

Belize in the Cocoa-Chocolate Global Value Chain

July 2018

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This research was prepared by the Duke University Global Value Chains Center on behalf of the Organization of American States (OAS). This study is part of the establishment of Small Business Development Centers in the Caribbean. The report is based on both primary and secondary information sources. In addition to interviews with firms operating in the sector and supporting institutions, the report draws on secondary research and information sources. The project report is available at www.gvcc.duke.edu.

Acknowledgements

The Duke University Global Value Chains Center would like to thank all of the interviewees, who gave generously of their time and expertise, as well as Renee Penco of the Organization of American States (OAS) for her extensive support.

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Acronyms

ANECACO	National Association of Cocoa Exporters
BCC	Belize Cacao Consortium
BELTRAIDE	Belize Trade and Investment Development Service
CCN-51	Colección Castro Naranja
CONACADO	National Confederation of Dominican Cocoa Producers, Inc.
EU	European Union
FFC	Fine Flavor Cocoa
FINACO	Association of Producing Countries of Fine Aroma Cocoa
FLO	Fairtrade Labelling Organizations
GAP	Good Agricultural Practices
GI	Geographic Indication
GVC	Global Value Chain
ICCO	International Cocoa Organization
INEN	National Institution of Standards
ISO	International Organization for Standardization
JAS	Japanese Agricultural Standards
MAGAP	Ministry of Agriculture, Livestock, Aquaculture and Fisheries
MMC	Maya Mountain Cacao
NGO	Non-Government Organization
NOP	National Organic Program
PDO	Protected Denomination of Origin
PGI	Protected Geographical Indication
RA	Rainforest Alliance
SMEs	Small and Medium-Sized Enterprises
TCGA	Toledo Cacao Growers Association
TSG	Traditional Specialty Guarantees
US	United States

Executive Summary

This report uses the Global Value Chain (GVC) framework to examine Belize's position in the global cocoa-chocolate industry and identify opportunities for local business to improve their position in the sector. While Belize is a relatively small player in terms of overall production volume, it has a distinguished historical tie to cocoa and is developing a reputation for premier quality. Specifically, the close ties of Mayan culture to chocolate manufacturing helps position Belize as a high-value producer of cocoa beans and chocolate.

There are, however, country-wide constraints that threaten Belize's competitiveness moving forward. Overall productivity is low, and infrastructure remains a challenge. Furthermore, the chief organizer of producers, the Toledo Cacao Growers Association (TCGA) has recently experienced a reduction in capacity and the loss of certification, meaning critical supportive activities that the industry needs are left unmet. Many of these challenges are surmountable; however, they will require a concentrated effort by domestic and regional stakeholders. Most notably, there is a need for more in-depth collaboration and coordination among all industry actors in the country to help ensure future competitiveness.

The Cocoa-Chocolate Global Value Chain

As the key ingredient in the production of chocolate, cocoa beans are one of the world's most highly traded tropical crops, valued at approximately US\$7 billion in 2015 (UNComtrade, 2017). Total trade in the cocoa-chocolate GVC has nearly doubled over the past ten years reaching US\$44 billion in 2015 (UNComtrade, 2017). Production is concentrated in hot tropical climates in developing countries, while consumption largely centers in developed countries in the Northern hemisphere.

As a crop, cocoa beans are diverse, with three main types that dominate production globally. These varieties vary in terms of resilience, productivity, and quality. The highest quality beans are frequently labeled Fine and Flavor Cocoa (FFC) beans. FFC certified is a distinct demarcation for cocoa beans and conveys that the product has a unique flavor profile suitable for the production of high-end chocolates. They vary from bulk cocoa beans in their physical and chemical composition as well as their taste. While no set standards exist, FFC beans are exclusively certified via a committee within the International Cocoa Organization (ICCO) that meets biannually and makes decisions based on available data for exporting nations and established guidelines. Only governments may petition for the certification and only exported beans may carry the certification. Depending on their quality, they can earn over three times the selling price for ordinary or bulk cocoa beans. The rise in demand for FFC beans reflects broader trends in the cocoa-chocolate industry. Some of the most pronounced recent trends that influence the industry include:

- **Global consumption patterns have changed as a result of rising disposable income in emerging economies driving demand for chocolate products.** A handful of emerging economies (Brazil, China, India, Russia, and South Africa) account for 70% of global confectionary growth (KPMG, 2014). These new players have joined mature markets in the European Union (EU), Japan and the United States (US) (ICCO, 2014a) to boost the size of the global chocolate market to approximately US\$98 billion . This has opened up numerous new South-to-South market opportunities for cocoa-producing countries. At the same time consumers in the global North are increasingly making shifts towards premium products, including single origin and artisanal chocolate (Yu, 2016a).

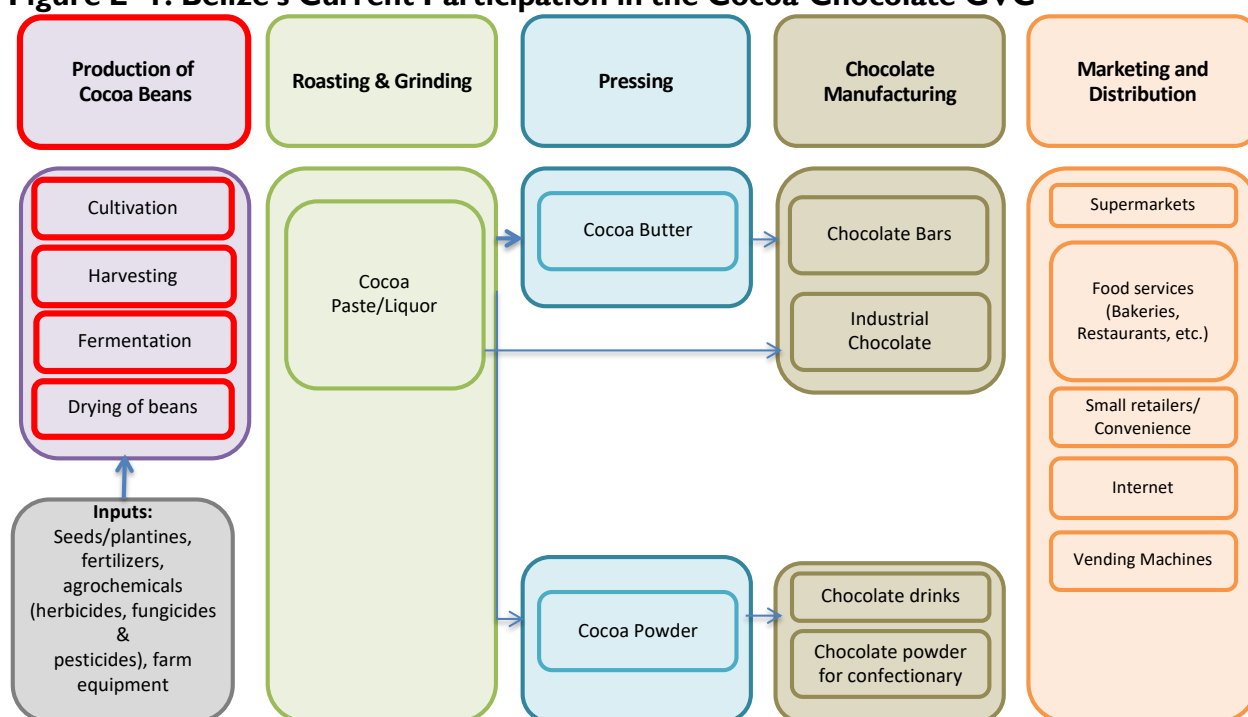
- **Sustainability and traceability are increasingly crucial in the industry and often driven by global chocolate manufacturers.** The chocolate sector has traditionally had little interaction with growers, who interacted with the market mainly through traders or national marketing boards (Barrientos, 2015). This has begun to change. At the cocoa production level, global companies, including Mars, Mondelez, and Nestle are committed to sustainability and have plans to only purchase sustainably produced beans in the near future.
- **The growing popularity of specialty cocoa-chocolate is spurring new actors to enter into the market.** Growing popularity in specialty markets is spurring many nations to enter the chain, especially into FFC bean production. Since 1972 when relatively few nations exported FFC beans, there are currently 23 nations exporting an approximate 283,731 tons of cocoa beans. These niche markets, known collectively as specialty chocolate, encompass artisanal chocolate makers and bean to bar chocolate. Price premiums earned for FFC beans can be over 300% the price of bulk, uncertified beans. They are also more profitable than other certified beans, earning up to 2.5x more than Fairtrade or Rainforest Alliance (RA) certified beans (ICCO, 2017).

Belize in the Cocoa-Chocolate Value Chain

The cocoa-chocolate industry in Belize is centered around a handful of cocoa bean buyers who connect small farmers to export markets. There is also a small local chocolate-making industry in the nation, but their focus is primarily on domestic markets and tourists. Historically, the industry has capitalized on its organic production, as well as emphasizing the linkage of cocoa/chocolate to Mayan history. As a result, since the 1990s the nation has carved a position in niche chocolate markets. However, the industry is in a state of flux. As new actors enter via FDI, a division is emerging between organic production, concentrated among smallholders, and industrial farms which rely on conventional farming mechanisms. Further, one of the key actors in the industry, the Toledo Cacao Growers Association (TCGA), recently lost their organic certification from the United Kingdom-based Soil Association as well as their Fairtrade Certification. Consequently, they are no longer buying cocoa beans from TCGA farmers, limiting buyers in the nation. At the same time, global declines in prices and lapses in technical assistance for Belize cacao farmers further threaten the viability of the industry. Despite these challenges, opportunities for growth exist but require investments in coordination activities and training to help ensure high-quality production at the farm level.

Belize's participation in the cocoa-chocolate GVC is primarily in the production segment (Figure E-1). Power in the Belizean cocoa-chocolate value chain is concentrated among a few buyers who also function as exporters, connecting the nation to international markets. At the other end of the spectrum are the roughly 1000 producers, who primarily farm small plots of land.

Figure E- I. Belize's Current Participation in the Cocoa-Chocolate GVC



Source: Authors

Recent changes and the entry of new actors are helping to further alter the industry. The most significant features of the industry include the following:

- **Production is fragmented though some coordination is occurring.** As in most countries, the smallholder model is the dominant model of cocoa production. Smallholders who cultivate cacao trees often intercrop it with other products for subsistence, such as maize. These farmers sell cocoa beans to major buyers who aggregate and, in some cases, engage in fermentation and drying (Field Research, 2018).
- **The historic driver of the industry, the Toledo Cacao Growers Association (TCGA), is experiencing a decline in prominence.** Historically, the TCGA has been the primary actor in the nation. Founded in 1986, the NGO represents cocoa farmers in southern Belize and handles the marketing of cocoa as well as negotiates selling prices for the nation's farmers. The TCGA also helps to certify production, primarily as organic and/or Fairtrade. Recently, TCGA has lost its certifications, and as a result, it is no longer buying beans to sell to buyers. At the same time, new actors, primarily in the private sector, are entering into the industry and providing new opportunities.
- **International investment is growing in the industry, causing shifts in the established organization of production.** With growing demand for specialty chocolate, international influence is growing in the nation. Foreign investors are buying large plots of land in southern Belize for cocoa bean production. These farms differ from the smallholder in the use of conventional agriculture practices and machinery to help maximize efficiency. These farms are still in the early stages and have yet to produce notable quantities of cocoa beans or define markets but as they mature their production will grow. One of the main

distinction of these foreign investors is that they are planning to cultivate conventional cocoa instead of FFC.

Aggregated, these characteristics lead to strengths for Belize as it pursues upgrading trajectories in the cocoa-chocolate GVC. The advantages include:

- 1. High quality production.** The country is known for high-quality production. While only 50% are certified as FFC by the ICCO, the nation is known globally for having a consistently high-value crop and strong processing abilities that create a superior product. Many actors state that the high quality is a direct result of the processing techniques used in the nation (Field Research, 2018).
- 2. Established and growing investor interest.** Capitalizing on the high-quality reputation, investment in the industry is expanding. Recently several foreign actors have entered the business. Most of these investors use conventional production, a contradiction from the organic and FFC bean cultivation used by most smallholders (Field Research, 2018).
- 3. Historic and cultural links to cocoa-chocolate industry.** Belize can trace cocoa bean production to Mayan times, highlighting the long history of the plant in the nation. As a result, it has strong linkages with cultural and historical legacies which help craft appealing narratives for consumers. It also helps to create links to other sectors, including Mayan chocolate making demonstrations helping link chocolate manufacturing to tourism.

Despite these strengths, there are multiple challenges, some of which have become particularly pronounced in recent years. The most prominent include:

- 1. Lack of industry cohesion.** Coordination in the industry is lacking. Divisions between large-scale, conventional producers and smaller, organic production as well as disagreement on how to best integrate into the cocoa-chocolate GVC is limiting the competitiveness of the industry. Belize lacks a well-defined body to help coordinate actors and better position the industry for growth. This lack of private sector coordination is also seen in the lack of collaboration with government agencies and educational institutions.
- 2. Limited data availability.** Production data is limited. The leading actor who maintained data, the TCGA, has reduced this activity and no longer has updated membership rosters of producers or amounts produced. The lack of data presents difficulties in gaining ICCO's FFC certification as well as establishing contracts with buyers and monitoring the productivity of the industry.
- 3. Absence of modern infrastructure.** Road quality and transport ability from farms to export ports is a significant constraint for the industry. Lack of quality roads, especially during the wet season makes it difficult to deliver harvest to traders. Infrastructure deficiencies present a high cost and waste in the industry which limits competitiveness.
- 4. Limited extension services.** With the decline of the TCGA, extension services are limited in Belize. While several NGOs seek to fill this need, none have achieved the scale needed to serve the entire industry. Following a massive tree planting initiative in the early

2010s, extension services are now required to help instruct farmers on best practices to maintain high yields as these trees become active producers of cocoa beans.

- 5. Insufficient marketing and branding.** Despite a long history of cacao tree cultivation and chocolate manufacturing and the strong link with Mayan tradition, the industry has not worked extensively on collective marketing and branding efforts. Instead, most promotion occurs at the firm level. A coordinated marketing and branding effort could help distinguish Belize as a high-quality provider of cocoa beans and help increase its position on the global market.
- 6. Aging farmer population.** The average age of cocoa farmers in Belize is increasing. The average age of southern Belize farmers is between 50-60 years old (IDC, 2015). Further, the Belizean youth are not entering into the industry, preferring better-paying jobs in tourism and other sectors. The aging of farmers and limited entry of new growers will present a challenge for the industry moving forward.

Other cocoa bean exporting countries have utilized different strategies for overcoming similar impediments. Ecuador provides a strong example of diversifying market offerings to help enter into subsegments of the cocoa-chocolate industry. In 2011, the government established the Association of Producing Countries of Fine Aroma Cocoa (FINACAO) along with other countries in the region who produce fine flavor cocoa. It is headquartered in Ecuador. The objective of the organization is to build capacity among small and medium size producers to help them capture higher value and sustainably cultivate fine flavor cocoa through improvements in harvest quality and international cooperation (Kooij, 2013). It further has invested in training programs to help maintain plantings, such as pruning campaigns.

The Dominican Republic's National Confederation of Dominican Cocoa Producers, Inc. (CONACADO) helped spur process and product upgrading by providing support for farmers to achieve the necessary certification to export in niche markets as well as improving productivity via trainings and access to finance. By organizing the industry to help facilitate the flow of information and developing trainings to improve farm level practices, CONACADO has help make the Dominican Republic a major supplier of FFC beans globally.

Both of these cases also offer a lesson on the importance of industry coordination and direction. Ecuador and the Dominican Republic have strong institutions that support the industry. Ecuador uses multiple programs that are driven by input from public and private sector actors as well as NGOs while the Dominican Republic has one central organization to help steer industry activity. Such steps helped build each country's brand as a high-quality producer globally, allowing firms to enjoy higher prices.

Belize's potential upgrading can employ similar strategies while addressing the country's location-specific challenges. Specifically, Belize can attempt to implement the following trajectories:

- 1. Short-term investments in product upgrading to increase the number of exporters who have international certifications.** Organic and Fairtrade certification are critical certifications needed to increase selling prices in the nation. However, one of the key buyers, TCGA, is no longer certified. By making investments to help buyers gain and maintain certifications, a more robust market for farmers can emerge and reduce price

shocks in the nation. Beyond previously held certification, efforts to increase the amount of FFC certified beans is crucial.

2. **Short-term investment in process upgrading to maintain and improve yields.** In the 2010s a massive campaign by both MMC and TCGA sought to increase cacao trees in Belize. As these trees reach maturity, it is important that programs to help maintain the trees to maximize productivity are offered. These trainings should also accompany input provision programs and post-harvest trainings to help maximize farm-level activity and help ensure high quantities of cocoa beans.
3. **Medium-long term functional upgrading via development of a national brand to promote internationally:** Belize offers a high-quality product with a strong link to the nation's history and Mayan culture. These types of cultural/historic links are currently sought after in niche markets and offer a strong opportunity to increase participation in international markets. Marketing efforts would help all producers and brands in the nation.

Beyond these upgrading trajectories, there is a critical need for transversal efforts around improving the institutionalization of the industry and investing in modern infrastructure: The above recommendations depend upon broad upgrading efforts that involve the whole industry but do not necessarily animate individual strategic aims. These efforts should encompass the following overarching components:

- ***Institutionalization:*** Historically, Belize enjoyed a high level of institutionalization via the TCGA. However, with the entry of new actors and internal issues, new efforts around institutionalization are necessary. Nascent efforts aimed at increasing coordination, such as the Belize National Cacao Committee, exist but lack full participation and remain in the planning phase. As currently envisioned, it would work primarily to stabilize prices in the nation. This activity is not sufficient. Stronger coordination of all support roles, including knowledge transfer of best practices, input provisions and branding and marketing at the country level is needed to help better position the industry. Further, institutionalization should involve all value chain actors, including farmers, buyers, and chocolate manufacturers as well as provide for a clear strategy for the nation. The government can employ a more aggressive posture in supporting the industry through helping to establish a national committee to help direct the industry, fund projects and coordinate efforts towards a common strategy.
- ***Infrastructure:*** Roads around cocoa growing regions are difficult to navigate, especially during rainy seasons. As a result, any farmers struggle to reach buyers. Some buyers, such as MMC, go to the farms to meet farmers but also cited road conditions as an industry constraint (Field Research, 2018). Significant investments to improve infrastructure in the region will help facilitate the upgrading trajectories mentioned above, as well as reduce transport loss and reduce cost. This will also help increase cocoa tourism in the area by making it easier for visitors to access cocoa farms.

I Introduction

Cocoa beans, derived from the cacao tree, are a highly traded product and the main ingredient in chocolate manufacturing. Production is concentrated in developing nations that possess the requisite climate and soil for cultivation while processing and consumption is largely concentrated in developed nations. The industry, valued at US\$44 billion in 2015 is growing and presenting many prospects for nations to increase their participation (UNComtrade, 2017)¹. Notably, growing demand in artisanal chocolate offers new opportunities for niche suppliers in the high value cocoa bean market.

A small exporter of cocoa beans (less than US\$550 thousand in 2015, or >0.001% of global supply) Belize is seeking to expand its participation in the sector. A major agriculture product in Southern Belize, many linkages to Mayan culture and community are still drawn today. Following a revitalization of the industry in the 1980s and rapid growth in the 2000s the industry is now at a crossroads. The recent entry of new investors and the loss of certification of a historic aggregator presents new challenges and opportunities for the industry.

To help address emerging challenges and to better capitalize on opportunities, Belize must upgrade its cocoa-chocolate industry. Specifically, it should develop greater coordination among actors in the nation to ensure all are working towards a common strategy. It must also work to develop the industry in ways that attract a new generation of farmers and ensures competitiveness at the global level.

This paper uses the Duke Global Value Chain Center framework to assist local and regional stakeholders' efforts to boost the Belize cocoa-chocolate sector. The Global Value Chain (GVC) framework helps policymakers better understand how the global cocoa-chocolate industry is evolving and assess Belize's current position in the chain with the goal of identifying opportunities for economic upgrading to provide returns for small and medium-sized enterprises (SMEs) in the country. The report is structured as follows: It first provides an overview of the cocoa-chocolate value chain to present a clear understanding of the scope of the industry, how markets are structured and how changing distribution of demand and supply destinations alter structural dynamics. It then analyzes the domestic industry within Belize, first detailing the country's position in the chain as well as recent export trends. After examining Belize's position in the chain, it outlines the organization and governance found in the local landscape.

After assessing the advantages and constraints observed in Belize, it looks to Ecuador and the Dominican Republic for comparative case studies. After detailing the lessons learned for Belize, the report concludes by outlining potential upgrading strategies to enhance the country's competitiveness.

¹ Because UN Comtrade trade data from 2016-present for key exporters, including Cote D'Ivoire, the world's largest cocoa bean exporter are missing, this report uses 2015 figures.

2 The Global Cocoa-Chocolate Industry²

As the key ingredient in the production of chocolate, cocoa beans is one of the world’s most highly traded tropical crops, valued at approximately US\$7 billion in 2015 (UNComtrade, 2017). Total trade in the cocoa-chocolate GVC has nearly doubled over the past 10 years reaching US\$44 billion in 2015 (UNComtrade, 2017).³ Production is concentrated in hot tropical climates in developing countries, while consumption has been primarily in developed countries located in the Northern hemisphere.

As a crop, cocoa beans are diverse, with three main types that dominate production globally (see Table I). The most commonly produced variety, Forastero, accounts for over 80% of all cocoa beans produced globally. Forastero beans are often compared to the resilient Robusta coffee bean and are used in mass chocolate manufacturing. In contrast, Criollo beans are rare, and account for roughly 5% of global production. Trees are native to Central and South America, as well as the Caribbean and Sri Lanka. Criollo trees are known to be very fragile to environmental disturbances but yield the highest value beans in the market. A third version, Trinitario beans are hybrids of Criollo and Forastero beans. These have sufficient quality to be considered fine and flavor cocoa (FFC) but are more resilient to harsh climate and disease compared to Criollo (Barry Callebaut, 2016c; ICCO, 2017; The Chocolate Revolution, 2016).

Table I. Characteristics of Cocoa Beans by Type

	Forastero	Trinitario	Criollo
Characteristics	Resilient; high yields purple-colored beans bitter taste	Resilient; high yields Rich taste but qualities vary by specific type	Fragile; low yields Rich secondary taste notes
% of global supply	80%	15%	5%
Major producing regions/countries	Africa (Cote d’Ivoire and Ghana); Ecuador and Brazil	Mexico; Caribbean islands; Colombia; Venezuela and Southeast Asia	Central and South America; Caribbean islands and Sri Lanka
Primary use	Mass Chocolate	Fine and Flavor Cocoa chocolate	Ultra-premium chocolate Fine and Flavor Cocoa chocolate

Source: Barry Callebaut (2016b)

Bulk production, which requires Forastero and certain Trinitario varieties is often driven by scale. In this segment of the industry, the most competitive exporters are able to meet the high volume demands of global firms in the industry. Beyond the major cocoa bean types, a secondary product distinction, Fine and Flavor Cocoa (FFC) beans, is growing in popularity FFC beans come primarily

² This section of the report is based on Hamrick et al., 2017.

³ Sector-wide exports have doubled over the past 10 years, with a peak almost US\$48 billion in 2014 (UNComtrade, 2017).

from Criollo and high quality Trinitario beans and are used in specialty chocolate manufacturing⁴ (see Box 1).

Box 1. Fine or Flavor Cocoa

Fine and flavor cocoa (FFC) is also prominent in the international market. FFC certified is a special demarcation for cocoa beans and conveys that the product has a unique flavor profile suitable for the production of high-end chocolates. They vary from bulk cocoa beans in their physical and chemical composition as well as their taste. While no set standards exist, FFC beans are exclusively certified via a committee within the International Cocoa Organization (ICCO) that meets biannually and makes decisions based on available data for exporting nations and established guidelines. Only governments may petition for the certification. Depending on their quality, they can earn over 3 times the selling price for ordinary or bulk cocoa beans (see section 2.3.1 for more detail).

FFC beans are typically Criollo or Trinitario varieties, but can also be Forastero varieties, such as in the case of Ecuador. FFC beans are frail but capture the highest value. Only 11% of exported beans are eligible to be classified as FFC. FFC is recognized for its high-quality taste profile and commands higher prices. ICCO, the agency that regulates and denotes beans as FFC, only uses this distinction for exported cocoa beans.

Source: ICCO (2017); UNComtrade (2017)

While FFC beans receive higher market prices, variance exist within the category. Due to perceived higher quality and the higher cost, FFC beans are used for specialty markets, including artisanal chocolate and single origin bean to bar products. The rise in demand for FFC beans reflects broader trends in the cocoa-chocolate industry. Some of the most pronounced recent trends that influence the industry include:

- **Global consumption patterns have changed as a result of rising disposable income in emerging economies driving demand for chocolate products.** A handful of emerging economies (Brazil, China, India, Russia, and South Africa) account for 70% of global confectionary growth (KPMG, 2014). China, in particular, is a major driver of this growth as incomes rise, the market liberalizes and consumers begin to adopt more Western dietary habits and lifestyles (Ferdman, 2014; Squicciarini & Swinnen, 2016). Chinese imports of chocolate grew around 700% from 2006 to 2015, from nearly US\$67 million to over US\$516 million (UNComtrade, 2017). Brazil has followed a similar pattern, increasing imports tenfold over the past decade.⁵ Expansion of cold chain capabilities in these southern markets has also helped to drive demand by allowing for easier shipment of large quantities of chocolate (Barrientos, 2015). These new players have joined mature markets in the European Union (EU), Japan and the United States (US) (ICCO, 2014a) to boost the size of the global chocolate market to approximately US\$98 billion (Hawkins & Chen, 2014; Statista, 2018). This has also opened up numerous new South-to-South market opportunities for cocoa-producing countries. At the same time consumers in the global North are increasingly making shifts towards premium products. Demand for dark chocolate is especially increasing due to its health benefits (Yu, 2016a). Single origin and

⁴ Ecuador offers one exception. Though technically a Forastero bean, the unique variety, *Nacional*, found only in Ecuador is considered a FFC bean. See section 4.1.1 below for further detail.

⁵ Brazil imported US\$33 million in 2006, while in 2015 increased to nearly US\$170 million (UNComtrade, 2017).

artisanal chocolate is also growing in popularity in developed economies as consumers seek more differentiated and specialty products (Yu, 2016a).

- **Sustainability and traceability are increasingly crucial in the industry and often driven by global chocolate manufacturers.** Concurrent with rising demand, stagnation in the supply of cocoa beans is resulting in concerns about sustainability.⁶ The chocolate sector has traditionally had little interaction with growers, who interacted with the market mainly through traders or national marketing boards (Barrientos, 2015).⁷ This has begun to change. At the cocoa production level, company schemes and commitments towards sustainable production include Plan Ferrero's commitment to sustainable cocoa, Mars' Sustainable Cocoa Initiative, Mondelez's Cocoa Life (see Box 2) and Nestlé's Cocoa Plan (Barrientos, 2015; Fairtrade Foundation, 2016). Together these initiatives are focused on a) developing more disease-resistant and productive hybrids, b) improved and innovative techniques for fermentation and drying, c) enabling more efficient and varied farm growing plans and business models, d) paying higher wages and providing better quality of life for farmers (Williams & Eber, 2012).

As a result of these programs and concerns about future supplies, global chocolate manufacturers are increasingly demanding that cocoa beans be certified as sustainability produced. Social concerns, including fair trade and child labor eradication are also helping advance the traceability trend. In recent years, several leading chocolate manufacturers announced they would only source from UTZ or Rainforest alliance certified producers, though timelines vary. These manufacturers include Mars, Hersey and Ferrero (Nieburg, 2013).

⁶ There are several causes for the concern about sustainability. Weak farm gate returns from cocoa—the average income from cocoa production was estimated to be approximately US\$0.42/capita/day in Ghana in 2008 (Barrientos & Asenso-Okyere, 2008)—have driven farmers to move to better and faster paying crops, or out of agriculture completely. Aging trees, adverse weather conditions and disease have accentuated this shift, and production has become unsustainable for many producers (Barrientos, 2014; UNCTAD, 2016; Williams & Eber, 2012). With future demand expected to increase by more than 4.5 million tons by 2020, experts predict a global shortage of cocoa supply, that could be as high as 1 million tons by 2020, and 2 million tons by 2030 (Fairtrade Foundation, 2016; Ferdman, 2014).

⁷ From the 1950s to 1980s, the predominant model of support for cocoa farmers was through state dominated export-marketing boards, which set farmer prices, had monopoly control over cocoa purchases and exports. The international cocoa market was then largely characterized by arms-length trading through commodity markets (Barrientos, 2015).

Box 2. Mondelez Cocoa Life Program to Boost Productivity

In 2012, ten of the leading cocoa processors and chocolate brand manufacturers (developed country firms) agreed on sharing good agricultural practices (GAP) and crop yield to meet growing demand and address declining cocoa beans production. Mondelez International,⁸ the world's largest chocolate manufacturer, is one of the leaders of this initiative through its program, Cocoa Life. Through Cocoa Life, Mondelez has committed US\$400 million to cocoa sustainability programs in six nations: Ghana, Cote d'Ivoire, Indonesia, the Dominican Republic, India, and Brazil; the goal is to work with as many as 200,000 cocoa farmers by 2022.

The program seeks to promote sustainable, high yield production among farmers to help increase farm revenue. In addition to teaching farmers GAPs, it focuses on developing business skills of the farming communities, helping to shift the perception of farming as a subsistence activity to a commercially, viable operation, making the profession more attractive to younger generations. The design and themes of programs are created in consultation with multiple stakeholders in the community.

To measure the impact of this initiative, third parties frequently evaluate the program. By 2015, as a result of Cocoa Life, Mondelez International was working with 76,700 cocoa farmers in Ghana, Cote d'Ivoire, Indonesia and India and sourced 21% of its cocoa beans from sustainable farms.

Source: Mondelez International (2016).

- **The growing popularity of specialty cocoa-chocolate is spurring new actors to enter into the market.** In addition to sustainability concerns, the rise in traceability is also spurring the development of new market segments focused on FFC beans. Growing popularity in specialty markets is spurring many nations to enter the chain, especially into FFC bean production. Since 1972 when relatively few nations exported FFC beans, there are currently 23 nations exporting an approximate 283,731 tons of cocoa beans. These niche markets, known collectively as specialty chocolate, encompass artisanal chocolate makers and bean to bar chocolate.

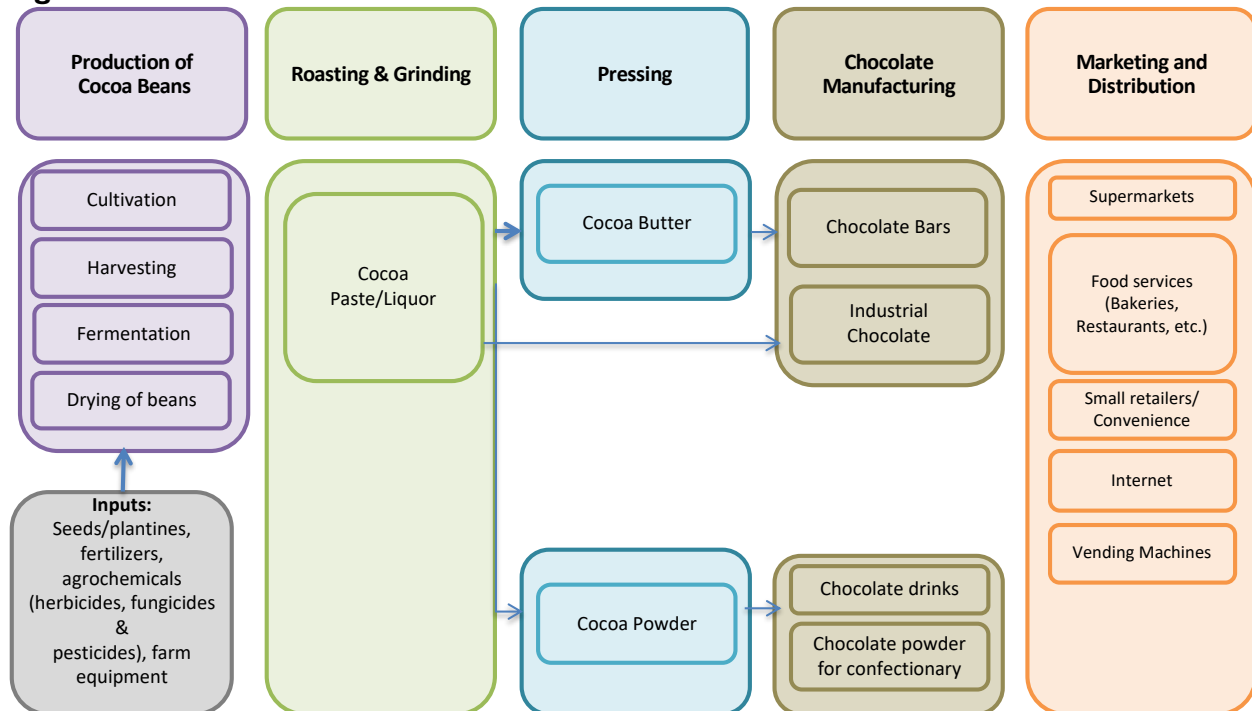
Nations seeking to capitalize on the growth of specialty markets are driving the rise in FFC certified nations. Price premiums earned for FFC beans can be over 300% the price of bulk, uncertified beans. They are also more profitable than other certified beans, earning up to 2.5x more than Fairtrade or Rainforest Alliance (RA) certified beans (ICCO, 2017). Many retailers are now promoting single origin chocolate products in high end markets, with Chocolatier Godiva offering one example. The retailer offers origin-specific chocolate in high end brands, with cocoa sourced from Mexico, a small quantity producer but with a rich history of chocolate production (Yu, 2016b).

⁸ Mondelez International owns the following chocolate brands: Cadbury, Milka, Lacta, Côte d'Or and Alpen Gold (see Section 2.3).

2.1 The Cocoa-Chocolate Global Value Chain

The cocoa-chocolate GVC spans both agricultural and manufacturing activities, as well as marketing; and these activities typically occur in diverse locations around the world (Figure 1). These processes can be divided into five main segments: 1) Production of Cocoa Beans 2) Roasting and Grinding, 3) Pressing, 4) Chocolate Manufacturing, and 5) Marketing and Distribution. Figure 2 provides an illustration of this value chain. While each stage is highly focused on one or two processes, volume, energy, shipping conditions, and other input requirements have resulted in this considerable fragmentation of the chain.⁹

Figure 1. Cocoa-Chocolate Global Value Chain



Source: Authors.

Production of Cocoa Beans: Cocoa production is a perennial crop; after planting, trees enter production within approximately three to five years depending on the variety and have a productive life of 25-30 years, producing beans approximately every six months (ICCO, 2014b; UNCTAD, 2016).¹⁰ Cocoa beans vary by quality, determined by the type of bean and the production and harvesting conditions. Growing techniques such as shade-plantation and fertilization can have important impact on the productivity of raw mature cocoa beans. Production is labor-intensive during harvest which is done by hand, and trees require close monitoring during the rest of the year – particularly for fertilization needs, weed control, disease and animal interference (UNCTAD, 2016; World Cocoa Foundation, 2016). Harvesting is often performed by a male labor force; however, women are active in production and processing in many large producing nations

⁹ Fragmentation between cocoa production and chocolate manufacturing exists in the FFC industry but to a lesser degree than the undifferentiated cocoa-chocolate GVC. For more information, see Hamrick et al, 2017.

¹⁰ The harvesting cycles depend on the climate and the variety of cocoa and thus may differ slightly by location and type.

(Barrientos, 2014). Following harvest, the pulp-covered beans must be fermented and dried. Fermentation entails heating the beans for up to a week. This is a key process with considerable bearing on the quality of downstream products as it produces the chocolate flavor. Afterwards, the wet cocoa beans are typically dried in sunlight for five to ten days, which helps to improve their shelf life. This drying process can also be done in mechanical dryers (UNCTAD, 2016; World Cocoa Foundation, 2016).

Labor intensity combined with the industrial organization structure of producing-countries within the Tropics has favored production by primarily smallholders. These farmers, which cultivate between 1 and 4 ha of land, account for between 80% and 90% of global production (UNCTAD, 2016). Growers typically undertake fermentation and drying activities, although this may also be carried out collectively by cooperatives or at a collection center owned by traders/processors. The output of this stage is dried cocoa beans. In addition to farm level activities, production is supported by a wide array of research and development activities geared particularly to studying new varieties of cocoa beans as well as optimal growing cycles and processes.

At the marketing level, one increasingly popular tactic is the use of place—based protections know as geographical indication (GI). GIs limit the use of certain names to protects produced in specific areas and under set procedures and are compatible with the recent trend in single origin chocolate. For example, champagne must come from a defined region in France and follow strict procedures. Three subtypes of GIs are commonly used: protected denomination of origin (PDO) is the strictest type and dictates production and processing spaces while the less restrictive protected geographic indication (PGI) only set standards for one aspect of the value chain. Traditional Specialty Guarantees (TSG) is the most flexible and only denoted production using traditional methods. Evidence suggests that each of these protections does help nations earn higher prices but the cost of establishing and protecting GIs are cumbersome and investments in national branding is still needed (Hamrick & Fernandez-Stark, 2017).

Roasting and Grinding to Produce Cocoa Liquor or Paste: This mid-stream activity is the first agri-processing stage of the value chain and is focused on enhancing the aromas, flavors and color of the beans. Dried beans are inspected and cleaned; roasted to reduce water content and then undergo alkalization after the shells are removed (ICCO, 2016). Specialty grinders are used to mill the roasted nibs to create cocoa liquid/liquor or paste. These capital-intensive activities are primarily undertaken by large, multinational processors or ‘grinders’ (Barrientos, 2015), with a growing share of grinding taking place at the origin of cocoa bean production (referred to as ‘origin grindings’). Origin grindings is an emerging feature within specialty chocolate and frequently uses FFC beans. Roasting and grinding requires investment in equipment and is high in energy consumption (VDMA, 2009).

Pressing to Produce Cocoa Butter and Cocoa Powder: During this stages, the cocoa liquor/paste is fed into hydraulic presses at high temperature that separates the liquor/paste into two components: cocoa butter and cocoa cake, a solid mass that is later pulverized to form cocoa powder (Barry Callebaut, 2016a; World Cocoa Foundation, 2016). In the process, two outputs are generated: cocoa butter and cocoa powder. The pressing stage requires special and expensive equipment that consumes high levels of energy since it needs to heat and agitate the cocoa liquor.

Many of these machines require specialized technicians to operate them (Duyvis Wiener, 2017).¹¹ Large multinational processors dominate the production of cocoa butter and powder. In some cases, these operations are co-located with roasting and grinding operations, although these can be geographically separated.

Chocolate Manufacturing: This stage of the chain primarily involves the production of chocolate, and to a lesser degree, cocoa powder preparations. Depending on the type of chocolate manufactured (Barry Callebaut, 2016a), a mixture of cocoa butter, cocoa liquor, sugar, milk and other ingredients are heated and blended,¹² removing volatile flavors, reducing viscosity and particle size (Cadbury, 2016a; World Cocoa Foundation, 2016). After this, the mixture is tempered – that is, heated, cooled and reheated, before being molded into chocolate bars and cooled and packaged. In the case of cocoa powder preparation, cocoa powder is mixed with sugar and other additives. Chocolate production includes products destined directly for consumption, such as chocolate bars, as well as inputs for the production of confectionary items, such as biscuits, cakes, and ice cream, amongst others. Chocolate bar manufacturing tends to be dominated by major brands, with private-label retail chocolate taking up a minor share. In contrast, ‘industrial chocolate’ destined for the production of other final products is manufactured by both brands as well as specialty chocolate providers (Box 3). Branded manufactures are frequently owned by multinational food and beverage companies and thus vertically integrated into the production of final products, and mid-stream cocoa processors.¹³ Specialty chocolate providers, in contrast, supply what is referred to as the ‘open market’ (Webber, 2009).

Marketing and Distribution: Once the chocolate and cocoa powder are packaged they are distributed to different channels for their sale and consumption, including supermarkets, convenience stores, specialty retailers, vending machines, and artisanal confectionary producers (e.g. bakers, pastry chefs, hotels, restaurants and caterers). Supermarkets dominate sales in most major markets. Overall, as a large share of chocolate consumption is based on impulse purchases, gifts and special occasions such as Easter and Christmas, producers use as wide a range of purchasing points as possible to increase potential consumption (Webber, 2009).

¹¹ Well-known cocoa press equipment manufacturers are: Duyvis (the Netherlands), Carle & Montanari (Italy), Vitali, (Italy), Nagma/Heidenau (Germany) and Bauermeister (Germany) (Cocoa & Chocolate Online, 2016).

¹² This requires specialized blenders known as conches in the industry.

¹³ Under the popular global business brands, for instance, Barry Callebaut (Cacao Barry and other six brands), Cargill (Gerken Cacao), and ADM (deZaan), cocoa processors supply industrial chocolate, as well as cocoa powder, to business customers such as specialty manufacturers, and artisanal producers, including bakers, pastry chefs, hotels, restaurants and caterers (Euromonitor, 2012).

Box 3. Specialty Chocolate and Artisanal Chocolatiers

A major use of high quality cocoa beans is specialty chocolate. These include artisanal chocolate, single origin and bean to bar niches. Specialty chocolate is growing in popularity among producers as it origin has much higher prices compared to the average unit price for traditional chocolate. It is also growing in demand markets as consumers seek out diversity.

In the marketing of specialty or artisanal chocolate the key feature is diversity. In comparison to industrial chocolate producers that focus on standardized batches, niche chocolatiers seek to experiment with new origins and bars, making each batch unique. It also looks to partner with small producing nations that have higher quality or unique characteristics to offer consumers.

The rise of specialty chocolate mirrors the trend other commodities with a growth in demand as consumers seek out unique products. However, unlike artisanal production in more established industries, for example craft beer and specialty coffee, the specialty chocolate industry lacks an established definition of what it means makes it special. Such parameters help consumers better understand the meaning and value of the product.

The lack of a clear definition or agreed criteria for specialty chocolate reflect the embryonic nature of the industry. Quality has been a concern for chocolatiers for decades, but newer, niche markets have ballooned more recently, increasing to over 200 artisanal chocolatiers in North America since 2005.

Source: Sethi (2017)

2.2 Global Trade in the Cocoa-Chocolate Global Value Chain

This section analyzes global trade in the cocoa-chocolate GVC. A large number of both developed and developing countries participate in the cocoa-chocolate GVC. On the supply side, developing countries located along the equator are the major exporters of cocoa beans. The majority of bulk beans for mass produced chocolate comes from Africa, while specialty chocolatiers frequently source from Latin America and other small producing nations. These beans are exported and later processed into intermediate products in other locations around the world, most often in the country of final consumption. Final products, like chocolates and other confectionary items are mainly produced and exported by the EU and North America. Demand for cocoa beans and chocolate is still concentrated in developed countries located primarily in Europe and North America.

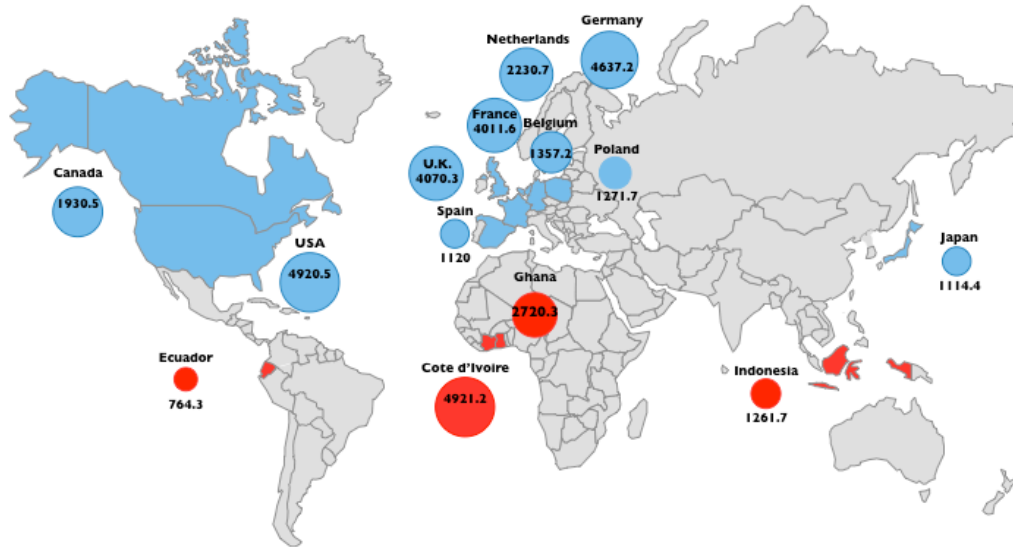
2.2.1 Global Supply

Production of cocoa beans is almost exclusively the domain of developing countries.

Two regions drive global exports: Africa and South America (see Figure 2). Cote D'Ivoire is the leading exporter of cocoa beans, followed by Ghana. In 2015, Cote D'Ivoire supplied approximately US\$3 billion, while Ghana exported US\$2 billion worth of cocoa beans (UNComtrade, 2017); together, concentrating 61% of the total world exports. South American production by comparison is much smaller; but the region's focus is on fine cocoa, supplying 80% of this higher value variety (Amores et al., 2007). Leading exporters are Ecuador,¹⁴ Dominican Republic and Peru.

¹⁴ Ecuador is the largest supplier of fine cocoa in the world.

Figure 2. Cocoa Chocolate Value Chain Input-Output Traders



Top Exporters of Cocoa Beans and Semi-Processed Goods by value (US\$ million)

Top Importers of Chocolate by value (US\$ million)

Source: Authors based on UN Comtrade, HS2002- 1801,1803,1804,1806; downloaded 11/28/2017.

Specialty cocoa, especially Fine Flavor Cocoa producing nations are limited in number and most export marginal quantities (see Table 2). Despite 61% of global bulk cocoa originating in West Africa, South America is the dominant supplier of FFC beans, producing approximately 80% of the total supply. Ecuador is by far the largest producer with 62% of all FFC bean exports coming from the nation. Other major suppliers include the Dominican Republic with 11% of total supply and Colombia with 5% of all FFC exports (ICCO, 2017; UNComtrade, 2017).

Exports from FFC nations has shrunk over the last decade as demand has grown.

Despite the growing demand for premium products and more nations entering into FFC bean exports, the overall supply is decreasing as it is harder to maintain the certifications. Nations who export FFC beans are increasing plantings but it is harder to achieve high yields with FFC varieties due to their fragility. Of the nation's exporting FFC, exports decreased 27% from 2008 to 2015 (UNComtrade, 2017). Despite this trend, several nations are increasing exports, including Peru, Colombia, and Grenada saw especially high growth. Established FFC nations, such as Ecuador, the Dominican Republic and Madagascar also saw growth, but at a slower pace (UNComtrade, 2017).

Table 2. Fine Flavor Cocoa (FFC) Bean Exports by volume, 2015

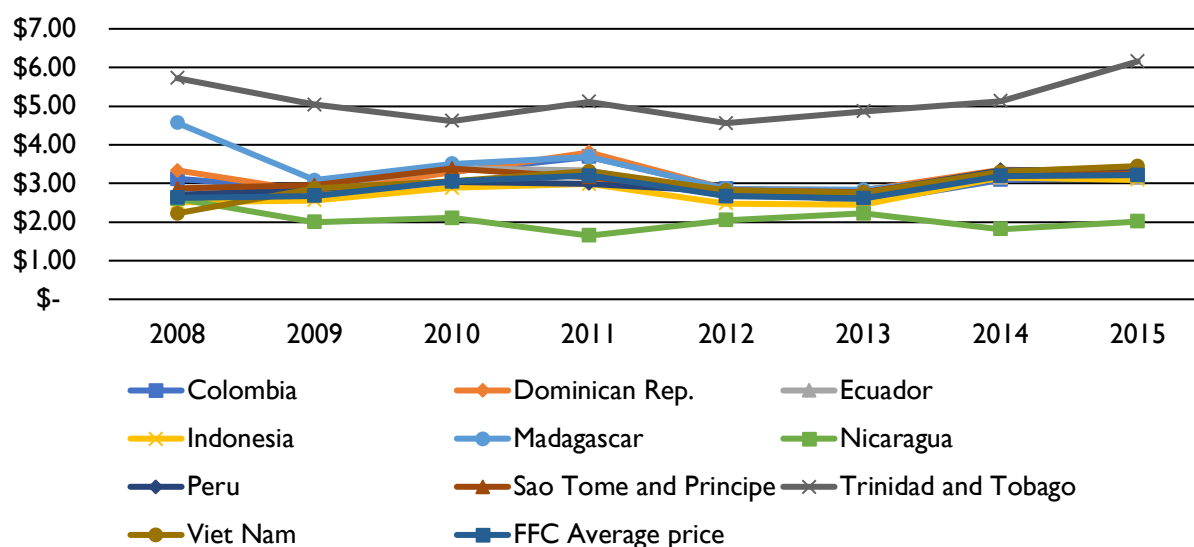
Country	Cocoa Bean Export (kg, '000)	FFC exports (kg, '000)	% exports classified as FFC	% of global FFC exports
Ecuador	236,072	177,054	75%	62%
Peru	59,132	44,349	75%	16%
Dominican Republic	79,597	31,839	40%	11%
Colombia	13,744	13,057	95%	5%
Madagascar	9,856	9,856	100%	3%
Nicaragua	3,904	3,904	100%	1%
Vietnam	2,810	112	40%	0.4%
São Tomé and Príncipe	2,794	978	35%	0.34%
Indonesia	39,622	396	1%	0.1%
Trinidad and Tobago	339	339	100%	0.12%
Costa Rica	256	256	100%	0.09%
Bolivia	198	198	100%	0.07%
Jamaica	151	144	95%	0.05%
Mexico	134	134	100%	0.05%
Belize	191	95.5	50%	0.03%
Guatemala	65.5	33	50%	<0.01%
Saint Lucia	.033	.033	100%	<0.01%
Dominica	--	--	100%	--
Grenada	--	--	100%	--
Honduras	--	--	50%	--
Panama	--	--	50%	--
Papua New Guinea	--	--	90%	--
Venezuela	--	--	100%	--
FFC Total	448868216	283731166	63%	--
Bulk +FFC beans	2562144925	283731166	11%	--

Note: World totals are for FFC and bulk bean exports based on UN Comtrade, HS2002-1801; downloaded 11/28/2017

Source: ICCO, 2016 and UN Comtrade, 2017

FFC certified countries usually receive higher unit prices than bulk exporters, but the premium varies greatly. Calculating the average price premium for FFC beans is difficult since most nations exports both FFC and bulk cocoa beans. However, based on trade data for the 10 nations that export exclusively FFC beans, a price premium is seen in most cases, but varies by amount and year (Figure 3). Of the exporters who have 100% of their beans certified as FFC, the average per unit value in 2015 was US\$4.59, well above the average unit price for all cocoa beans, US\$3.12 (UNComtrade, 2017). Two nations, Bolivia and Saint Lucia, were able to earn unit values above US\$7.00/kg. Despite high returns, a high degree of fluctuation in unit prices exists due to variations in yield for these nations.

Figure 3. FFC Export Unit Value for 100% FFC Exporting Nations, 2008-2015



Note: Unit Value calculated from Value Import/ Quantity
 Source: UN Comtrade, HS2002- 1801; downloaded 11/28/2017

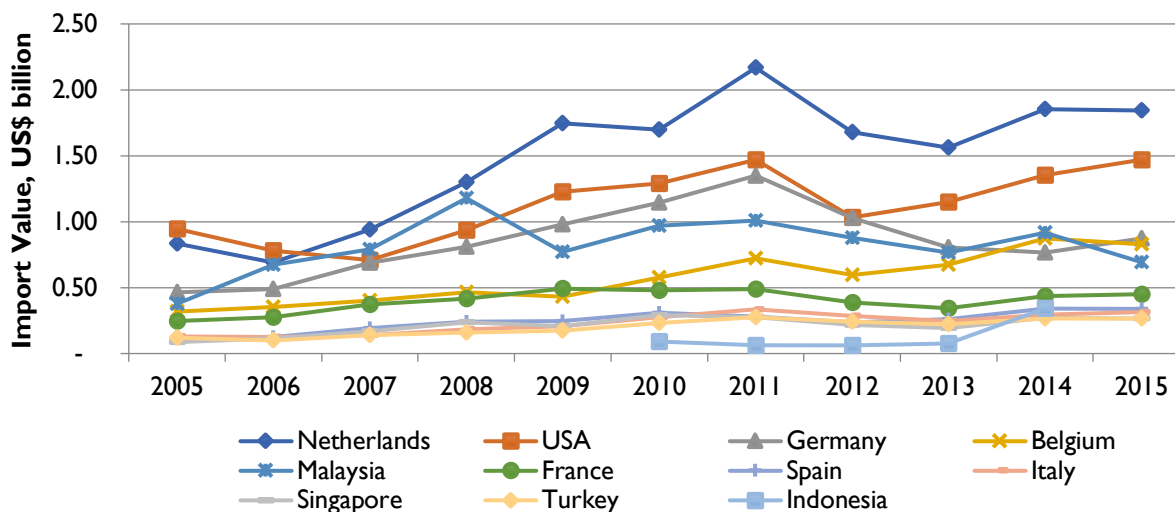
2.2.2 Global Demand

Traded cocoa beans are destined primarily to developed countries. Demand for cocoa beans to produce chocolate bars and other products that contain chocolate is concentrated in Europe and the US. The top 10 importers represent 82% of the market; although the leading three importers, the US, the Netherlands and Germany, alone accounted for approximately half (47%) of imports in 2015. The Netherlands serves both as a leading manufacturing destination, as well as an entry point for cocoa beans destined to Germany (see Figure 4).¹⁵ Malaysia is the only Southern market in the top five. Host to a number of chocolate global brands, Malaysia aims to be the leader of chocolate production in the Asian region by 2020.¹⁶ The country is also encouraging the production of cocoa in the country providing inputs and training to small farmers (Malaymail Online, 2014). While the country's value of imports has remained constant over the past ten years, it has seen a significant decline in the volumes imported as prices have risen. Between 2006-2008, import volumes were approximately 454 million tons, but by 2015, this had fallen to just half of that amount (UNComtrade, 2017).

¹⁵ In 2015, approximately 23% of cocoa beans imported into the Netherlands were re-exported on to Germany.

¹⁶ Nestlé produces in Malaysia under the brands Milo and Kit Kat, Cadbury manufacture a number of chocolate products and the Department of Islamic Development Malaysia certifies it Halal.

Figure 4. Top Ten Cocoa Bean Importers, by Value (US\$ billion), 2005-2015

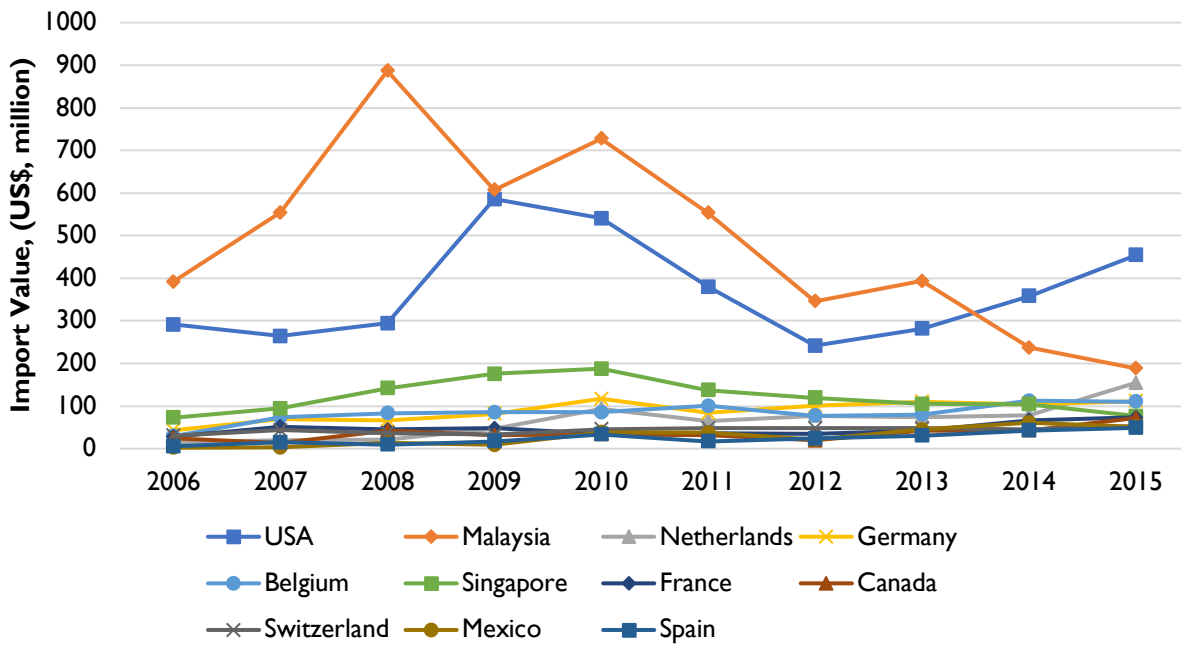


Source: UN Comtrade, HS2002- 1801; downloaded 11/28/2017

Fine Flavor Cocoa beans, are most often bought by developed nations who use the beans for specialty chocolate. Imports from FFC certified nations grew 47.5% between 2006 and 2015 (UNComtrade, 2017)¹⁷. Top importers of FFC cocoa beans are generally concentrated in the United States and Europe, where most chocolate manufacturing occurs (Figure 5). Malaysia is frequently the largest importer from FFC nations but its inclusion is due to Indonesia being an FFC exporter. However, only 1% of Indonesia beans are classified as FFC, making Malaysia’s participation in the FFC market less prominent than the data reveals (ICCO, 2017).

¹⁷ While total imports from FFC producing nations grew, it is impossible to determine the amount of growth in the FFC market with the available data because FFC eligible exports are only given as a percentage of total beans from each nation. Import data was not available at an aggregate level.

Figure 5. Top FFC Importers, by Value (US\$ million), 2006-2015



Source: UN Comtrade, HS2002- 1801; downloaded 11/28/2017

Chocolate trade, occurs primarily between developed countries, particularly those in Europe. While producing countries have made inroads into cocoa intermediates trade, developed countries continue to dominate the exports and imports of chocolate (see Figure 6 and Figure 7). Germany and Belgium lead exports while the US, Germany, UK and France are the major importers. The market size of the chocolate sector in 2016 in Western Europe accounts for US\$35 billion¹⁸ and US\$19 billion in the US (Euromonitor, 2016).

¹⁸ The two largest consumers in Europe are the UK with US\$8.6 billion and Germany US\$ 7.8 billion (Euromonitor, 2016)

Figure 6. Leading Chocolate Exporters, by Value (US\$ million), 2005-2015

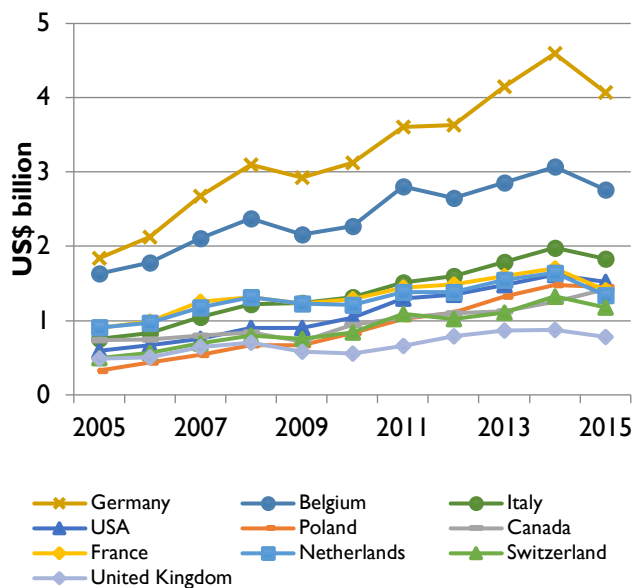
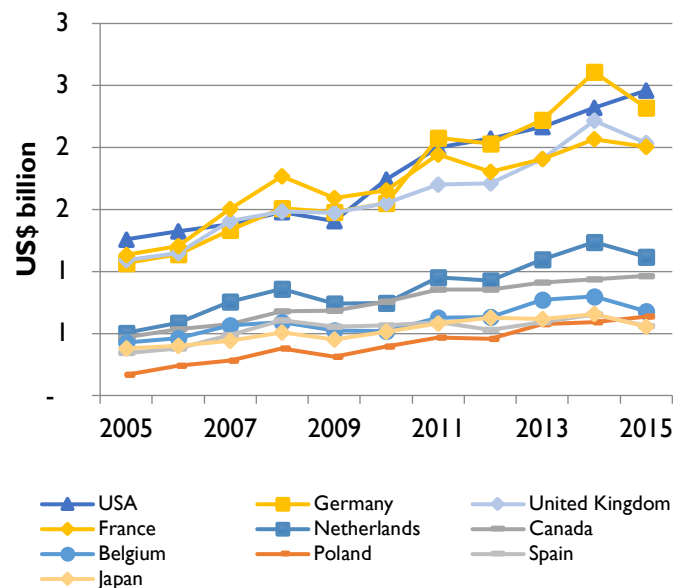


Figure 7. Leading Chocolate Importers by Value (US\$ million), 2005-2015



Source: UN Comtrade, HS2002-1806; downloaded 11/28/2017

2.3 Governance and Lead Firms

The cocoa-chocolate GVC today is characterized by two contrasting organizational structures: high degrees of concentration in the mid- and down-stream stages, and considerable fragmentation of the upstream stages of production of cocoa beans. A small number of branded chocolate companies dominate the global consumer market, interacting with a similarly small number of mid-stream processors or processing internally; these firms are highly sophisticated and are headquartered in developed country markets.¹⁹ Production of cocoa beans, on the other hand, is carried out by millions of small farmers in developing countries who are generally underfinanced and under-educated. This has led to an asymmetrical balance of power within the chain, with smallholders obtaining an ever decreasing share of this growing industry (Barrientos, 2015). As a result, many producers are opting out of the industry in favor of other higher paying crops or jobs. This structural challenge is creating sustainability concerns for the chocolate industry. The most prominent characteristics associated with the governance of the chain are outlined below.

Cocoa bean production, including specialty cocoa, is generally based on the smallholder model. Cocoa production occurs on an estimated five million small farms, producing cocoa on plots of 1-4 ha of land (ICCO, 2012). Local cocoa trade also involves large number of local collectors or buying agents, often situated in captive relations or working on commission for large traders.²⁰ Income from cocoa farming is low. Since liberalization and the dissolution of national marketing boards in producing countries, smallholder farmers have been compelled to bear the

¹⁹ The control of the cocoa-chocolate value chain by these two sets of actors at different nodes of the chain is often referred to as a 'bi-polar' governance structure (Barrientos, 2015).

²⁰ Total employment in the sector reaches approximately 14 million workers worldwide, with its three-quarter concentrated in Africa (Abdulsamad et al., 2015).

increasing costs and risks of production. Farmers lost access to subsidized inputs and services, including credit, extension services, quality control and marketing. Expectation was that removing the state would free the market for private actors to take over these functions— reducing costs, improving quality, and eliminating inefficiencies. However, in most cases this did not occur, leaving the majority of smallholders exposed to extensive market failures, high transaction costs and risks, and service gaps (Barrientos, 2015; World Bank, 2008). As a result, cocoa farms have since entered a period of perpetual underinvestment, decreasing productivity, and increased incidences of pests and diseases. This has been an important contributing factor of the current sustainability challenge (Barrientos, 2015).

Limited opportunities for bulk cocoa farmers to increase the value of their products.

The structural transformations of the chain have created an oligopolistic market for smallholders, who have experienced persistently declining bulk cocoa prices and a reduction in opportunities for value addition at the farm level (Barrientos, 2015). Furthermore, critical quality control points gradually shifted from the farm gate to the processing stage, reducing local buyer incentive to compensate farmers for better quality (Tollens & Gilbert, 2003). The required scale of bulk transportation necessitated blending of variable-quality beans. Not willing to sacrifice the cost advantage in transportation, large processors, instead, have developed internal processing mechanisms to meet quality requirements of the downstream buyers (Tollens & Gilbert, 2003). These factors highlight the challenges for effective smallholder participation in the bulk cocoa chain. However, upgrading possibilities are present in the specialty chocolate market, which represents a unique opportunity for farmers to increase their product value. This is helping spur the growth in FFC production from the supply side.

Rising demand for specialty chocolate is pushing closer relationships between producers and manufacturers in the premium market. Growth in the specialty chocolate market is facilitating new organizational arrangements among producers and chocolate manufactures. Most noticeable is the rise in direct trade, where a single or small group of chocolate manufactures works directly with a grower or group of growers to obtain the necessary supply. Increasingly direct trade is seen as a favorable alternative to other certifications (discussed below in section 2.3.1) because of the high cost associated with traditional certifications and the flexibility direct trade allows in quality, quantity and growing conditions (Weihe, 2015). However, scholars argue that Direct Trade, while growing in popularity will not be the dominant organizational model in the Cocoa-Chocolate GVC due to issues of scalability and production complexity²¹ as well as the low-price margins (Weihe, 2015).

Despite opportunities for specialty bean producers, chocolate manufactures remain the lead actors in the specialty beans GVC and receive the highest value from GVC participation. FFC producers are able to leverage their higher quality product for more earnings on the global market compared to ordinary cocoa producers. However, power remains in the hands of chocolate manufacturers who serve as both processors and retailers of the final chocolate product. As a result, farmers in producing nations, regardless of the type of cocoa produced, remain constraint by the demands of chocolate manufacturers.

²¹ In FFC bean harvesting, beans require the same processing as traditional cocoa beans but also adds a need for cocoa pod selection and rapid delivery to drying and fermentation centers. The number of complex steps needed, coupled with the high-quality standards demanded of the beans makes it difficult to achieve on a large scale (Weihe, 2015).

2.3.1 Standards and Institutions

In hopes to improve the returns for producers from participation in the cocoa chain, developing country governments and producers alike have begun to turn to certifications for their products. Fully understanding how certification schemes operate in the GVC, however, is important in weighing whether the benefits outweigh the high costs. This section presents the evolution of standards in the sector with a focus on specialty cocoa beans.

Since the early 2000s, as in other high value agricultural products, different forms of standards emerged in light of growing concern about the economic, social and environmental sustainability of production in developing countries. These included industry codes of conduct, standard and certification schemes, and multi-stakeholder initiatives (Bitzer et al., 2012). In particular, two key factors drove the incorporation of standards and certifications into the cocoa-chocolate value chain: First, the industry became the target of global campaigns by nongovernmental organizations (NGOs) and the media that made allegations of child labor and child trafficking on cocoa plantations in West Africa (Schrempf-Stirling & Palazzo, 2013). The connection of valuable brands with child exploitation posed serious threat to corporate reputation and sales (Schrage & Ewing, 2005). Second, the internal threat to the sector in the form of farmer exit, low productivity, aging trees and farmers, and a high incidence of pests and diseases fueled concerns over the future shortages of cocoa supply (Barrientos, 2014, 2015; Barrientos & Asenso-Okyere, 2008).

Traditionally, three main standards have emerged in the cocoa-chocolate GVC: Fairtrade, Rainforest Alliance, and UTZ Certified, with a fourth, IFOAM also cited as an important certification for the sector (Potts et al., 2014).²² These certifications are voluntary private standards, and producers can decide whether or not to pursue these avenues for differentiation. The share of certified cocoa has expanded dramatically over the past five years. Starting from a small base, mainly IFOAM and Fairtrade, that accounted for less than one percent of global production in 2008 (KPMG, 2013; Potts et al., 2014), the net volume of certified cocoa supply reached 22% of total production worldwide in 2012 (Potts et al., 2014).²³ The rapid growth was fueled by industry corporate social responsibility programs and UTZ and Rainforest Alliance NGOs, whose certifications expanded, respectively, at compound annual growth rates of 363% and 223% between 2008 and 2012 (Potts et al., 2014). In 2017, UTZ and Rainforest Alliance announced a merger and that now a single certification, Rainforest Alliance would be used (Rainforest Alliance, 2017) The merger sought to help strengthen the label and reducing duplication. It also made one auditing process and reduced the bureaucratic burden on smallholders seeking to enter into the certification. However, certification costs are still a cost for farmers operating with low margins.

The high cost of achieving and maintaining these certifications makes them unattractive for many farmers. However, several studies have indicated that even though the price received for certified cocoa may not differ from commodity cocoa (ITC, 2011), participation in the certification process has important indirect benefits – particularly with respect to farm productivity. Training to farmers,

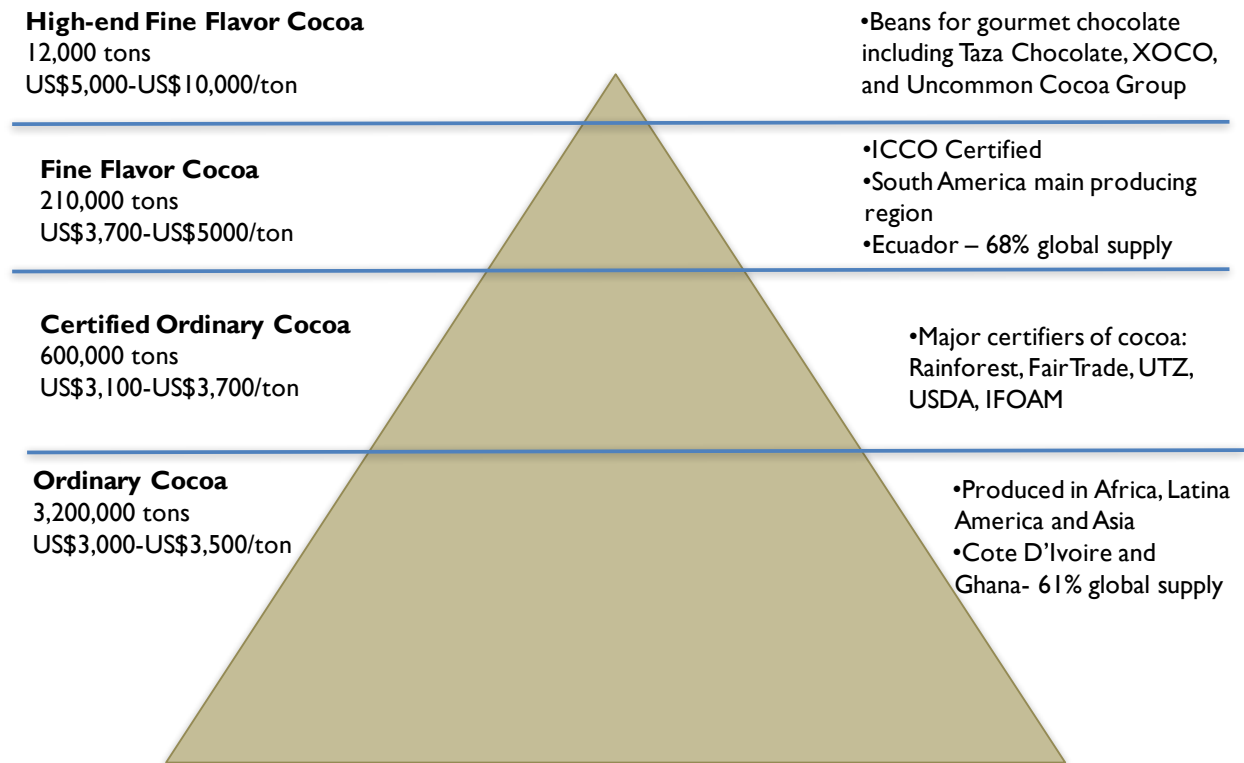
²² IFOAM works to ensure production relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects, certifying beans as organic. In 2011, 75% of IFORM beans were sold as certified, amounting to 77,539MT of the 103,554MT produced (Potts et al., 2014).

²³ This volume accounts for total certified production after adjustment for overlapping and multiple certifications that together represented one-third of the total reported certified volume by the related organizations in 2012.

a criterion required by certifying agencies, can help improve yields, given the absence of, or dysfunctional, extension services (Kessler et al., 2012). Drawing on data points derived from between 3,500 to 16,000 farm surveys per country, one study noted that certified farmers demonstrated better training in farming techniques, improved farm practices (soil and water conservation, conserving biodiversity), higher yield (+14%) and a modest difference in net income (+7%) (COSA, 2013).

Additionally, many of the leading brands have made certification commitments, often targeting a specific percentage of cocoa-sourcing by 2020 (Barrientos, 2015). Five of the top ten chocolate manufacturers, including Nestlé, Ferrero, Hershey and Mars have committed to buy 100% UTZ certified cocoa by 2020 (UTZ, 2017). It remains unclear how the 2017 merger with Rainforest Alliance will impact the commitment. Mondelez International is already the leading buyer of Fairtrade certified cocoa, and Mondelez brand, Cadbury, signed an agreement with Fairtrade in November 2016 to improve the livelihood of cocoa farmers (Cadbury, 2016b; Mondelez International, 2016). Even private label firms have committed to procure only certified cocoa; for example, in July 2016, Tesco, the largest supermarket chain in Europe, announced that all cocoa required for its private label chocolate products sold in the UK will be from Rainforest Alliance certified sources by the end of 2018 (Tesco, 2016).

Figure 8. Price and Production differences by cocoa bean type



Source: (Auro Chocolate, 2016; ICCO, 2017)

Certified beans, such as Rainforest Alliance and Fairtrade have higher market values than ordinary beans. However, these beans do not earn the same price as FFC beans (see Figure 8). FFC beans receive much higher market prices and the highest quality beans can be over three times the value of ordinary beans and more than 2.5 times the value of certified beans. FFC bean trade in the specialty and high-end market often involves direct relationships between producers and

manufactures. However, the market for the highest value beans is small, and only a limited quantity is needed globally to meet consumer demand.

Box 4 recaps key insights gleaned from an analysis of the global cocoa-chocolate industry. The industry can be divided multiple ways, but a clear distinction exists between the ordinary of bulk cocoa, a key input in mass-market chocolate and specialized cocoa, namely certified and FFC. While many nations claim to be FFC producers, only those with ICCO certification can carry the mark officially with export. In the following section, attention turns to Belize, a small producer of cocoa but with a strong historic tie to the industry.

Box 4. Key Takeaways

Production of bulk cocoa, the key input for mass-market chocolate, is heavily concentrated with production largely occurring in a handful of African nations and buyers being select large MNCs. In contrast, the FFC-chocolate GVC offers higher prices for growers and has a higher concentration of production in Latin America and the Caribbean with a more diverse range of buyers. Despite the increasing number of nations with FFC certified cocoa beans, and growing demand, the number of FFC beans exported is shrinking.

FFC, a classification set by ICCO is only applicable to exported beans that meet high quality standards. These can earn up to 2.5 times higher prices than ordinary beans and have higher market value than other bulk certified beans, such as Rainforest Alliance or Fairtrade.

Beyond divergences in geographies of production and certifications, it also varies in the type of end-market and key actors involved. These beans frequently are used for specialty and artisanal chocolate which demand higher quality inputs. They are also increasingly being used in single origin chocolates that promote unique taste profiles of cocoa varieties in specific nations. Because of these market demands, there is frequently closer linkages between FFC producers and chocolate manufactures, especially in the ultra-premium and high-end markets.

3 Belize in the Cocoa-Chocolate Global Value Chain²⁴

Belize's participation in the cocoa-chocolate GVC totaled less than US\$600 thousand in 2016 (UNComtrade, 2017), making the country a small player in this industry. The majority of exports were cocoa beans, which accounted for nearly 98% of Belize exports in the cocoa-chocolate industry. Despite a long history of cacao cultivation and chocolate manufacturing as well as rising interest in the nation as a high-end cocoa bean supplier, Belize's cocoa-chocolate industry is in a state of crisis. Unsustainable price battles between the principal buyers coupled with a lack of coordination among industry actors threaten future growth. Further the entry of new actors, who are planting using conventional methods could cause a shift in Belize's reputation on the world market if branding efforts are not enacted.

The cocoa-chocolate industry in Belize is centered around a handful of cocoa bean buyers who connect small farmers to export markets. There is also a small local chocolate making industry in the nation, but the focus is primarily on domestic markets and tourists. Historically, the industry has capitalized on its organic production as well as by emphasizing the linkage of cocoa/chocolate to Mayan history. As a result, since the 1990s the nation has carved a position in niche chocolate markets. However, the industry is in a state of flux. As new actors enter via FDI, a division is emerging between organic production, concentrated among smallholders, and industrial farms which rely on conventional farming mechanisms. Further, one of the key actors in the industry, the Toledo Cacao Growers Association (TCGA), recently lost their organic certification from the United Kingdom-based Soil Association as well as their Fairtrade Certification. Consequently, they are no longer buying cocoa beans from the TCGA farmers, limiting buyers in the nation. At the same time, global declines in prices and a lapse in technical assistance for farmers, which threaten the viability of the industry. Despite these challenges, opportunities for growth exist but require investments in coordination activities and training to help ensure high-quality production at the farm level.

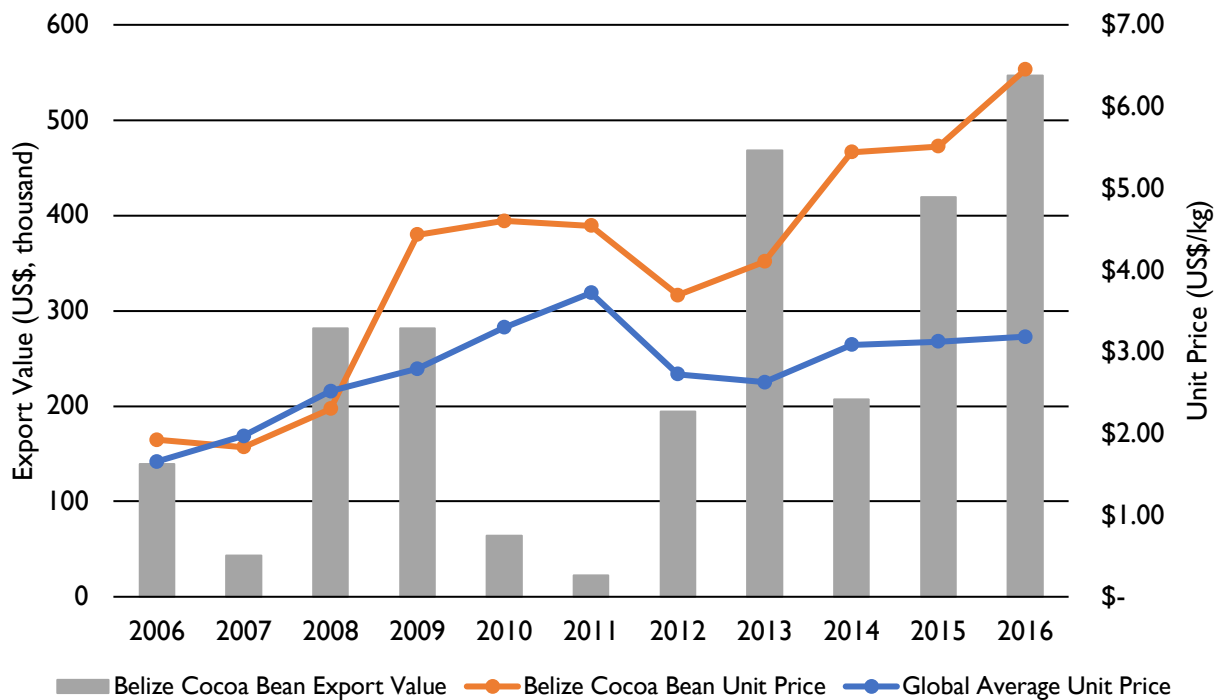
The following section seeks to further understand the depth and breadth of Belize's participation in the cocoa-chocolate GVC and provide a foundation for analyzing how the country can take advantage of available opportunities. First, current products and exports are examined using available trade and firm-level data. The structure of the industry is then outlined as well as key actors active in the country at each stage of the value chain. The section concludes with advantages and constraints that will shape future participation in the cocoa-chocolate GVC.

3.1 Belize's Current Participation in the Cocoa-Chocolate Global Value Chain

Compared to other nations, Belize is a small supplier of cocoa beans. In 2016, cocoa exports were approximately US\$547 thousand (UNComtrade, 2017). The only other industry export, chocolate, was below US\$12 thousand (UNComtrade, 2017). Despite current low levels of cocoa and chocolate exports, the industry is growing, and exports are expected to increase as recently planted trees mature and enter production. Further, an increase in unit value prices, well above the global average and above the average for most FFC suppliers, indicates continued high-quality growth (Figure 9).

²⁴ This section draws heavily from field research conducted in January 2018.

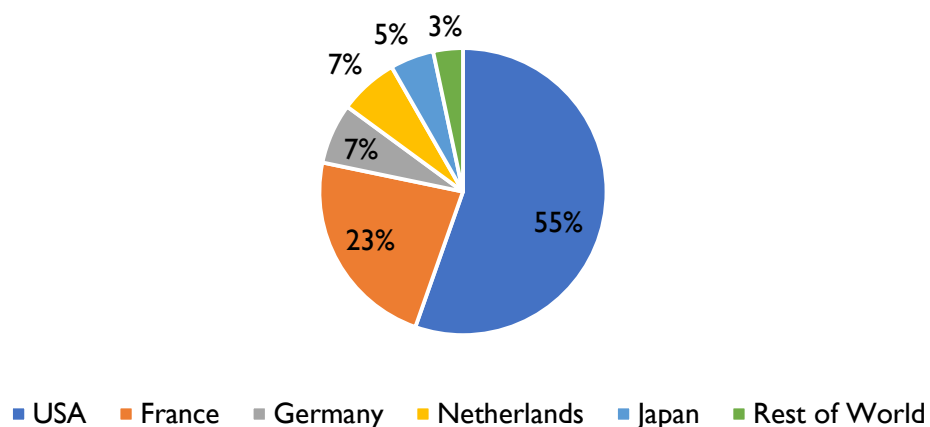
Figure 9. Belize Cocoa Exports by Value (US\$), 2006-2016



Source: UN Comtrade, HS2002- 1801; downloaded 11/28/2017

Exports of cocoa beans head primarily to developed economies with the United States accounting for 55% of all exports. Other key markets include the European Union and Japan (Figure 10) (UNComtrade, 2017) . Most of the cocoa beans go to artisanal and chocolate manufacturers, though these vary in size. For example, Cadbury’s Green and Black, now owned by Mondelez historically sourced beans from TCGA in Belize. However, due to internal problems, the TCGA is no longer buying or exporting cocoa beans. Similarly, Maya Mountain Cacao (MMC), another large domestic buyer, sells many of the beans they source to artisanal chocolate manufactures in the United States and Europe via its parent company, Uncommon Cacao.

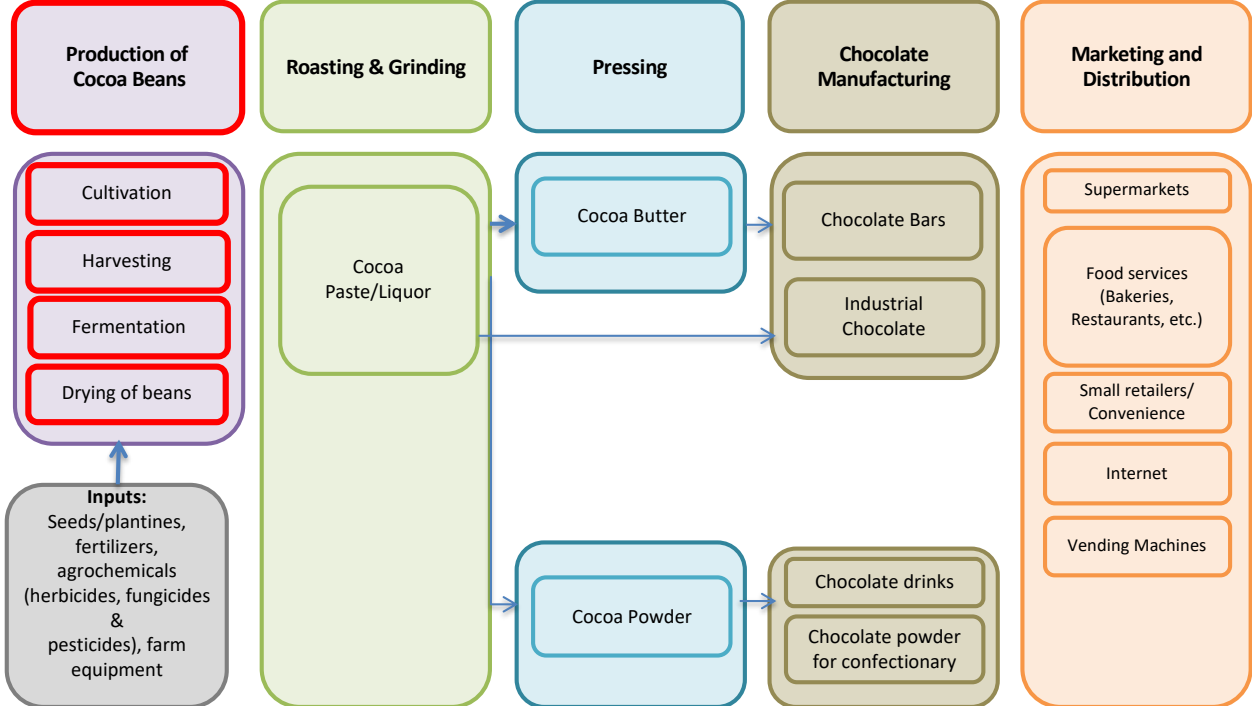
Figure 10. Belize Cocoa Bean Export Destinations, 2016



Source: UN Comtrade, HS2002- 1801; downloaded 11/28/2017

Figure 11 shows Belize’s participation in the cocoa-chocolate GVC is almost exclusively in the production stage with the harvesting of cocoa beans and initial processing (fermentation and drying). Actors do engage in value-added activities and produce chocolate bars and products for the local market and tourists. However, these firms are small in size and are not participating in global markets to a significant extent.

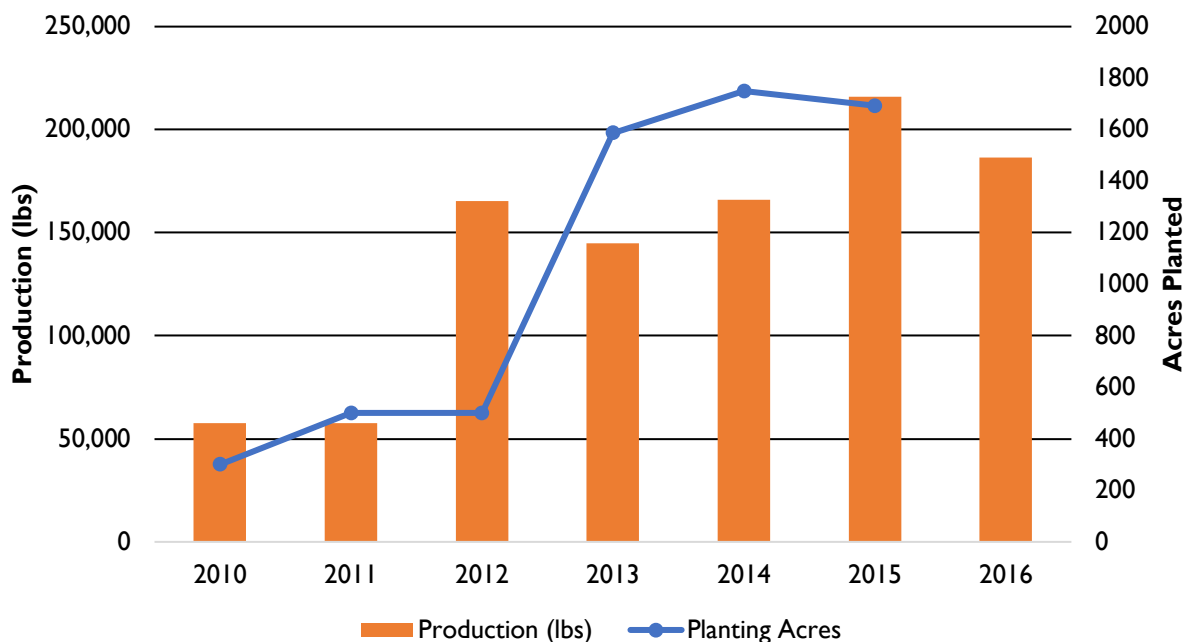
Figure 11. Belize's Current Participation in the Cocoa-Chocolate GVC



Source: Authors

Belize produces all types of cocoa beans (Criollo, Forastero and Trinitario) though the main varieties are Trinitario, but with multiple Trinitario varieties in production across the nation. Greater variation in national production centers on the two models utilized in the country: a small-scale organic model and an industrial scale, conventional approach. Organic and FFC beans are mostly produced by smallholders while the conventional model utilizes large-scale farms and frequently funded by outside investors. Total production is growing nationally as several thousand trees become active (Figure 12). In the mid-2010s a massive campaign by both TCGA and MMC to increase trees occurred. Beginning in 2017 many of these trees reached the producing stage. At the same time, new areas are being dedicated to the planting of cacao trees, such as 300 acres of the protected lands managed by Ya'axché Conservation Trust (an NGO that works with Mayan communities) and cultivated through a partnership with Trinitario cacao growers. It takes between 3 to 5 years for the trees to reach production (ICCO, 1998). As a result, yields are still low, estimated at 128 lbs./acre in 2015, compared to global averages. However, as more of the new trees become active and reach maturity yields will likely grow.

Figure 12. Belize Cocoa Production and Planting Area, 2010-2016



Source: Beltraide, 2017 (based on data from the Ministry of Agriculture)

Note: Planted acres not available for 2016

3.2 Governance and Industry Organization

Power in the Belizean cocoa-chocolate value chain is concentrated among a few buyers who also function as exporters, connecting the nation to international markets. At the other end of the spectrum are the roughly 1000 producers, who primarily farm small plots of land. In addition to these two types of actors, international investors and local chocolatiers are increasingly playing an active role in the value chain and changing the organization of the industry. The most significant characteristics of the industry organization are:

- **Production is fragmented though some coordination is occurring.** As in most countries, the smallholder model is the dominant model of cocoa production. Smallholders who cultivate cacao trees often intercrop it with other products for subsistence, such as maize. These farmers sell cocoa beans to major buyers who aggregate and, in some cases, engage in fermentation and drying (Field Research, 2018). At the same time, a growing number of larger producers are entering the market, but the destination of these beans is undefined. One exception is the Belize Cacao Consortium’s (BCC), Peini Cacao Plantation Limited, which uses beans for their own chocolate companies (Belize Cacao Consortium, 2014). The BCC also sources from small producers for export and chocolate manufacturing.
- **The historic driver of the industry, Toledo Cacao Growers Association (TCGA), is experiencing a decline in prominence.** Historically, the TCGA has been the primary actor in the nation (Box 5). Founded in 1986, the NGO represents cocoa farmers in southern Belize and handles the marketing of cocoa as well as and helps to negotiate high prices for the nation’s farmers. The TCGA also helps to certify production, primarily as organic and/or Fairtrade. Recently, TCGA has lost its certifications, and as a result, it is no longer buying beans to sell to buyers. However, the establishment of new leadership and internal reviews are seeking to

reestablish the association. At the same time, new actors, primarily in the private sector, are entering into the industry and providing new opportunities. The majority of the farmers associated in TCGA also sell their cocoa beans to the Maya Mountain Cacao (MMC).

Box 5. Toledo Cacao Growers Association

The Toledo Cacao Growers Association (TCGA), formed under a USAID program in 1986 is the organization that helped bring the industry to its former position as a high-end supplier. The association, comprised of various farmers, collectively negotiates prices and pool crops to sell to international buyers. TCGA also has been the primary source of technical assistance for growers.

TCGA historically had several different arms. One arm focused on working with farmers to develop modern agriculture practices and increase cultivation. Secondly, the association held and monitored farms for certifications. TCGA had both a Fairtrade certification and organic certification from Soil Associates in the United Kingdom. The goal of these certifications was to help farmers receive higher prices from international markets. Third, TCGA negotiated prices for farmers. The major buyers since 1993 were located in the United Kingdom and TCGA developed a stable export market until recently.

Following internal management issues that resulted in a loss of certification and a pause in other activities, the organization is restructuring to resume its role in the industry. However, as of March 2018, it has not resumed many of its original activities and the farmers are selling their production to other buyers.

Source: Field Research, 2018

- **International investment is growing in the industry, causing shifts in the established organization of production.** With growing demand for specialty chocolate, international influence is growing in the nation. Foreign investors are buying large plots of land in southern Belize for cocoa bean production. These farms differ from the smallholder in the use of conventional agriculture practices and machinery to help maximize efficiency. These farms are still in the early stages and have yet to produce notable quantities of cocoa beans or define markets but as they mature their production will grow. One of the main distinction of these foreign investors is that they are planning to cultivate conventional cocoa instead of FFC or organic beans.

Beyond these industry trends, there are three types of actors that dominate industry activity in country and several key stakeholders (Table 3). They are described below.

Producers

Smallholders are the largest actor group in Belize. An estimated 400 to 1000 smallholders are active in cocoa bean production in Toledo²⁵ (Field Research, 2018; Hollingsworth et al., 2015). Producers

²⁵ One reason for the variation is that no census of members by the TCGA has occurred since 2008. As the main actor involved in production, their numbers were frequently used as official statistics. As part of restructuring efforts, TCGA is updating rosters to have a more current profile of farmers in the nation (Field Research, 2018).

are concentrated in Toledo, in Southern Belize. However, a few farmers cultivate small plots in other parts of the nation, most notably Stann Creek and Cayo.²⁶ The amount of land each farmer dedicates to cocoa varies and while some have 10 or more acres, most only manage 1 to 2 acres of land. The majority of these smallholders are organic producers due to the high cost of inputs. They also frequently plant other crops on their farms, include maize, ginger, bananas and an assortment of other fruits and vegetables. Many of these products are sold locally or used in-home.

As mentioned above, concurrent with smallholders is a growing interest in Belize is causing a rush of international investment in cacao tree plantings. Often, these producers opt for conventional production and have resources to invest in high-quality inputs and farming equipment. However, many of these producers' trees are still maturing and have yet to enter into producing. Further, no clear markets are defined for the anticipated cocoa. While some producers plan on supplying their chocolate manufacturing businesses, others indicated no clearly identified buyer for their future supply (Field Research, 2018).

Buyers

Three key buyers link the cocoa-chocolate industry in Belize to global markets: Toledo Cacao Growers Association, Maya Mountain Cacao, and the Belize Cacao Consortium. Other buyers, including Belizum and Toledo Cacao, do not buy consistently or buy in small quantities. Historically, these actors have been the key organizers of the industry, linking producers with international buyers and providing the primary market for cacao. In Belize, these actors have significant power, setting both the buying price and managing the certifications of smallholders. Specifications varied among buyers, for example, MMC prefers to undertake most of the processing to help ensure a more uniform product while TCGA often advocated for initial processing to occur at the farm level to help improve farmer prices.

Buyers often struggle to maintain a stable supply from farmers. Producers will sell to buyers offering the highest price, and buyers do not use contracts with producers because of their limited effectiveness. As a result, buyers are disincentivized from engaging in capacity building or technical assistance as farmers sell to the buyer offering the highest prices and not those who they partner with for inputs (Field Research, 2018).

Local Chocolate Manufacturers

Finally, a small group of firms is manufacturing chocolate for local markets and tourists. The local chocolate manufacturers use a small portion of cocoa beans produced in the country and often capitalize on the Mayan heritage. Usually, manufacturing of chocolate is primarily performed by a female workforce while males work the land, cultivating cacao trees.

The domestic market is relatively small with only a handful of manufacturers. Major producers include Cotton Tree, Moho, Kakaw, Goss, Che'il, Ixcacao and Eliado's. Manufactures are diverse, with some locally owned firms (e.g., Belize Chocolate Company, Che'il, Eliado's and Ixcacao), and other, foreign-owned, chocolate companies (e.g., Cotton Tree, Moho, and Goss) (IDC, 2015). They also offer a diverse range of products beyond chocolate including soaps, lotions, and other innovative products. Some, such as Eliado's, also offers tours of cacao fields, entering into ecotourism and giving visitors a complete view of the industry.

²⁶ In the 1980s, the Hershey's Corporation had a farm outside of Toledo but it is no longer a producer of cocoa beans.

Table 3. Key Industry Stakeholders in the Cocoa-Chocolate GVC

Actor	Description	Role
Maya Mountain Cacao	Foreign owned buyer of cocoa beans and major Belizean supplier to artisanal chocolate manufactures	Buys wet beans from farmers to process and sell to chocolate manufactures
Toledo Cacao Growers Association	Historical association that drove industry and moved into buying and selling beans on behalf of farmers. Currently under reorganization	Historic supplier of technical assistance. More recently it moved to buy beans as well but current role being redefined
Belize Cacao Consortium	Group of cocoa related investments owned by foreign actors seeking to build the industry	Cocoa bean production, buying of cocoa beans and chocolate manufacturing
Ya'axché Conservation Trust	NGO group founded in 1999 to manage 770,000 acres of Mayan land and work with local communities towards sustainable development	Works with farmers in the Trail Cacao Growers Association to cultivate land for cocoa bean production.
National Cacao Committee	Nascent group designed to convey various stakeholders and help coordinate industry activities	Recently formed committee still in planning stages, role not clearly defined
Ministry of Agriculture	Public sector unit responsible for developing and implementing agricultural policy	Limited role in cocoa due to the historically strong presence of support via TCGA and other actors
Belize Trade and Investment Development Service (BELTRAIDE)	A national economic development agency, operates within the Ministry of Economic Development, Petroleum, Investment, Trade and Commerce. Responsible for national investment promotion and export promotion	Assist industry in developing links with international buyers of cocoa beans and chocolate and organizing events to attract investments in the industry

Source: Authors.

3.3 Industry Evolution in Belize's Cocoa-Chocolate Global Value Chain

Belize's cocoa-chocolate industry has seen several transformations in the recent history (see table 4). Hershey's was a critical industry driver in the 1980s, providing a market for virtually all beans produced in the country (IDC, 2015). This growth was chiefly linked to the 1977 establishment of a 500-acre cacao farm by the company. At the same time, development projects from USAID and others helped to spur industry growth. This push for growth helped to establish the TCGA in 1984. However, subsequent drops in international cocoa bean prices in the late 1980s led to the exit of Hersey from the nation and a change in strategy for TCGA towards organic production. The association soon became closely tied to the European market via a multi-year contract with Whole Earth Food Ltd., which later became Green & Blacks Organic Ltd. (IDC, 2015). Association with

Green & Black proved to be a source of growth in the industry thanks to the organic and social aspects heavily featured in their marketing materials.

Throughout the 1990s and early 2000s, TCGA remained the key industry player. The association not only was a buyer of beans but also provided extension services to farmers and was the principle collective body for farmers. However, in 2008 a new firm entered the country, MMC. MMC, a small, U.S. owned company, seeks to integrate smallholders into cocoa bean markets by facilitating market linkages with artisanal chocolatiers. The company sells beans to its parent company, Uncommon Cacao, which in turn distributes throughout the US. Uncommon Cacao also sources from other regional producers including Guatemala, Haiti, and the Dominican Republic. MMC quickly became a competing buyer with TCGA and established extension services. During this time prices for beans grew steadily and plantings increased throughout the nation with seedling programs designed to increase the number of cacao trees. As demand for cocoa from both TCGA and MMC and several other competitors grew, farmers quickly saw an increase in prices offered, capping at US\$1.25/lb. for wet cocoa beans (Field Research, 2018).

The high prices were unsustainable. Several new entry buyers, facing losses, stopped buying beans. At the same time, TCGA lost certifications and also ceased buying cocoa. The reduction in buyers, coupled with an increase in harvest created an oversaturation of supply and limited demand, with MMC being the only large-scale buyer active. With prices well above the global average, artisanal shops soon turned to other nations. The average global price in 2017 for all dry cocoa beans on the London Futures market was listing global prices at US\$1900/ton, and Belize was exporting at US\$7100 with the cost to buyers increasing once logistics and transport cost are added (Field Research, 2018). By comparison, the Dominican Republic was selling in the specialty market at US\$3500/ton during the same time. The global market pressured Belizean buyers to lower their buying price from farmers.

Following a boom in prices, the industry is facing a bust. A reduction in buyers as a result of TCGA's loss of certification and a reduction of global prices presents challenges for farmers. From 2017 to 2018 the farm gate price declined 40% from \$1.25/lb. to \$0.75/lb. The price is even lower for non-organic beans, at roughly US\$0.65/lbs. While these prices are still above the global average, they represent a significant decline for farmers who see it as a result of limited competition among buyers in the nation (Field Research, 2018).

In the wake of the current situation, new avenues for growth for the industry are under consideration. Most notably, the establishment of a geographic indication (GI) for cocoa bean grown in southern Belize (Hollingsworth et al., 2015). The proposed GI will cover production in Toledo, and functions as an attempt to help differentiate smallholders' production from the emerging conventional cultivation. However, the GI initiative is still in the planning stages and no formal legislation is approved (Field Research, 2018).

Table 4. Belize's Cocoa-Chocolate Industry Evolution, 1970s-Present

Time period	Characteristics	Key Actors
1970s-1980s	<ul style="list-style-type: none"> • Initial interest in revitalizing industry • Entry of Hersey into Belize • Establishment of TCGA 	<ul style="list-style-type: none"> • Hersey Corporation • TCGA • USAID
1990s	<ul style="list-style-type: none"> • Rise in organic production • Entry into export markets • Developed relationship with Green and Black 	<ul style="list-style-type: none"> • TCGA
2000s	<ul style="list-style-type: none"> • Continued growth • Entry of new buyer 	<ul style="list-style-type: none"> • TCGA • MMC
2010s- present	<ul style="list-style-type: none"> • Expansion of growing area and new plantings • Increased investment • Price bubble and industry reorganization 	<ul style="list-style-type: none"> • MMC • TCGA • BCC

Source: Authors based on literature review and field research

3.4 Advantages and Constraints

Belize's potential in the cocoa-chocolate GVC depends on a set of structural strengths and weaknesses, elaborated in Table 5. These strengths allow for strategic opportunities that Belize should capture. At the same time, the weaknesses presented below must be addressed for the country to improve its position in the industry.

Table 5. SWOT of Belize's Cocoa-Chocolate Industry

Strengths	Weaknesses
<ul style="list-style-type: none"> • High quality product • Established and growing investor interest • Historic and cultural links to Mayan communities 	<ul style="list-style-type: none"> • Lack of industry cohesion • Limited data availability • Absence of modern infrastructure • Limited extension services • Insufficient marketing and branding • Aging farmer population
Opportunities	Threats
<ul style="list-style-type: none"> • Deepen linkage to tourism • Growing demand for standard and specialty cocoa beans • Potential to increase FFC certification • Rising interest in the region for cocoa production 	<ul style="list-style-type: none"> • Neighboring producers • Production variations (organic vs conventional) • Shifting climate patterns and disease

Source: Authors

3.4.1 Advantages

Belize's primary strength in cocoa/chocolate is the nation's historic link to the crop and massive interest in production. The established recent history of building the industry and increasing production could help to boost production quantities. Further, the nation has a reputation as a quality producer with most beans going into premium markets. The following sub-section elaborates on these strengths.

1. **High quality production.** The country is known for high-quality production. While only 50% are certified as FFC by the ICCO, the nation is known globally for having a consistently high-value crop and strong processing abilities that create a superior product. Many actors state that the high quality is a direct result of the processing techniques used in the nation (Field Research, 2018).
2. **Established and growing investor interest.** Capitalizing on the high-quality reputation, investment in the industry is expanding. Recently several foreign actors have entered the business. A key example, the Belize Cacao Consortium, a Canadian backed group entered the industry. More recently, US farmers have bought land and began cultivating cocoa beans. Most of these investors use conventional production, a contradiction from the organic and FFC bean cultivation used by most smallholders (Field Research, 2018).

Beyond producers, investment into chocolate manufacturing in the country is also occurring. These operations are relatively small with no notable exports. Instead, these firms focus on local tourist markets.

3. **Historic and cultural links to cocoa-chocolate industry.** Belize can trace cocoa bean production to Mayan times, highlighting the long history of the plant in the nation. As a result, it has strong linkages with cultural and historical legacies which help craft appealing narratives for consumers. It also helps to create links to other sectors, including Mayan chocolate making demonstrations helping link chocolate manufacturing to tourism.

3.4.2 Constraints

Although Belize has several strengths in the cocoa-chocolate value chain, there are multiple challenges, some of which have become particularly pronounced in recent years. Limited data availability and the lack of modern infrastructure in cocoa producing regions undermine the entire competitiveness of the sector while underdeveloped marketing, extension services, and coordination threaten future growth. Specifically, the lack of coordination among the industry stakeholders remains the most critical impediment to future growth. The following sub-section expounds upon these challenges.

1. **Lack of industry cohesion.** Coordination in the industry is lacking. Divisions between large-scale, conventional producers and smaller, organic production as well as disagreement on how to best integrate into the cocoa-chocolate GVC is limiting the competitiveness of the industry. Belize lacks a well-defined body to help coordinate actors and better position the industry for growth. This lack of private sector coordination is also seen in the lack of collaboration with government agencies and educational institutions.

- 2. Limited data availability.** Production data is limited. The leading actor who maintained data, the TCGA, has reduced this activity and no longer has updated membership rosters of producers or amounts produced. The lack of data presents difficulties in gaining ICCOs FFC certification as well as establishing contracts with buyers and monitoring the productivity of the industry. Instead of industry-wide statistics, traders have rough estimates based on the beans they buy each year.
- 3. Absence of modern infrastructure.** Road quality and ability to transport cocoa beans from farms to export ports is a significant constraint for the industry. Lack of quality roads, especially during the wet season makes it difficult to deliver harvest to traders. Infrastructure deficiencies present a high cost and waste in the industry which limits competitiveness.
- 4. Limited extension services.** With the decline of the TCGA, extension services are limited in Belize. While several NGOs seek to fill this need, none have achieved the scale needed to serve the entire industry. Following a massive tree planting initiative in the early 2010s, extension services are now required to help instruct farmers on best practices to maintain high yields as these trees become active producers of cocoa beans.
- 5. Insufficient marketing and branding.** Despite a long history of cacao tree cultivation and chocolate manufacturing and the strong link with Mayan tradition, the industry has not worked extensively on collective marketing and branding efforts. Instead, most of the promotion occurs at the firm level. A coordinated marketing and branding effort could help distinguish Belize as a high-quality provider of cocoa beans and help increase its position on the global market. This effort should especially focus on the Mayan heritage in the region that is shared among the majority of producers.
- 6. Aging farmer population.** The average age of cocoa farmers in Belize is increasing. The average age of southern Belize farmers is between 50-60 years old (IDC, 2015). Further, the Belizean youth are not entering into the industry, preferring better-paying jobs in tourism and other sectors. The aging of farmers and limited entry of new growers will present a challenge for the industry moving forward.

4 Lessons for Belize's Upgrading in Cocoa-Chocolate from Global Experiences

In order for Belize to successfully establish a position for itself as an integrated player in the cocoa-chocolate global value chain, it needs to upgrade its current operations in the industry. By adopting new technologies, producing a new product or engaging in an entirely new set of activities, upgrading can also allow actors in the GVC to capture greater value from their participation (Humphrey & Schmitz, 2002). In agribusiness chains such as cocoa-chocolate, this can be achieved in a number of different ways; for example, by improving agriculture practices to cultivate cocoa beans; introducing new technologies such as irrigation; or moving to processing stages of the chain such as cocoa liquor and cocoa butter. Due to the growing sustainability challenge in the industry, process upgrading in the agricultural production segment – that is increasing productivity has been a central challenge for most countries. International demand is high and most cocoa producing countries have in place special programs to increase agricultural productivity. These programs are frequently not only led by country governments, but also by firms and NGOs. Table 6 summarizes

the key upgrading trajectories that have typically been pursued by countries in the cocoa-chocolate GVC.

Table 6. Selected Upgrading Trajectories in the Cocoa-Chocolate GVC

Upgrading Trajectories	Description
PROCESS UPGRADING	<p>Primarily focused on increasing the quantity of beans harvested from the trees. Replacing aging trees can considerably increase production; improved fertilizer and irrigation techniques, pruning and weed control as well as shade coverage can also all boost production. Achieving this upgrading requires access to training to familiarize producers with new production methods and affordable finance to support the integration of new techniques into the production operations.</p> <p><i>Example.</i> Between 2009 and 2012, several companies together with CONACADO, the national confederation of cocoa producers in the Dominican Republic launched an initiative to increase productivity via the rehabilitation and rejuvenation of cocoa plantations. Even before new plants reached maturity, the introduction of organic fertilizer, weeding and pruning had boosted output by up to 77%, increasing productivity to competitive global levels (Fernandez-Stark & Bamber, 2012).</p>
PRODUCT UPGRADING	<p>Shifting into the production of fine cocoa beans; these include replacement of regular varieties for higher value ‘fine’ cocoa variety as well as improving the quality of production of regular cocoa beans. These cocoa beans yield higher returns on average than commodity cocoa beans.</p> <p><i>Example:</i> Capitalizing on the growing demand for premium chocolate, Ecuadorian farmers shifted production to fine or flavored cocoa beans, known as cocoa Arriba. Because of its high quality and unique taste profile it is able to obtain above market prices and is used in niche chocolate manufacturing. In 2012, the government established a national program dedicated to increase yields via industrialization and increased production. It now supplies over 65% of all Arriba cocoa consumed globally (Nestle, 2012).</p>
FUNCTIONAL UPGRADING	<p>Installation of roasting and grinding operations, allowing for in-country intermediate processing and value addition to cocoa beans. Traditionally, cocoa beans have been harvested, fermented and dried before being shipped in bulk to processing facilities in developed countries. Increasingly, cocoa producing countries are providing primary processing before shipping. On average, over the past ten years, the value of 1kg of cocoa paste exports has been 16% higher than the value of 1kg of cocoa beans. Usually this type of functional upgrading is reserved for countries that reach high economies of scale such as Ghana and Cote d’Ivoire.</p> <p><i>Example:</i> In Cote D’Ivoire, the government instituted tax incentives for grinders to establish operations in the country in the 1990s; these were in place for 20 years until 2012 (Monnier, 2015). By 2016, 12 grinders with 720,000T of capacity were operating locally, of which market leaders</p>

	Barry Callebaut, Olam International, Cargill and Cemoi are the largest (Aboa & Kpodo, 2016). New policy initiatives include tax-incentives for grinders expanding their capacity, and a secondary market limiting access to the mid-crop to locally based grinders to improve their competitiveness (Monnier, 2016). In addition, the country is implementing export taxes on unprocessed and early-processed products to try and drive upgrading into even higher stages of the chain (Monnier, 2016). The country aims to process 50% of the country's output by 2020.
INTER-SECTORAL UPGRADING	<p>Intersectoral upgrading entails moving into or creating strong linkages with other industries, namely, with the tourism industry. Cocoa farmers are increasingly forging links with tourism to provide new channels for marketing and avenues for deeper participation in the industry.</p> <p><i>Example:</i> In the Dominican Republic, the <i>Ruta del Cacao</i>, seeks to link cocoa production and local cultures by offering tours of production areas and exhibitions on processing. It is complimented with traditional meals, dance and local art for sell. These efforts allow cocoa producing communities to expand into new economic opportunities (Ashley et al., 2005).</p>

Source: Authors based on Hamrick et al 2017.

4.1 Case Studies

In analyzing different prospective paths for upgrading in the Belize Cocoa-Chocolate industry, it is useful to look more in depth at specific examples from countries facing similar questions of how to add value to their domestic sectors. Two cases were selected for further examination:

- **Ecuador** offers a compelling display of the benefits of a targeted approach towards productivity increases and quality improvements. Ecuador's current position as a lead exporter of FFC beans and its improvement in productivity and quality are attributable to the nation's approach towards industry coordination involving multiple stakeholders along the value chain.
- **Dominican Republic** provides an example of strong entry into the specialty chocolate market. The Dominican Republic was able to grow from a low value, low volume exporter in the 1980s to a leader in cocoa exports for specialty chocolate. Upgrading was largely attributable to a high degree of industry coordination that allowed actors in the country to work towards similar goals.

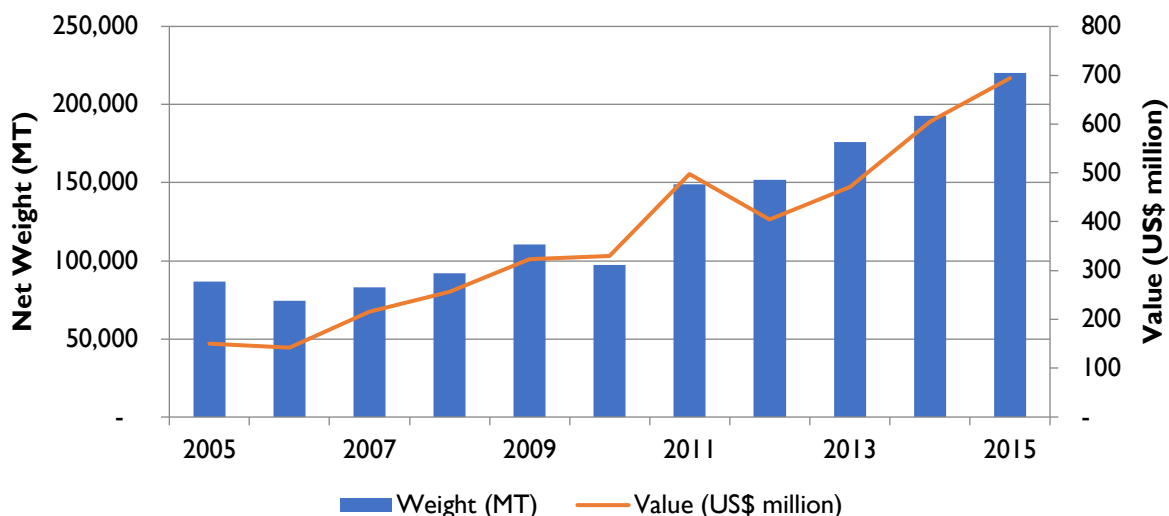
4.1.1 Ecuador— Increasing Value by Product and Functional Upgrading

In 2015, Ecuador was the 3rd largest exporter of cocoa beans in the world by value and 4th largest in volume, exporting 220,300 tons (UNComtrade, 2017). It is currently the largest exporter in Latin America, surpassing traditional export markets in the region such as Brazil, Peru, and Colombia (USDA, 2015). Cocoa beans are a key contributor to export revenue and represent approximately 4% of the country's total exports (UNComtrade, 2017). Ecuador is the world's largest producer of "fine or aromatic" cocoa and accounts for about 60% of global exports of this higher value crop (Hernández et al., 2014).

Ecuador’s participation in the cocoa-chocolate GVC is almost exclusively as an exporter of FFC beans. Only 12% of domestically produced beans are processed domestically, and the grinding capacity in the country is minimal. Just 2% of cocoa goes into chocolate production and only 1% of that chocolate is exported (Bain & Company, 2015). Cocoa production can occur in almost all parts of the country, with the exception of the highlands area (Kooij, 2013). Furthermore, production of cocoa occurs on small and middle-sized farms (Nestle, 2017). Smallholders produce about 90% of Ecuador’s total cocoa bean output. On average, these smallholders cultivate 2 ha/farm in the mountains and 10 ha/farm at the coast (Cepeda et al., 2013).²⁷

Production in Ecuador has been consistently increasing since 2008 (USDA, 2015). Production increased 154% from 2008 to 2014, growing from 94,300 to 240,000 tons (USDA, 2015). Exports also rose in this time period (see Figure 13); increasing by approximately 363% in value and 154% in volume between 2005 and 2015 (the largest gains occurred after 2010) (UNComtrade, 2016). Increases in production, and consequently exports, reflect the results of several different programs, although two stand out - the National Cocoa Plan, and Nestlé’s Cocoa Plan. These programs worked closely with small and medium farms to replace older plantations with lower productivity and expand production areas while simultaneously improving quality (Cepeda et al., 2013; USDA, 2015). In addition, there has been a drive towards international certification, that has helped promote sales and capture value, as well as improve the sustainability of the industry.

Figure 13. Ecuadorian Cocoa Bean Exports, 2005-2015



Source: UN Comtrade, HS2002- 1801; downloaded 11/28/2017

Ecuador’s upgrading in the cocoa-chocolate GVC can be divided into two key trajectories of interest for Belize: (i) Product Upgrading: focus on higher quality to increase selling price; and (ii) Functional Upgrading: brand variations for different bean types. As part of its focus on increased productivity and quality, Ecuadorian farms are pursuing several certifications for sustainability. The country is also seeking denomination of origin certification for the “Arriba” variety of cocoa bean, as well as for single source cocoa. These branding efforts, although still pending their outcomes, will

²⁷ Middle-sized farms, by comparison, are 11 to 50 ha in size and employ hired labor.

support the country's product upgrading. The two trajectories Ecuador followed to increase competitiveness are examined in further detail below.

(i) *Product Upgrading: Focus on High Quality Cocoa Beans.* Increased production in the country in the 2000s focused heavily on fine flavor cocoa beans. Improved production techniques incorporated in process upgrades helped to maintain the quality levels through harvesting and post-harvest fermentation and drying. The result of the focus on producing fine flavored beans is a 59.3% growth in per unit value from 2005 to 2015, with the unit price of exports increasing from US\$1.73/kg in 2005 to US\$3.15 in 2015 (UNComtrade, 2017). In Ecuador, the National Institution of Standards (INEN) sets standards regarding the quality of cocoa beans. It has classified cocoa beans into 5 classes, corresponding to quality standards as well as other factors, including the size and weight of the bean, as well as post-harvesting techniques (Kooij, 2013).

Additionally, Ecuador is working to increase the amount of certified growers in the country to match global demand for sustainably sourced cocoa (Potts et al., 2014). In 2012, it supplied 2% of the world's certified cocoa beans and 5% of the world total supply of cocoa (Potts et al., 2014).¹ The promotion of certification among producers reflects the shift among global chocolate manufactures for sustainably sourced cocoa beans. By 2012, it was estimated that 15%-20% of the cocoa produced in Ecuador was certified under one or more of the voluntary sustainability initiatives: Organic, Fair Trade, and Rain Forest Alliance (Larrea & Lynch, 2012).

Finally, Ecuador is able to achieve product upgrading thanks to certifying beans as FFC by ICCO. The result helped them show that their production came from varieties that impart a rich flavor and helped to further demarcate the country exports. Currently, 75% of all exported beans have are ICCO certified as FFC (ICCO, 2017). Using these quality improvements, Ecuador also is able to functionally upgrade using various marketing and branding efforts.

(ii) *Functional Upgrading for Branding and differentiating bean varieties:* Today, the country produces mainly two types of medium and high-quality beans: *Arriba*,²⁸ a Forastero clone and the *Colección Castro Naranjal* (CCN-51), a Forastero-Trinitario hybrid. *Arriba* cocoa beans represent 37% of national production while CCN-51 accounts for 36% of national production (USDA, 2015). *Arriba* beans have a special designation of fine or flavor cocoa beans, referring to their unique taste profile and are used for premium quality chocolate production (ICCO, 2017).

To help maintain their position as a global exporter, the nation has given special attention to differentiating the beans. A key method of this is special marketing and branding for the *Arriba* bean. For example, efforts to achieve a GI status for the bean help to specialize it on the international market. In 2014 an application for the designation was submitted to the European Commission. Further, the focus of linking high quality beans with sustainable production and building the awareness of smallholder driven production have been key to their success.

Together, product and functional upgrading have helped to boost overall export value and volume of cocoa beans in Ecuador. Export volume has increased 2.5 times, while exports value has increased 4.3 times by more than half a billion dollars (UNComtrade, 2017). The following section looks at the programs and policies that helped to grow the industry in Ecuador. It is worth noting

²⁸ Also known as "National". This is a unique FFC bean in that it is a Forastero bean, which is generally understood as having lower quality taster profiles.

that these policies and programs were not individual efforts but the result of a multi-stakeholder approach involving public and private sector actors in the industry.

Policies and Programs for Upgrading

Ecuador's current position in the cocoa-chocolate GVC is the result of specific policy interventions to build the industry lead by the government, private sector and NGOs. Key actors include the Ministry of Agriculture, Livestock, Aquaculture and Fisheries (MAGAP), which facilitates, regulates and manages agricultural production; the Ministry of Industry and Productivity, Ministry of Foreign Relations, Trade, and Integration, and ProEcuador which manages industrialization and export promotion; the National Institution of Standards (INEN) which controls the quality of cocoa beans; and a number of associations that promote the development of cocoa including the National Association of Cocoa Exporters (ANECACAO), the largest association that represents exporters. ANECACAO provides a range of services including industry data, technical assistance, marketing of Ecuadorian cocoa, and provides policy advice. These organizations work together with private sector actors, including cocoa bean aggregators, exporters and a handful of processors to direct the industry.

Table 7 highlights several major initiatives used to drive growth in Ecuador. Increased production is the result of a combination of government and private sector programs that sought to increase plantings, improve farming techniques and to boost the sustainability of the industry. At the same time, other programs sought to increase the quality of harvests and to capitalize on the unique cocoa bean varieties grown in the country to capture higher values. The main goal of each of these initiatives is to promote Ecuador's cocoa. The National Cocoa Program served as an umbrella program to help coordinate production activities for cocoa bean export, while other programs focused on production of the *Arriba* bean or product upgrading through improved branding.

Table 7. Major Policies in Ecuador's Cocoa Industry

Initiative	Year	Description
Abidjan Cocoa Declaration	2012	<ul style="list-style-type: none"> Ecuador signed the declaration to improve sustainable cocoa economy
National Program of Fine Aroma Cacao	2012	<ul style="list-style-type: none"> To position Ecuador as the leading producer and exporter "Cocoa <i>Arriba</i>" Increase sustainable production, productivity and export of '<i>Arriba</i>' cocoa Develop and implement efficient quality processes in the value chain. Promote national industrialization and "Cocoa <i>Arriba</i>", and promote domestic consumption. Increase international market share and diversification
National Cocoa Program	2013	<ul style="list-style-type: none"> To establish links with organizations working towards the commercialization in cocoa such as: INIAP (Investigation), MAGAP (Production), MIPRO (Industrialization), IEPI (Denomination of Origin) and MRECI-PROEcuador (Promotion of exports and commercial protection)
Geographical Indication (PGI) Status for ' <i>Cacao Arriba</i> '	2014	<ul style="list-style-type: none"> Applied to the EU commission Part of negotiations to add Ecuador to an existing trade agreement between EU member states and Colombia and Peru

Source: Adapted from Ahmed and Hamrick (2015).

The most notable push for upgrading occurred via efforts to promote institutionalization and coordination. For example, the National Cocoa Program established in 2013, helped coordinate efforts in the industry. This plan involves the participation and coordination of key stakeholders in the value chain, from cocoa producers to cocoa processors, including also R&D and other government agencies. The overarching goal of the plan was to promote cocoa production by working with agencies along the value chain to steer the industry towards larger scale production and export. Specifically the program sought to increase farm level interventions to improve farming practices, such as pruning, in order to meet export requirements (Freire, 2013).

Additional programs helped specific other causes, such as sustainability or differentiating *Arriba* beans. In 2011, the government established the Association of Producing Countries of Fine Aroma Cocoa (FINACAO) along with other countries in the region who produce fine flavor cocoa.²⁹ It is headquartered in Ecuador. The objective of the organization is to build capacity among small and medium size producers to help them capture higher value and sustainably cultivate fine flavor cocoa through improvements in harvest quality and international cooperation (Kooij, 2013). The government is investing over US\$80 million in the next 10 years for development of fine and flavor cocoa beans in the country (Cepeda et al., 2013). Money designated for fine flavor cocoa aims to maintain and expand its position as global supplier of the fine flavor cocoa. In 2015, Ecuador accounted for 2/3 of the global supply and hopes to increase its production (Nieburg, 2015).

These government funds go to a variety of initiatives. For example, as part of the National Program of Fine Aroma Cacao, in 2012 the government led a cocoa pruning campaign. The program sought to expand planting of cocoa trees to new areas, replant trees in aging farms, and implement new farming protocols to increase existing production. Pruning, an essential task to maintain high yields and sustain productivity of trees, was especially encouraged through the program. The government partnered with over 500 producer associations to help the estimated 30,000 smallholders in the nation increase pruning of cocoa trees. A total of approximately 19 million cocoa trees were pruned during the program (Freire, 2013). Additionally, programs helped to promote sustainable farming practices including proper use of fertilizer and other farm techniques to help promote sustainability.

The government is also seeking to distinguish *Arriba* cocoa from other cocoa beans to capture higher value. In 2005, the Ministry of Agriculture declared *Arriba* cocoa beans a “Product Symbol of Ecuador,” affirming the importance of cocoa in the nation (ANECACAO, 2015). Subsequently, the government sought denomination of origin protection for the *Arriba* bean. As part of trade negotiations between the EU, Ecuador, Colombia, and Peru, Ecuador sought to achieve a PGI status for its *Arriba* bean.

4.1.2 Dominican Republic—Upgrading via Industry Coordination

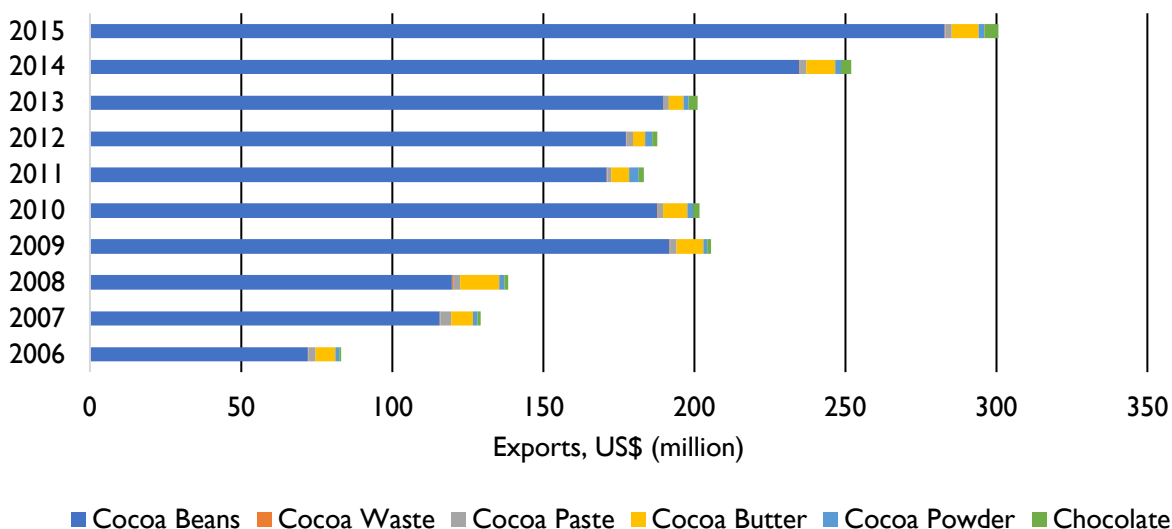
Until the 1980s, the Dominican Republic had a reputation as a low-quality producer and its main variety of cocoa, known domestically as *Sanchez*. Heavy rainfall during harvesting season and limited ability to dry or ferment the cocoa beans resulted in low market prices. During the 1980s and 1990s several efforts to improve drying and fermentation processes and to help gain organic certification helped to revive the industry and shift it into specialty and FFC markets. The shift towards higher quality came in response to major buyers deciding to source beans from Indonesia,

²⁹ Other member nations include Bolivia, Colombia, Costa Rica, Nicaragua, Peru and Venezuela.

creating a deeper crisis for the industry. These new beans were branded by a new name, *Hispanola*, which carried a reputation for quality that translated into higher prices (Berlan & Berges, 2013).

The rise in reputation is due to strategic investments and the coordination of various value chain actors. The nation is now one of the prominent suppliers of FFC beans to the global market. In 2015 the Dominican Republic supplied 11% of FFC bean exports globally. The volume and value of cocoa bean exports have risen steady in the last decade, which the nation simultaneously upgraded into higher value segments of the value chain, including the export of chocolate (See Figure 14).

Figure 14. Dominican Republic Exports by GVC Segment (US\$, million) 2006-2015



Source: UN Comtrade based on HS codes 1801,1802,1803,1804,1805,1806. Retrieved on November 28, 2017.

Cocoa bean exports had the largest growth between 2006 to 2015, growing over from US\$72 million to nearly US\$284 million. At the same time, chocolate exports rose from less than US\$750 thousand in 2006 to nearly US\$4.6 million, an increase of nearly 530% (UNComtrade, 2017). The growth in the industry is attributable to coordinate efforts at the national level to rebuild the industry and the promotion of practices to improve the quality of the beans as well as to upgrade into newer, higher value activities along the GVC. Broadly speaking four upgrading trajectories can be seen. 1) Process and product upgrading by providing support for farmers to achieve the necessary certification to export in niche markets; 2) Process upgrading to improve productivity via trainings and access to finance; 3) Functional upgrading into chocolate manufacturing and 4) marketing activities. All of these steps were supported by a broader restructuring of the main stakeholder to help coordinate industry activities.

Through all of these upgrading trajectories, National Confederation of Dominican Cocoa Producers, Inc. (CONACADO) played a central role in achieving success and organizing industry stakeholders. Representing over 10,000 cocoa producers, the confederation sells on the international market and is a lead exporter of organic cocoa. CONACADO has also been a major driver of the industry helping promote several programs aimed at improving post-harvest handling and also improving farmer techniques.

The following section outlines CONACADO's role in supporting the Dominican Republic's cocoa sector. Because of the relevance for the Belize cocoa-chocolate industry, it centers its analysis on CONACADO. Before outlining the industry-wide upgrading supported by CONACADO, it first describes the history, organization and funding model used.

Organization of CONACADO

Founded in 1985, CONACADO is comprised of approximately 152 small cocoa producer associations, with around 10,000 members. CONACADO is the leading producer and exporter of fermented organic cocoa for the European and United States markets (Fernandez-Stark & Bamber, 2012).

The organization consists of 7 affiliates that bring together approximately 152 small cocoa producer associations, with around 10,000 members. Additionally, it has three sub-sections that address specific aspects of the industry (Fernandez-Stark & Bamber, 2012). These include:

1. CONACADO ONG the main vehicle for technical assistance.
2. CONACADO COOPERATIVA, which is in charge of savings and loans for the confederation
3. CONACADO AGROINDUSTRIAL the unit responsible for the commercialization of the cocoa. Through the unit, CONACADO is certified by BCS Okograntie (Germany), by Biosuisse (Switzerland) and JAS (Japan). In addition, it has been a certified Fair Trade 'Fair Labeling Organization' since 1985 (Fernandez-Stark & Bamber, 2012). Further, many of the beans are FFC certified and/or certified organic (Berlan & Berges, 2013; ICCO, 2017).

Each of the sub-sections of the organization have operations in the 7 affiliates making services readily available to all members. By separating activities but keeping them under the same organization, it provided a unifying force in the industry and helped to facilitate the upgrading trajectories mentioned below. It also helped to attract many international firms such as processors ICAM and from Green & Black to the region to help further empower the industry.

Upgrading Supported by CONACADO

CONACADO is the main driver of growth in the cocoa industry within the Dominican Republic. It has helped facilitate upgrading by taking several steps to improve productivity as well as improve the quality of the beans and to facilitate entry into new markets. These steps include:

- 1) **Restructured organization to help increase representation and help facilitate the flow of information in the industry.** To help improve competitiveness, CONACADO underwent a drastic shift in organization in the early 2010s, moving from a NGO model with various units operating largely autonomous into a singular structure with three organizations that each undertake a specific function (Fernandez-Stark & Bamber, 2012).
- 2) **Assisting growers to obtain the necessary certifications to participate on the international market.** A key requirement for access markets in the global North is certifications. CONACADO has taken steps to obtain many of these certifications. Standards that the confederation include: European standard (EC834/2007), Biodynamic,

National Organic Program (NOP), Hand in Hand, Fairtrade Labelling Organizations (FLO), Rainforest Alliance, International Organization for Standardization (ISO), Kosher and Japanese Agricultural Standards (JAS) (Berlan & Berges, 2013). Over half of CONACADO's production is eligible for Fairtrade certification (Berlan & Berges, 2013).

- 3) Developing training courses and farmer assistance programs to help improve farming and post-harvest practices.** Productivity is a major issue for the nation, which has limited space for production. Further, antiquated growing and post-harvest techniques drastically limited the profitability and cocoa bean supply in the nation. To address this, CONACADO introduced a number of reforms to help improve farm practices. These were supplement with access to finance for farmers who made the requisite farm upgrades.
- 4) Facilitated functional upgrading by purchasing a cocoa processing plant.** In addition to improving cocoa bean quality and production, CONACADO is also taking steps to move into new segments of the value chain to add further value to the industry. In 2008, it purchased a cocoa powder processing plant in order to functionally upgrade along the value chain into semi-processed goods (Fiore, 2015).

Beyond CONACADO driven upgrading, firms are now identifying new opportunities to grow and expand into new segments. For example, growers are expanding into tourism to help build awareness of the cocoa produced on the island. Visitors have the opportunity to visit farms to see how cocoa beans are produced and processed. It also provides an opportunity to sell local crafts and cocoa products. Visitors are also exposed to local dance, cuisine and culture to help link production to cultural tourism to increase revenue to the community (Ashley et al., 2005).

4.2 Lesson Learned for Belize

Despite key points of differentiation between Belize and the two cases presented above, both Ecuador and the Dominican Republic's experience in the cocoa-chocolate industry provide important lessons for Belize. Further, both nations export higher volumes than Belize and have been able become increasingly their competitive in the specialty chocolate market via industry focused policies and programs. The most crucial lessons for Belize from their experience includes the following:

Both nations were able to upgrade thanks to a highly coordinated country strategy that involved multiple stakeholders working for a common goal. A unified approach to growth that involved multiple stakeholders was a key driver of success for both industries. Ecuador did this through government agencies working with industry associations, such as ANECACAO to build the industry. Coordination was focused on the specialty market. In the Dominican Republic CONACADO was the primary driver of the industry and oversaw a number of activities from technical capacity building to processing,

Ecuador used government-backed programs to diversify their beans and make them distinct from other international suppliers. Ecuador's growth strategy involved developing various cocoa varieties and marketing them distinctly. For example, the Arriba brand is seen as a unique product to Ecuador and they want to further differentiate it through a GI protection. At the same time, they are also promoting other varieties, such as the CCN-51, which is of a lower quality than Arriba beans, but still superior to bulk cocoa. A similar strategy is possible for Belize to use to

differentiate the high quality, small model organic production and the conventional beans on larger farms.

The Dominican Republic helped to pull farmers together to streamline trainings and help facilitate trade. Smallholders often lack the quantity and certifications to meet global retailers demands. To help combat this, the Dominican Republic's CONCADO was developed to represent various farmer groups and helped to increase efficiencies. One of the key features that helped the industry was technical assistance and access to loans that the organization offered farmers. It also helped to move into commercial operations once production was sufficient enough. CONCADO, while sharing some features with the TCGA, differs in its approach. Investments into semi-processed products were made to increase participation in the value chain, rather than steps to increase farmer prices. It also has consistently been the sole representative and advocate for farmers in the Dominican Republic, compared to the shared role with private sector buyers in Belize.

Both nations saw the importance of a niche market strategy to help overcome production limitations and to earn higher unit prices. Like Belize, both Ecuador and the Dominican Republic opted for niche markets rather than bulk cocoa sells which are driven more on volume and lower prices. As a result, they were able to capitalize on higher quality and obtain better prices for farmers. Such an approach however, requires investments in branding and production methods that give superior beans for sell. It also necessitates ties with artisanal buyers in developed economies.

5 Recommended Upgrading Trajectories for Belize

Belize's upgrading path in the cocoa-chocolate GVC can mimic some elements of Ecuador and the Dominican Republic's experience. The overarching goal of these efforts is to increase production, quality and brand recognition, thereby providing increased economic benefits for small businesses. The most immediate upgrading trajectories that will accomplish these aims include:

Most critical are a set of transversal efforts around improving the institutionalization of the industry and investing in modern infrastructure: The above recommendations depend upon broad upgrading efforts that involve the whole industry but do not necessarily animate individual strategic aims. These efforts should encompass the following overarching components:

- ***Institutionalization:*** Historically, Belize enjoyed a high level of institutionalization via the TCGA. However, with the entry of new actors and internal issues, new efforts around institutionalization are necessary. Nascent efforts aimed at increasing coordination, such as the Belize National Cacao Committee, exist but lack full participation and remain in the planning phase. As currently envisioned, it would work primarily to stabilize prices in the nation. This activity is not sufficient. Stronger coordination of all support roles, including knowledge transfer of best practices, input provisions and branding and marketing at the country level is needed to help better position the industry. Further, institutionalization should involve all value chain actors, including farmers, buyers, and chocolate manufacturers as well as provide for a clear strategy for the nation. The government can employ a more aggressive posture in supporting the industry through helping to establish a national

committee to help direct the industry, fund projects and coordinate efforts towards a common strategy.

- **Infrastructure:** Roads around cocoa growing regions are difficult to navigate, especially during rainy seasons. As a result, any farmers struggle to reach buyers. Some buyers, such as MMC, go to the farms to meet farmers but also cited road conditions as an industry constraint (Field Research, 2018). Significant investments to improve infrastructure in the region will help facilitate the upgrading trajectories mentioned above, as well as reduce transport loss and reduce cost. This will also help increase cocoa tourism in the area by making it easier for visitors to access cocoa farms.

Concurrent with these transversal actions, a set of upgrading trajectories for the nation is also advisable. These include:

1. **Short-term investments in product upgrading to increase the number of exporters who have international certifications.** Organic and Fairtrade certification are critical certifications needed to increase selling prices in the nation. However, one of the key buyers, TCGA, is no longer certified and therefore severely limits the outlets for farmers and places pressure on the industry. As a result, farmers experienced a 40% reduction in prices from 2017-2018. By making investments to help buyer gain and maintain certifications, a more robust market for farmers can emerge and reduce price shocks in the nation.

Beyond previously held certification, efforts to increase the amount of FFC certified beans is crucial. Belize has a reputation for high quality and many of its beans qualify as FFC beans (Field Research, 2018). However, only a small percentage of production is formally recognized by ICCO as FFC.

2. **Short-term investment in process upgrading to maintain and improve yields.** In the 2010s a massive campaign by both MMC and TCGA sought to increase cacao trees in Belize. As these trees reach maturity, it is important that programs to help maintain the trees to maximize productivity are offered. These trainings should also accompany input provision programs and post-harvest trainings to help maximize farm-level activity and help ensure high quantities of cocoa beans.
3. **Medium-long term functional upgrading via development of a national brand to promote internationally:** Belize offers a high-quality product with a strong link to the nation's history and Mayan culture. These types of cultural/historic links are currently sought after in niche markets and offer a strong opportunity to increase participation in international markets. Branding efforts should occur at both the national and firm level. The national level branding should be steered by several actors and should promote the image of Belize cocoa beans at the global level. While BELTRAIDE does this to an extent, such as trade missions to Belgium, an industry driven branding program is necessary. These efforts would help all producers and brands in the nation. Firm level, private sector branding can help to create nuances between actors in the nation but should be done internally by each individual firm.

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