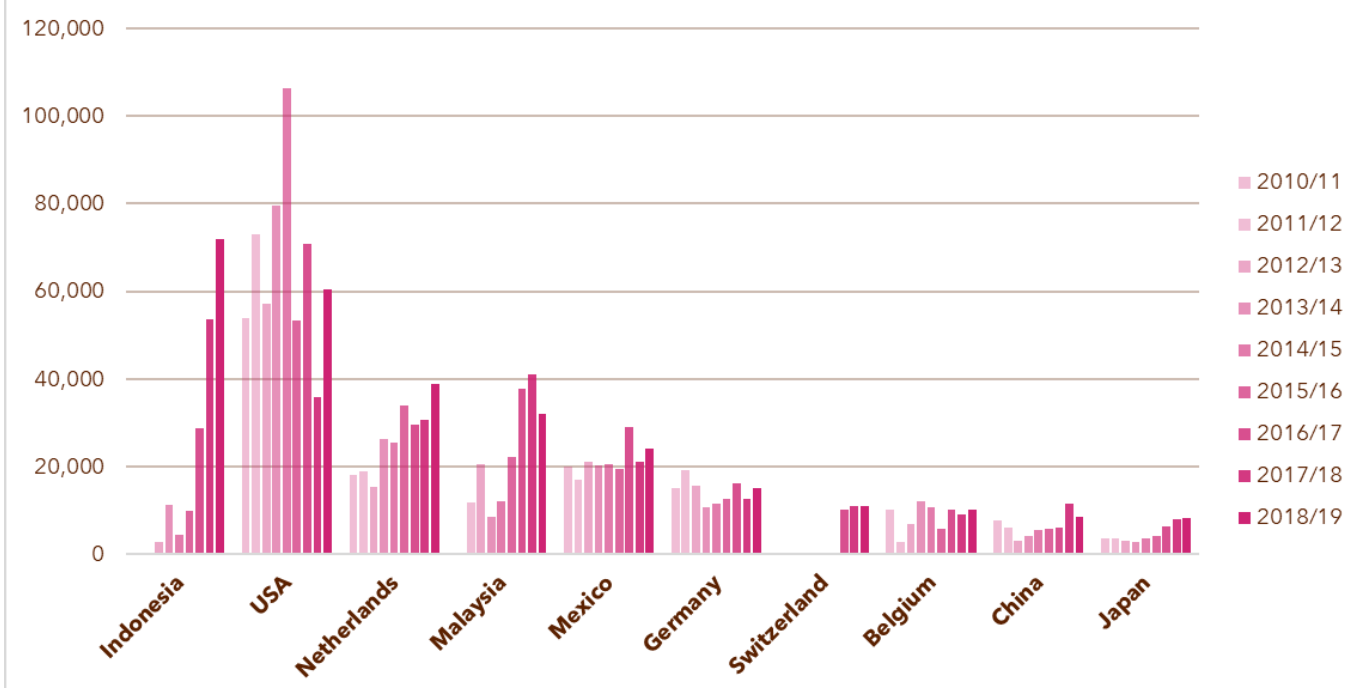
For a long time, companies from the United States were the biggest buyers of Ecuadorian cocoa. This has changed dramatically during the last years, a change that has developed parallel to the rise of CCN 51 production. Nowadays, Indonesia is the most important customer, followed by the United States, the Netherlands and Malaysia. Malaysia and Indonesia together buy nearly one third of the exports (Figure 2).

### Standard cocoa dictates farmgate price

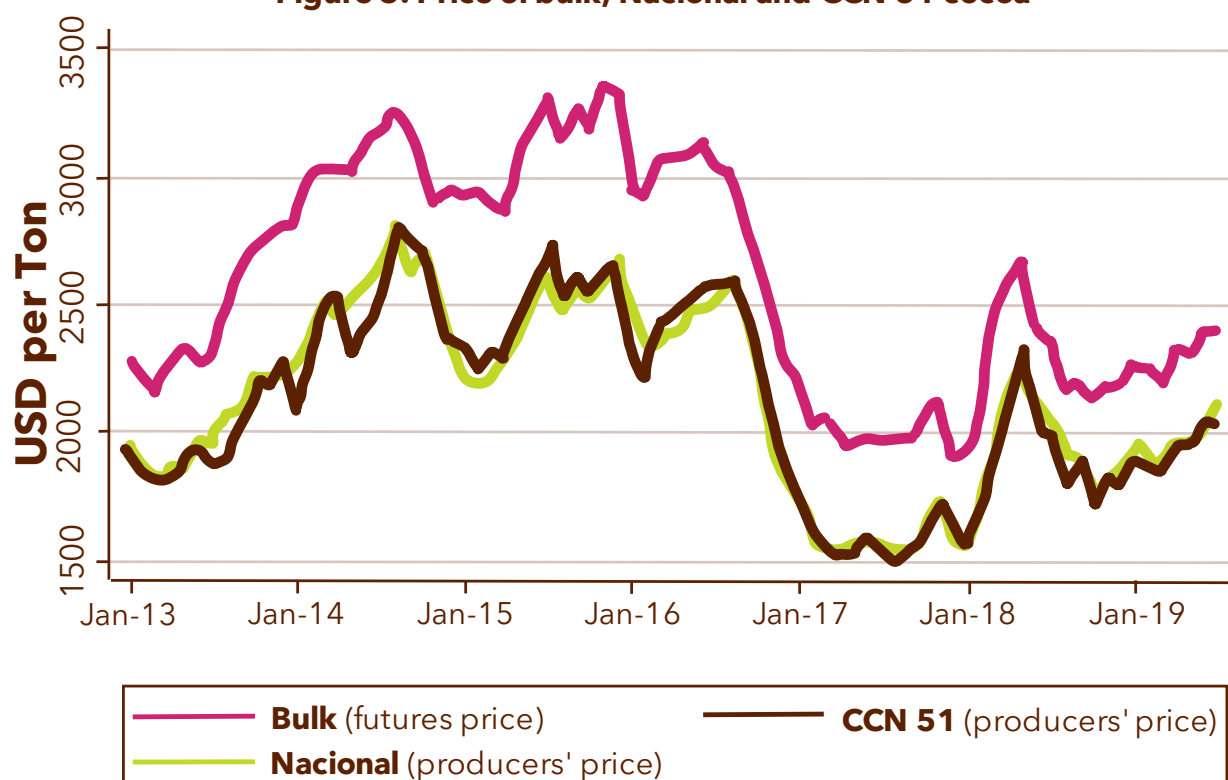
Another proof of the change in the Ecuadorian sector is the export price. The Central Bank of Ecuador indicates an average value per ton of exported cocoa and (in very small quantities, see above) semi-finished products made from cocoa of 2,672 US dollars for 2020 (Banco Central del Ecuador 2021: 7). This is almost exactly on par with the price of standard cocoa reported by the ICCO as an average for the 2019/20 season (US\$2,398) as well as 2020/21 (US\$2,403) (ICCO 2022: Table 1).

This is not a new development. Farmers in Ecuador do not receive a significant premium

**Figure 2: Export of cocoa beans from Ecuador**



**Figure 3: Price of bulk, Nacional and CCN 51 cocoa**



Data Source: ICCO(2019) and MAGAP (2019)

for higher quality cocoa. During the years 2013 to 2019 for example, the price for Nacional was nearly exactly the same as for CCN 51. Furthermore, both prices were closely linked to fluctuations of the world market price (Villacis/Alwang/Barrera 2019: 11-12; Figure 3).

The parallel movements between the market prices for standard and Nacional cocoa must be frustrating for farmers who grow FFC. Ultimately, they produce the better tasting cocoa, accepting often lower productivity and higher vulnerability to disease, but are not rewarded by price premiums.

The average prices do not always reflect the differences in the field. Some farmers sell unfermented cocoa which might be included in the calculation. On the other hand, well-fermented CCN 51 is very attractive for traders due to its physical characteristics and the size of the beans (Villacis/Alwang/Barrera 2019: 13-14).

Nonetheless, there are indeed plantations and farmer cooperatives in Ecuador who get US\$4000 and more for a ton of cocoa, but the specialty buyers usually purchase very small volumes.

In the end, the situation for most farmers in Ecuador is similar to West African farmers;

they are price takers with no influence on market prices. Their income completely depends on the fluctuating price for standard cocoa at the commodity exchange, whether or not they produce Fine/Flavour cocoa.

This weak position has an influence on the situation of workers on cocoa plantations. Labour rights are not guaranteed in Ecuador and labour unions are very weak or non-existent in the agricultural sector. However, proper data on wages and labour conditions on cocoa plantations are not available, and further research on this is needed.

## Brazil

In Brazil, cocoa cultivation began in the seventeenth century. In the 1770's, the Portuguese crown attempted to diversify Brazilian exports by promoting the industrial production of coffee, cotton, and cocoa. In Bahía, to date the province with the highest cocoa production behind Pará, the first plantations were established in the 1820s with Swiss and German capital. Around 1900, Brazil increased its cocoa production significantly and became the largest producer worldwide for many years, until Ghana took over (Willumsen/Dutt 1991: 56; Valla 1976: 465). However, the following decades, the sector saw a gradual decline of production.

In the 1950's, government supported projects aimed to strengthen cocoa production. Large-scale plantations were developed that planted cocoa without shadow trees and used fertilisers and pesticides. Research showed that yields could be increased significantly, but many small-scale farmers were reluctant to invest in new agricultural practices and inputs (Camargo/Nhantumbo 2016: 46-47).

### **Witches Broom**

In the late 1980's, the outbreak of a fungus called Witches Broom had a disastrous impact on Brazilian cocoa production. It was able to spread rapidly through large scale plantations. Within a few years, approximately 200,000 workers lost their jobs. By the mid-1990s, many farmers gave up their cocoa plantations and the sector collapsed (Camargo/Nhantumbo 2016: 49).

While cocoa production decreased from 350,000 MT in 1989/90 to 123,500 MT in 1999/2000, consumption of chocolate increased and in the harvesting season 1997/98 Brazil became a net cocoa importing country (Pekic 2014).

### **Stagnating bean production**

Since the Witches Broom collapse, production in Brazil has only partially recovered, with cocoa production now fluctuating around 200,000 tonnes of cocoa per year (Table 1). The main cocoa producing areas are Bahia and Para. Para has attracted significant investments into the cocoa sector, including from multinational companies.

Approximately 580,000 ha are used for cocoa production,<sup>10</sup> and most cocoa is produced by smallholders who only have very limited access to capital, extension services, and inputs.

Usually, farmers sell their beans to intermediaries who then sell on to grinding companies that are mostly subsidiaries of the big international companies active on the market, such as Cargill, Barry Callebaut and OFI. There are also medium-sized companies still active on the market who often buy directly from producers.

Compared to West Africa, farm gate prices for cocoa are relatively high, as there is a demand for the local chocolate market, and alternatives are to buy cocoa in West Africa at the world market prices plus transport costs (Hütz-Adams et al. 2016).

The use of high yielding cocoa varieties combined with intensified use of agrochemicals has led to yields of roughly 900 kg/ha, while production in Bahia is still 300 kg per hectare (IBGE 2016: 38; Camargo/Nhantumbo 2016: 53; Mendes et al. 2016: 10).

However, even with the support of federal or state government agencies cocoa farmers still face many problems when they need technical assistance or extension services. Other problems are labour shortage and the missing coordination between the different projects and programmes (Camargo/Nhantumbo 2016: 53-54).

### **Rising chocolate production**

Brazil exports nearly no unprocessed cocoa beans, relatively low volumes of cocoa paste/liquor, and much higher figures of powder and cake.

To meet the demand of local production, during the season 2020/21, 52,000 tons of cocoa beans were imported and additionally 41,000 tons of cocoa powder and cake. Except Mexico, there is no other South American country which imports significant amounts of cocoa and cocoa products for the national market.

With a domestic consumption of 187,700 tons in 2018/90 (which is roughly 900 g per capita), the country was the sixth biggest cocoa consumption market globally (see tables 2 and 3).

Turnover of the local chocolate industry is near US\$4 billion.<sup>11</sup> Chocolate production in Brazil is dominated by subsidiaries of multinational companies such as Mondelez, Nestlé, Mars, and Hershey (Hütz-Adams et al. 2016). Additionally, many small and medium-size local companies are active on the Brazilian market.<sup>12</sup>

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<sup>10</sup> See: <https://www.confectionerynews.com/Article/2022/02/28/brazil-s-cocoa-production-bounces-back-after-covid-problems>

<sup>11</sup> See: <https://www.statista.com/forecasts/1246918/revenue-chocolate-market-brazil>

<sup>12</sup> See: <https://www.mordorintelligence.com/industry->

## Child labour

In Brazilian, there are both small-scale producers and also medium-scale farms. Working on small farms might lead to very low income, and sharecroppers often earn a very low income. This might lead to exploitation and cases of child slave labour (OIT / MPT 2018). Though more recent data isn't available, a 2014 study showed that around 7,900 children and adolescents - aged between 10 and 17 - worked on cocoa plantations (DIAS, 2016).

## Agroforestry systems

Cocoa cultivation can be an opportunity for restoration of plant cover. In Pará, the state with the largest cocoa production, the local government published specific legislation that considers the planting of agroforestry systems with cocoa as a method of forest restoration on family properties, bringing legal certainty to the practice. In the state of Bahia, the second largest national producer, the management of cocoa in agroforestry systems with local species is regulated with specific legislation on the management of cocoa production areas intercropped with species native to the Atlantic Forest. Vigilance is necessary to ensure that cocoa does not contribute to further deforestation.

## Sustainability Initiatives

Brazil has become member of the Amazon Origin Cocoa Initiative. This is supported by CocoaAction Brazil, an initiative of major cocoa and chocolate companies. Another initiative is Vision Cacau 2030, which focuses on strengthening workers' rights, and supporting local governments to tackle child labour, forced labour and other labour rights violations. It also aims to increase productivity and profits of cocoa producers. (TFA 2022: 24).

## Different than the rest of Latin America

The situation of Brazilian cocoa is very different than in other Latin American countries. It has 214 million inhabitants, more than ten times the population of Ecuador. It has a large middle-class, that can afford to buy the luxury good chocolate. The per capita annual consumption of chocolate has increased from

approximately 300 g. in the 1970s to 2,5 kg. in 2013, which means a yearly average increase of 5,44 % (Neto et al. 2021: 3113). The country is the second biggest cocoa producer in the region, but a net importer of cocoa as it has a chocolate industry which focuses on the national market (Table 2).

## Peru

Cocoa and coffee cultivation was promoted in Peru in the 1930s. This took place during the period of first waves of migration of Andean people and some groups of European immigrants into the Amazonian regions of the country.

Later, cocoa production came under pressure from two developments. Since the 1980s, coca cultivation for cocaine production increased significantly in the region. As this was highly profitable, many farmers switched from cocoa to coca. This development was accompanied by conflicts between rebels, government troops and syndicates. The second threat for cocoa production was the outbreak of two diseases, the moniliasis and the "witches' broom".

## Smallholder farmers

Cocoa production in Peru is still dominated by small-scale farmers. Many of them suffer from bad road infrastructure combined with high transport costs and difficult logistics (Banco Mundial 2016). Most farmers depend on intermediaries working highly informally and sometimes paying low prices to the small producers. Additionally, these often mix different varieties and qualities which has a negative impact on the prices which can be achieved by farmer. Poverty among cocoa farmers is still widespread (Technoserve 2015: 16, 7).

## Growing sector

After a stagnation of cocoa production at around 30,000 tonnes per year, the situation changed from 2010 on. Harvests have grown considerably, and over the past three years fluctuate around 150,000 tons per year (Table 1). This has led to a strong increase of cocoa exports from Peru. Additionally, a small

industry was set up and the local consumption reaches 25,000 tonnes per year (Table 2).

## **Yields**

Approximately 90,000 farmers produce cocoa planted on 150,000 ha. Only one third of the farmers are organised. Yields are an average 840 kg per hectare, which is higher than in most other producing countries. The relatively high yields are partly possible due to the fact that many cocoa plantations are young, but also the variety of cocoa has an influence. Farmers from Peru also often get a higher price than their neighbours in Ecuador (Wiegel et al. 2020a: 20).

Part of the increase of cocoa production takes place in the traditional cocoa growing areas of the country. Many of the existing plantations consist of old trees which need to be replaced. Supported by researchers, some of the replacement of old trees takes place with seedlings from trees which produce specific flavours. The seedlings are grown in clonal gardens. Many of the younger and high yielding plantations were set up as part of the programme to support alternatives to coca. These often use the CCN 51 variety (details see chapter on Ecuador). Additionally, specialty cocoa of different varieties is also grown (Wiegel et al. 2020a: 21-22).

Between 2011 and 2016 the Peru Cacao Alliance funded by USAID supported the increase of cultivated areas of FCC from 46% to 60%<sup>13</sup>

## **Cocoa for cocaine**

The fast growth during the last decade was partly driven by international development cooperation programs in combination with targeted support of the Ministry of Agriculture. The government of Peru has implemented a programme to combat drug trafficking in the Peruvian Amazon, promoting cocoa as an alternative crop to coca. These programmes were heavily supported by USAID and the United Nations. Due to this extensive support, there was an abundant supply of field technicians trained in search of permanent and stable employment (Hütz-Adams et al. 2016).

Support for farmers is coordinated by a platform managed by the Ministry for

Agriculture (MINAGRI), the producer organisation Asociación Peruana de Productores de Cacao (APPCACAO) and the industry body Cámara Peruana de Café y Cacao. The common agenda of all stakeholders is to improve quality e.g. with the distribution of high quality seedlings, to set up information and capacity building systems, to organise farmers and to cope with the regulations specifically of the EU concerning cadmium content of the cocoa beans (Wiegel et al. 2020a: 21).

## **CCN & FFC**

While the ICCO states that 75% of the cocoa produced in Peru is FFC, the real figure is much lower, as is the case in neighbouring countries. Much of the production increase was a result of the introduction of CCN 51 in the year 2002. 10 years later, this variety already produced half of the cocoa harvested in the country. In recent years, the Ministry of Agriculture and Irrigation (Ministerio de Agricultura y Riego (MINAGRI) supports farmers who want to use FFC seedlings instead of CCN 51 (Wiegel et al. 2020a: 20). The German umbrella organisation of the cocoa importing sector estimates that two thirds of the planting area in Peru is planted with CCN 51. Most of the harvest of the country is standard quality cocoa. But there are some clusters left where high quality FFC is produced which achieves high prices on the cocoa market (Kakaoverein 2021: 37). Other sources indicate that for 2011 54% of cacao cultivated areas were CCN 51 and that the percentage had to 40% by 2016 (MINAGRI - DEVIDA 2014; Alianza Cacao Perú 2017).

Farmers from Peru also often get a higher price than their neighbours in Ecuador (Wiegel et al. 2020a: 20). This is related to the importance of exports of FFC.

## **Multinationals increased influence**

The rise of cocoa production in Peru attracted the interest of multinational companies, hoping to profit not only from increasing volumes but also from niche markets (Wiegel et al. 2020a: 21).

Most Peruvian cocoa is traded as fermented beans, which is preferred by export

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<sup>13</sup> See: <http://www.alianzacacaoperu.org/en>

companies and local processors. Usually, farmers sell their cocoa to intermediaries, or to their cooperative if they are part of one. These export the cocoa either themselves or sell to multinationals. Some of the cooperatives are specialised in FFC, receiving significantly higher prices (Wiegel et al. 2020a: 22).

Certification of organic cocoa is an important and increasing factor in Peru. The country is the second largest producer of certified organic cocoa. This cocoa follows a different and specialized value chain. Many cooperatives are double or even triple certified. Presently, approximately 25% of production is certified (Banco Mundial 2016: 9; Technoserve 2015: 7).

### **Deforestation issues**

Around the year 2012, reports appeared that cocoa could be at least as lucrative for investors as palm oil, and companies started to invest in very large-scale plantations. One of these was United Cacao. Courts and the Ministry of Agriculture suspended the operation of the company which had cleared up to 5000 ha forest<sup>14</sup> without the necessary permits.<sup>15</sup> Many things around this specific case remain unclear, but it shows the risks connected to large-scale investors attempting to replicate experiences from the palm oil sector for cocoa production.

### **Sustainability Initiatives**

Based on the deforestation risks and the global regulation, the Cocoa, Forest, and Diversity Agreement was launched in 2021 as part of the platform Coalition for Sustainable Production. Supported by the Ministry of Agriculture, producer' organizations, exporters, and civil society organizations, this agreement commits members to eliminate deforestation in their supply chains by 2025, based on traceability and monitoring systems. It also provides incentives to smallholders.<sup>16</sup>

Peru has also joined the Amazon Origin Cocoa initiative which aims to protect and assign forests and add value to sustainably produced cocoa (TFA 2022).

Furthermore, the Ministry for Agriculture, together with international agencies and national stakeholders, developed a National Plan for the Development of the Cocoa-Chocolate Value Chain 2020-2030 (Plan Nacional de Desarrollo de la Cadena de Valor de Cacao-Chocolate 2020-2030).<sup>17</sup>

## **Colombia**

Cocoa has been consumed and cultivated in what is now Colombia for thousands of years. The cocoa tree might even originate from the Orinoco region, which stretches from the north-eastern part of the country into Venezuela.

While cocoa-based products have been part of diet for a long time, today the local market is growing (Abbott 2018 et al.: 14). A rising middle class is not only buying chocolate, but also consuming cocoa-based drinks. The national market is the most important developmental driver for the cocoa sector, which is similar to the state of the Brazilian cocoa sector.

Cocoa production in Colombia nearly doubled in the last 15 years. Still, the country is not a big player in the global market, considering its rather small production of roughly 70,000 tons per year (Table 1). While 40,000 tons of this harvest is consumed in the national market, the country exports only 11,000 tons of unprocessed beans. Colombian exports of chocolate and chocolate products exceed imports. Net exports of cocoa add up to 16,000 tons (Table 2). This shows a gradual increase in the investment of companies in the grinding and production of chocolate.

### **Cocoa production**

More than one third of the Colombian cocoa production stems from the department Santander (38%), smaller volumes originate

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<sup>14</sup> See: <https://redd-monitor.org/2015/09/26/dennis-melka-exporting-deforestation-from-sarawak-to-peru/>

<sup>15</sup> See: <https://www.forestpeoples.org/en/news-article/2017/melka-resigns-united-cacao-company-faces-financial-crisis-and-delisting-london>

<sup>16</sup> See: <https://produccionsostenible.org.pe/grupos-de-trabajo/cocoa/>

<sup>17</sup> See: <https://gestionparticipativa.pe.iica.int/Procesos/Plan-Cacao/Inicio.aspx>

from Antioquia, Arauca, Huila, and Tolima (between 9-7 % of national production).<sup>18</sup>

Approximately 65,000 families grow cocoa on 190,000 ha, both figures increased during the last years. Most farmers work under agroforestry systems, and cultivate cocoa alongside other crops, including coffee, banana, different fruits, and timber. The sector provides 173,000 direct and indirect jobs of which a significant number is done by women (Cardona/Nieto/Ramírez 2021: 3-4; Ministerio de Agricultura de Colombia).

### **Smallholder farmers**

Most farmers work on small farms with an average a yield of 400 kg per hectare. There are different types of farmers. One sub-group utilizes inadequate agricultural practices with lower yields of less than 300 kg per hectare. Partly, these are situated in regions which are not really suitable for cocoa production. Another sub-group grows cocoa often as part of agroforestry systems. Yields are relatively low between 300 and 500 kg per hectare due to the lower plant density, in which they usually produce bulk cocoa. A third group identifies cocoa as a cash crop, uses technical assistance and has access to inputs and modern technologies. These farmers obtain yields between 1,200 and 1,800 kg per hectare, for which they need significant investment capital and hire workers. But this group only makes up a small percentage of the whole cocoa sector. The last group of farmers operates in diversified systems. In their diverse portfolio of different crops, cocoa is only one part of their business. Usually, yields lie between 300 and 600 kg per hectare (Abbott 2018 et al.: 58-60).

### **Cocoa prices**

Despite the ICCO grading of 95% of Colombian cocoa as FFC, only small volumes are traded as FFC at significantly higher prices (Abbott 2018 et al.: 20, 48-51).

Farmers struggle with hiring labour, since the investments of extra labour costs are often higher than additional profits. Low premiums for better quality cocoa are insufficient incentive for many farmers to improve their pre- and post-harvest practices.

Traders generally are not offering higher premiums, as they need a market that is prepared to compensate these extra expenses. Often, traders even mix different qualities of cocoa, which leads to standard cocoa and does not reward the efforts of farmers who invest money and labour to produce higher quality cocoa.

Nonetheless, there are different segments in Colombia, and there still is a market for highly valued cocoa varieties. In some cases, producer organizations or chocolate manufacturer even control the fermentation themselves and buy wet beans. But this generally only affects small volumes (Abbott 2018 et al.: 52).

Prices in Colombia follow the world market price for bulk cocoa, but since transport costs are low and the country bears no relevant export tax, the percentage of the world market price reaching the farmer is higher than in many other cocoa producing countries. Additionally, many farmers do not rely on intermediaries but transport the cocoa directly to the larger buyer (Abbott et al 2018: 40-48).

### **Dominance of local chocolate producers**

In contrast to the situation in Brazil or Mexico, the Colombian cocoa sector is dominated by two Colombian based multinational companies, Casa Luker and Nutresa. They purchase 80% of the national cocoa bean production. Only relatively low volumes are traded by other buyers, small local chocolate producers, and multinationals. Of the large multinationals, only ECOM and Olam have a relevant market share.

### **Sustainability initiatives**

The Colombian government runs several projects to support cocoa farmers, including the "Fondo Nacional del Cacao". The fund supports farmers who want to invest in the rehabilitation of plantation and improved production practices (Ministerio de Agricultura de Colombia 2021).

Additionally, the increase of cocoa production in Colombia was supported by projects financed by international cooperation of various countries, including the US government through agencies like

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<sup>18</sup> See: <https://www.colombia.co/en/colombia-country/colombia-the-land-where-cocoa-production-is-cacao-fino-de-roma/>



USAID/USDA. Target of the project was to support cocoa production in regions severely affected by the internal conflict and illegal drug production and trade.

The most recent larger project is called “Cacao for Peace”, which runs from mid-2021 to mid-2026. By strengthening cocoa research institutions and through technical assistance Cacao for Peace wants to support not only a sustainable and growing cocoa production, but also the creation of conditions which could bring peace to the region (creation of jobs, replacement of marihuana or coca production, consolidation of state institutions, etc.).<sup>19</sup>

Led by the High Council for Post-conflict a public-private initiative called Cocoa, Forest and Peace (Iniciativa Cacao, Bosques & Paz Colombia) was started in 2018. This public-private initiative aims to promote deforestation-free cocoa production models that protect and restore forests in the cocoa supply chain, improve livelihoods for producers and help consolidate the peace process with a focus in post-conflict territories. The purpose is for cocoa to become a key value chain to guarantee sustainable production options.<sup>20</sup> An action plan for the years 2020 to 2030 was established in Colombia. It became part of the Cocoa Amazon Origin initiative (also discussed in the country profiles on Peru and Brazil) promoted by the Tropical Forest Alliance together with Alisos Foundation (TFA 2022: 26)

Some of these projects focus on a sustainable cocoa production. For instance, the World Bank cooperates with the Colombian government and aims to implement climate smart business models, to trade cocoa and build transparent value chains. The Colombian government wants to utilize cocoa production to reforest areas presently used for cattle ranching. A pilot project on 3000 ha started in 2021.<sup>21</sup>

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<sup>19</sup> See <https://www.usaid.gov/colombia/factsheets/red-cacao-peace>

<sup>20</sup> See: <https://cacaobp.org/en/about-us/>

<sup>21</sup> See: <https://blogs.worldbank.org/climatechange/future-colombian-cocoa-sustainable-climate-smart-and-oh-so-sweet>

<sup>22</sup> See: <https://www.makeminefine.com/cocoa-sustainability/dominican-republic-republica-dominicana/>

Most of these initiatives build on existing projects which supported production increase, improvement of post-harvest management and organization of farmers. Nonetheless, the majority of production increase was due to the extension of plantations, since yields per hectare remained relatively low (Abbott et al. 2018: 13-14, 17. 74-76).

## Dominican Republic

The Spanish colonists brought cocoa to the Dominican Republic in the 17<sup>th</sup> century. When the French took over, they brought in different cocoa varieties from other colonies. However, it took until mid 19<sup>th</sup> century for the country to become a relevant exporter of cocoa. Dominican cocoa usually has a genetic base of FFC, descending from Criollo and Trinitario. These varieties have the potential to develop strong flavours.<sup>22</sup>

### Cocoa production

Cocoa production in the Dominican Republic increased significantly between 2005 and 2015. Since then, cocoa volume have stabilised around roughly 75,000 tons per year. The country has a relatively small local consumption rate of roughly 10,000 tons, and most of the cocoa is exported as raw bean (Table 2).

Approximately 40,000 producers harvest cocoa on 150,000 ha. A significant number of these producers are registered as organic farmers.<sup>23</sup> According to the government, roughly 80% of the export price goes to the farmer (Matlick/Weber/Morillo 2016: 10). Approximately 50 % of the production is marketed by CONACADO (Confederación Nacional de Cacao Dominicano).<sup>24</sup>

Roughly 70% of the farmers work on 2 - 5 ha of land, mostly in agroforestry systems which produce a wide variety of crops. In the north-eastern region (Cibaoa) farms are often bigger than 7.5 ha. There are also some significantly

<sup>23</sup>

See: <https://www.iica.int/es/prensa/noticias/cocoa-key-crop-keeps-dominican-republic-one-leading-countries-export-organic>

<sup>24</sup> See: <https://www.iica.int/es/prensa/noticias/el-cacao-un-cultivo-clave-que-mantiene-la-republica-dominicana-como-uno-de-los>

larger farms. One of these, connected to the family-owned company Rizek Cacao, cultivates 2,000 ha of cocoa. Additionally, the company buys cocoa from many small-scale producers. All in all, they trade 14,000 tons of cocoa per year.<sup>25</sup>

Many cocoa buyers in the Dominican Republic, different from most other cocoa producing regions, prefer wet beans. Some ferment these in own facilities to produce specific flavours preferred by their customers. Often, international customers ask for specific fermentation processes as they need unique flavours.<sup>26</sup>

The development to become the origin of cocoa with very specific flavour was supported by sustainability programmes e.g. of the German development organization GIZ. Nowadays, part of the cocoa coming from the Dominican Republic is well-known for its high quality.<sup>27</sup>

### Production increase plans

The government plans to significantly increase cocoa production and combined with this export earnings. To do this, they want to support farmers to replant old plantations with new, higher yielding trees with the aim to significantly increase the low productivity. Presently, productivity is on average less than 400 kg per hectare, but a small group of farmers demonstrate that much more is possible.<sup>28</sup>

### Organic cocoa

Despite being a relatively small cocoa producer compared to Ecuador, Brazil – and

even more so compared to West African producing countries – the Dominican Republic has found a market where it is the most important producing country: a vast percentage of the cocoa harvested in the Dominican Republic is traded with an organic certification.

It is estimated that up to 60% of the exports of the country are certified organic cocoa. As the market for organic cocoa is small, this adds up to approximately 70% of the global production of organic certified cocoa.

How much more income organic cocoa generates compared to conventional crops is not transparent. Premiums for organic beans decreased while certification costs remain relatively high (Matlick/Weber/Morillo 2016: 17).

The Dominican Republic has one big advantage compared to other countries on the market concerning organic production: some diseases which have a high effect on cocoa production, e.g. Moniliasis (*Moniliophthora roreri*) and Witch's Broom (*Crinipellis perniciososa*), do not occur in the country.<sup>29</sup> A recent research shown that the arrival of Moniliasis to the island could have devastating effects along the value chain; 80% of the plantations could be infected in less than four years, while the national production could fall 77% by year six (Brito Sosa 2021). Hence, new and improved cacao planting material is needed to avoid a massive socioeconomic impact on cacao cultivation in the Dominican Republic.

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<sup>25</sup> See: <https://www.makeminefine.com/cocoa-sustainability/dominican-republic-republica-dominicana/>; <https://www.worldcocoafoundation.org/blog/transitioning-to-high-quality-sustainable-cocoa-in-the-dominican-republic-a-success-story/> and <https://www.cacaoteca.com/dominican-cacao.html>

<sup>26</sup> See: <https://www.makeminefine.com/cocoa-sustainability/dominican-republic-republica-dominicana/>

<sup>27</sup> See <https://www.cacaoteca.com/dominican-cacao.html>. Employees of European chocolate factories told the authors that the Dominican Republic is becoming more and more attractive for them as they can rely on good quality as promised in contracts. Other countries, specifically Ecuador and Peru, have difficulties to remain on the high-quality standard (see country chapters).

<sup>28</sup> See: <https://www.iica.int/es/prensa/noticias/cocoa-key-crop-keeps-dominican-republic-one-leading-countries-export-organic> and <https://www.makeminefine.com/cocoa-sustainability/dominican-republic-republica-dominicana/>

<sup>29</sup> See <https://www.iica.int/es/prensa/noticias/cocoa-key-crop-keeps-dominican-republic-one-leading-countries-export-organic>. When the World Cocoa Conference with more than 1000 visitors from all around the world took place in the Dominican Republic in 2016, these visitors were not allowed to enter cocoa plantations. The government was afraid that they could introduce cocoa diseases presently not occurring in the Dominican Republic.

## Mexico

Mexico builds on a history of thousands of years of cocoa production and consumption. However, Mexican cocoa production is no longer growing. Since 2005 annual production slightly decreased from 34,000 tons to 28,000 tons (Table 1). In the meantime, domestic consumption of cocoa-based products increased significantly, and the country nowadays imports more cocoa beans than it produces. Additionally, the country imports significant volumes of semifinished cocoa products, chocolate, and chocolate products (Table 2).

### Cocoa farming no longer lucrative

It might surprise some that cocoa farming is not increasing in countries with a local chocolate market, to satisfy the demand. However, many Mexican farmers are well aware of the risks connected with cocoa as they remember the development of the sector during the last decades. The sector grew for decades until 2000 (Díaz-José et al. 2013). When prices plummeted on an inflation-adjusted historical low around the years 2000 and 2001, many cocoa farmers in Mexico switched to other crops. From 2005 on the crop disease Moniliasis spread in the remaining plantations. For many farmers, planting cocoa does not seem to be a lucrative business anymore. They did not invest into their plantations, trees became too old and less productive (Díaz-José et al. 2013).

Roughly two thirds of the remaining cocoa farmers operate in the state Tabasco. In Tabasco, 10 of the 17 municipalities that comprise the state are dedicated to the cultivation of cocoa, the most prominent being Comalcalco, Cárdenas, Cunduacán and Huimanguillo, which together produce 87% of the production of said state. An area of 41 thousand hectares is used for cocoa. Most of the others in Chiapas. There are few producing states in our country, but due to their climates and type of soil, Veracruz and Nayarit have great potential for growing cocoa.<sup>30</sup>

Some farmer cooperatives are well known for their high quality beans (Michail 2019).

<sup>30</sup>

See:

[http://www.cedrssa.gob.mx/post\\_industria\\_del\\_n-cacao\\_en\\_mn-xico-n.htm](http://www.cedrssa.gob.mx/post_industria_del_n-cacao_en_mn-xico-n.htm)

**Table 7: cocoa production in Central America**  
in 1000 tonnes

	Nicaragua	Guatemala	Honduras	Costa Rica	Panama
2005/2006	1.2	0.8	0.6	0.5	1.5
2006/2007	1.2	0.8	0.6	0.6	1.5
2007/2008	2.8	1.1	0.6	0.6	1.3
2008/2009	2.2	1.1	0.6	0.6	0.7
2009/2010	2.8	1.1	0.6	0.7	0.6
2010/2011	3.4	1.1	0.5	0.6	0.7
2011/2012	3.2	1.0	0.5	0.5	0.8
2012/2013	4.0	1.0	0.7	0.5	0.8
2013/2014	3.4	0.5	1.0	0.5	0.8
2014/2015	4.8	0.5	1.0	0.5	1.0
2015/2016	4.6	0.5	1.0	0.5	1.0
2016/2017	5.2	0.5	1.1	0.5	1.0
2017/2018	6.6	0.5	1.1	0.5	1.0
2018/2019	6.9	0.5	1.5	0.5	1.0
2019/2020*	7.3	0.5	1.0	0.8	1.0
2020/2021**	7.5	0.5	1.0	0.8	1.0

\* Estimate  
\*\* Forecast  
Source: ICCO

Organizations like ASCHOCO (Asociación Nacional de Fabricantes de Chocolates, Dulces, y Similares) and institutions like Pro Mexico (a public office in charge of promoting exports) have been pushing for the development of a differentiated and high-quality local chocolate production, which could use the historic heritage and the uniqueness of some Mexican cocoa beans. Though the land area dedicated to cocoa has decreased slightly since 2006, the value generated has more than doubled between 2006 and 2020 (Blog Agricultura 2022).<sup>31</sup>

Only very small quantities of raw cocoa are exported, from high quality varieties with a very specific aroma.

### High export volumes of chocolate

The Mexican cocoa sector is the only cocoa producing nation that exports significant amounts of chocolate and chocolate products. It exported roughly 200.000 tons of chocolate and chocolate products per year during the

<sup>31</sup> However, this does not take into account the devaluation of the Mexican Peso.

**Table 8: Cocoa Exports of Nicaragua : Destinations and prices 2017-2020**

in tonnes

	2017		2018		2019		2020	
	Tons	Price in USD	Tons	Price in USD	Tons	Price in USD	Tons	Price in USD
<b>Belgium</b>	862	2,730	1,162	2,950	1,599	2,910	1,855	3,030
<b>El Salvador</b>	839	430	790	490	835	480	500	460
<b>Guatemala</b>	2,360	470	1,645	150	1,874	410	2,716	390
<b>Italy</b>	76	4,340	82	4,220	124	4,130	111	4,250
<b>Honduras</b>	65	3,180	15	3,240	3	2,300	3	1,300
<b>USA</b>	35	2,830	54	2,222	68	2,230	107	2,380
<b>Netherlands</b>	0,02	-	73	3,100	98	2,470	17	4,260
<b>Germany</b>	-	-	14	3,210	11	3,470	-	2,000
<b>Costa Rica</b>	-	-	10	2,900	-	-	44	2,450
<b>TOTAL</b>	<b>4,238</b>	<b>-</b>	<b>3,887</b>	<b>-</b>	<b>4,640</b>	<b>-</b>	<b>5,352</b>	<b>-</b>

Source: CETREX

last decade and is by far the biggest exporter of all Latin American countries (Table 2).

Different cocoa production strategies were developed but none of them were fully implemented because the expansion of the chocolate industry became the biggest priority.

The main reason for this shift was the further liberalization of trade between the U.S., Canada and Mexico (NAFTA-treaty) in 2006; chocolate produced from non-NAFTA cocoa beans obtained "duty-free" status that year (Beganovic et al. 2010: 19).<sup>32</sup> This liberalization - together with availability of cheap sugar and comparatively low wages - turned Mexico in the second largest chocolate supplier of the U.S. within 3 years.<sup>33</sup> By 2009, Mexico had increased its chocolate exports to the U.S. by 63%, and 3% of all incoming foreign direct investments were going to the chocolate industry.

Hershey's and Barry Callebaut are some of the multinationals which moved their production facilities to the country - especially Nuevo León - with the purpose of supplying the local and the U.S. market. Two thirds of the Mexican chocolate production is controlled by multinationals, and one third by local companies (Beganovic et al. 2010: 15).

The chocolate export market is dominated by multinational companies, led by Nestlé Mexico, followed by Mars and Ferrero. The three of them contributed nearly 60% of the

retail sales in the country. Additionally, national and international companies including subsidiaries of Lindt, Mondelez, and Hershey are active on the market, including small and medium size Mexican companies (Euromonitor International 2017).

## Central America

High quality cocoa from some Central American countries - specifically Panama and Costa Rica, but recently also Nicaragua - have an excellent reputation. Nonetheless cocoa production is very small compared to South American countries and even more so compared to West Africa. Moreover, the volume of cocoa production in Central America is relatively stable, with the exception of Nicaragua (Table 7).

## Nicaragua

Approximately 11,000 families nowadays grow cocoa in Nicaragua (Wiegel et al. 2020b: 2; Martorell 2020:12). Only 15 years ago, the country produced not much more than 1,000 tonnes per year, and nowadays 7,500 tons. The significant increase of cocoa production in Nicaragua was driven by farmers and companies with some government support.

Most important markets for the cocoa producers in Nicaragua are still the neighbouring countries. Much cocoa is exported unfermented to these countries and serves in the traditional manner to produce drinks and other traditional cocoa products in

<sup>32</sup> See: Annex 401: [https://tcc.export.gov/Trade\\_Agreements/All\\_Trade\\_Agreements/NAFTA\\_Annex\\_401\\_1.asp](https://tcc.export.gov/Trade_Agreements/All_Trade_Agreements/NAFTA_Annex_401_1.asp).

<sup>33</sup> Mexico is the sixth larger sugar-producer worldwide (Beganovic et al. 2010: 15). In 2007

labor costs per hour in Mexico averaged \$ 2.02 while in Canada and Brazil they averaged \$ 24.90 and \$ 6.05 respectively (ibid.); a similar relation can be observed in annual health care costs and social insurance.

the region. In a parallel process, lucrative markets for higher quality beans were explored with the support of companies such as Ritter Sport. Most of the planting materials are of Trinitarian origin.

Depending on quality and market, export prices differ extremely. Figures on export to neighbouring countries, however, are not reliable. According to official figures, Guatemala pays roughly US\$400 per tonne. Meanwhile, exports to Belgium, which are mostly delivered to the German company Ritter Sport, achieved an export price of US\$3,030 per tonne in 2020, smaller volumes going to Italy even achieved US\$4,250 per tonne (Table 8).

The driver of production increase of high-quality cocoa in Nicaragua was the long-term engagement of Ritter Sport. The company invested in strengthening cooperatives and supported them to build an infrastructure to train farmers, make better inputs available - including good seedlings, and centralise best practices in fermentation. Additionally, ways were found to level price fluctuations with long-term contracts and flexible premiums. Farmers working with Ritter Sport received much more support than usual in the sector. Due to different premiums, most of them based on high quality, their income rose significantly. Most of this production takes place in agroforestry systems, protecting the

environment and guaranteeing diversified income sources (Navarro et al. 2013). An additional step for Ritter Sport was to set up a known plantation of 1200 ha plus additional 1200 ha reforested area (Hütz-Adams/Campos 2022).

As a result of these efforts, 80% of the production in Nicaragua is now recognised by the ICCO as FFC. This figure seems unrealistic, as most of the production is either not fermented or is of lower quality. Nevertheless, it gives the farmer an opportunity to increase quality and be rewarded for this by higher prices.

### **Honduras**

Cocoa production in Honduras is small and stagnates a level of roughly 1,000 tonnes per year. Approximately 4,500 producers work on small plots with low productivity, and the impact of cocoa on the local economy is low. Many of the cocoa producing families have a diversified farm production, and family members have additional jobs.

### **Guatemala**

Cocoa production in Guatemala remains very low level and nearly all cocoa is consumed within the country. To meet demand, the country imports cocoa.



**Recommendations**

## 6 Recommendations

The cocoa sector is at a crossroads. Due to massive human rights violations including widespread child labour in West African cocoa producing regions, and to a lower extent potential human rights violations in the American producing areas (such as the displacement of indigenous population or the appropriation of land, which was taken from farmer families or communities in violent contexts), the sector has to rethink its business practices.

The political framework is changing. The UN Human Rights Council endorsed the Guiding Principles on Business and Human Rights (UNGP) in 2011. These principles stress that governments have the duty to protect people from human rights violations. But they also clearly state that human rights violations are still taking place, and that even if governments do not fulfil their duty, businesses should not profit from these violations.

To guarantee this, companies have to undertake all necessary steps to avoid human rights violations. Therefore, companies need transparency in their value chain, need to make risk analyses, and where necessary change present purchasing practices and guarantee a remediation for victims of human rights violations. This process is called human rights due diligence (United Nations 2011). The United Nations have asked all national governments to set up national action plans to implement the UNGPs.

The Organisation for Economic Co-operation and Development (OECD) incorporated the UNGPs into the update of the OECD Guidelines for Multinational Enterprises (OECD 2011). In addition to the OECD member countries, seven non-members including Brazil and Peru recognise the OECD standards. Specifically for the agricultural sector, the OECD in cooperation with the FAO developed a Guidance for Responsible Agricultural Supply Chains (OECD 2016).

Globally, more and more governments have either implemented the UNGP's in a specific legislation (e.g. France, Germany) or are planning to do it. The EU, the biggest global cocoa market, is in the progressed stages of developing a regulation on businesses and human rights.

Besides the changed regulatory environment, climate change is another factor that is changing business as usual. Forests play a crucial role within efforts to mitigate climate change. Many governments, including all major cocoa producing countries, have a legislation to protect the remaining forests, and the EU has almost completed a specific regulation to ban the import of products coming from deforested areas.

Human rights violations and deforestation free value chains should become major pillars of the cocoa sector; all stakeholders must act.

## **Governments of Latin American cocoa producing countries should**

- implement obligations for companies concerning human rights due diligence in their respective legislation;
- enforce the application of the Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean (Escazú Agreement) in all its dimensions;
- actively participate in sectorial dialogue initiatives;
- support farmers to increase their income via training measures and a supportive environment (access to inputs, credit facilities, etc.);
- support farmers to use cocoa as a tool to reforest deforested areas;
- protect remaining forests against the encroachment of small-scale farmers or the ambitions of large-scale investors who want to set up cocoa plantations,
- make the publication of data on projects collected by companies, NGOs and researchers mandatory and use the collected information is to support farmers;
- collaborate to collectively work for a higher cocoa price which allows a living income for cocoa farmers in the living wage for workers in cocoa plantations.

## **Companies in the cocoa and chocolate sector should**

- sign a statement at board level to commit themselves to implement human rights due diligence processes, as recommended by the UNDPs;
- make their sourcing fully transparent to farm level as this is a precondition to detect human rights violations and illegal deforestation;
- analyse the risk of human rights violations in their value chains;
- ensure reparations to victims of detected past or present human rights violations;
- calculate prices which are necessary for cocoa farmers to achieve living income and to pay a living wage to workers;
- permit the creation of independent worker unions within plantations and companies;
- use transparency to avoid buying cocoa from recently deforested areas;
- engage/support farmers in the voluntary market of payment for environmental services, mainly carbon sequestration to avoid land use change.
- cooperate with local human rights organisations and independent and autonomous human rights institutions;
- encourage and support the creation of collective organizations of rural producers;



A photograph of cocoa beans and pods on a burlap background. On the left is a large, vibrant red cocoa pod. In the center are two yellowish-brown pods, one of which is split open to reveal white, fleshy beans. In the bottom left is a pile of light brown, unroasted cocoa beans. In the bottom right, a wooden tray holds a pile of dark brown, roasted cocoa beans. The text "Colophon and Bibliography" is overlaid in white in the center of the image.

# Colophon and Bibliography

## 7 Colophon

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### Contact

Requests for information can be addressed to: [antonie@voicenetwork.cc](mailto:antonie@voicenetwork.cc)

The authors are tremendously grateful for the input from all the contributors to the Latin America Baseline Barometer, through which the document has become so much richer and better. Any errors, as well as the final responsibility for the content and the views expressed in this publication lies solely with the authors.

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We encourage the use of (parts of) the Latin America Baseline Cocoa Barometer in other publications, provided proper references are given.

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## 8 Literature

- ACDI/VOCA (2008): Ecuador – Success Alliance Project Profile 3/2008.
- Abbott, P.C. et al. (Benjamin, T.J., Burniske, G.R., Croft, M.M., Fenton, M., Kelly, C.R., Lundy, M., Rodriguez Camayo, F., and Wilcox M.D.) (2018): An Analysis of the Supply Chain of Cacao in Colombia. United States Agency for International Development - USAID. URL: <https://cgspace.cgiar.org/handle/10568/96636> (Access: 15.08.2022).
- Alianza Cacao Perú (2017): Cacao fino de aroma de origen peruano: estrella de nuestra biodiversidad nativa (Presentation in Expoalimentaria)
- Banco Central del Ecuador 2021: Evolución de la Balanza Comercial por Productos Enero-Agosto 2021, Octubre, 2021.
- Banco Mundial (2016): Análisis Integral de Logística en Perú. Parte 2a: Resultados por productos: Cacao, April 2016, URL: [https://www.mincetur.gob.pe/wp-content/uploads/documentos/comercio\\_exterior/facilitacion\\_comercio\\_exterior/Reporte\\_Anexo\\_Cacao\\_Final.pdf](https://www.mincetur.gob.pe/wp-content/uploads/documentos/comercio_exterior/facilitacion_comercio_exterior/Reporte_Anexo_Cacao_Final.pdf) (Access: 15.08.2022).
- Beganivic, Jasmina et al. (2010). The Mexican Chocolate Cluster. The Microeconomics of Competitiveness. Harvard University. URL: [https://www.isc.hbs.edu/Documents/resources/courses/moc-course-at-harvard/pdf/student-projects/Mexico\\_Chocolate\\_2010.pdf](https://www.isc.hbs.edu/Documents/resources/courses/moc-course-at-harvard/pdf/student-projects/Mexico_Chocolate_2010.pdf) (Access: 15.08.2022).
- Blog Agricultura (2022): Estadísticas de producción de cacao en México, 04 Februar 2022. URL: <https://blogagricultura.com/estadisticas-cacao-mexico/> (Access: 15.08.2022).
- Brito Sosa, E. 2021. Impacto Socioeconómico de una potencial entrada de la moniliasis del cacao a República Dominicana. Tesis Mag. Sci. CATIE, Turrialba, Costa Rica, 100 p. <https://repositorio.catie.ac.cr/handle/11554/11541>
- Bunn, Christian, Fabio Castro, Mark Lundy, and Peter Läderach. 2018. "Climate Change and Cocoa Cultivation." In *Achieving Sustainable Cultivation of Cocoa*, edited by Pathmanathan Umaharan, 445-67. Burleigh Dodds Science Publishing. <https://doi.org/10.19103/AS.2017.0021.28>
- Camargo, Marisa / Nhantumbo, Isilda (2016): Towards sustainable chocolate: Greening the cocoa supply chain, IIED, London
- Cardona, Claudia / Nieto, María Carolina / Ramírez, Mónica (2021): Analysis of gender equity in the cocoa sector of Colombia. URL: [https://www.solidaridadnetwork.org/wp-content/uploads/2021/08/SOL\\_AnalysisGenderEquityCocoaColombia\\_small.pdf](https://www.solidaridadnetwork.org/wp-content/uploads/2021/08/SOL_AnalysisGenderEquityCocoaColombia_small.pdf) (Access: 15.08.2022).
- Ceccarelli, Viviana et al. (2022): Conservation and use of genetic resources of cacao (*Theobroma cacao* L.) by gene banks and nurseries in six Latin American countries. In: *Genetic Resources and Crop Evolution* volume 69, pages 1283-1302 (2022)
- CEPAL n.d.: Diagnóstico de la Cadena Productiva del Cacao en el Ecuador. Comisión Económica para América Latina y el Caribe. URL: <https://docplayer.es/68113482-Diagnostico-de-la-cadena-productiva-del-cacao-en-el-ecuador.html> (Access: 15.08.2022).
- CFN (Corporacion Financiera Nacional) (2021): Ficha Sectorial Cacao y Chocolate Subgerencia De Análisis de Productos y Servicios.
- De Sousa, Kauê et al. (2019): The future of coffee and cocoa agroforestry in a warmer Mesoamerica. *Scientific Reports* Volume 9, Article number: 8828 (2019). URL: <https://www.nature.com/articles/s41598-019-45491-7> (Access: 15.08.2022).
- DIAS, Júnior César (2016) : O trabalho infantil nos principais grupamentos de atividades econômicas do Brasil. Brasília: FNPETI, 2016. URL: [https://fnpeti.org.br/media/12dejunho/documentos-de-referencia/O\\_Trabalho\\_Infantil\\_nos\\_Principais\\_Grupamentos\\_de\\_Ati.pdf](https://fnpeti.org.br/media/12dejunho/documentos-de-referencia/O_Trabalho_Infantil_nos_Principais_Grupamentos_de_Ati.pdf) (Access: 15.08.2022).
- Díaz-José, Oscar et al. (2013): Current state of and perspectives on cocoa production in Mexico. *Ciencia e Investigación Agraria* 40: 279-289.
- Durry, Andrea / Schiffer, Thomas (2012): *Kakao. Speise der Götter*. München 2012
- Euromonitor International (2017): *Chocolate Confectionery in Mexico*, 22 August 2017. URL: <https://nations-emergentes.org/wp-content/uploads/2019/07/Mexique-chocolat.pdf> (Access: 15.08.2022).
- European Commission (2022): Análisis de la cadena de valor del cacao en Ecuador.
- Fountain, Antonie / Hütz-Adams, Friedel (2020): *Cocoa Barometer*. Barometer Consortium. URL: <https://www.suedwind-institut.de/files/Suedwind/Publikationen/2020/2020%20Cocoa%20Barometer.pdf> (Access: 15.08.2022).
- Goldman, E., M.J. Weisse, N. Harris, and M. Schneider (2020): Estimating the Role of Seven Commodities in Agriculture-Linked Deforestation: Oil Palm, Soy, Cattle, Wood Fiber, Cocoa, Coffee, and Rubber. Technical Note. Washington, DC: World Resources Institute. URL: <https://www.wri.org/research/estimating-role-seven-commodities-agriculture-linked-deforestation-oil-palm-soy-cattle> (Access: 15.08.2022).
- Hütz-Adams, Friedel (2021): *Guide to Conducting Risk Analysis for Cocoa Producing Countries*. Guidelines and analyses for Côte d'Ivoire, Ghana, Cameroon, Nigeria, Ecuador, Peru, the Dominican

- Republic, Nicaragua, Liberia, Togo, Sierra Leone and Bolivia. URL: <https://www.suedwind-institut.de/files/Suedwind/Publikationen/2021/2021-18%20Guide%20risk%20analyses%20cocoa%20sector.pdf> (Access: 15.08.2022).
- Hütz-Adams et al. (Hütz-Adams, Friedel / Huber, Claudia / Knoke, Irene / Morazán, Pedro / Mürlebach, Mara (2016): Strengthening the competitiveness of cocoa production and improving the income of cocoa producers in West and Central Africa. SÜDWIND, Bonn.2016. URL: <https://suedwind-institut.de/files/Suedwind/Publikationen/2017/2017-06%20Strengthening%20the%20competitiveness%20of%20cocoa%20production%20and%20improving%20the%20income%20of%20cocoa%20producers%20in%20West%20and%20Central%20Africa.pdf> (Access: 15.08.2022).
  - Hütz-Adams, Friedel / Campos, Pablo (2022): Kakaoproduktion in Nicaragua: Auswirkungen des Engagements von Ritter Sport. URL: [https://www.suedwind-institut.de/files/Suedwind/Publikationen/2022/2022-06\\_Studie%20Kakaoproduktion%20Nicaragua.pdf](https://www.suedwind-institut.de/files/Suedwind/Publikationen/2022/2022-06_Studie%20Kakaoproduktion%20Nicaragua.pdf) (Access: 15.08.2022).
  - Hütz-Adams, Friedel / Campos, Pablo / Knoke, Irene (2022): Zwischen Edelkakao und Massenware – Die Entwicklung des Kakaoanbaus in Ecuador. URL: <https://www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/Amazonas/WWF-Studie-Kakao.pdf> (Access: 15.08.2022).
  - IBGE (Instituto Brasileiro de Geografia e Estatística) (2016): Indicadores IBGE. Estatística da Produção July 2016).
  - ICCO (International Cocoa Organisation) (2022): OBCS (Quarterly Bulletin Of Cocoa Statistics), different years, last available Bulletin: Volume XLVIII No. 2, Cocoa Year 2021/22
  - Matlick, B.K. / Weber, James A. / Morillo, Alfredo (2016): Análisis de la Cadena del valor del cacao en la República Dominicana. Santo Domingo, República Dominicana. Programa Exportando Calidad e Inocuidad (ECI), 2016. URL: [https://adoexpo.org/es/assets/Informe\\_Cacao\\_ECI\\_3v-final.pdf](https://adoexpo.org/es/assets/Informe_Cacao_ECI_3v-final.pdf) (Access: 15.08.2022).
  - Navarro, M.; Orozco-Aguilar, L.; López-Sampson, A.; Breuer, B. 2013. Sistematización de la Experiencia de Fomento de la cadena de valor de cacao en Nicaragua: Cooperación Alemana 2000-2012. Informe final de consultoría. GIZ. Managua, Nicaragua, 88 p. [http://cadenacacaoca.info/CDOC-Deployment/documentos/sistematizacion-\\_Fomento\\_de\\_la\\_cadena\\_de\\_valor\\_de\\_cacao\\_Nicaragua.pdf](http://cadenacacaoca.info/CDOC-Deployment/documentos/sistematizacion-_Fomento_de_la_cadena_de_valor_de_cacao_Nicaragua.pdf)
  - OIT / MPT (Organização Internacional do Trabalho / Ministério Público do Trabalho (2018): Cadeia Produtiva do Cacau Avanços e Desafios Rumo a Promoção do Trabalho Decente: análise situacional. URL: [https://www.ilo.org/wcmsp5/groups/public/---americas/---ro-lima/---ilo-brasilica/documents/publication/wcms\\_817094.pdf](https://www.ilo.org/wcmsp5/groups/public/---americas/---ro-lima/---ilo-brasilica/documents/publication/wcms_817094.pdf) (Access: 15.08.2022).
  - ITUC - International Trade Union Confederation (2021): *The World's worst countries for workers: Executive Summary*. . URL: [https://files.mutualcdn.com/ituc/files/ITUC\\_GlobalRightsIndex\\_2021\\_EN\\_Final.pdf](https://files.mutualcdn.com/ituc/files/ITUC_GlobalRightsIndex_2021_EN_Final.pdf) (Access: 15.08.2022).
  - Jano, Pilar / Mainville, Denise (2007): The Cacao Marketing Chain in Ecuador: Analysis of Chain Constraints to the Development of Markets for High-Quality Cacao. URL: [http://nbcgib.uesc.br/cicacau/arquivos/producao\\_tecnico\\_cientifica/1067-paper.pdf](http://nbcgib.uesc.br/cicacau/arquivos/producao_tecnico_cientifica/1067-paper.pdf) (Access: 15.08.2022).
  - Kakaoverein (Verein der am Rohkakaohandel beteiligten Firmen E.V. German Cocoa Trade Association) Geschäftsbericht 2020/2021 (2021). URL: [http://kakaoverein.de/fileadmin/inhalte/Dokumente/Gesch%C3%A4ftsbericht\\_Kakaoverein\\_2020\\_2021\\_digital.pdf](http://kakaoverein.de/fileadmin/inhalte/Dokumente/Gesch%C3%A4ftsbericht_Kakaoverein_2020_2021_digital.pdf) (Access: 15.08.2022).
  - Leissle, Kristy (2018): Cocoa. Cambridge 2018
  - Lundy, M., Rodriguez Camayo, F., and Wilcox M.D.) (2018): An Analysis of the Supply Chain of Cacao in Colombia. United States Agency for International Development - USAID. URL: <https://cgspace.cgiar.org/handle/10568/96636> (Access: 15.08.2022).
  - Macías Barberán, Ricardo et al. (Ricardo Macías Barberán, Gerardo Cuenca Nevárez, Frank Intriago Flor, Creucí María Caetano, Juan Carlos Menjivar Flores and Henry Antonio Pacheco Gil) (2019): Vulnerability to Climate Change of smallholder Cocoa Producers in the Province of Manabí, Ecuador. *Revista Facultad Nacional de Agronomía Medellín* 72(1). URL: <http://www.scielo.org.co/pdf/rfnam/v72n1/2248-7026-rfnam-72-01-08707.pdf> (Access: 15.08.2022).
  - Martorell Mir, Jaume (COORDINADOR) (2020): CARACTERIZACIÓN A NIVEL NACIONAL DEL SECTOR CACAO EN NICARAGUA. Gobernanza e incidencia en la cadena de valor de cacao en Nicaragua.
  - Meter, A., Atkinson, R. J., & Laliberte, B. (2019). Cadmio en el cacao de América Latina y el Caribe. Análisis de la investigación y soluciones potenciales para la mitigación. Caracas: CAF. Fuente: <http://scioteca.caf.com/handle/123456789/1505>.
  - Mendes, Leticia et al. (2016): Anuário brasileiro do cacau 2016, Santa Cruz do Sul. URL: [http://www.grupogaz.com.br/tratadas/eo\\_edicao/68/2015/11/20151123\\_552fff111/pdf/4987\\_2015caca\\_u.pdf](http://www.grupogaz.com.br/tratadas/eo_edicao/68/2015/11/20151123_552fff111/pdf/4987_2015caca_u.pdf) (Access: 15.08.2022).

- Michail, Niamh (2019): Mexico is on 'reactivating' its cocoa sector: 'Our goal is to position Mexico as the original of chocolate in the world', 11 February 2019. URL: <https://www.foodnavigator-latam.com/Article/2019/02/11/Mexico-on-reactivating-its-cocoa-sector-Our-goal-is-to-position-Mexico-as-the-origin-of-chocolate-in-the-world> (Access: 15.08.2022).
- MINAGRI - DEVIDA (2014) Catálogo de Cultivares del Perú. URL: [https://www.academia.edu/33872810/MINISTERIO\\_DE\\_AGRICULTURA\\_Y\\_RIEGO\\_DEVIDA\\_CULTIVARES\\_DE\\_CACAO\\_DEL\\_PER%C3%A9](https://www.academia.edu/33872810/MINISTERIO_DE_AGRICULTURA_Y_RIEGO_DEVIDA_CULTIVARES_DE_CACAO_DEL_PER%C3%A9) (Access: 30.08.2022).
- Ministerio de Agricultura y Ganadería de Ecuador (2020): Informe de Rendimientos de Cacao almendra seca 2020.
- Ministerio de Agricultura de Colombia 2021. URL: <https://sioc.minagricultura.gov.co/Cacao/Documentos/2021-03-31%20Cifras%20Sectoriales.pdf> (Access: 15.08.2022).
- Ministerio de Comercio de Colombia 2022. URL: <https://www.mincit.gov.co/CMSPages/GetFile.aspx?guid=14bd43fc-7060-410d-972f-08cad3925963> (Access: 15.08.2022).
- Motamayor, J. C., Lachenaud, P., da Silva e Mota, J. W., Loor, R., Kuhn, D. N., Brown, J. S., & Schnell, R. J. (2008). Geographic and genetic population differentiation of the Amazonian chocolate tree (*Theobroma cacao* L). PLoS ONE, 3(10). <https://doi.org/10.1371/journal.pone.0003311>.
- Mulangu, Francis/ Miranda, Mario/ Maiga, Eugenie (2015): Is More Chocolate Bad for Poverty? An Evaluation of Cocoa Pricing for Ghana's Industrialisation and Poverty Reduction, AGRODEP Working Paper 0014, August 2015. URL: <https://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/130097/filename/130308.pdf> (Access: 15.08.2022).
- Neto, Paschoal Frederico (2021). Uma análise estratégica sobre o mercado brasileiro de chocolates. Brazilian Journals of Business Vol. 3, Núm. 4: 3108-3127. URL: <https://brazilianjournals.com/ojs/index.php/BJB/article/view/34826> (Access: 15.08.2022).
- OECD (2011): OECD Guidelines for Multinational Enterprises. URL: <https://www.oecd.org/daf/inv/mne/48004323.pdf> (Access: 15.08.2022).
- OECD (2016): OECD-FAO Guidance for Responsible Agricultural Supply Chains. URL: <https://negocioresponsable.org/wp-content/uploads/2019/03/OECD-FAO-2017-responsible-agricultural-supply-chains.pdf> (Access: 15.08.2022).
- Orozco-Aguilar L, López-Sampson A, Leandro-Muñoz ME, Robiglio V, Reyes M, Bordeaux M, Sepúlveda N and Somarriba E (2021): Elucidating Pathways and Discourses Linking Cocoa Cultivation to Deforestation, Reforestation, and Tree Cover Change in Nicaragua and Peru. *Front. Sustain. Food Syst.*, 17 June 2021. URL: <https://www.frontiersin.org/articles/10.3389/fsufs.2021.635779/full> (Access: 15.08.2022).
- Pekic, Vladimir (2014): Uncertain future for Brazilian cocoa production, in: Confectionery News, 13 October 2014. URL: <http://www.confectionerynews.com/Commodities/Brazil-s-cocoa-production-to-fall-next-decade> (Access: 15.08.2022).
- Ramos C, Paez-Valencia A.M, Blare T. (2019): Gender Perspectives on Cocoa Production in Ecuador and Peru: Insights for Inclusive and Sustainable Intensification. Policy brief No 44. Nairobi: World Agroforestry. URL: <http://apps.worldagroforestry.org/downloads/Publications/PDFS/PB19059.pdf> (Access: 15.08.2022).
- Ramtahal, Gideon (2017): Mitigation of Cadmium Bioaccumulation in Cacao through Soil Remediation. Presentation. URL: <https://www.icco.org/wp-content/uploads/Keynote-Thematic-6.-Gideon-Ramtahal-1.pdf> (Access: 15.08.2022).
- Schockaert, Heleen (2020) The Impact Of Climate Change On Cocoa And Coffee Farmers Around The Globe. URL: [https://assets.rikolto.org/paragraph/attachments/the\\_impact\\_of\\_climate\\_change\\_on\\_cocoa\\_and\\_coffee\\_farmers\\_around\\_the\\_globe.pdf](https://assets.rikolto.org/paragraph/attachments/the_impact_of_climate_change_on_cocoa_and_coffee_farmers_around_the_globe.pdf) (Access: 15.08.2022).
- Schroth, Götz; Laderach, Peter; Martinez Valle, Armando/Bunn, Christian/Jassogne, Laurence (2016): Vulnerability to climate change of cocoa in West Africa: Patterns, opportunities and limits to adaptation. In: *Science of the Total Environment*, 556, 231-241.
- Solórzano, Lorena S. (2008): Commercial Opportunities and Marketing Potential - Ecuador, Presentation 22.5.2008
- Somarriba, E, Cerda, R, Orozco, L, Cifuentes, M, Dávila, H, Espino, T, Mavisoy, H, Ávila, G, Alvarado, E, & Poveda, V. 2013. Carbon stocks and cocoa yields in agroforestry systems of Central America. *Agriculture, ecosystems & environment*, 173, 46-57.
- Somarriba, Eduardo / Lopez-Sampson, Arlene (2018): Coffee and Cocoa Agroforestry Systems: Pathways to Deforestation, Reforestation, and Tree Cover Change. URL: <https://repositorio.catie.ac.cr/handle/11554/9035> (Access: 15.08.2022).

- Technoserve (2015): Building a Sustainable and Competitive Cocoa Value Chain in Peru. A Case Study of the Economic Development Alliance Program for San Martin, Huánuco, and Ucayali 2010-2015. URL: <https://www.technoserve.org/wp-content/uploads/2015/09/case-study-building-a-sustainable-and-competitive-cocoa-value-chain-in-peru.pdf> (Access: 15.08.2022).
- TFA - Tropical Forest Alliance (2022): Amazon Origin Sustainable Cocoa, May 2022. URL: [https://www.tropicalforestalliance.org/assets/Uploads/TFA\\_Pitchbook\\_2106alt.pdf](https://www.tropicalforestalliance.org/assets/Uploads/TFA_Pitchbook_2106alt.pdf) (Access: 15.08.2022).
- Troya Rocha, María Belén (2013): Accion colectiva y cadenas de valor - Estudio de caso: Cadena de cacao y UNOCACE, August 2013. URL: <http://repositorio.flacsoandes.edu.ec/bitstream/10469/5851/2/TFLACSO-203MBTR.pdf> (Access: 15.08.2022).
- UNCTAD (2015): Política Nacional de Exportación de Productos Verdes del Ecuador: Cacao-Chocolate y Pesca Sostenible. URL: [http://unctad.org/en/PublicationsLibrary/ditcted2015d5\\_en.pdf](http://unctad.org/en/PublicationsLibrary/ditcted2015d5_en.pdf) (Access: 15.08.2022).
- USDA (2015): Ecuador Cocoa Update and Outlook, February 2015. URL: <https://www.fas.usda.gov/data/ecuador-ecuador-cocoa-update-and-outlook> (Access: 15.08.2022).
- Valla, Victor V. Articulo (1976): Factores relacionados com a distribuição fundiária na região cacauera da Bahia.
- Villacis, Alexis / Alwang, Jeffrey / Barrera, Victor (2019): Does the Use of Specialty Varieties and Post-Harvest Practices Benefit Farmers? Cocoa Value Chains in Ecuador. URL: <https://ideas.repec.org/p/ags/saea20/302303.html> (Access: 15.08.2022).
- Wiegel, Jennifer et al. (2020): (del Río, Martha / Gutiérrez, Juan Fernando / Claros, Luisa / Sánchez, Derly / Gómez, Lorena / González, Carolina / Reyes, Byron): The Cacao Market in Ecuador: Opportunities for Supporting Renovation and Rehabilitation. International Center for Tropical Agriculture (CIAT). Cali, Colombia. URL: <https://hdl.handle.net/10568/108117> (Access: 15.08.2022).
- Wiegel et al. (2020a): Wiegel, Jennifer; del Río, Martha; Gutiérrez, Juan Fernando; Claros, Luisa; Sánchez, Derly; Gómez, Lorena; González, Carolina; Reyes, Byron. (2020a). Coffee and Cacao Market Systems in the Americas: Opportunities for Supporting Renovation and Rehabilitation. International Center for Tropical Agriculture (CIAT). Cali, Colombia. URL: [https://cgspace.cgiar.org/bitstream/handle/10568/108108/Market%20Systems%20CIAT%20Publication\\_English\\_Final.pdf?sequence=2&isAllowed=y](https://cgspace.cgiar.org/bitstream/handle/10568/108108/Market%20Systems%20CIAT%20Publication_English_Final.pdf?sequence=2&isAllowed=y) (Access: 15.08.2022).
- Wiegel, Jennifer et al. (Wiegel, J.; Del Río, M.; Gutiérrez, J.F.; Claros, L.; Sánchez, D.; Gómez, L.; González, C.; Reyes, B). 2020b. The Cacao Market System in Nicaragua: Opportunities for Supporting Renovation and Rehabilitation. International Center for Tropical Agriculture (CIAT). Cali, Colombia. URL: [https://cgspace.cgiar.org/bitstream/handle/10568/108120/Nicaragua%20Cacao\\_Eng\\_Final.pdf?sequence=2&isAllowed=y](https://cgspace.cgiar.org/bitstream/handle/10568/108120/Nicaragua%20Cacao_Eng_Final.pdf?sequence=2&isAllowed=y) (Access: 15.08.2022).
- Willumsen, M. / Dutt, A. (1991): Café, cacao e crescimento económico no Brasil, Revista de Economia Política, vol. 11, no. 3. URL: <https://bjpe.org.br/repos/index.php/journal/article/view/1470/1456> (Access: 15.08.2022).