In November 2018, Gifford (Giff) Laube, Operations Manager of Cacao Oro de Nicaragua, was about to share a recommendation that would surely change the future of the company. Over the last few weeks, Giff had engaged in analyzing the most profitable market segment for the company. He felt the need to prioritize a competitive strategy for that segment to set the firm on its way to accelerated growth. He identified three different options: first, to specialize in “conventional” cocoa, with moderate prices and high-volume transactions; second, to specialize in lower-volume/higher-priced “fine” cocoa, with higher barriers to entry; and, finally, to enter the market under a "hybrid" scheme to market percentages of conventional and fine cocoa.

Some years earlier, plans were underway for 10,000 combined hectares of cocoa in Nicaragua and Peru (later refined to an exclusive focus on Nicaragua, the founder’s home base), with the aim of becoming the largest cocoa producer worldwide. To start large-scale operations, the first requirement was to restore a 3,000-hectare farm in La Rosita, on the Atlantic coast of Nicaragua, damaged by Hurricane Félix in 2008. In 2014, after restoration, reforestation, and planting, Cacao Oro was born, with more than 2,000 hectares (ha) of cocoa planted since its start. The first harvest (2017) yielded a few metric tons (MT) of cocoa, which has since grown to more than 1,500 MT per year. The core farm is expected to yield between 3,000 and 4,000 MTs per year at full production.
1. A Historic Crop

Cocoa (Theobroma cacao) belongs to the genus Theobroma and the Malvaceae family, with more than 22 known species. Originally from South America, it was later domesticated in Middle America. Its scientific name comes from the Greek theos (god) and broma (food), a name that reflects its importance to Native Americans.

Cocoa requires adequate temperature, humidity, and rainfall to produce acceptable yields and to reduce its susceptibility to pests and diseases. Cocoa trees grow close to 30 feet tall in the wild but only seven to nine feet when planted for farming. The trees have straight, smooth trunks, with oval, bright red and green leaves, depending on their age, and small yellowish flowers that turn into fruits. The fruit consists of an elongated berry containing around 20 to 40 seeds.

Cocoa pods were first used by the Mayans around 600 AD in Mexico, for a drink served exclusively to warriors and nobles. The Mayans valued cocoa more than gold and, thus, used it for barter. Mayan mythology held that cocoa was a gift to humans from Kukulcan, the feathered serpent deity, and they honored the cocoa god with offering and sacrifices. Aztecs, on the other hand, adapted the mythology and maintained that Quetzalcoatl descended from heaven to bring cocoa as a gift to humans. As a result, cocoa was used not only for currency, but also for veneration.

Regardless of its origin, cocoa’s economic and cultural contribution to society cannot be denied. Currently, it is a major crop in different regions around the world.

2. Global Cocoa Industry

2.1 Production

Traditional cocoa classification has only three basic types—Criollo, Forastero, and Trinitario—resulting in different varieties, hybrids, and clones planted worldwide. (See Exhibit 1 below.)

Exhibit 1. Types of cacao: a) Criollo, b) Forastero, c) Trinitario

Source: Arvelo et al., 2017
The worldwide cocoa market had been characterized over time by its high variability. Cocoa ranked approximately fourth (behind palm oil and rubber) in terms of tropical crops price negotiated, more or less on a par with bananas. Also, cocoa ranked third in volume, after sugar and coffee, in the world market for agricultural commodities.

Different names were common in commerce and industry to describe the quality of cocoa beans. Cocoa beans fell into two broad categories: bulk (or ordinary) cocoa, accounting for 90-95% of worldwide production, obtained from the Forastero variety; and fine or flavor cocoa, accounting for 5%-10% of worldwide production, obtained from the Criollo and Trinitario varieties. Bulk cocoa had different names depending on the region. For example, it was known as common cocoa in Europe. “Bulk” was a term used very frequently, although it really meant bulk cocoa shipped without bags. Other terms included normal or basic cocoa.

Cocoa production had grown steadily for 50 years in a row, resulting in a fourfold worldwide supply of cocoa, especially during the 80s, the 90s, and the early 21st century. As of 2011, however, an estimated 300,000 MT reduction in productivity growth was noted worldwide, as compared to the 2011 harvest (Arvelo et al., 2017).

This decline in production was reversed from 2016 on, with a rebound towards growth. As a result, cocoa prices declined sharply around the world between September 2016 and February 2017, with a loss amounting to more than a third of their value (from $3,000 to $1,900.) Therefore, cocoa revenue dropped 30%-40%¹ (Fountain y Huetz-Adams, 2018). This price collapse was linked mainly to the increase in production over the previous few years, resulting from the expansion and creation of new production areas, which had a negative impact on native forests. A clear case in point is Africa, where more than 90% of the original western forests region disappeared to make room for cocoa production.

At the same time, national policies to encourage cocoa production in Latin American countries such as Ecuador and Peru had also boosted production. In Central America, the land devoted to cocoa production grew by 13% in 2006-2014. Although that figure was below the world average growth (17%; see Annex 1), it allowed countries such as Costa Rica, Nicaragua, Guatemala, and Belize to modestly expand their growing cocoa frontier.

By 2017, world cocoa production exceeded four million MTs of cocoa beans, with five countries (The Ivory Coast, Ghana, Indonesia, Nigeria and Cameroon) leading the market with more than 84% of world production (see Annex 2).

Africa accounted for 73% of world production, as well as for 64% of the world’s area planted with cocoa. Latin American contributed 17% of world production and 17% of the planted area, while Asia and Oceania contributed the remaining 10% of production with 19% of the planted area worldwide.

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¹ Except in Ghana, where the government indirectly subsidized the price of cocoa.
Cocoa cultivation in Latin American countries over the last few years had spread remarkably in at least 23 countries, with yields of over 675,000 MTs and around 1,700,000 hectares (ha) planted in 2016. The largest producers included Brazil, Ecuador, the Dominican Republic, Peru, Colombia, and Mexico, with more than 90% of the production and planted area on the continent (Arvelo et al., 2017).

With regard to the 2018-2019 cocoa season, world production was expected to reach around 4.8 million MTs (a 4% increase over 2017-18), with an 18,000 MTs surplus. Just as before, Africa was estimated to continue leading, with 76% of total worldwide production, followed by Latin America with 17%, and Asia/Oceania with 6%. Likewise, a +6% growth rate in production was forecast for Africa, stagnation for Latin America, and a 4% reduction in production for Asia. The most notable production growth rates by country were seen in the Ivory Coast (+13%), Papua New Guinea (+11%), and Cameroon and Ecuador (+8%) (Leitón, 2019).

The world cocoa frontier had reached around 10,000,000 cultivated hectares by 2017. Only in the Americas had it grown 17% since 2006, which meant more than 235,000 hectares had been designated to cocoa production in the region. Over the last ten years, the land devoted to cocoa production had grown approximately 2% per year, mainly as a result of investments in planting improvements in The Ivory Coast, Nigeria, Cameroon, and especially Indonesia.

Cocoa was estimated to be cultivated by more than 5.5 million producers worldwide, with plots between 0.2 and 0.5 hectares. Between 80-90% of cocoa production came from small farmers, for whom cocoa was a major source of income (Arvelo et al., 2017).

Specifically in LAC countries, 90% of cocoa production was in the hands of small and medium-sized family farmers. Producers in Central America had cocoa plots of less than 2 ha. Average farms in Mexico were around 3 ha. In South America, on the other hand, the average cocoa plot was around 5 ha, except for Brazil, with average plots of around 11 ha (see Annex 3).

Despite extensive cocoa plantations worldwide, average productivity over the last few years had been around 438 kg per hectare (kg/ha.) Productivity for major African producers was 432 kg/ha. Both Asia and Oceania had an average of 505 kg/ha, and in LAC countries, it was 408 kg/ha. Only a few countries, such as the Ivory Coast and Peru, had levels above the international average.

According to SEPSA (2017), there were several causes for low productivity in Latin American countries (except for Ecuador). The main cause was the age of cocoa plantations, which in many cases were around 40 years old, which most of the time made them economically unproductive.

Work had been done in Ecuador on identifying and replicating improved material. The best-known case was clone CCN-51 (not fine or flavor, but highly productive cocoa), and improved Nacional Arriba material had been developed (the new
INIAP clones\(^2\)), with production equal to or greater than those of clone CCN-51. Though an important element of this process, genetics were not the only factor in productivity. Ecuador had been outstanding in terms of assistance and technical follow-up to cocoa producers, good agricultural practices, integrated pest control, fertilization, pruning, among others actions taken by actors such as INIAP. All of these factors helped Ecuador to increase its productivity considerably (SEPSA, 2017).

On the other hand, in the Ivory Coast, which reported the highest productivity levels, the private sector had invested heavily in fertilization campaigns, which had greatly contributed to the increase in productivity.

Limitations to productivity worldwide were hard to eradicate since most of the production was in the hands of small producers, who could improve only with support from the government or private entities, as was the case in Ecuador and the Ivory Coast. However, some operations in LAC countries had yielded up to 3,000 kg/ha, as compared to global averages. This productivity resulted from higher tree density, use of higher-yield, disease-resistant varieties, better agricultural practices, and proper maintenance of trees, which small producers in Africa and other regions could not provide.

### 2.2 World Cocoa Trade

Cocoa was globally traded in a diversified market, increasingly demanding quality and volume. Cocoa processing and marketing gave rise to a global chain with actors from the main producing countries, as well as consumers (including cocoa producers, processors, exporters, chocolate manufacturers, wholesalers, and retailers, among others).

#### 2.2.1 Global Demand

Between 1961 and 2014, the world demand for cocoa grew at a CAGR of 2.7%. This rate was expected to accelerate to 5.2% by\([?]\) 2020 and 7.3% by\([?]\) 2025. Historical growth in global aggregate demand was primarily a function of organic population growth and, largely, of tracking GDP. However, the sector was undergoing long-term structural changes, with demand increasing mainly as a result of the growth of the middle class in China, India, and Brazil. This middle class had enough income to purchase luxury goods, including chocolate confectionery. However, despite the aforementioned projections, cocoa demand had remained more or less stable between 2012 and 2016 (see Annex 4).

Although cocoa was a raw material for a variety of products, chocolate was the main source of demand and consumption. The apparent domestic consumption of cocoa was the result of adding net imports and all cocoa- and chocolate-based products in their cocoa-bean equivalent to the national or world grind.

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\(^2\) Instituto Nacional de Investigaciones Agropecuarias de Ecuador.
World cocoa consumption had grown steadily since 2007, with year-on-year growth rates of about 1.3% (see Annex 5).

Growth in cocoa consumption was shown in a differentiated way by region. World consumption grew by 13% for the 2014-2015 season. However, growth rates differed by country. For example, cocoa consumption in the United States, Canada, and Europe grew 7% during that period, while emerging markets in Asia, Africa, and LAC grew 28%.

According to Arvelo et al. (2017) using ICCO data, Europe was the largest consumer of cocoa by region with 47% of the world's apparent domestic consumption, followed by the Americas with 32%, Asia and Oceania with 17% and, finally, Africa with only 4%.

Fifty-five percent of world cocoa consumption was concentrated in seven countries. The United States led the list with 20% of consumption, followed by Germany with 9%, France and the United Kingdom with 6% each, Brazil and Russia with 5%, and Japan with 4% (see Annex 6).

Europe led the way in 2015 regarding annual per capita consumption, with 2.27 kg per head, mainly as a result of significant consumption in Belgium, Switzerland, Germany, France, the United Kingdom, Slovenia, the Netherlands, Poland, and Italy. Consumption in these countries more than doubled the world average per capita consumption (640 grams per head a year).

America ranked second in terms of highest consumption per capita, with around 1.33 kg per head a year. Canada, the United States, Uruguay, Chile, Trinidad & Tobago, Brazil, and Bermuda consumed more than 1 kg of cocoa per head a year, thus contributing to the regional average.

According to Ecuador's Ministry of Industries and Productivity, citing Mars and Barry Callebaut, one of the world's largest chocolate manufacturers, the gap between cocoa demand and production would grow to one million MTs by 2020 and two million by 2030, reflecting the demand trend for cocoa and anticipated production issues due to climate change, a weak focus on sustainability, and social issues in large producing countries.

However, recent global trends in the demand for natural, gourmet, and healthy products using ethical and ecological business practices were the main driver behind the fine or flavor cocoa and certified cocoa segment.

Chocolate manufacturers used fine or flavor cocoa in recipes, mainly for a small number of expensive products and for high-value market segments.

The main consumption market for fine or flavor cocoa and certified cocoa consisted of Western European countries such as Belgium, France, Germany, Italy, Switzerland, and the United Kingdom, in addition to Japan due to the trend towards sustainable, ethical trade and the demand for premium chocolates. The United States, on the other hand, consumed mostly bulk cocoa, while some Latin American countries had a sizeable market for these segments.
The global demand for specialty/premium chocolate was on the rise. In Europe, the premium chocolate market was projected to grow at a CAGR of 8.7% between 2019 and 2024 (ProFound, 2020). Similarly, the sustainability goals of large chocolatiers were driving demand towards certified cocoa, and it was expected that, by 2020, they would obtain their cocoa from sources that were 100% sustainable.

2.2.2 Major Exporters

Cocoa exports included cocoa beans, cocoa butter, cocoa paste, cocoa liquor, and cocoa powder. Cocoa exports had grown steadily over the previous few years at an average year-on-year rate of 1.5%, reaching 23% growth from 2001 to 2016 (Arvelo et al., 2017).

By 2018, world exports had reached just over $20 billion, decreasing by 2% in value terms and growing by 4% in MTs between 2014 and 2018 (see Annex 7). Cocoa beans had accounted for the main export input, with approximately 46% of the total, followed by cocoa butter, fat, and oil with 27%.

Major cocoa exporters included the Ivory Coast, Ghana, Ecuador, the Netherlands, Cameroon, and Belgium (see Annex 8). By 2018, 44% of exports came from Africa, 32% from the European Union, 14% from Asia, and 9% from the Americas.

2.2.3 Bulk Cocoa: Prices

Bulk cocoa dominated the industry and was traded primarily on international exchanges: New York (ICE - USD) and London. Fine or flavor cocoa was traded outside the market in formalized exchanges directly between producers or dealers and end-users, on a negotiated basis. Due to cocoa’s unique place in the food value chain and its production characteristics, cocoa prices were largely uncorrelated with major cash crops and the spectrum of most other tropical crops.

The 2015-16 cocoa season left a global cocoa supply deficit, with world stocks that had not been so low since 1985. However, this changed in the 2016-17 season with a structural excess supply in the market. As a result of this increase in supply, a drop in world market prices from US$3,000 to US$2,600 per MT was expected. However, the price fell much further, reaching less than US$2,000 for several months in a row.

According to ICCO data, world cocoa prices for 2015 were US$3,136.7 and EUR 2,826.5\textsuperscript{3} per MT of cocoa, Prices began to decrease from this year on, reaching US$2,293 and EUR 1,942.1\textsuperscript{4} per MT in 2018 (see Annex 9). Likewise, according to ICCO, despite increased supply, prices per MT of cocoa were expected to continue rising, albeit moderately, from 2019 on due to the continuous increase in demand (see Annex 10).

\textsuperscript{3} Approximate average values from monthly data provided by ICCO.
\textsuperscript{4} Approximate average values from monthly data provided by ICCO.
**Cocoa Quality: Fine and Certified Cocoa**

**Fine or Flavor Cocoa**

Fine or flavor cocoa, accounting for around 5% to 10% of production, was made from cocoa beans with certain distinctive characteristics, appreciated for their aroma and flavor, which could not be reproduced using other types of beans. It was called fine cocoa in Europe and flavor cocoa in the United States.

It should be noted that the main difference between fine or flavor cocoa and bulk cocoa was in its flavor, not in its other qualities. The flavor of this fine cocoa could include fruity, floral, herbaceous, woody, nutty, or caramel notes. Evidence had indicated that, in addition to genetic components and post-harvest practices, factors such as climate and soil contributed to the difference in the flavor of some types of cocoa beans (Arvelo et al., 2017).

Over time, a combination of important criteria had been used to help define the quality of fine or flavor cocoa. Genetic origin, morphological characteristics of the plants, chemical characteristics, and color of the beans, as well as degree of fermentation, humidity, and acidity were among these criteria. Likewise, in evaluating the quality of this type of cocoa, the presence of undesirable flavors, insect infestation, and the percentage of internal mold and impurities were analyzed (Pipitone, 2015).

There were different varieties of fine or flavor cocoa, each with a typical flavor. They were used mainly in the production of high-quality chocolates, with different types of cocoa beans blended to give the chocolate a distinctive flavor and aroma.

This type of cocoa used to have lower yields than bulk cocoa. As a result, supply was short, and buyers were willing to pay price premiums to acquire it. Yield depended on the genetic type used, technology, agricultural practices, and so on. In many cases, the yield of fine cocoa was similar to that of some bulk cocoa varieties. Ecuador, the largest producer of fine cocoa, reported a national yield of around 500 kg per ha for 2018.

The fine or flavor cocoa market had grown steadily, at a 7% to 11% rate, since 2011, with an estimated turnover of more than 200,000 MTs per year (about 5% of the world total) since that year. However, the lack of a reliable database in this market made it difficult to verify these values (Martin, 2017). Eighty percent of total production of fine or flavor cocoa came from LAC countries (Pipitone, 2015).

In 2015, around four million MTs of cocoa were marketed worldwide. Of these, 12,000 MTs (0.3%) were exclusive fine cocoa, and 230,000 MTs (5.7%) were fine cocoa. By 2018, Ecuador was the main exporter of fine or flavor cocoa, accounting for 56% of total MTs exported worldwide up to that time, followed by the Dominican Republic (19%) and Peru (12%) (see Annex 11).

Annex "C" of the 2010 International Cocoa Agreement (revised in 2015) set the list of producing countries exporting totally or partially fine or flavor cocoa. Of the
ten countries exporting 100% fine or flavor cocoa, nine were LAC countries, showing the region's leadership in this market.

### 2.2.4 Fine Cocoa Prices

Unlike bulk cocoa, fine or flavor cocoa was marketed in an independent, relatively small, highly specialized market in which supply and demand played a key role.

The purchase and the sale of fine cocoa were carried out directly between producers and buyers, with the latter being specific chocolate companies for the most part. The price was set by a balance between supply and demand. Other factors were considered, including bean quality, origin, or uniqueness and, in the specific case of chocolate, reputation in the gourmet market.

Since this was a small market with few participants and negotiations impacted by short-term factors, prices varied considerably. Fine or flavor cocoa used to command a “premium” over bulk cocoa on the London and New York Stock Exchanges.

Premiums were not formally recorded and could vary based on demand and location within producing areas, among other factors. Over the last few years, premiums in the Latin American markets for sustainable and high-quality cocoa reached around US$ 1,500 per MT. However, buyers of fine cocoa tended to be drawn from a narrow spectrum of smaller specialty manufacturers.

It is important to take into account the value represented by market trends, which was added to the preferential price of fine cocoa in world markets. While the price of a metric ton of bulk cocoa in 2015 oscillated between US$3,100 and US$3,500, the price of fine or flavor cocoa varied between US$3,500 and US$10,000 per metric ton (SEPSA, 2017.)

Likewise, for 2018 and subsequent years, it was planned that in addition to origin, fine cocoa would also have good quality standards and certifications, so that it could be sold at prices equal to or greater than US$1,000 per MT, higher than the price of bulk cocoa (see Annex 12). (Leitón, 2019)

The premiums for fine or flavor cocoa reached over 23% of the international price. Premium prices of exclusive fine cocoa were thought to exceed it by around 66%.

### The Role of “Mixtures” in the Cocoa Industry

The global marketing of cocoa was not a "black or white," "fine or bulk" issue. In fact, recent trends, mainly in LAC countries, showed that new cocoa plantations in the region cultivated 30-40% fine or flavor cocoa varieties and 60-70% bulk varieties, usually CCN-51. The main goal of these mixtures was to combine the optimal yields of bulk varieties, while somehow protecting prices by incorporating fine varieties that added quality to the mixture.

Usually, cocoa beans were fermented separately due to differences in time and drying requirements. Then, they were mixed prior to marketing to meet quality and volume requirements.
In spite of this, many cocoa farmers challenged the assumption that fine cocoa varieties could not match the yield, disease resistance, and pollination of bulk cocoa. Some fine cocoa farms in Ecuador produced beans that resembled bulk cocoa varieties in management and yield. Also, investments and production costs involved in cultivating fine or bulk cocoa were not so different, sharing many of the same management activities in their production cycles.

**Certified Cocoa**

Certified bulk cocoa was seen as part of the sustainable, differentiated, and high-quality cocoa goods. The demand for certified bulk cocoa had grown significantly as a response from the chocolate industry to consumer demands, given their growing interest in health issues, differentiated origin, social equality, and environmentally friendly products. Recorded production for 2012 included 150,000 MT of certified cocoa under the “FairTrade” standard, 98,400 MT under “Rainforest Alliance,” 214,000 MT under the UTZ certificate, and 45,000 MT under organic standards. In 2015, however, the marketing of certified cocoa reached a total of 600,000 MT, only 15% of the total amount.

The overdependence of big chocolate manufacturers (Nestlé, Lindt, and Hershey, among others) on African cocoa production was a latent threat to them due to three major problems in the region: climate change; social problems such as child labor and slavery; and a lack of orientation towards sustainability. For those reasons, these chocolatiers had set a goal for 2020 to purchase their cocoa from 100% sustainable sources. However, by 2017, none of them was making even 50% of its purchases from certified suppliers.

The three main certification standards implemented in the cocoa industry were UTZ, Rainforest Alliance, and FairTrade. However, in January 2018, UTZ and the Rainforest Alliance merged, keeping the Rainforest Alliance name. Thus, it was expected that by 2019, they would work through a single standard. All of these standards made no difference in the type of cocoa grown (fine or bulk cocoa). And they provided the differentiated response sought by the market regarding responsible production and trade of cocoa, with the following goals: social and organizational well-being; environmental sustainability; good agricultural practices favoring sustainability; and fair commercial practices (Gonzales, 2016.)

According to ICCO, currently, only 10%-12% of cocoa production was certified. However, projections indicated that by 2020, this would increase by 50%. Exports of certified cocoa were estimated to have grown 37% of CAGR from 2003 to 2010 and were projected to grow at higher rates. Latin American countries (Costa Rica, the Dominican Republic, Nicaragua, Peru, Ecuador, Brazil, among others) accounted for 48% of the global production of sustainable cocoa, followed by Africa (Ivory Coast, Ghana, Nigeria), and Asia (India, Indonesia, and Papua New Guinea).
2.2.5 Certified Cocoa Prices

No certification had ever contributed significantly to a decent income for cocoa farmers. The average income of certified cocoa farmers could be slightly higher than average. However, the overall impact of certification was relatively low, and cocoa farmers remained poor.

Despite this, and although it did not maintain a defined pattern, the price of certified cocoa over the last three years exceeded the international price by an average of 4% to 20%. As with fine cocoa, certified cocoa also commanded a premium between $100 and $1,000, depending on the contracts between producers and chocolatiers. By 2016, certified cocoa prices were between $3,100 and $3,700, above bulk cocoa but below fine cocoa (see Annex 13.)

The outcome of negotiations between producers and buyers was that most certifications did not guarantee a price above that of bulk cocoa. Thus, bargaining power played a key role. The FairTrade certification was the only major standard establishing a minimum price for cocoa ($2,000 per MT), as well as a fixed premium of $200 per MT, offering some protection to small-scale cocoa farmers with weak bargaining power.

Prices for this type of cocoa were expected to rise over time due to the demand for sustainable products following global trends.

3. The Cocoa Industry in Nicaragua

The Nicaraguan government had paid greater attention and given more support to the cocoa sector since 2010. It established a policy in 2012 and joined ICCO in 2013 to include Nicaragua in the ICCO origin list of fine or flavor cocoa in 2015.

Nicaragua's production volumes were only about 3% of Ecuador's, making it almost irrelevant in world cocoa markets. However, innovations in quality and flavor, as well as the establishment of more than four large farms (over 2,000 hectares) over the previous few years, had placed Nicaragua on the map. As of 2014, farms owned by Ritter Sport, Bean and Company, and Cacao Oro allowed Nicaragua to be seen as a region that would soon have significant cocoa volumes and quality (Wiegel et al., 2020).

By 2018, Nicaragua had a harvested 11,620 hectares, managed by around 11,000 small producers with estimated average yields of 597.2 kg/ha5 and a production of 6,940 MTs (see Annex 14). (FAO, 2021)

Cocoa production in Nicaragua took place in five agroecological regions:

1. Matagalpa - Jinotega

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5 Estimated average value, FAO.
In these five regions, 98.2% of cocoa production took place, with the rest distributed in other departments, including Rivas, Granada, Boaco, and Chinandega.

The Autonomous Region of the North Caribbean Coast (RACCN)—the most important region among the five listed above—accounted for 38% of cocoa production, followed by Matagalpa-Jinotega (31.54%). (IICA, 2018) The municipalities with the highest production were Waslala, Rancho Grande, and Matiguas.

### 3.1 Value Chain

Most Nicaraguan producers were organized into cooperatives, associations, and solidarity groups, although a large number were individual producers. They usually owned smallholdings of 0.7-1.4 hectares and grew cocoa under agroforestry systems, with cocoa associated with Musaceae species, fruit trees, and/or timber trees that helped cocoa by providing shade and sources of food for their families.

Cocoa marketing in Nicaragua was guided by demand, complying with international quality standards, as well as with ecological and fair-trade certification requirements, in order to access international markets and set prices.

The cocoa chain was led primarily by producer organizations that accounted for a significant portion of production and that had export contracts. Such was the case of CACAONICA, La Campesina, Ríos de Agua Viva, and COOPESIUNA, among others. NGOs cooperating with producer organizations also influenced the cocoa chain[?].

Most of the cocoa grown in Nicaragua was of the Trinitarian type, with a Criollo genetic base, which gave the country great potential to produce cocoa with a differentiated flavor and smell (fine cocoa). Due to this, and the country's results over the last decades, Nicaragua was recognized by ICCO as a 100% producer of fine cocoa.

Nicaraguan cocoa trade consisted mainly of exports of cocoa beans, with around 4,304 and 4,013 MTs exported in 2017 and 2018, respectively. Income obtained from said exports was $5.9 million and $6.9 million for those years (see Annex 15.)

The main export destinations for Nicaraguan cocoa had been Guatemala and El Salvador, with 72.7% and 60% of total exports⁶ in 2017 and 2018 (see Annex 16). Other major destinations included Germany, the Netherlands, Italy, the

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United States, Denmark, and Belgium. The latter was a high-potential market that, in 2018, grew rapidly to 29.2% of exports in terms of volume, becoming the destination with the highest value (US$3.4 million.)

Cocoa sent to El Salvador or Guatemala was grown mainly by small producers. They only washed and dried the cocoa and sold it to intermediaries who took it to those countries. There was significant cocoa smuggling to these destinations, an issue Nicaragua had not been able to tackle. Most of the cocoa exported to El Salvador and Guatemala was underdeclared; that is, the real value of cocoa exports was much higher than reported, and it ended up in destinations such as Mexico. For that reason, even though large quantities of cocoa were exported to those countries, their monetary value was lower than that of cocoa exported to Germany or Belgium.

A second significant flow of cocoa was of the certified fermented type, exported to Germany and other countries by Ritter Sport, which bought it from cooperatives with which it had partnerships. Finally, fine or flavor cocoa was produced both by cooperatives and individual producers who could sell it to companies such as Ingemann (fine cocoa processor and exporter) or who could export it directly to fine chocolate manufacturers located in Italy, Germany, or Belgium, among other countries. This latter segment was the one receiving the most interest over the past few years, given the international recognition granted to the country. This, in turn, had resulted in greater interest from buyers of fine cocoa.

Cocoa cultivation in Nicaragua certainly had significant potential to become a major source of income for producers and a source of development for producing regions. Despite this, some issues had to be overcome to achieve development.

According to Carrillo (2019), a major weakness of cocoa programs was a discontinuity in the support for producers until they were linked to the market. Other limitations included producers’ limited crop management knowledge, combined with their low-investment capacity to create new plantations. Nicaragua had limited infrastructure for cocoa fermentation and drying, which resulted in restricted potential. Another issue was obtaining verifiable genetic material that would result in greater long-term productivity.  

Crop profitability had proven to be a hindrance for the sector. Evidence had shown that cocoa-growing per se was not profitable. As a result, many cocoa growers prioritized other crops grown together with cocoa. This resulted mainly from a lack of inputs, lack of experience, poor agricultural practices, and an unwillingness of producers to devote themselves fully to cocoa, choosing, instead, other, more common activities in the country, such as raising livestock.

The cocoa industry in Nicaragua was emergent and dealt only with marketing cocoa as a commodity, while transformation into intermediate or final cocoa products was just in its first stages. However, the tradition of consuming cocoa and its by-products, together with international recognition of the country as a

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7 Instituto Nicaragüense de Tecnología Agropecuaria (INTA) was the main supplier of this material in 2018.
supplier of high-quality cocoa, contributed to energizing the national value chain in the short-to-medium term.

By late 2018, Nicaragua was undergoing a sociopolitical crisis. Despite this, cocoa was one of a few crops for which growth was expected for 2019. Nicaragua was expected to produce some 7,206 MTs of cocoa on around 11,100 hectares, with approximate yields of 700-800 kg/ha, a value well above the world average, due to production from plantations that had been juvenile the previous year. Export revenues of US$9.3 million were projected that is, around US$2 million above those in 2018. Likewise, APEN expected that by 2026, Nicaragua would be able to produce around 25,475 MTs of cocoa, resulting in income greater than US$40.7 million (APEN, 2019.)

4. Cacao Oro de Nicaragua: The Company

Cacao Oro de Nicaragua was founded in 2014 to produce certified cocoa on large-scale, sustainable plantations in Nicaragua and Peru. Since its onset, the company aimed to work with agricultural communities of the Atlantic of Nicaragua to grow cocoa as a profit crop. It planned to expand to Peru, to reach a total production area of about 10,000 hectares. The company subsequently refocused its development efforts solely on Nicaragua, with a goal of developing 10,000 hectares of cocoa in the country’s northern autonomous region of the Caribbean coast.

From its start, Cacao Oro was a source of development for the region, as it provided employment in an extremely poor area in the northeastern Atlantic region of Nicaragua. It was the main employer in the area, with the positive impact of improving the lives of its employees and their families. It contributed to building bridges, roads, irrigation canals, and general infrastructure for both the community and the company itself.

The plantation was in a 3,000-hectare area that had been damaged by Hurricane Felix in 2008. The farm was planted, reforested, and managed following sustainability criteria. The first harvest of several MTs of fine cocoa occurred in 2017. Operations Manager Gifford Laube was responsible for the selection of cocoa varieties, the technical nursery, field operations, post-harvest processing, logistics, and fine cocoa processing. Therefore, he was the most knowledgeable manager on the plantation, and, to a large degree, success depended on him.

Cacao Oro’s farm operation planning was executed by Clément Ponçon, who had more than 45 years of experience in large-scale agricultural projects in Nicaragua and in 18 other countries in Latin America. The company had established strategic alliances with Exportadora Atlantic, exporter of approximately half of Nicaragua's coffee production at that time, and Ecom Agroindustrial (Parent company of Exportadora Atlantic), a global trader of agricultural commodities and logistics, with a presence in more than 40 countries.

Cacao Oro operations were in the process of being certified under independent, internationally recognized sustainability standards, including UTZ and Rainforest
Alliance. Likewise, Cacao Oro’s farm was developed following an agroforestry model, including active reforestation of degraded lands with native species such as cedar, mahogany, and “nanciton.” More than 200,000 hardwood trees had been planted, interspersed with cocoa plants and other crops, which improved soil nutrition and helped care for the flora and fauna in the region.

Cacao Oro’s production revolved around La Rosita, a 3,000-hectare farm of which 2,000 hectares were devoted to cocoa production. Cacao Oro owned the largest private cocoa plantation worldwide with more than two million cocoa trees in 2,000 hectares, more than 200,000 broadleaf trees, and a 1.5-hectare permanent shade nursery able to produce 1.5 million plants per year. Large-scale cultivation resulted in optimal economies of scale, as well as the need to innovate at all operational levels.

At the time of making the decision to innovate[?], Cacao Oro had nineteen different cocoa varieties under study: CCN-51, known worldwide for its productivity and low quality; CATIE R-1, CATIE R-4, CATIE R-6, CC-137, ICS-39, PMCT-58, ICS-95, IMC-67, UF-296, UF-613, UF-667, UF-668, which were international clones; and six Costa Rica Selecto varieties, categorized as fine or flavor cocoa. These varieties stood out for their organoleptic features, their resistance to disease, and their bean size, which was reflected in their weight (above 1 gram.)

With these varieties, Cacao Oro considered developing three different production areas: 600 hectares for the CCN-51 variety, 700 hectares for international clones, and 700 hectares for the fine or flavor cocoa variety. The former had the highest yield per hectare (around 1.5 - 2 MT/ha), while the clone and fine cocoa areas had slightly lower productivity.8

Investment and production costs such as labor, harvesting, fertilization, pruning, pest management, and so on were almost the same for all areas. The only difference was post-harvest processing, during which the CCN-51 variety had to be handled separately due to its different drying and fermentation times.

Cacao Oro sought to focus on agricultural technology and equipment innovation. It had an industrial-capacity cocoa bean fermentation center, with mechanical dryers and classification and packaging equipment designed to protect product quality.

4.1 Competitive Advantages

Production volume: Production volume was the main difference and advantage of Cacao Oro. Both Nicaraguan and world cocoa production were dominated by small producers who could hardly provide more than 500 MTs to chocolatiers due

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8 In 2020, preparing to expand their cocoa operations, the company hired CATIE to perform an agronomic due diligence investigation on the cocoa operation. As a result of this investigation, and based on field observations, harvest yield statistics, and six additional characteristics, only eight of the 19 clones were selected for the expansion projects. CCN-51 was not selected because the company wanted to maintain a fine cocoa focus and because many of the other varieties selected had higher harvest yields and were more resistant to disease.
to cultivated areas. As a result, Cacao Oro surpassed 95% of the small producers worldwide.

**High yield** was a key factor in profitability. Cacao Oro’s projected yields amounted to 1,500-2,000 kg/hectare, a figure never achieved by Nicaraguan producers.

**Availability of capital:** A lack of capital prevented small producers from implementing best practices, training, acquiring adequate technology, and so on. For its part, Cacao Oro enjoyed a significant degree of capitalization, resulting in high tree density, intensive maintenance and control, better cocoa varieties, and better technologies, among other factors.

**Low production costs:** Cacao Oro projected production costs between $800 and $1,000 per metric ton produced, fermented, dried, and packaged. Considering market prices, Cacao Oro had very low risks.

**Vertical integration:** Unlike Nicaraguan producers, Cacao Oro’s fermentation/drying operations were designed to increase margins, control product quality, and eliminate dependence on third parties, since cocoa processing is key to quality improvement and marketing benefits.

There were very few large-scale cocoa producers with the experience, bargaining power, and resources that Cacao Oro had. This gave Cacao Oro a unique opportunity in its industry, with the potential to become the largest producer in Nicaragua and Latin America.

5. The Decision

In a decisive time for Cacao Oro, Gifford Laube wondered what option would be best for entering the market, leading to sustained growth and success. There were three choices: first, to specialize in conventional cocoa, with moderate prices and high-volume transactions; second, to specialize in lower-volume/higher-priced fine cocoa, with higher barriers to entry; and, finally, to enter the market under a "hybrid" scheme to market a percentage of conventional cocoa combined with fine cocoa.

Cacao Oro could serve as a source of development for the region, as it had a clear focus on its social, production, and processing capabilities. However, the firm was waiting for proper recommendations on which market segment to serve so that it could aim its efforts at a specific goal. On the one hand, specializing in conventional cocoa would bring about challenges related to market and price instability, as well as product oversupply. On the other hand, specializing in fine (or flavor) cocoa entailed facing uncertainty about demand, challenges regarding appropriate yields, extremely strict demands from buyers, and the need for highly trained personnel and optimal processing technology. Whatever the decision, it would have to be based on key data allowing the company to formulate a competitive strategy aimed at achieving Cacao Oro’s worldwide growth.
Annexes

Annex 1.
Performance of Area Harvested in Central American Cocoa-Producing Countries - 2006 and 2013 (Ha)

Source: Taken from Arvelo et al., 2017 based on FAO data, 2016

Annex 2.
Average Cocoa Bean Production-Main Producing Countries


Annex 3.
Average Area of Cocoa Production Units in LAC Countries (ha)
Annex 4.

World Cocoa Bean Production and Grindings

Source: ICCO, 2018

Annex 5.

Apparent Domestic Cocoa Consumption Trend Worldwide


Source: Arvelo et al., 2017 based on ICCO data, 2016
Annex 6.
Average Apparent Domestic Cocoa Consumption Of Main Consuming Countries Worldwide; 2007 - 2015 (MTs)

Source: Arvelo et al., 2017 based on ICCO data, 2016
Annex 7.

World Exports of Cocoa as An Ingredient, 2014-2018

Source: Leitón, 2019 based on data from FAOSTAT and Trademap.

Annex 8.

Cocoa Bean Exports per Country, 2014-2018 (MT 000s)

<table>
<thead>
<tr>
<th>Exporting Countries</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>3,188</td>
<td>2,626</td>
<td>2,980</td>
<td>3,874</td>
<td>4,047</td>
</tr>
<tr>
<td>1 Ivory Coast</td>
<td>1,117</td>
<td>1,286</td>
<td>1,056</td>
<td>1,510</td>
<td>1,526</td>
</tr>
<tr>
<td>2 Ghana</td>
<td>-</td>
<td>-</td>
<td>581</td>
<td>573</td>
<td>844</td>
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<tr>
<td>3 Ecuador</td>
<td>199</td>
<td>236</td>
<td>227</td>
<td>285</td>
<td>294</td>
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<td>4 Cameroon</td>
<td>193</td>
<td>238</td>
<td>264</td>
<td>443</td>
<td>245</td>
</tr>
<tr>
<td>5 Netherlands</td>
<td>197</td>
<td>172</td>
<td>139</td>
<td>173</td>
<td>237</td>
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<td>6 Belgium</td>
<td>135</td>
<td>161</td>
<td>187</td>
<td>233</td>
<td>189</td>
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<tr>
<td>7 Malaysia</td>
<td>94</td>
<td>71</td>
<td>91</td>
<td>145</td>
<td>156</td>
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<tr>
<td>8 Dominican Rep.</td>
<td>68</td>
<td>80</td>
<td>74</td>
<td>51</td>
<td>68</td>
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<tr>
<td>9 Peru</td>
<td>47</td>
<td>59</td>
<td>62</td>
<td>58</td>
<td>60</td>
</tr>
<tr>
<td>10 Sierra Leone</td>
<td>0</td>
<td>4</td>
<td>10</td>
<td>122</td>
<td>15</td>
</tr>
<tr>
<td>Subtotal</td>
<td>2,051</td>
<td>2,308</td>
<td>2,691</td>
<td>3,594</td>
<td>3,633</td>
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<tr>
<td>Others</td>
<td>1,137</td>
<td>318</td>
<td>289</td>
<td>280</td>
<td>413</td>
</tr>
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</table>

Source: Dirección de Estudios Económicos e Información Agraria de Perú, 2019 based on Trademap data

Annex 9.

Cocoa Price per MT (2010-2018)

Source: Author’s elaboration based on data from la ICCO.

Annex 10.

Cocoa Price Projections in US$ per MT
Annex 11.

Main Countries Exporting Fine or Flavor Cocoa, 2018

<table>
<thead>
<tr>
<th>Countries</th>
<th>Fine or Flavor Cocoa Export Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecuador</td>
<td>USD 000s: 498 838</td>
</tr>
<tr>
<td>Dominican Rep.</td>
<td>USD 000s: 123 008</td>
</tr>
<tr>
<td>Peru</td>
<td>USD 000s: 116 177</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>USD 000s: 58 672</td>
</tr>
<tr>
<td>Madagascar</td>
<td>USD 000s: 19 524</td>
</tr>
<tr>
<td>Colombia</td>
<td>USD 000s: 15 941</td>
</tr>
<tr>
<td>Indonesia</td>
<td>USD 000s: 7 244</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>USD 000s: 5 584</td>
</tr>
<tr>
<td>Granada</td>
<td>USD 000s: 3 277</td>
</tr>
<tr>
<td>Brazil</td>
<td>USD 000s: 2 653</td>
</tr>
<tr>
<td>Panama</td>
<td>USD 000s: 1 400</td>
</tr>
<tr>
<td>Trinidad &amp; Tobago</td>
<td>USD 000s: 1 347</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>USD 000s: 1 209</td>
</tr>
<tr>
<td>Guatemala</td>
<td>USD 000s: 498</td>
</tr>
<tr>
<td>Jamaica</td>
<td>USD 000s: 449</td>
</tr>
<tr>
<td>Dominica</td>
<td>USD 000s: 281</td>
</tr>
<tr>
<td>Haiti</td>
<td>USD 000s: 255</td>
</tr>
<tr>
<td>Saint Lucia</td>
<td>USD 000s: 73</td>
</tr>
</tbody>
</table>

Source: Leitón, 2019 based on Trademap

Annex 12.

Prices of Fine or Flavor Cocoa - Exporting Countries, 2010-2018

(USD/MT)
Certified Cocoa Prices vs. Prices of Other Segments (2016)

Source: Arvelo, 2017

Annex 14.
Nicaragua - Cocoa Production and Yield (2015-2018)

Source: Author’s elaboration based on FAOSTAT data

Annex 15.
Annex 16.

Volume of Nicaraguan Cocoa Exported by Destination Country (MTs)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Germany</td>
<td>1,085</td>
<td>834</td>
<td>862</td>
<td>14</td>
<td>20.0%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>0</td>
<td>14</td>
<td>0</td>
<td>86</td>
<td>0.0%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Guatemala</td>
<td>1,910</td>
<td>1,487</td>
<td>2,318</td>
<td>1,612</td>
<td>53.9%</td>
<td>40.2%</td>
</tr>
<tr>
<td>El Salvador</td>
<td>765</td>
<td>701</td>
<td>813</td>
<td>785</td>
<td>18.9%</td>
<td>19.6%</td>
</tr>
<tr>
<td>United States</td>
<td>62</td>
<td>47</td>
<td>56</td>
<td>81</td>
<td>1.3%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Denmark</td>
<td>26</td>
<td>24</td>
<td>32</td>
<td>47</td>
<td>0.7%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Belgium</td>
<td>-</td>
<td>-</td>
<td>38</td>
<td>1172</td>
<td>0.9%</td>
<td>29.2%</td>
</tr>
<tr>
<td>Italy</td>
<td>22</td>
<td>30</td>
<td>76</td>
<td>83</td>
<td>1.8%</td>
<td>2.1%</td>
</tr>
</tbody>
</table>

Source: Author’s elaboration based on FAOSTAT data.
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