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Center on Globalization, Governance & Competitiveness, Duke University

The Philippines in the Coffee Global Value Chain

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Acronyms

ACE	Association of Coffee Excellence
ANACAFE	Asociación Nacional del Café Guatemala
BPI	Bank of the Philippine Islands
CDA	Cooperative Development Authority
CQI	Coffee Quality Institute
CoE	Cups of Excellence
DA	Department of Agriculture, Philippines
DENR	Department of Environment and Natural Resources, Philippines
DOST	Department of Science and Technology
DTI	Department of Trade and Industry, Philippines
FAO	Food and Agricultural Organization, United Nations
FEDECOCAGUA	Federación de Cooperativas de Café de Guatemala
ICA	International Coffee Agreement
ICE	International Commodity Exchange (New York)
ICO	International Coffee Organization
IFOAM	International Foundation for Organic Agriculture
ITC	International Trade Center
MFN	Most Favored Nation
NGO	Non-Governmental Organization
NGP	National Greening Program
PRDP	Philippine Rural Development Project
RA	Rainforest Alliance
SCAA	Specialty Coffee Association of America
SCAE	Specialty Coffee Association of Europe
UNCTAD	United Nations Commission for Trade and Development
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
VBARD	Vietnamese Bank for Agriculture and Rural Development

Executive Summary

This report uses the Duke CGGC Global Value Chain (GVC) framework to examine the Philippines' position in the global coffee industry and identify opportunities for upgrading for the sector. While the country has a rich history as being a significant exporter of beans, a variety of impediments—coffee rust, shifting dynamics within the global industry, and insufficient government support—have caused the domestic industry to atrophy in recent decades. The Philippines' current coffee production levels are analogous to small-scale nations such as Guinea, Togo, and Madagascar, and the value of its 2015 exports of green and roasted coffee accounted for less than 0.0004% and 0.003% of global trade, respectively.

While production and exports remain low, the Philippines is an important coffee market in other respects. The country has been a leading importer of instant coffee by volume since 2011 and is projected to become one of the world's largest five consumers by 2021. The robust demand has, in turn, boosted fortunes of businesses participating in the retail segment in the country. In an effort to help domestic producers take advantage of both the local and global markets, policymakers have engaged with the stakeholders to facilitate economic upgrading. In order for those efforts to gain traction, further process and product upgrades are necessary to improve the quality of Filipino coffee. If successful, such efforts may create the necessary momentum for functional upgrading into high-value segments of the chain over the longer term.

The Coffee Global Value Chain

The global coffee industry, valued at approximately US$77 billion in 2015 with trade of US$66.5 billion, is characterized by production concentrated in developing countries in the so-called 'coffee belt' around the equator, while consumption is concentrated in northern regions. Of the two main species, Arabica are considered to impart a superior taste and earn a higher market price, while Robusta typically is used for lower-value segments of the market such as instant coffee.

The coffee GVC can be divided into five categories: production, processing, trade, roasting and marketing. The lowest value captured is in the production stage of the chain, carried out in developing countries in the coffee belt, while the highest value captured is in the marketing stage of the chain, which continues to be concentrated in developed countries by global firms. The disparity in profiles between Arabica and Robusta lead to different emphasis: quality and marketing are key factors in Arabica profitability, while high productivity and farm efficiency are the critical determinants of Robusta profitability.

While the broad features of the global industry have supported steady growth, there have been important structural evolutions in recent years. These include the following:

- **The de-commoditization of the coffee sector in the last two decades.** Although coffee is still traded on commodity markets, marketing has raised consumer awareness of not just the quality of the coffee, but also, its specific

origin, type and flavor profile as well as the social and environmental conditions under which it is produced. This has been driven in part by the rise of specialty coffee stores—known as the 'second' (e.g. Starbucks) and 'third' (e.g. Intelligensia) wave coffee producers. This trend has accelerated in recent years—today, coffee is no longer seen as simply Arabica and Robusta but is segmented into numerous different products.

- **Instant coffee has been losing market share to fresh coffee in mature markets, leaving Asia as a key source of demand.** Instant coffee now only accounts for 7% of the market in the US, forcing companies to shift to Asia, where coffee consumption is still in its relative infancy and instant is used as an inexpensive way to draw in new drinkers. Key emerging markets—particularly in the Asia Pacific region, where beverage consumption is still dominated by tea—are expected to be an important source of growth for the industry, with China, Indonesia and the Philippines expected to add US$1.5 billion in new sales in the next five years.

- **Traceability and sustainability has become increasingly important.** This is particularly true in two product categories: specialty coffee and certified coffee. In specialty coffee, the product is sold based on its specific origin and the quality characteristics afforded to it by production in that location. In certified coffee, the product's value is in reassuring the consumer that it has been produced according to a specific set of economic, social and environmentally sustainable norms. This, in turn, has led to the restructuring of the supply chain, with roasters purchasing coffee directly from farmers in producing regions (i.e., "direct trade").

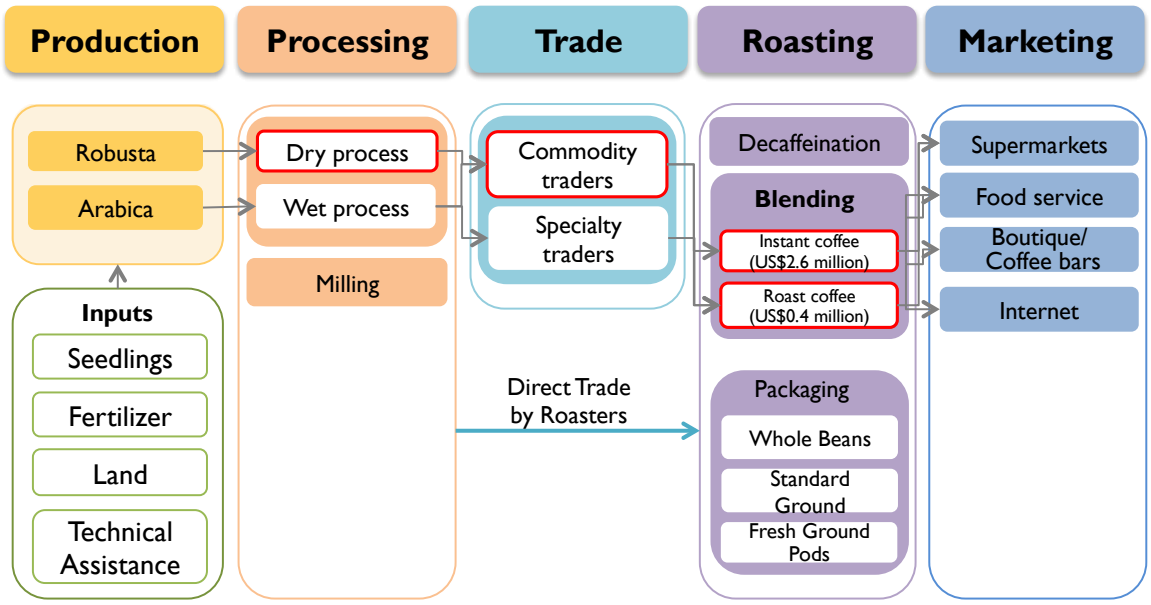
The Philippines in the Coffee GVC

A leading exporter of Arabica coffee in the 19th century, the country shifted its emphasis toward Robusta after coffee rust and other diseases decimated the crop in the 1890s. While production rebounded in the latter half of the 20th century, the Philippines failed to fully recover its former leading role. More recent downturns have impaired the country's exports and participation in coffee GVCs. In a testament to the limited scale of the industry, fewer than 10 companies exported coffee in any form in 2014, and none of those had exports in excess of US$500,000 (see Figure E-1).

The coffee crisis in 2000 and 2001 as well as changes in domestic priorities are a few of the most immediate factors that have reduced exports. While there have been recent developments in each segment of the value chain—the government establishing nursery centers, the Cooperative Development Authority (CDA) providing seedlings for coffee growers, and a variety of public and private sector actors offering extension services to farmers are three of the more tangible efforts—few of these developments have yet led to quantifiable increases in the overall competitiveness in the industry.

There are, however, reasons for optimism. The Philippines' strengths in the coffee industry include the following features:

Figure E-1. The Philippines in the Coffee GVC



Source: Authors.

1. **Geographic conditions to produce different coffee varieties:** The Philippines grows all four varieties of coffee—Robusta, Arabica, Excelsa and Liberica—throughout the country. While the diversity affords the country flexibility to explore potential niches, its emphasis on the two most popular varieties (Robusta and Arabica) of coffee aligns with regional and global trends.

2. **Archipelago provides natural barriers to disease:** Coffee rust is thought to spread by fungus spores that are dispersed through the wind, making land-locked regions particularly vulnerable.

3. **Government support by DTI and the DA:** Various government agencies have provided active support for the coffee industry. The DA has helped established nursery centers and seed gardens, some of which are supported by universities and educational institutions, others of which are maintained by the private sector. It has also engaged with the Bank of the Philippine Islands (BPI), the CDA and local governments to distribute seedlings in the region while also supporting implementation of the PRDP. Both the DA and DTI have conducted extensive studies of the industry to identify bottlenecks and potential policy solutions while DTI has included coffee as part of its NICCEP program to develop industry clusters throughout the country. Other actors that have provided support to the coffee industry include the DENR, DOST, the Department of Labor and Employment, TESDA and local governments.

4. **Improved organization in production segment of chain:** While still young and developing, cooperative networks have strengthened in recent years in some production regions, especially in the Arabica areas in Benguet. Support from the

DA and the PRDP in the form of extension services as well as input provision has played a role in helping these networks gain traction.

Even with these steps, prominent challenges remain. The most significant include the following:

1. **Limited stock of quality seedlings:** While the DA's seedling program has had some successes in increasing input distribution to producers, there are shortcomings with the effort. Most immediately, the quality of the plants can be substandard, with offices other than the DA issuing deficient varieties.

2. **Lack of modern production techniques:** This is part stems from both the age of farmers, and a lack of extension services over the past few decades. The average age of farmers in the Philippines is 57 years old. With little formal training and education, these farmers continue to produce coffee with outdated techniques agricultural techniques.

3. **Crude post-harvest processing methods:** The emphasis on lower-quality Robusta has mitigated the incentives for farmers to engage in process upgrading and improve their post-harvest capabilities. While there are a small handful of wet processing facilities scattered around the country, dry processing facilities still dominate. Furthermore, many farmers still require training about the benefits of sorting associated with sorting beans based on coffee species.

4. **Lack of coordination between industry stakeholders:** While there is government attention to the sector and cooperation within individual segments of the chain, communication often falters between the various nodes. At a national level, the public sector is characterized by multiple government agencies offering similar services.

5. **Gaps in collection and distribution of research and technical knowledge:** Data collected by the DA and the PSA about the country's production volume conflict with estimates offered by international organizations such as the ICO. Furthermore, there is limited transfer of knowledge and technology from R&D centers to producers, with best practices not being adequately communicated.

6. **Popularity of instant coffee:** The popularity of instant coffee has allowed Nestle to establish itself as the dominant consumer of the Philippines' coffee beans. Traditionally, Nestle has not emphasized specialty coffee or premium quality, instead accepting Robusta beans that meet minimum standards. As global trends have moved toward single-source Arabica coffee, the existing profile has required a paradigm shift for farmers seeking to enter higher-value segments.

These constraints restrict the country's possible upgrading trajectories. Most immediately, the Philippines' low production levels, its emphasis on Robusta and its lack

of wet washing stations require attention. The upgrading trajectories presented in Table E-1 offer opportunities for boosting the sector.

Table E- 1. The Philippines and the Coffee GVC: Upgrading Trajectories

Time Frame	Upgrading Trajectory	Key Benefits	Philippines Challenges
Short Term	**Process upgrading in production of natural Robusta & Arabica**	•Increased productivity •Lower unit costs increase competitiveness of local coffee •Allow for build-up of skills to potentially engage export market	•Low yields due to aging trees, outdated production techniques •Farmers approaching retirement •Competition from regional peers such as Vietnam
Short Term	**Product upgrading into higher value specialty Arabica**	•Possible entry into lucrative export market •Increased opportunity for product differentiation •Higher unit value income •Employment in both production and processing stages of the chain	•Historical orientation toward Robusta supported by popularity of instant coffee, limited market signals locally about value of Arabica •Producers view coffee as a commodity •Limited access to quality seedlings •Limited knowledge of production & harvesting techniques required to maintain quality •Lack of washing station infrastructure
Short-to-Medium Term	**Functional upgrading into processing with introduction of environmentally friendly washing stations**	•Facilitate entry into specialty coffee market •Encourage environmental upgrading by reducing water pollution associated with wet processing •Build new specialty coffee reputation and brand based on sustainable practices •Create source of inexpensive organic fertilizer	•Over-reliance on dry processing facilities •Insufficient capital to finance investments
Medium Term	**Functional upgrading into branding**	•Building the Philippines' reputation as a sophisticated coffee producer •Differentiate Philippine coffee from commodity market •Access higher-value product segments of coffee GVC	•Erosion of country's reputation as a coffee producer •Underdeveloped backward linkages between retailers and domestic sector

Source: Authors.

1. Introduction

Once a large coffee exporter, the explosive growth of coffee consumption in the Philippines has encouraged policy makers to revitalize its sector. The domestic industry, which historically relied on a smallholder producers cultivating Robusta, collapsed in the 1990s, following the end of the International Coffee Agreement and the 2001 coffee crisis. Yet by 2010, rising incomes swelled demand for coffee, forcing a government re-evaluation of the sector.

The Philippines has become one of the world's largest importers of soluble coffee and is projected to be the second fastest growth coffee market between 2015-2020 (Euromonitor, 2016b). Strong local demand is being influenced by at least two changes that reflect both regional and global trends within the industry:

1) By volume, Filipino demand has been driven by increased consumption of instant coffee, particularly amongst younger generations who favor the convenience. This is a marked trend in the Asia-Pacific region in general, where economic growth has boosted disposable incomes, and tea-drinking countries are increasingly acquiring a taste for coffee.

2) Wealthier Filipinos have supported the emergence of a specialty coffee sector, particularly in major urban areas. Global brands such as Starbucks, the Coffee Bean & Tea Leaf and UCC have established wide networks in the country while smaller, independent coffee shops are also emerging. These features reflect the rise of the specialty and premium coffee segment and café culture that has swept global markets.

If the strong local demand has provided motivation for the government to revitalize the sector, it has also raised questions about whether import-substitution strategies will ultimately facilitate growth in exports. Global conditions have changed considerably since the Philippines—most recently a Robusta producer—generated coffee at significant volume. At a regional level, Vietnam has emerged as the world's largest producer of Robusta, dominating global exports with low-cost coffee.

At an industry level, technological progress made in the 1990s allows Robusta to be roasted and blended to achieve similar taste profiles to the natural, unwashed Arabicas. This has provided some product differentiation in the lower and middle tiers of the market. That trend has been further accentuated by higher quality, specialty Arabica producers making a push toward sustainability in their supply chains, with major global roasters and traders committing to sourcing only certified coffee from specific origins. As a result, coffee producing countries have spent the last decade adjusting their strategies towards these new market conditions, with increased focus on quality and certification in the Arabica segment and increased productivity and lower production costs in the Robusta segment.

The Philippines does have reasons for optimism. It is one of just a few countries that can produce both Arabica and Robusta varieties.[1] This opens two possible paths for development in the country: higher-altitude regions of the Cordillera have shown some promise for growing Arabica; while the cheaper, rural land in Mindanao and near Cavite make it a potential competitor in Robusta. The government's recent attention to the sector can also help the country address some of the more entrenched challenges.

However, many of the Philippines' constraints are significant, especially in the context of the evolving global market. The industry's increasing focus on specialty and certified coffee depends on maintaining high quality throughout the chain, from seedlings to production to post-harvest handling. Robusta production is similarly reliant on modern agricultural techniques and high use of inputs. If the Philippines is to upgrade its position in the chain, these features should be emphasized more systematically—Filipino smallholders currently do not have access to the knowledge, training, or financial resources to meet these quality and productivity requirements.

This paper uses the Global Value Chain (GVC) framework to understand how the global coffee industry is changing, assess the Philippines current position, and identify opportunities to upgrade with the goal of promoting economic development, especially in rural areas. It first provides an overview of the coffee 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 can alter structural dynamics. It then analyzes the Philippines' place, examining both the advantages and challenges for domestic industry development. After providing comparative case studies on Vietnam and Guatemala's experiences, it concludes by outlining potential upgrading strategies.

2. The Coffee Global Value Chain

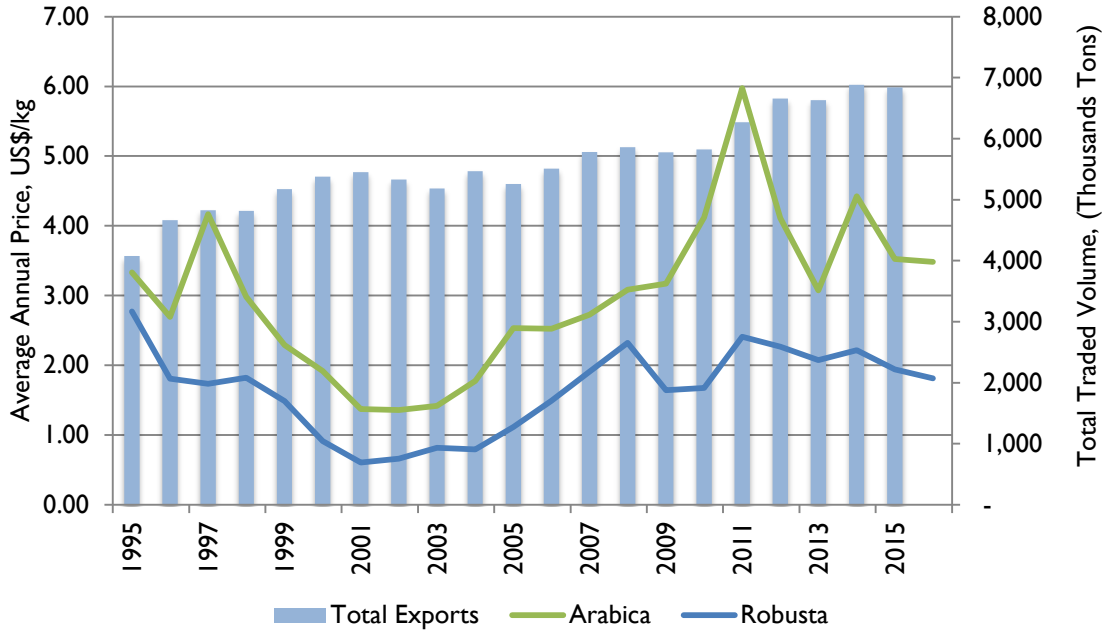
Coffee's production and consumption profile—production is dominated by developing countries that populate the so-called 'coffee belt' around the equator, while consumption is concentrated in northern regions—supports a high volume of international trade. By 2015, the global coffee industry was valued at approximately US$77 billion with trade of US$66.5 billion (Euromonitor, 2016a; UNComtrade, 2016). The total volume of green coffee trade—a good proxy for demand in all downstream categories—has steadily increased over the past two decades; growth has continued despite fluctuations in price at around 2% CAGR since 2011 (Figure 1).

There are two main species of coffee grown for commercial markets: Arabica and Robusta. Variety production options are largely determined by geographic conditions. Arabica is best suited for higher altitudes of 1,000-2,000 meters and average temperatures between 15° and 24°C (ICO, 2013a). Robusta is better suited to the lower altitudes. *Arabica* beans are considered to impart a superior taste and therefore

[1] The Philippines also produces Liberica and Excelsa. However, these varieties constitute a small share of the global market and are not analyzed in detail in this report.

fetch a higher market price relative to Robusta, which is more commonly destined for lower-value segments of the market such as instant coffee (ICO, 2013a; ITC, 2011; Ponte, 2002a). The highest differential in the past half-century was registered in 2010-2011, where Arabica prices were on average US$2.84 higher per kilogram. The price differential remained over US$1.40 over between mid-2014 and mid-2016 (World Bank Commodity Prices Pink List, 2016) (Figure 1).[2] *Robusta* coffee trees, nonetheless, yield roughly 33% more beans per hectare compared to Arabica (ICO, 2013a). Quality and marketing are thus key factors in Arabica profitability, while high productivity and farm efficiency are the key factors in Robusta profitability.

Figure 1. NYSE Prices for Coffee Beans and Total Volume, 1995-2015



Source: World Bank Pink Sheet, 2016 and ICO, 2016.

Steady growth of the industry has disguised numerous structural changes that have emerged in recent years. The most notable of these trends include the following:

1) **The last two decades have seen the "de-commoditization" of the coffee sector.** Although coffee is still traded on commodity markets, marketing has raised consumer awareness of not just the quality of the coffee, but also, its specific origin, type and flavor profile as well as the social and environmental

[2] The official coffee price for both Arabica and Robusta is based on the International Commodity Exchange (ICE) Commodity C price; it is influenced by numerous factors and the price fluctuates on a daily basis. In unusual market conditions high-quality Robusta beans may be more highly valued than low-quality Arabica by international trading companies (Nicholson, 2013). However, a comparison of monthly coffee prices from 1960 to September 2016, indicates that the price of Arabica has been consistently higher than Robusta for all but 10 months in 1977 and 1978 (World Bank, 2016a).

conditions under which it is produced (Potts et al., 2014; Wilson & Wilson, 2013). This in part has been driven by the rise of specialty coffee stores—known as the 'second' (Starbucks) and 'third' (Intelligensia) wave coffee producers. This trend has accelerated in recent years; today, coffee is no longer seen as simply Arabica/Robusta but is segmented into numerous different products from a basic commodity coffee through to ultra-luxury coffee, which has even attracted global luxury brands such as Prada and LVMH (Euromonitor, 2016a).

2) **Instant coffee has been steadily losing market share to fresh coffee in more mature markets, shifting its demand to Asia.** As US domestic consumers prioritizes "premium" coffee, instant coffee now only accounts for 7% of the market (Euromonitor, 2016b). In addition to increased consumer awareness on taste, the emergence of fresh coffee pods (or small canisters of instant coffee) has enabled consumers to benefit from the same convenience but with higher quality. Instant has thus shifted to Asia, where coffee consumption is still in its relative infancy and instant is used as an inexpensive way to draw in new drinkers. Key emerging markets are expected to be an important source of growth for the industry, with China, Indonesia and the Philippines expected to add US$1.5 billion in new sales in the next five years (Euromonitor, 2016b). Nonetheless, the expansion of coffee into the region is likely to involve more innovation than earlier expansion—products such as 3-1 mixes (including milk and sugar) and micro-ground varieties could be gateway products before consumers quickly trade up with the arrival of specialty coffee shops.

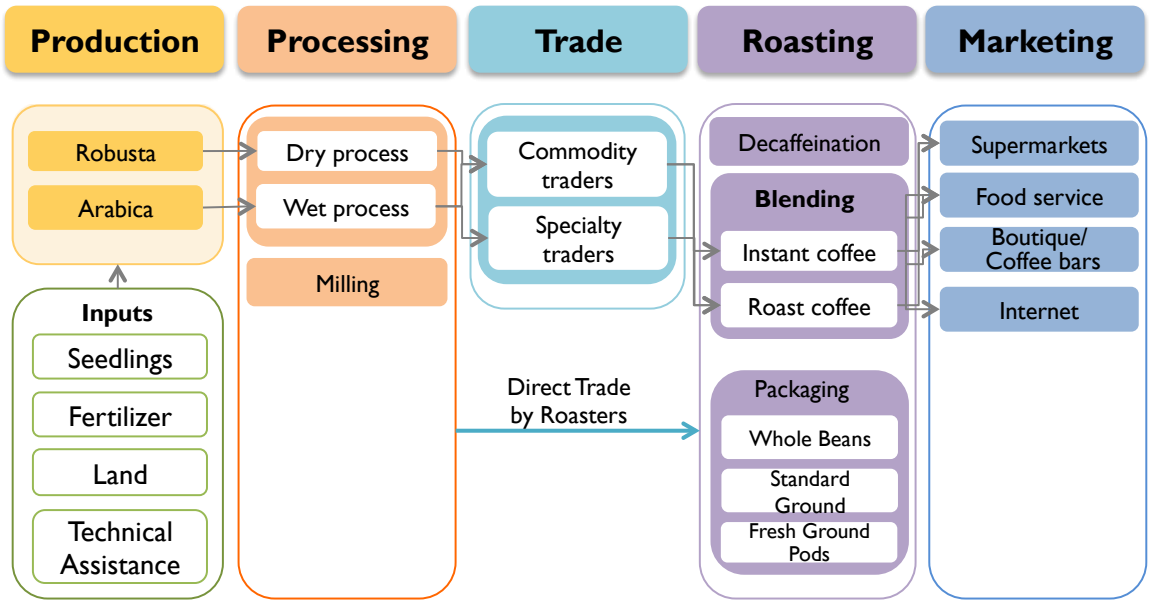
3) **Traceability and sustainability has become increasingly important in the supply chain.** This is particularly true in two product categories: specialty coffee and certified coffee. In specialty coffee, the product is sold based on its specific origin and the quality characteristics afforded to it by production in that location. In certified coffee, the product's value is in reassuring the consumer that it has been produced according to a specific set of economic, social and environmentally sustainable norms. Together, these two trends are increasingly becoming pre-requisites for participation in the industry. This, in turn, has led to the restructuring of the supply chain, with roasters purchasing coffee directly from farmers in producing regions (i.e., "direct trade"). In the past, the industry had relied primarily on large coffee traders to source their beans; however, traders' business model was based on aggregation, rather than differentiation. This has created new opportunities for competitive producers to gain direct access to their markets.

This section of the report builds upon these insights, examining how change is expressing itself in the international industry. It first maps the coffee GVC from inputs to marketing. It then charts global supply and demand dynamics before analyzing the organization of the industry. It concludes by examining the standards and certifications that have become more critical for entry and upgrading within the chain in recent years.

2.1. Mapping the Coffee Global Value Chain

The coffee GVC includes several stages of transformation from production to final marketing, which typically take place in diverse locations around the world. Figure 2 provides a visual representation of the various stages of value-addition. The lowest value captured is in the production stage of the chain, carried out in developing countries in the coffee belt, while the highest value captured is in the marketing stage of the chain, which continues to be concentrated in developed countries by global firms.

Figure 2. The Coffee Global Value Chain



Source: Duke CGGC; Ponte, 2002; Fitter and Kaplinsky, 2001; Daviron and Ponte, 2005, Fernandez-Stark and Bamber, 2012.

Production: Coffee trees are perennial crops; it takes approximately three to four years to for a tree to become productive, and it bares fruit for up to approximately 20 years. The production process for coffee requires several inputs, including physical inputs, land and labor. The qualities of the various inputs can determine the types of end-markets in which the coffee may ultimately be sold. For example, for coffee production to be certified as organic, growers may only use particular types of approved organic fertilizers and sprays (TCC, 2012). Irrigation, fertilizer application, weeding and pruning all contribute to improved productivity of the crop, with fertilizer and pruning making the most difference (ED&F Man-Volcafe, 2013). Harvesting is labor intensive for high quality output; the best quality is obtained from selective picking in which only red, ripe cherries are gathered by hand in successive picking rounds until most of the crop has been harvested (ITC, 2012). Nearly 70% of the global coffee supply is produced on small coffee farms of 1-5 hectares, usually using family labor (TCC, 2012).[3] Inputs are typically sourced directly by smallholders or estates; however, traders, non-

[3] Brazil is an exception—most production is carried out on large plantations (ED&F Man-Volcafe, 2013).

governmental organizations (NGOs) and government actors may provide assistance to finance the purchase of inputs. Frequently, technical assistance in the form of workforce development and agronomy services are also required for growers to increase their productivity and the value of their products (Murray et al., 2006).

Processing: During this stage, the coffee cherry is cured and milled to remove the fruit from the bean. Curing occurs either through dry or wet processing. *Dry processing* involves exposing the coffee cherries to the sun to dry for approximately one month, at which point the fruit becomes brittle and can be easily removed from the bean. This is typically used for Robusta, and lower quality Arabica beans. Under *wet processing*, the cherry is immersed in water to soften the outer layer, and the fruit is removed. Wet processing is typically seen to impart a better flavor to the coffee, which often translates into a higher price; however, although wet processing must be undertaken within 24 hours of harvest. After curing (dry or wet), the bean must then be milled and washed to remove any remaining layers of skin or husk. The resulting product is *green coffee*.

Actors involved in processing can vary (ITC, 2011). In some cases, especially with Robusta processing, smallholders dry the cherries themselves, and then deliver it to a mill owned by traders or exporters to remove the husk; trading companies are integrated into the processing stage to ensure a steady supply of coffee with desired characteristics (Akiyama, 2001; Bamber, Guinn, et al., 2013; Olam, 2016; Ponte, 2002a). Small farmers may also participate in cooperatives or associations to achieve efficiency gains at the processing stage. Large estates usually process their beans on-site. Green coffee can be stored for over 10 years in an adequately controlled environment before being roasted, and therefore, is best suited for intercontinental shipping (Bamber, Guinn, et al., 2013; Daviron & Ponte, 2005; Ribeiro et al., 2011).

Trade: Between 70 and 80% of green coffee beans are traded internationally, and trading companies have traditionally played an important role in coffee GVCs.[4] Traders purchase green coffee from growers and grower associations and ship the beans to end markets. These firms often provide a wide range of extension services in their outgrower programs. This segment is fairly concentrated (ITC, 2011; Ponte, 2002a), although the market share of the leading traders has declined slightly as a result of the increase in direct trade. Between 2011 and 2012, the market share of the top five traders declined by 5% (ITC, 2011, 2012).

Roasting: Roasters produce roast coffee beans, ground or whole, as well as instant coffee. The roast coffee market segment includes both blended and origin-specific beans. Arabica beans are more commonly found in the whole bean and fresh ground segment, while Robusta beans are typically used for instant coffee.[5] If the coffee is to be

[4] Calculated using crop year exports/production, between 2011/12 and 2016/17 using United States Department of Agriculture statistics, the average annual exports are 70% of production. Calculated using ICO data, for the period 2004/5-2014/15, the average is higher at 77%.

[5] Instant coffee is prepared by making liquid coffee and then either spray-drying or freeze-drying it to produce granules, which the consumer rehydrates.

decaffeinated, this process takes place just before roasting and is accomplished by passing the green coffee through a steam bath or submersing it in a prepared water solution. Roasted coffee loses quality within a matter of weeks, even with high-quality packaging. This is accelerated by increased temperature, moisture and oxygen exposure.[6] As a result roasting activities are typically concentrated close to the major end-markets of Europe, North America and, increasingly, East Asia. The high perishability of roasted coffee makes it less suitable for shipping long distances or where logistics and customs processes lack predictability and can cause unforeseen delays. Roasters today package their coffee in a range of formats to target different markets; these include fresh whole beans, standard ground coffee, fresh ground coffee pods and instant coffee (Euromonitor, 2016a).

Large multinational food manufacturers, including Nestle, Kraft and Smuckers, large own-brand roasters such as Starbucks, Tchibo and Lavazza, and private-label roasters participate in this segment. The food manufacturers used to control the industry, producing standard ground coffee and instant coffee (ITC, 2011; TCC, 2012); however, the 'second' and 'third' wave of the coffee industry have increased the market share of firms involved in the sale of higher quality coffee.

Marketing: The four main channels through which coffee is marketed are retail, the food service industry, specialty coffee bars and online sales. Packaged coffee sold through retail, and online outlets account for approximately 60% of sales, while coffee-by-the-cup, sold in coffee shops and food service account for the remaining 40% (Euromonitor, 2016a, 2016b). Retail outlets sell coffee sourced from large roasters as well as from smaller local and regional and specialty roasters. In recent years, supermarket chains have also begun roasting and marketing their own brands of coffee under private labels.

Specialty coffee bars gained prominence in the US, Europe and East Asia in the 2000s (Daviron & Ponte, 2005) and have subsequently expanded rapidly into most regions (Euromonitor, 2016a). These specialty coffee bars—Starbucks being among the most well-known—sell both prepared coffee and beans that have been roasted in-house or by relatively small-scale niche roasters. Specialty coffee bars compete on quality by attracting attention to certifications or crafting narratives about the conditions under which the coffee was produced (Golding & Peattie, 2005; Ponte, 2002a). Internet retailing is predicted to be the fastest growing channel between 2015 and 2020; in more mature markets, there is increasing overlap between these sales channels—specialty coffee shops encourage consumers to sample in store before buying online (Euromonitor, 2016a).

As consumer preferences in mature end-markets grow more discerning, demand has become increasingly differentiated between instant, commodity, certified, specialty and

[6] A literature review detailed by SCAA highlights that significant further research under conditions comparable to the specialty coffee context are still required (Stark & Sage, 2012).

premium or luxury coffee. These market segments require different quality coffee, which may or may not require specific production and handling processes throughout the value chain. The retail price of these products varies significantly, even within the specialty and premium ranges. The average price of instant coffee has been falling in developed markets over the review period, while that of fresh coffee is rising (thanks mainly to the growing share of sales coming from high-priced pods, although standard ground prices are rising as well).

Box 1. What is Specialty Coffee?

Specialty coffee is that which exhibits the highest levels of quality. These coffees usually command higher market prices due to the superiority of the beans. Most specialty coffee is of the Arabica variety, which is best grown between 1,500m and 2,200m above sea level. Since the late 2000s, there has also been recognition for a very small production of high quality Robustas, known as "Fine Robustas." Achieving "specialty" status involves minimizing defects and impurities in the production processes. Both Arabica and Robusta specialty coffees require acute attention by farmers from beginning to end: sourcing premium seeds, preparing soils carefully, precisely maintaining the crop, ensuring that cherries are picked at peak ripeness and carefully managed wet processing and milling. Highly skilled testers—known as cuppers—assess the coffee to determine 'specialty' status. These cuppers have trained palates to evaluate the purity of different coffees, similar to that of a wine sommelier, and they are certified by organizations such as Specialty Coffee Association of America (SCAA), Specialty Coffee Association of Europe (SCAE)[7] and Coffee Quality Institute (CQI). Without a cupper's approval, coffees are generally not considered 'specialty'. Due to this rigorous assessment, effective coordination between key chain actors is essential to access specialty coffee markets.

Cuppers rate the quality along two key dimensions: grading the green coffee beans and coffee sampling. When grading green coffee beans, cuppers assess a sample of beans for defects, color, and odor. Specialty beans must not exhibit any major defects and have no more than five minor defects. They must lack obvious blemishes; have a specific color; and must not contain any foreign odors. For sampling, the coffee is tested 15 times in a uniform three step process: 1) fragrance/aroma; 2) flavor, aftertaste, acidity, body, and balance; and 3) sweetness, uniformity and cleanliness. The coffee is scored from 0-100. A score of at least 80 is required across all 15 tests to be graded as 'specialty.' Higher scores equate to higher quality and therefore generate higher market values. Specialty coffee does not require costly certifications; however, it does require a certain level of human capital so that growers can produce high-quality beans and effectively access specialty markets.

Estimates of the size of the specialty market in the US range from 5% of the total market for green coffee to 38%, depending on the definition of "specialty" (see ITC, 2011, p. 38-43). Applying the SCAA's standards, the ITC estimates that only 5% or perhaps 8% of the coffee consumed (by volume) in the US is of specialty grade. However, the SCAA reports that 37% of the coffee consumed in the US is specialty. This higher figure likely includes slightly lower-quality "premium" coffees (which face less exacting standards) as well as certified coffees.

Sources: SCAA, 2012; CQI & UCDA, 2013; SCAA, 2009a; SCAA, 2009b

[7] These two organizations announced their intention to merge in 2016 (SCAE, 2016).

2.2. The Geography of Demand and Supply in Coffee Global Value Chain[8]

In 2015, total world trade of coffee reached US$66.5 billion. The total volume of imports of green beans—valued at US$20.3 billion in 2015 (UNComtrade, 2016)—have increased by an average CAGR of approximately 2% over the past decade.[9] Green beans are destined primarily to developed countries, while trade flows of processed products are typically from developed to a broader range of countries, with developing countries slowly increasing their participation as consumers develop a taste for coffee. This section of the report examines how demand and supply are changing in the coffee GVC, using production and export data to situate the Philippines in the overall context of industry change.

Production is highly concentrated in developing countries along the coffee belt. The top four countries (Brazil, Vietnam, Colombia and Indonesia) produce approximately 68% of all coffee by volume (USDA, 2016c). Latin America, led by Brazil and Colombia, dominates Arabica production, while Asia supplies the majority of Robusta production. Brazil is by far the largest producer of coffee in the world. The country specializes in Arabica, producing one third of global supply.[10] Vietnam, on the other hand, is the world's leading producer of Robusta. Overall, the country is the second largest producer of coffee, with 1.8 million MT. Almost all of that is commodity-grade Robusta, of which Vietnam accounts for approximately 40% of global supply (ICO, 2016b; USDA, 2016c).[11]

With the exception of Brazil, there is little overlap between the leading producers of Arabica and Robusta coffee, with countries focused primarily on one variety or the other. This is a function primarily of three factors: 1) Geographical and climatic conditions directly contribute to where each variety can grow; 2) Policy responses to coffee rust disease led many producers to opt for more resilient Robusta, and 3) The focus of NGOs and international agency efforts following the international coffee crisis encouraged countries to focus on one variety. Arabica continues to account for a slightly larger share of global production, with 55-60% of the world's supply 2011/12-2016/17 (USDA, 2016c). In addition to Brazil, key Arabica

[8] This section draws on three primary sources of data: (1) United Nations Statistics Division Comtrade database for trade statistics, using importer data; (2) International Coffee Organization (ICO) which tracks imports, exports, and production of coffee by volume. While this source provides the most detailed historical perspective, with data from 1990, it typically focuses only on members of the organization and last available data is 2013/14 season. (3) A final source is thus also used to understand the most recent trends, the United States Department of Agriculture (USDA) Foreign Agricultural Services database, which provides volume data on production, imports, exports from 2011-2016.

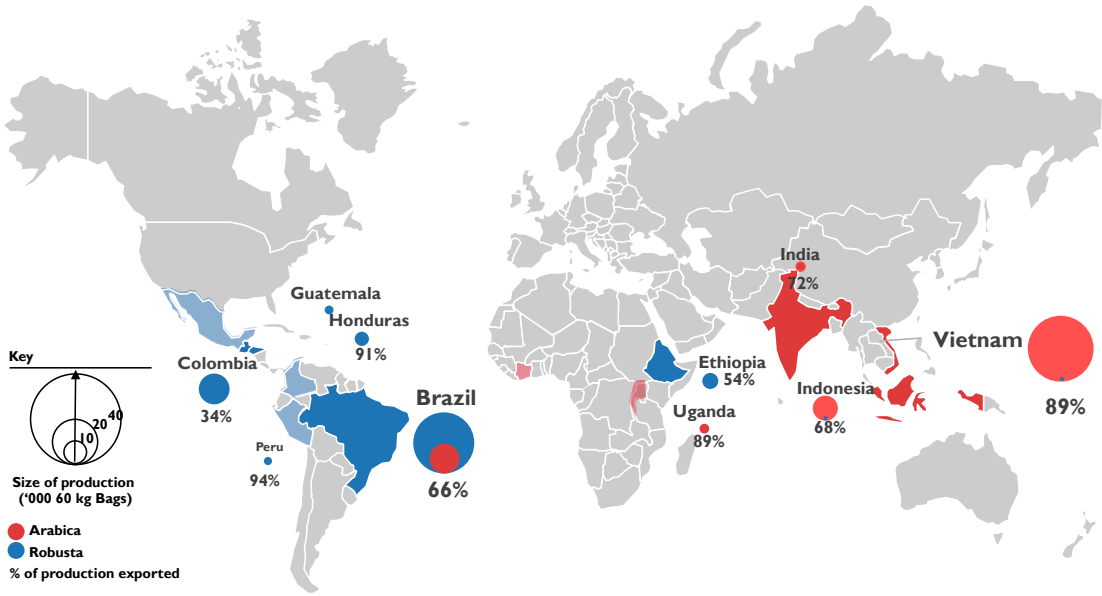
[9] During this same period, trade values actually decreased by 24%. This is due to the collapse of the commodity prices in 2011/12, and thus, a more precise measure of demand is therefore volume.

[10] Total Brazilian production reached 3.36 million MT (78% of which was Arabica, 12% Robusta) during the 2014/2015 growing season (USDA, 2016c).

[11] Vietnam was a very minor player in the world coffee market until 1994, when the government introduced incentives for Robusta production and its exports expanded dramatically (Baffes & Onal, 2012b; Daviron & Ponte, 2005). See Section 4.2 for a discussion of Vietnam's role in the coffee GVC.

producers include Colombia, Ethiopia and Honduras. Leading Robusta producers include Vietnam and Indonesia. This distinction is important for understanding competitiveness between the different market segments.

Figure 3. Leading Producers of Arabica and Robusta Coffee Beans, 2015/16



Source: Authors based on USDA, 2016

Note: Exporters represented account for 90% of global production in each product category

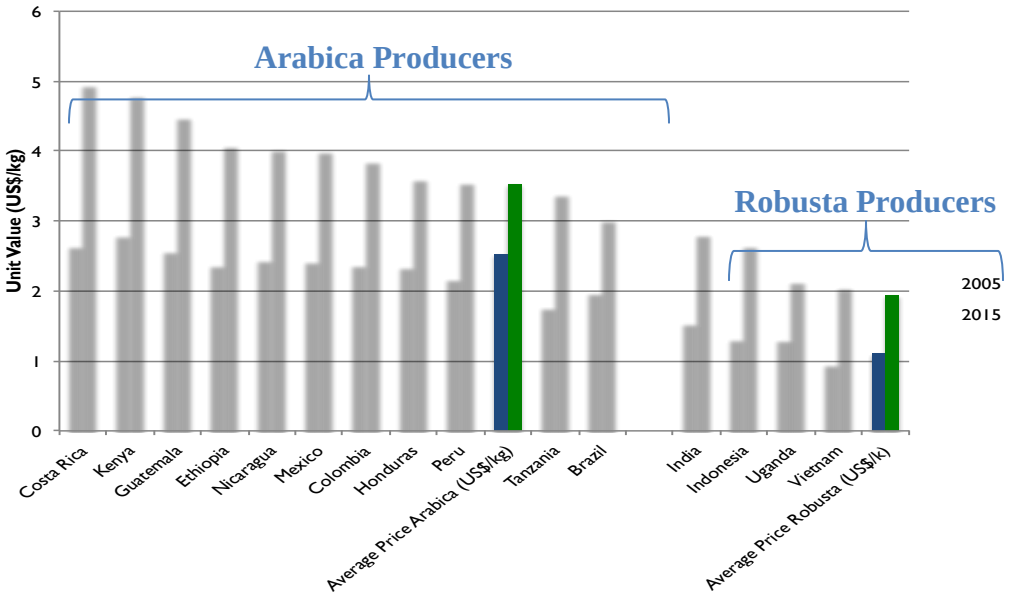
While these producer countries have growing domestic markets, the majority of their production is exported (see Figure 3). Based on a simple analysis of annual production minus exports, just one third of coffee produced globally remains in-country on an annual basis (USDA, 2016c).[12] Brazil has been successful in developing its domestic processing and consumption, exporting just over half of its annual production on average. Vietnam, on the other hand, exported on average 88% of its green bean crop annually between 2011 and 2015; Indonesia, meanwhile, exported 64% (USDA, 2016c). Three producing countries in Asia—namely, China, Malaysia and the Philippines—do not export any significant part of their crops at all, suggesting that they produce less than local demand. These countries, however, represent a small share of global production, with each accounting for less than 1%.

Due to a price and production differential, Arabica producers dominate the leading coffee exporters by value. Costa Rica, Kenya and Guatemala, pure Arabica players with high participation in the specialty and certified coffee segments, have the highest unit value prices for their exports (UNComtrade, 2016). In Costa Rica, for

[12] This does not consider seasonal differences, or potential stockpiling year on year. It is based on a simple calendar year analysis of production minus exports and assumes that coffee-producing countries will not stockpile coffee for more than five years.

example, by 2010, 80% of coffee production was for the specialty market; making it the fourth largest specialty coffee producer in the world (USAID, 2010b). Lower grade Arabica increasingly can be substituted with Robusta in blends thanks to improved roasting techniques, lowering their value. Thus, large producers of these natural Arabicas like Brazil net a much lower unit value price, despite Robusta accounting for just 12% of its total production. Amongst the top ten producers over the past ten years, Vietnam's coffee has been the cheapest coffee export/kg for the past decade, costing less than other Robusta exporters Indonesia (21% cheaper on average) and Uganda (12% cheaper on average).

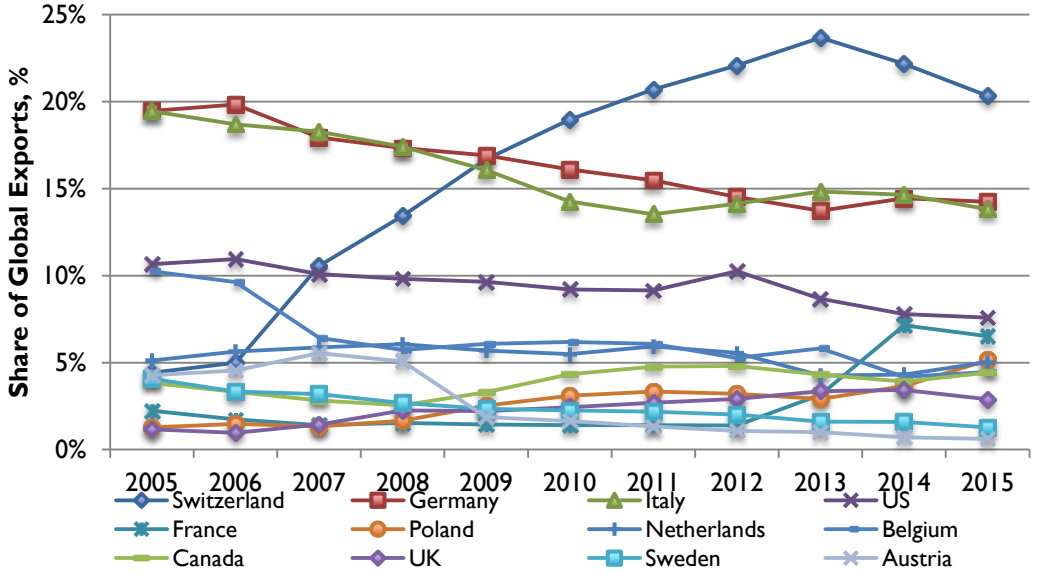
Figure 4. Leading Exporters Unit Value for Exports, 2005 and 2015



Source: Unit Value calculated from Value Imports/Quantity KG; UN Comtrade 2016 HS 90111). Average price of Robusta & Arabica calculated from monthly averages reported (World Bank, 2016a)

Roasting continues to be based primarily in developed country markets; for both their domestic and export markets. Developed countries (with the exception of Poland) have made up the top ten exporters of roasted coffee for the past ten years (UNComtrade, 2016); accounting for an annual average of 83% of exports by value during this period. This is partly due to their proximity to key end-markets as the quality of roasted coffee rapidly begins to deteriorate; the developed country share of roasted coffee imports by value was 74% in 2015 (UNComtrade, 2016). Only emerging markets in Eastern Europe featured in the top ten importers during this period in any way (UNComtrade, 2016). As a result of their dominance in roasting, these key countries account for the majority of coffee bean imports. In 2013/14, the top three markets alone (US, Germany and Italy) accounted for 49% of all green coffee imports by volume (ICO, 2016b) and 47% by value (UNComtrade, 2016); while developed countries, in general, accounted for an annual average of approximately 84% of green coffee imports between 2011 and 2016 by both volume and value (UNComtrade, 2016; USDA, 2016c)

Figure 5. Leading Exporters of Roasted Coffee, by Value, 2005-2015



Source: UN Comtrade, HS 901211, based on all importers. Downloaded on Oct. 16, 2016.

Countries that are strong exporters of roasted coffee rely on trade policies that create incentives for domestic roasters. For example, Germany, Switzerland, Italy, and other European exporters of roasted coffee have provided a boost to their roasting industries by eliminating tariffs on imports of green coffee beans and placing tariffs, of up to 9%, on imports of roasted and decaffeinated coffee (ICO, 2013b). The European ad valorem tariff, nonetheless, only applies to a relatively small group of countries, although importantly this includes Brazil, China, Indonesia, Malaysia, the Philippines, Vietnam and Singapore (ICO, 2013b). This illustrates how difficult it is for non-producing developing countries to break into this segment of the market, both in terms of accessing raw materials and accessing markets.

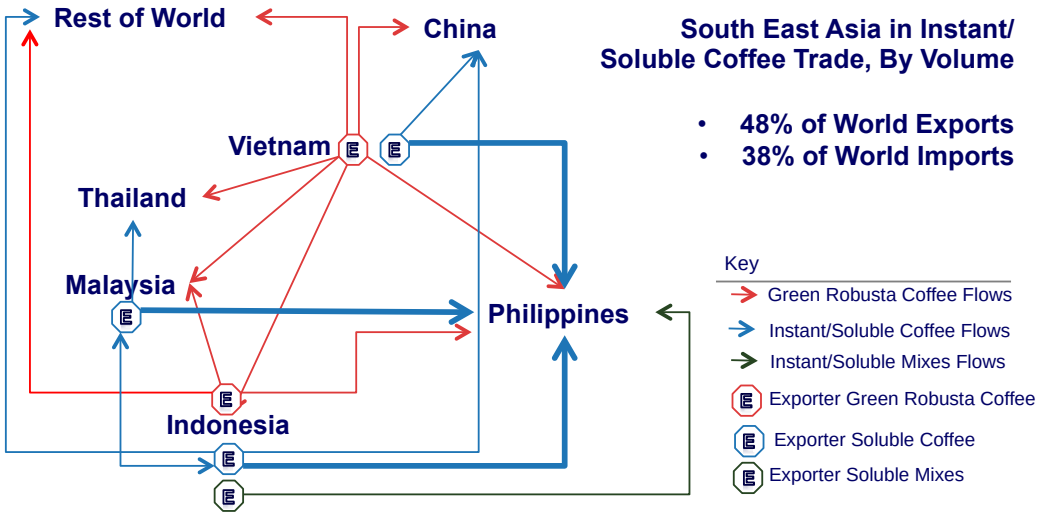
Leading markets differ in the price paid for coffee. Switzerland, Canada and the US have consistently paid higher prices per kilogram than other importers; indeed, Switzerland has paid at least the average global price of Arabica since 2011. Germany is a lower value market, consistent with higher commodity coffee imports (UNComtrade, 2016). Asian countries (China, Indonesia, Vietnam, Philippines, Malaysia and Thailand) all consistently pay below the world average per unit/kg. This is the result of their strong bias towards cheaper Robusta imports (ED&F MAN-Volcafe, 2014). This indicates the importance of not only opening new markets in general for exports, but analyzing which markets are most appropriate for the product mix of producing countries.

Developing countries are beginning to increase their imports of green coffee. Several developing countries have increased their import of green coffee between 2011 and 2016, including Malaysia, Turkey, China and Thailand (USDA, 2016c). Malaysia has

seen the most significant growth, almost doubling its imports.[13] Nonetheless, combined these countries continued to account for less than 10% of the global market. Furthermore, imports by South East Asian countries are dominated by Robusta beans (ED&F MAN-Volcafe, 2014); China, Malaysia and Thailand's green bean imports are primarily Robusta from Vietnam and Indonesia (ED&F MAN-Volcafe, 2014). These beans are being almost exclusively used for the production of instant/soluble coffees and mixes; some are for the instant markets, while others for regional export (ED&F MAN-Volcafe, 2014).

On the other hand, instant coffee is increasingly characterized by trade between developing countries, with South East Asia playing a growing role. Instant coffee for export tends to be produced in coffee growing regions, especially Latin America and Asia. While Brazil has long been the leading exporter of soluble coffee (ICC, 2013), Southeast Asian countries have established a firm foothold in the segment over the past five years (ED&F MAN-Volcafe, 2014; USDA, 2016c). Indonesia, Malaysia, Vietnam and Thailand were among the top six exporters in 2015. Malaysia's exports by volume almost equaled those of Brazil in 2016 (USDA, 2016c), and Vietnam has enjoyed 233% growth between 2011 and 2016) (USDA, 2016c) (see Section 4.2). On the demand side, the Philippines has emerged as a leading global importer of instant coffee by volume[14] (USDA, 2016c). The Philippines is the largest export destination for Indonesia, Vietnam and Malaysia's instant coffee producers.

Figure 6. South East Asia in Soluble Coffee Trade



Source: Authors adapted from (ED&F MAN-Volcafe, 2014).

[13] Malaysia's strong growth can partly be attributed to the expansion of Super Coffee's operations in the country. The Singapore instant food and beverage company opened its operations in Malaysia in 2006, expanding to 8,000MT in 2008 and 20,000 MT in 2016, making it the largest instant coffee producer in the country and one of the largest in the region (Chan Telk, 2008; Super Group Ltd, 2016).
[14] By value, the Philippines was the 14th largest importer in 2014 (UN Comtrade, 2016, based on HS2002-210111, downloaded on Nov. 16, 2016).

2.3. Governance & Lead Firms

The coffee GVC is led by downstream actors with roasters and traders playing the most important role in the industry. There is increasing overlap between these two sets of actors, with roasters engaging in more direct trade and traders in roasting. This shift makes it increasingly difficult for coffee producers to move into roast coffee production without seeking FDI from these players.

Global production is based generally on smallholder operations. An estimated 70-80% of the world's coffee is produced by smallholders with less than 5 hectares (Panhuysen & Pierrot, 2014).[15] Agrarian reform and land ownership legislation throughout much of the coffee belt fragmented production in these growing regions. Small coffee producers have very little bargaining power in coffee GVCs due to limited economies of scale, undeveloped commercial skills, and poor access to information about conditions in end-markets (Fernandez-Stark et al., 2012). Furthermore, they often lack the capital required to use improved processing techniques (e.g. wet processing) or transport the product to port, relying on traders and roasters to provide financing and transportation. As a result, small producers often receive a very low share of the final value of the coffee produced (FAO, 2013; Potts et al., 2014). Estimates indicate that the share of value captured by primary producers has declined over time.[16] In the 1970s, it was estimated that primary producers captured 20% of the total value of the final product. Recent evidence suggests that primary producers now capture only between 5 and 10% of the final retail value (FAO, 2013).

There are two sets of lead firms in the industry: roasters and traders. Traditionally, traders played a fundamental role in aggregating supply from a wide range of smallholders and delivering it to the market, on time and on budget (Fitter & Kaplinksy, 2001; TCC, 2012). Roasters would then purchase the bulk of their coffee through these traders, with a resulting balance of power as each relied on the other to gain access to important raw materials and access to the consumer base. Both segments included a small number of large lead firms, combined with a more fragmented market of medium and smaller operations.

Two factors—the influx of second and third-wave specialty roasters associated with premiumization, and the increasing popularity of instant coffee in Asia—has changed the make-up of the roasting segment. Nestle is by far the most powerful firm, with unmatched global reach and a leader in both the fresh and instant coffee markets; the firm's 2015 global revenue for hot beverages was twice

[15] For example, some 90% of Vietnam's coffee is produced by smallholders with less than two hectares (Baffes & Onal, 2012a); similarly, in Indonesia—the second biggest producer of Robusta—the majority of coffee is produced by 1.5 million smallholders (ECF, 2014).
[16] Due to the inadequacy of global input-output data for the coffee industry, it is difficult to get precise figures on shares of value-added contributed at each stage of production.

that of the next largest firm, JDE (Euromonitor, 2016a; Nestle, 2015a).[17] Starbucks is the global leader in the coffee shop segment, with strong expansion into Asia (Starbucks, 2015). Smaller local brands and regional roasters have emerged over the past decade. For example, in the Philippines, JG Summit launched its own brand – Great Taste. The strong local demand for coffee in the Philippines has helped catapult the brand into the top ten global instant brands (Euromonitor, 2016b). Food brands such as Kraft Heinz and Smuckers remain important volume roasters. In the roaster segment, in 2013, the top ten roasters controlled 40% of coffee sales (Panhuysen and Pierrot 2014); this has declined from a decade earlier when the top ten controlled 56% of the market (ICARD, 2002). Leading traders include both coffee specific operators such as Neumann Gruppe, Volcafe (ED&F) and Sucafina as well as diversified traders Olam, ECOM and Louis Dreyfus. In 2012, the top 10 traders controlled over 50% of the market.

Strong competition and growth in the industry has resulted in changing lead firm dynamics with regard to how they target product segments and market channels, particularly in fresh coffee products. While firms previously concentrated on one or two segments, such as instant or fresh ground coffee, there is increased overlap today. Traditional diversified food brands, Kraft Heinz and J.M.Smuckers have remained focused on fresh ground coffee sourced from traders and sold through supermarkets and other retail outlets earning them a combined US$4.5 billion in sales in 2015 (Euromonitor, 2016a); however, the dynamics of other leading firms have changed as they seek to increase their consumer base and respond to premiumization. Nestle, for example, was originally known as the world's largest instant coffee producer with its global flagship brand Nescafe. The company made the shift into fresh ground coffee sales over a decade ago with the introduction of the single-service Nespresso machine. It now serves three out of the four main price points—low end instant, mid-level—Nescafe Dolce Gusto soluble mixes and the premium Nespresso products (Nestle, 2015a). It also opened boutiques where consumers can buy pod machines, coffee for at-home brewing and purchase individual cups.

Starbucks, on the other hand, began with fresh ground coffee in the café market and have now moved into the production and sale of micro-soluble blends, which compete in the instant market. JAB is the most notable example of this trend; the company has been established through a series of mergers and acquisitions, beginning with the breakup of Sara Lee, the sale of its coffee operations to Douwe Edgars, and the latter's merger with the coffee operations of Mondelez International to create JDE in 2011. Since then, JAB has added Keurig Green Mountain, Peet's Coffee, Intelligensia, Stumptown, Caribou Coffee and Krispy Kreme to its line up. This provides the company with a presence in all market segments, from the most economic to the luxury product segment (Euromonitor, 2016a; JAB Holding Company, 2016).

[17] This also includes Nestle's participation in the hot chocolate, tea and coffee creamer markets, however, the bulk of their hot beverage revenue is derived from coffee sales (Nestle, 2015a).

Sourcing strategies for leading roasters have thus begun to vary according to the market segment they are serving. Coffee producers can therefore cater to a number of different markets:

- **Instant coffee:** Instant coffee production continues to draw on traders for both natural Arabica and Robusta; a less discerning consumer base combined with technology advances means that these roasters can use a variety of quality level beans and thus rely on the cheapest sources, rather than differentiated inputs (ED&F MAN-Volcafe, 2014). A growing number of regional firms from developing countries participate in this market segment, such as Super Group from Singapore.

- **Standard fresh coffee:** Major roasters like Smuckers and Kraft Heinz focus on standard fresh coffee and continue to operate with volume models; they usually do not accept coffee for their blends from countries that cannot guarantee a minimum of approximately 60,000 tons per a year (Ponte, 2002b; Raikes & Gibbon, 2000), which means that this market segment tends to exclude small-scale producing countries with unpredictable supply.

- **Specialty coffee:** The second and third wave firms which cater to a much more discerning buyer have engaged in more direct trade. These firms are primarily concerned with coffee quality, traceability and volume. Sourcing is often associated with strong, direct relationships between the buyers and the producers – particularly when guaranteeing large volumes of better quality coffee is important. As in the cocoa sector, the decline in the price received by growers and high opportunity costs has led to fluctuations in the entry and exit rates of growers and contributed to the increased interest of roasters to engage upstream in order to guarantee their long term supply (Potts et al., 2014). Starbucks and Nespresso AAA, for example, have both pursued more direct trade strategies for these reasons (Ponte, 2002b; Starbucks, 2015).

- **Premium coffee:** In this segment, direct trade has been facilitated by a growing interest of consumers in the origin and quality of their coffee, and their increased willingness to pay a higher price for that knowledge (Neilson & Shonk, 2014). Online auctions have become increasingly popular ways for connecting producers of ultra-high quality coffee with buyers (Wilson & Wilson, 2013). The Association of Coffee Excellence (ACE) is one of the most well-known auction platforms, hosting Cups of Excellence (CoE) competitions annually, during which batches of coffee are 'cupped' and ranked. This ranking is used as a key indicator in auction prices.

Large firms which cater to the wide range of product qualities use a combination of these sourcing strategies. Sourcing departments at roasters have thus become increasingly sophisticated. As a result, the balance of power in the coffee GVC has begun to shift from traders to roasters.

Table 1. Sourcing Strategies of Lead Roasters by Market Segment

Market Segment	Key Sourcing Interests	Sourcing Arrangement	Examples
Instant Coffee	• Natural (Dry Processed) Arabicas & Robustas • Price most important factor	Traders	Nescafe (Nestle) Jacobs (JBE)
Standard Fresh Ground	• Mostly Wet & Dry Processed Arabicas • Volume • Increased interest in sustainability certifications	Traders	Smuckers Kraft Heinz
Specialty Coffee	• Wet Processed Arabicas • Quality • Volume • Strong interest in sustainability	Direct Trade Some traders	Starbucks Pete's Coffee
Premium	• Very high quality Arabicas and Robustas • Traceability and Sustainability	ACE Auction Direct trade	Stumptown Community Coffee Intelligensia

Source: Authors.

Traders have seen their market share slip slightly as a result of increased direct trade with the growth of the specialty and premium markets, forcing them to adopt different strategies to maximize profitability. Some traders have responded by vertically integrating down the value chain into domestic green coffee production and processing operations in certain coffee producing countries with less developed supply chains (Ponte, 2002b). Several (e.g. Volcafe) have established specialty coffee divisions specifically focused on serving this niche markets and maintaining traceability. Others, such as Olam International, have upgraded into roasting operations (Olam International, 2016).

These changing governance dynamics have increased opportunities for developing country producers to engage directly with roasters and to benefit from increased interactions with buyers regarding issues of quality production and price. Ultimately, however, this has done little to increase their relative power vis-à-vis the larger downstream firms. This also remains a key barrier to functionally upgrading into the roasting segment of the value chain, since these roasters control access to market.

2.4. Standards and Certifications

Starting in the mid-2000s, there has been growing concern about the social, environmental and economic sustainability of conditions in coffee producing countries. As buyers and producing countries have sought greater differentiation in the coffee market and responded to growing concerns about sustainability of the supply chain, there has been a proliferation of standards. These include third-party process standards, company-specific supplier certifications and country-specific product standards, covering the global coffee market.

Of these, seven sets of sustainability standards have gradually emerged as more important to the industry (see Table 2) (Potts et al., 2014). These include first-party corporate schemes, in which a roaster sets up its own special line of coffee which indicates quality and process compliance (Starbucks C.A.F.E., Nespresso AAA Sustainable Quality Program); non-profit third-party certification regimes that operate through corporate partnerships (FLO, Rainforest Alliance), and for-profit third-party certification schemes (4C) (Raynolds, 2009; TCC, 2012). The 4C scheme is one of the most widely adopted and has been an effort to harmonize sustainability standards and make certification more accessible for a broader range of producers (Potts et al., 2014). Fair trade certified coffee is one of the most well-known forms of certified coffee, in which the certifying agency tries to ensure that producers get a fair price.

Table 2. Select Private and Civil Society Standards in the Coffee GVC

Certification	Participating Lead Firms	Major end-markets	Description
Common Code for the Coffee Community (4C)	Nestlé, Kraft, Tchibo, Strauss, Aldi	Europe	• Code of conduct for roasting industry. • Sets baseline criteria for social, ecological and economic conditions in producing countries. • Formed 2003, standards implemented as of 2007. • 2012:1,800,000 MT of 4C certified coffee produced, valued at US$2.2 million.
UTZ Certified	Nestle, Kraft, Tchibo, JDE	Netherlands	• Code of conduct for roasters and growers. • Sets sustainability and traceability standards. • Partnership with Nespresso and Kraft • 2012: 716,000 MT of certified coffee produced.
Fair Trade Labeling Organization (FLO)	Starbucks, Tchibo	UK, Netherlands, USA*	• Certification for small growers and associations. • Focused on ensuring equitable and stable prices for growers, setting minimum prices • Partnership with Starbucks • 2012: 380, 000 MT of certified coffee produced.
Rainforest Alliance (RA)	Nestlé, Kraft, Tchibo	Germany, UK, USA	• Sets minimum standards for farming practices. • Based on multi-crop guidelines developed by Sustainable Action Network. • Partnership with Nespresso • 2012: 266,000 MT of certified coffee produced.
International Federation of Organic Agriculture Movements (IFOAM)	Tchibo	Germany, Italy	• Certification program for organic farmers. • Sets standards for pesticide use, conservation practices, biodiversity and social justice. • 2012: 249, 000 MT of certified coffee
Starbucks' Coffee and Farmer Equity Practices (C.A.F.E.)	Starbucks	Worldwide	• Corporate standards for quality and sustainable farm practices. • Focus on areas of Product Quality, Economic Accountability, Social Responsibility, and Environmental Leadership
AAA Sustainable Quality Program	Nestlé	Worldwide	• Corporate guidelines for verifying farm practices. • Focus on environmental sustainability, origin and taste.

Sources: FLO, 2012; ITC, 2011; TCC, 2012, Potts, 2014.
Note: *The American fair trade organization, Fairtrade USA, split from FLO in 2011.

Most of these programs require producers or producer organizations to pay to participate (Daviron & Ponte, 2005; ITC, 2011; Raynolds, 2009). Producers in developing countries have thus often relied on the support of development agencies to obtain certification. However, not all certifications have equal placement in the market; in 2012, although 40% of all global coffee production was certification compliant, only 25% of that (12% of the global exports) was sold as such. UTZ, for example, sold the most compliant coffee by volume in 2012, with a reported 188,096 MT being sold as UTZ certified; although market placement is relatively low with just 26% of production sold as certified (Potts et al., 2014). CAFÉ, Rainforest and Organic certifications, on the other hand, have approximately a 50% chance of being sold as certified, and thus receiving premiums. Rainforest Alliance's high placement is partly the result of strong relationships the organization has forged with Nespresso and Kraft (Potts et al., 2014).

Table 3. Participation of Standard-Compliant Coffee in Global Market, 2012

Standard	Production, MT (2012)	Sale, MT (2012)	% of Production Sold as Certified	Growth Rate of Sales (2008-2012)	Sales as a Share of Global Coffee Market
4C	1,782,088	152,708	9%	90%	2%
CAFÉ	457,339	223,230	49%	14%	na
UTZ	715,648	188,096	26%	25%	3%
Rainforest	265,565	129,846	49%	28%	3%
Nespresso AAA	247,114	n/a	n/a	—	2%
IFOAM/Organic	248,767	133,163	54%	4%	2%
Fair Trade	430,000	128,000	30%	13%	2%

Source: Potts, 2014.

In addition to differences between certifications, there are important regional differences that have developed. The majority of certified sustainable producers are based in Latin America—in 2012, the region accounted for approximately 52% of global coffee production but 77% of sustainable coffee production (Potts et al., 2014). In comparison, uptake of sustainable certifications in Asia, which accounted for 24% of total production, was much lower, accounting for just 13% of sustainable coffee. This is consistent with the slower adoption of food standards in general in Asian agriculture (Reardon et al., 2012), as well as consistent with the region's role as a major Robusta producer. Certification in Robusta has been slower, as it tends to be sold into the commodities market; traceability is of less importance. Vietnam, the region's biggest producer, only launched its sustainable coffee initiatives in the late 2000s (see Section 4.2).

Whether or not certification ultimately results in a better deal for producers is debatable and the actual economic and social impact of obtaining these certifications has become the subject of considerable research in recent years, particularly because slow market uptake of certified coffee has resulted in farmers earning commodity market

prices despite their efforts. Price premiums have been declining for standard-compliant coffee—these range from approximately 1% (4Cs), to 2.5% (UTZ) to 10% (IFOAM) and 2-10% (Rainforest) in 2012 (Potts et al., 2014). However, depending on the local context, long-term benefits of improved farmer and value chain coordination and productivity could outweigh marginal costs of certification on a seasonal basis (Barham & Weber, 2012; Méndez et al., 2010; Ruben & Fort, 2012; Valkila & Nygren, 2009).[18]

Nevertheless, regardless of the cost/price ratio, sustainability certifications are increasingly becoming a requisite to sell to larger global roasters. By 2014, most major firms had committed to sourcing the majority of their coffee from certified producers (Muradian, 2005; Panhuysen & Pierrot, 2014; TCC, 2012). Starbucks and Nespresso already source over 80% standard-compliant coffee (Potts et al., 2014). The sales of certified coffee have also gained momentum over the past five years. Between 2008 and 2009, CAGR was just 1.8%, but the CAGR between 2011 and 2012 was 7.5%. Thus, while sales into the commodities market continue to account for the lion's share of global sale, any long-term strategy in the coffee industry must consider these certifications, particularly for the higher value products required by these buyers. Smaller production operations that may not be able to afford this costly process may prefer to sell into the commodity market.

[18] Generally, both qualitative and quantitative analyses on the impact of the Fairtrade, Organic and Rainforest certifications conclude that these programs lead to improved production management, increased returns, stronger producer organizations and improved access to credit and other inputs (Arnould et al., 2009; Méndez et al., 2010; Nelson & Pound, 2009; Ruben & Fort, 2012). Such benefits are also seen to increase over time, paving the way for easier certification in other standards, improved production processes and, ultimately, higher yields (Barham & Weber, 2012; Bolwig et al., 2009). Nonetheless, when increased inputs (time and opportunity costs) are taken into account, changes in net revenue for households as a result of certification appear to be modest, particularly during years in which regular coffee prices are relatively high (Haggar et al., 2012; Nelson & Pound, 2009; Ruben & Fort, 2012; Valkila & Nygren, 2009). Increased price premiums may simply offset increases in input and opportunity costs.

3. The Philippines in the Coffee Global Value Chain

The Philippines' footprint in coffee GVCs is relatively small. While the country has a rich history as being a significant exporter of beans, a variety of impediments—coffee rust, shifting dynamics within the global industry, and insufficient government support—have caused the domestic industry to atrophy in recent decades. The Philippines' current coffee production levels are analogous to small-scale nations such as Guinea, Togo, and Madagascar, and the value of its 2015 exports of green and roasted coffee accounted for less than 0.0004% and 0.003% of global trade, respectively (UNComtrade, 2016; USDA, 2016c). In a testament to the limited scale of the industry, fewer than 10 companies exported coffee in any form in 2014 (PSA, 2007-2014).

While production and exports remain slight, the Philippines has established itself as a vibrant coffee market. As is the case in much of Asia, domestic demand for instant coffee is especially high—90% of coffee consumed in the Philippines is instant coffee, and the country has been a leading importer of soluble coffee by volume since 2011 (Euromonitor, 2016b; USDA, 2016c). Table 4 charts the growth in retail sales of instant coffee in the last five years—retail sales of instant coffee increased by a total of 64%. As a result of the robust demand, the Philippines is projected to become one of the top five global consumers of instant coffee by 2021 (Euromonitor, 2016b).

Table 4. Retail Sales of Coffee in the Philippines by Category, 2011-2015

Category	Sales (PHP, millions)				
	2011	2012	2013	2014	2015
Total Coffee	**30,969.6**	**35,270.6**	**41,247.8**	**46,186.3**	**50,566.9**
Instant Coffee	30,847.8	35,140.1	41,111.1	46,042.8	50,415.7
Standard	30,829.7	35,121.5	41,092.1	46,023.2	50,395.4
Decaffeinated	18.1	18.7	19.0	19.6	20.3
Fresh Coffee	121.8	130.5	136.7	143.5	151.1
Beans	48.3	50.7	53.0	55.2	57.5
Ground	73.5	79.8	83.7	88.4	93.7

Source: Euromonitor International, 2016.

The expanding demand and inflows of instant coffee has prompted the government to take steps to boost the domestic sector. Broadly speaking, the focus has been on improving product quality through process and functional upgrades in the short term to allow for import substitution while also positioning the country to build its reputation as a source of specialty coffee for the export market.[19] In the upstream segments of the chain, the Department of Agriculture (DA) has attempted to expand the distribution of inputs while also engaging in extension services to increase the quality of the product. Meanwhile, the Department of Trade and Industry (DTI) has generated research

[19] The information in this section of the report is based partially on an industry road map developed by the DTI together with the industry association, as well as confidential in-country interviews conducted in November 2016. Where details are extracted from publicly available material, there is a specific citation; otherwise, the information comes from either interviews or the road map.

outputs in the last five years that have analyzed the country's competitiveness in the sector and outlined recommendations for addressing inefficiencies. From the Department of Science and Technology (DOST) to the Department of Environment and Natural Resource (DENR) to the Philippine Rural Development Project (PRDP), a host of other government agencies and development programs have also engaged in efforts to develop the sector.

This section builds upon some of those efforts. It analyzes the Philippines' participation in the coffee GVC by first using trade and firm-level data to examine current products and exports. It then outlines the industry organization and key firms active in the country at each stage of the value chain. From there, it highlights examples of upgrading before concluding with advantages and constraints that will shape future participation in the coffee GVC.

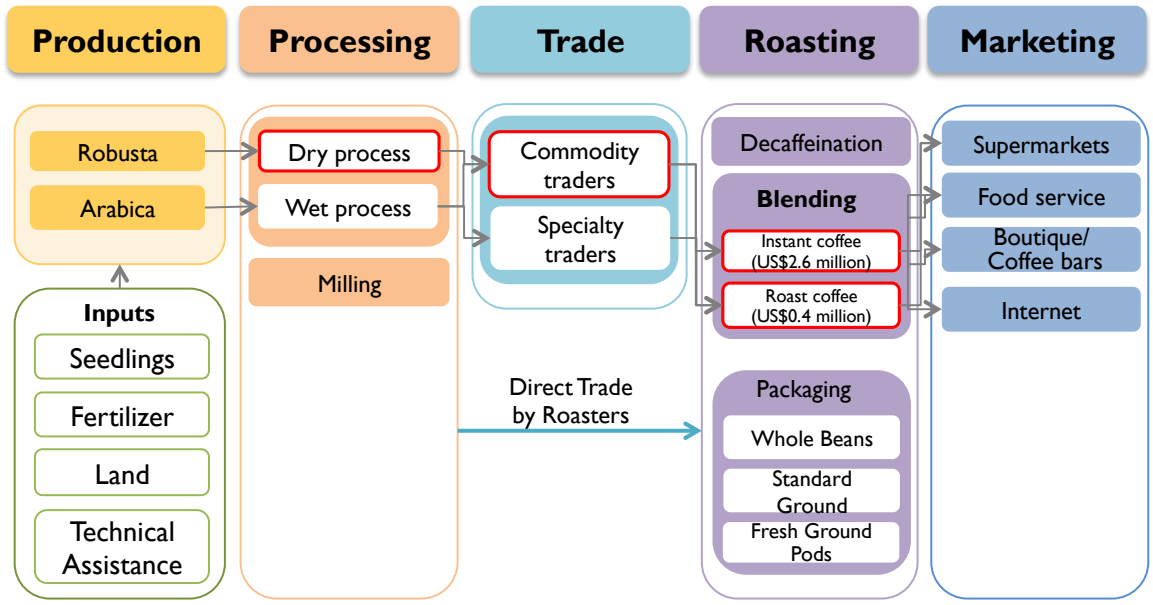
3.1. Current Participation in the Coffee Global Value Chain

Coffee production in the Philippines has been subject to historical ebbs and flows. A leading exporter of Arabica coffee in the 19th century, the country shifted its emphasis toward Robusta after coffee rust and other diseases decimated the crop in the 1890s. Production rebounded in the latter half of the 20th century, with some producers in the country integrating into the supply chains of Folgers (J.M. Smuckers) and Nestle (Field Research, 2016). However, the Philippines failed to fully recover its former leading role; even as pre-crisis exports peaked in 1998, these were only US$1.4 million, less than 1% of Vietnam's exports that same year (UNComtrade, 2016).[20]

The country's participation in the coffee GVC has diminished in the period since. Figure 7 illustrates current participation, outlined in red. There are no exporters in any segment of the chain with more than US$500,000 in exports in 2014. A combination of factors, including the end of the ICA in 1989, the coffee crisis in 2000 and 2001, and a change of domestic priorities have hobbled production to the point that upstream exports can barely be detected. At the same time that the low and declining production has curtailed exports, expanding domestic demand has increased the significance of the local market and caused imports to surge. While there have been recent developments in each segment of the value chain—the government establishing nursery centers, the Cooperative Development Authority (CDA) providing seedlings for coffee growers, and a variety of public and private sector actors offering extension services to farmers are three of the more tangible efforts—few of these developments have yet led to quantifiable increases in the country's overall competitiveness in the industry.

[20] The Philippines, to be clear, was not a significant coffee exporter in the final years of the 20th century. The country ranked 49th in the world for export volume of beans in that year, sandwiched between Australia and Romania. It ranked 53rd in the export value of its coffee beans, with Russia and Czechia as its closest peers.

Figure 7. The Philippines in the Coffee GVC



Source: Authors.

This section discusses the Philippines' current interaction with coffee GVCs. It first analyzes current production trends before outlining its export and import profile.

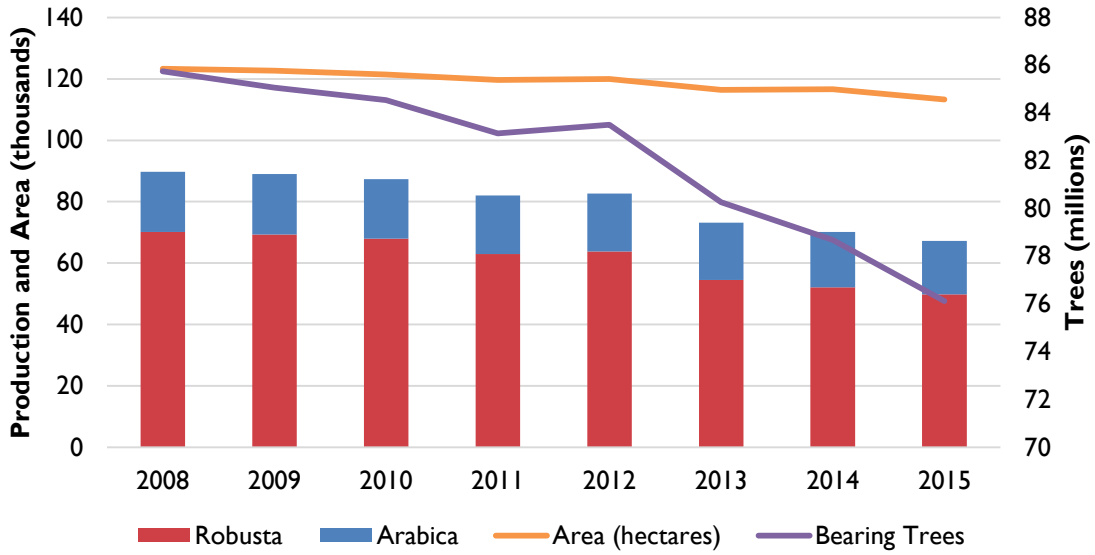
Production

All four coffee species are grown in the Philippines. Robusta is the dominant variety accounting for 69% of 2015/16 production volume (48,463 of the 70,586 metric tons), followed by Arabica (24%), Excelsa (6%), and Liberica (1%).[21] The share of Arabica has increased slightly (3%) in recent years, from 21% in 2010 to the current levels. However, this should not be misinterpreted as a shift towards higher value Arabica production. Coffee production as a whole is falling; in the period from 2008, official figures note that the Philippines' overall production of coffee fell by 26%—from 97,428 MT to 72,341—while the number of fruit-bearing trees and cultivated area dropped by 11% and 8% to 76 million and 114,000 hectares in 2015, respectively. Both prominent industry actors and the ICO suggest this vastly overestimates production, which could be as low as 25,000 MT/annum.[22]

[21] Excelsa and Liberica have a weak global demand, with an overall poor commercial presence in the global coffee industry. As a result, these will not be discussed further in the analysis.

[22] The Philippines' production data cited in this section is based on Major Non-Food and Industrial Crops Quarterly Bulletins provided by the Philippines Statistics Authority: https://psa.gov.ph/non-food. However, alternative data sources such as the International Coffee Organization estimate the Philippines' annual production volume is closer to 25,000 MT. In interviews, prominent industry stakeholders estimated the country produces roughly 25,000 MT per year.

Figure 8. Coffee Production Profile in the Philippines, 2008-2015



Source: PSA (2008-2015). (PSA, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015)

Thus, although Arabica's share is increasing, its overall production has fallen 11% in that five-year time frame, albeit at a lower rate than Robusta, which has decreased by 40%. Production is dominated by approximately 30,000 smallholders with 1-2 ha of land producing relatively low quality Robusta coffee (DTI, 2016). The largest production regions in the country are based in Mindano—Soccsksargen, the Autonomous Region in Muslim Mindanao, and Davao. Figure 8 above charts these trends.

Exports

With US$3.2 million in total coffee exports in 2014, the Philippines contributed less than 0.009% to globally traded supply. Extracts—instant coffee—are the country's largest export, accounting for roughly 82% of the value of exports in 2014. However, the export value of extracts plunged from US$6.2 million in 2005 to US$2.6 million in 2014, a trend that is likely the result of the production factors discussed above as well as the increasing domestic demand for coffee products. During the same period, the Philippines' total exports of raw, semi-processed and processed coffee also fell by US$4 million, from US$7.2 million to US$3.2 million (see Table 5).

Table 5. Export Value of the Philippines' Coffee Exports, 2005-2014

Category	Export Value (US$, million)					Share of Total Coffee Exports				
	2005	2007	2010	2012	2014	2005	2007	2010	2012	2014
TOTAL	7.2	5.6	1.5	1.6	3.2	—	—	—	—	—
Raw	0.4	0.2	0.08	0.1	0.1	6.0%	3.8%	5.3%	10.1%	3.4%
Green Coffee	0.3	0.1	0.06	0.09	0.08	5.4%	3.1%	3.9%	5.9%	2.5%
Coffee Husks	0.04	0.03	0.02	0.06	0.03	0.6%	0.7%	1.4%	4.1%	1.0%
Semi-Processed										
Unroasted Decaf	0.01	0.01	0.01	0.005	0.01	0.2%	0.3%	0.8%	0.3%	0.3%
Processed	6.7	5.4	1.4	1.5	3.1	93.8%	96.0%	93.9%	89.6%	96.3%
Roasted	0.3	0.1	0.3	0.2	0.4	4.6%	2.0%	19.8%	15.5%	14.4%
Roasted Decaf	0.1	0.01	0.01	0.01	0.01	2.3%	0.3%	0.7%	1.1%	0.4%
Extracts	6.2	5.2	1.1	1.2	2.6	86.9%	93.7%	73.4%	73.0%	81.5%

Source: UN Comtrade based on HS codes 090111, 090190, 090112, 090121, 090122, 210111, 210112. Retrieved on October 19, 2016.

Imports

With production dropping at the same time that overall demand is increasing (see Table 4), the Philippines' coffee imports have surged. The country's imports across the value chain were US$69 million in 2007; by 2014, they had ballooned to US$262 million. Vigorous demand for instant coffee drove much of the jump. In 2007, the Philippines' imports of coffee extracts were US$29 million, or 42% of the country's total imports; by 2014, it imported US$241 million worth of coffee extracts or 92% of its total coffee imports. Green coffee beans represented just 6% while the remaining categories—roasted coffee, non-roasted decaf, roasted decaf, and husks and skins—accounted for the remaining 2%. Table 6 lists the country's import profile.

Table 6. The Philippines' Coffee Imports, 2007-2014

Category (HS codes)	Value (US$, millions)				Share of Product Category			
	2007	2010	2012	2014	2007	2010	2012	2014
TOTAL	**69**	**117**	**249**	**262**				
Raw	**39**	**42**	**66**	**16**	**57.0%**	**36.4%**	**26.8%**	**6.4%**
Green Coffee	39	42	66	15	56.8%	36.3%	26.7%	5.9%
Coffee Husks	0.1	0.1	0.2	1.3	0.2%	0.1%	0.1%	0.5%
Semi-Processed								
Unroasted Decaf	0.01	0.1	1.0	0.2	0%	0.1%	0.4%	0.1%
Processed	**29**	**74**	**181**	**246**	**43.0%**	**63.5%**	**72.8%**	**93.6%**
Roasted	0.08	0.5	1.4	4.4	0.1%	0.4%	0.6%	1.7%
Roasted Decaf	0.09	0.02	0.6	0.1	0.1%	0	0.3%	0.1%
Extracts	29	74	179	241	42.7%	63.0%	72.0%	91.8%

Source: UN Comtrade based on HS codes 090111, 090190, 090112, 090121, 090122, 210111, 210112. Retrieved on October 19, 2016.

Note: Data on the Philippines' 2005 coffee imports are not available in the UNComtrade database.

The jump in instant coffee imports has positioned the Philippines as one of the world's leading markets for extracts and soluble coffee. According to UN Comtrade statistics,

the country was the seventh leading importer of coffee extracts by value in 2014 (UNComtrade, 2016). Meanwhile, USDA data has had the Philippines as the leading importer of soluble coffee, by volume, since 2011 (see Table A-3) (USDA, 2016c). The trend is likely to continue for the foreseeable future, with the Philippines becoming one of the top five global consumers of instant coffee by 2021 (Euromonitor, 2016b).

Indonesia and Vietnam are the Philippines' largest external sources of coffee. The two countries generally provide the Philippines with 70-85% of its foreign coffee, with Malaysia and Thailand serving as the largest secondary suppliers (see Table A-4 in the Appendix). Indonesia's emergence as a leading supplier for the Philippines has corresponded with the Philippines' increasing demand for instant coffee. The country's total coffee exports to the Philippines increased from US$24.5 million in 2007 to US$188 million in 2014, when extracts accounted for 98.5% of Indonesia's coffee exports to the Philippines (UNComtrade, 2016). This corresponds to Indonesia's role as a large Robusta producer upgrading into the production of soluble/instant coffee.

3.2. Governance in the Philippines' Coffee Sector

Although the Philippines has actors in all stages of coffee production and sales, most of these businesses are oriented toward the domestic market and are not engaged in GVCs other than as consumers. Fewer than 10 firms exported coffee products in any one-year in the period between 2007 and 2014 (PSA, 2007-2014).

Nestle is the largest buyer of Robusta beans operating in the country and shapes much of the domestic industry. The company employs almost 4,000 workers in the country and ranks amongst the Philippines' largest 10 taxpayers (Nestle, 2015b). It sources roughly 25% of its coffee for the domestic market from Filipino producers (DTI, 2012).[23] The majority of these domestic suppliers are smallholders with 1-2ha of land producing low quality Robusta, as there are few larger plantations (DTI, 2016). Industry stakeholders estimated that the company purchases roughly 70% of the coffee produced in the Philippines, with 80% of that coming from Region XII, in Mindanao.

As the largest consumer of Filipino coffee, the company exerts significant control over Robusta producers, who have limited alternative options if their beans are rejected for not adhering to Nestlé's minimum quality requirements. Nestle does not provide training for farmers; however, the company does have a demonstration farm in Davao (Field Research, 2016). Captive relationships of this nature often undermine sustainability in agricultural chains as, facing low returns for their effort, producers turn

[23] Other Robusta roasters as well as the limited number of Arabica and Excelsa roasters are primarily clustered in the greater Manila region. The largest of these companies reported similar ratios between imports and domestic beans: 25-30% of total supply was sourced from the Philippines, while 70-75% was imported, mainly from Indonesia and Vietnam. The roasters interviewed for this report use a variety of sourcing strategies; however, few said they use formal contracting methods when engaging with local farmers. Instead, most indicated that they rely on informal agreements.

to new higher margin products (Abdulsamad et al., 2015). This raises potential sustainability questions for the Philippines as it seeks to expand production.

There are a small number of local roasters who have integrated backward into production and processing, most frequently in Arabica; however, this model is not common. More often, these specialty Arabica roasters employ a more relationship-based model with producers and processors. One or two of these companies export beans in small volumes.

Box 2. Examples of Upgrading in the Philippines' Coffee Sector

With the soaring demand for coffee in general and instant coffee in particular, the most rigorous development in the Philippines has been in the downstream segments of the chain. Specifically, Great Taste (owned by J.G. Summit) has emerged as a prominent brand for instant coffee and companies such as Bo's Coffee have expanded their retail presence inside the country.

The growth of companies such as Great Taste and Bo's Coffee within the domestic market is not necessarily an outlier. Filipino businesses such as Rocky Mountain Coffee Company, Gourmet Farm, Silca and others have had varying levels of success growing retail brands, including as Arabica suppliers to the local market.[24] Bo's Coffee and Figaro are two of the country's largest retail outlets, and Great Taste ranks as one of the 10 largest instant coffee brands in the world. While Starbucks is the largest coffee retailer in the Philippines, with more than 200 branches, Bo's Coffee and Figaro are both in the top three with approximately 60 branches. While these businesses are oriented toward the domestic market, their expansion provides opportunities for learning and process upgrading that facilitate expansion into global and regional value chains.

Sources: (Euromonitor, 2016b; W. L. Flores, 2014)

3.3. Advantages and Constraints to Upgrading in the Philippines

While declining production, low exports, and limited examples of industry upgrading are notable characteristics of the Philippines' coffee industry in recent decades, the expanding demand and inflows of instant coffee has prompted the government to take steps to boost the domestic sector. As it attempts to increase competitiveness, the relevant departments will encounter advantages that may allow for future upgrading. Table 7 summarizes many of these along with some of the prominent constraints associated with the industry. The most prominent advantages and challenges are outlined in the section that follows. The potential upgrading section expounds on the potential opportunities.

[24] For most domestic companies, the expansion into Arabica is part of a diverse offering of brands that also includes Robusta and, in some cases, Excelsa, products.

Table 7. Advantages and Constraints of the Philippines in the Coffee GVC

Advantages	Challenges
• Geographic conditions to produce numerous types of coffee • Archipelago provides natural barriers to disease • Support from government stakeholders • Improved organization in production segment	• Limited stock of quality seedlings • Lack of modern production techniques • Crude post-harvest processing methods • Lack of coordination between industry stakeholders • Gaps in collection and distribution of research and technical knowledge • Popularity of instant coffee
Opportunities	**Threats**
• Specialty Arabica (standard compliant) • Strong retail market for Robusta provides openings for domestic producers to upgrade skills and export with specialty Robusta	• Cheap instant coffee imports, particularly from Vietnam, and Indonesia • Volatility of coffee prices internationally due to commodity price effects

Source: Authors.

3.3.1. Advantages

The Philippines' most pronounced strengths in the coffee GVC relate to the geographic conditions that allowed the industry to flourish at various points in the last 100-plus years. The most prominent include the following:

1. **Geographic conditions to produce different coffee varieties:** The Philippines grows all four varieties of coffee—Robusta, Arabica, Excelsa and Liberica—throughout the country (PSA, 2007-2014). While the diversity affords the country flexibility to explore potential niches, its emphasis on the two most popular varieties of coffee aligns with regional and global trends. In 2015, 92% of all production was either Robusta or Arabica, with Robusta grown on Mindanao and around Cavite, while Arabica is concentrated in Benguet and the Cordillera region (PSA, 2016). The profile affords the country opportunity to engage in both the instant coffee market that is popular throughout Asia as well as niche categories for higher-quality Arabica.

2. **Archipelago provides natural barriers to disease:** While the Philippines is not impervious to outbreaks of coffee diseases, its geography does provide insulation. In recent years, coffee rust has threatened plantations in a number of Central American countries (Avelino et al., 2015; Malkin, 2014), with individual farmers losing more than half of their production. Coffee rust is thought to spread by fungus spores that are dispersed through the wind, making land-locked regions particularly vulnerable.

3. **Support from government stakeholders:** Various government agencies and public institutions have provided active support for the coffee industry. The DA has helped established 11 nursery centers and seed gardens in six regions in the country, some of which are supported by universities and educational institutions, others of which are maintained by the private sector (see Table A-5 in the Appendix). It has also engaged with the Bank of the Philippine Islands (BPI), the CDA and local

governments to distribute seedlings in the region. Both the DA and DTI have conducted extensive studies of the industry to identify bottlenecks and potential policy solutions while DTI has included coffee as part of its NICCEP program to develop industry clusters throughout the country. Outside of those agencies, the DENR has included coffee as a high-value crop under its National Greening Program (NGP), which helps increase the amount of land available to farms and plantations. Other actors that have provided support to the coffee industry include DOST, the Department of Labor and Employment, TESDA and local governments.

Box 3. PRDP Outreach in Coffee Sector

The Philippine Rural Development Project (PRDP) is a US$665 million World Bank project approved in 2014 that is working through the DA to attempt to spur development in the country's agricultural and fisheries industries. The high-value commodities targeted for inclusion include coffee, cacao and five other areas (abaca, coconut, banana, dairy and goat). Still in its early phases, the PRDP has supported the coffee industry by initiating extension efforts. One such effort is the Kalinga Integrated Coffee Processing and Marketing Enterprise project in the province in northern Luzon. The program has engaged with farmers to improve production techniques, specifically offering training on weed removal and other steps to increase yield. The Kalinga project is also working with farmers to form cooperatives that have access to wet processing techniques while attempting to engage with large-scale buyers such as the Philippine Coffee Board, the Philippine Coffee Alliance and Nestle to secure more robust markets for the farmers. Similar efforts have been approved and will be implemented in South Cotabato in Mindanao.

Sources: (Department of Agriculture); (Mindanao Daily Mirror, 2016).

4. **Improved organization in production segment of chain:** The attention from government stakeholders has accelerated the organization of the sector. While still young and developing, cooperative networks have strengthened in recent years in some production regions, especially in the Arabica areas in Benguet. To cite one example, the Tuba Benguet Coffee Growers Association grew from 30 to 129 members in the period from 2014 to 2016 (Field Research, 2016). Other cooperatives in the region have even larger memberships and have been bolstered by the PRDP program (see Box 3).[25] Support from the DA in the form of extension services as well as input provision has played a role in helping these networks gain traction. Improved coordination can contribute towards lower input costs through joint purchases, stronger negotiating positions with buyers, as well as increased access to market information and credit (Fernandez-Stark et al., 2012).

[25] Some actors use alternative models for building scale and capacity in the production segment of the chain, finding some of the regulations surrounding cooperatives to be restrictive. However, the larger trend—improved organization—is still present.

3.3.2. Challenges

There is a diverse array of barriers to upgrading at different segments of the chain. Together, these shortcomings lead to two broad impediments that constrain the development of the industry: 1) Low volumes; and 2) Low quality of coffee. These two characteristics are not necessarily mutually reinforcing—for instant coffee, it is not necessarily problematic that the Philippines is producing lower quality coffee; rather, the small volume is the primary challenge. The following section outlines the most prominent constraints.

1. **Limited stock of quality seedlings:** While the DA's seedling program has had some successes in increasing input distribution to producers, there are shortcomings with the effort. Most immediately, the quality of the plants can be substandard, with offices other than the DA issuing deficient varieties (Field Research, 2016). Additionally, the government's accounting of seedling volumes was questioned by multiple actors.

2. **Lack of modern production techniques:** This is part stems from both the age of farmers, and a lack of extension services over the past few decades. The average age of farmers in the Philippines is 57 years old (DAR, 2013). With little formal training and education, these farmers continue to produce coffee with outdated techniques agricultural techniques. Key operations for driving productivity and quality improvements in coffee production, such as pruning, weeding, irrigation, fertilizer use and tree replacement are sporadic and unevenly applied (Field Research, 2016). The DA estimates most of the coffee trees in the Philippines are more than 20 years old. Partially as a result, together with low margins, the number of fruit-bearing trees in the Philippines fell from 85 million to 76 million in 2015, an 11% decline.[26] In many coffee producing countries, these upgrading efforts have been led by certification agencies and NGOs; however, there are few certifying agencies in the country and NGO engagement in the agricultural sector is limited.[27]

3. **Crude post-harvest processing methods:** Relatedly, the emphasis on lower-quality Robusta has mitigated the incentives for farmers to engage in process upgrading and improve their post-harvest capabilities. One of the larger roasters in the country said the processing methods used by farmers are "very crude" (Field Research, 2016). While there are a handful of wet processing facilities scattered around the country, dry processing facilities still dominate. Furthermore, many farmers still require training about the benefits of sorting associated with sorting beans based on coffee species. While there have been

[26] Government data on the average of farmers was not available.
[27] Of the major sustainability standards, there are only three firms with Fair Trade certification. There are no firms registered as UTZ, Rainforest certified or IFOAM Organic.

extensive outreach efforts by the government,[28] educational institutions and the private sector to train farmers about better processing and sorting practices, domestic roasters say they are still less consistent compared to Indonesia and Vietnam.

4. **Lack of coordination between industry stakeholders:** While there is government attention to the sector and cooperation within individual segments of the chain, such as the growing number of farmers groups, communication often falters between the various nodes (Table 8 below summarizes responsibilities for important actors with interests in coffee industry). At a national level, the public sector is characterized by multiple government agencies offering similar services. While the DA and DTI have both issued separated road maps and planning documents for the industry; implementation of these national strategies is uneven due to the autonomy of local governments to select which recommended initiatives to undertake. Additionally, provincial coffee councils support regional efforts; however, there is a need to strengthen these organizations as well as a national body to harmonize development efforts. As far as supporting services, multiple government agencies distribute inputs and seedlings to coffee farmers, leading to confusion among stakeholders (Field Research, 2016). In the private sector, challenges in the trading segment of the chain are emblematic of the larger issue of coordination. Stakeholders described two specific challenges: (1) Traders are prone to view relationships with producers or processors as a zero-sum game; (2) Traders have not improved their sophistication in terms of evaluating coffee quality.

5. **Gaps in collection and distribution of research and technical knowledge:** Data collected by the DA and the PSA about the country's production volume conflict with estimates offered by international organizations such as the ICO (Field Research, 2016). Furthermore, there is limited transfer of knowledge and technology from R&D centers to producers, with best practices not being adequately communicated.

6. **Popularity of instant coffee:** The popularity of instant coffee and three-in-one coffee drink in the domestic market has allowed Nestle to establish itself as the dominant consumer of the Philippines' coffee beans. Traditionally, Nestle has not emphasized specialty coffee or premium quality, instead accepting Robusta beans that met minimum standards. As global trends have moved toward single-source Arabica coffee, the existing profile has required a paradigm shift for farmers seeking to enter higher-value segments of the chain. While individual growers concentrate on separate varieties, the Philippines' preference for instant coffee means the market communicates market signals about Robusta more vigorously

[28] In addition to the DA and PRDP efforts highlighted above in the Advantages section, DTI's Shared Service Facility program provides SMEs with machinery, equipment and tools. Similarly, DOST's, DOST's SETUP and the Department of Agrarian Reform's ARCESS projects also offer access to technology.

than higher-quality Arabica. In turn, that has slowed the country's recognition of the importance of treating coffee less as a commodity and more of a premium good.

Table 8. Key Stakeholders with Interests in the Philippines' Coffee Sector

Actor	Description	Role
Department of Agriculture	Public sector unit responsible for developing and implementing agricultural policy in the industry	Provides technical assistance and other support to smallholders in the country; carried out a road-mapping exercise for the coffee industry in 2012.
Department of Agriculture, High Value Crops Development Program	Program is designed to work closely with private sector, particularly smallholders and farmers	Through the provision of extension services, goals include food security, expansion of private sector investment and income as well as improved production techniques. Coffee is a priority commodity.
Department of Trade and Industry, Board of Investments	The Board of Investment reviews and approves applications for investment incentives for the industry.	A Coordinating agency of technical working groups to overcome industry-binding constraints, it focuses primarily on processing activities.
Department of Trade and Industry, Regional Operations Group	Responsible for field operations of DTI at regional level and coordinates with regional and provincial coffee organizations	Serve as platform for collaboration among government and private sector stakeholders in regions/provinces.
Philippines Coffee Board	Private sector organization representing numerous different actors along the value chain	Focused on repositioning the Philippines as a specialty coffee producer, including both Arabica and Fine Robusta.
Coffee Quality Institute	International private sector institute	Carries out training for cuppers in the Philippines. Promoters of concept of fine Robustas.
ACDI/VOCA	International NGO focused on improving the livelihoods of poor in developing countries by connecting them with international markets	Currently carrying out the project in Mindanao focused on coffee, cacao and coconut.

Source: Authors.

In summary, there is an array of challenges impairing the Philippines' coffee sector. Despite recent attempts to revive the sector, farmers continue to exit the industry, production is on a downward trajectory, and processing is plagued by outdated technology. As a result, policymakers face questions about how to reverse these trends in order to leverage the opportunities both in the domestic and—ultimately—the export markets.

4. Upgrading: Lessons for Philippine Upgrading from Global Experiences

The Philippines will need to upgrade its capabilities in the coffee GVC to compete against the likes of countries such as Brazil, Vietnam and Indonesia. By adopting improved technologies, generating a new product or engaging in an entirely fresh set of activities, upgrading can also allow actors to capture greater value from their participation in GVCs (Humphrey & Schmitz, 2002). In agribusiness chains such as coffee, this can be achieved in a number of different ways; for example, by improving the characteristics of green coffee beans or the way they are produced; undertaking further processing to convert it into a higher value intermediate or final output; or directly marketing a final product to the end customer. Table 9 summarizes the key upgrading trajectories that have typcially been pursued by countries in the coffee GVC.

Table 9. Selected Upgrading Strategies in the Coffee GVC

Upgrading Trajectory	Description
PRODUCT UPGRADING	• Product upgrading involves the production of a higher value product. • Requires knowledge of market preferences, costs and prices. • Entry into certified and specialty niche markets are examples of product upgrading; however, these usually requires process upgrading first.
	Example: In the early 2000s, Rwanda initiated programs to increase coffee earnings and reposition it as a specialty producer. These included improving production and processing quality. In 2012, 27% of Rwanda's coffee was exported as specialty coffee, up from 0% in 2000 (Alliance for Coffee Excellence, 2008; Kalan, 2012; National Agricultural Export Development Board, 2013)
PROCESS UPGRADING	• Introduction of new technologies into the production system or restructuring the existing system to improve efficiency. • Examples include: shade-grown coffee, use of organic production techniques or improved harvesting techniques, amongst others.
	Example: Part of Vietnam's explosive growth in the coffee industry in the late 1990s and 2000s can be attributed to an aggressive campaign focused on increasing input-intensity to drive productivity. This included improving availability and cost of fertilizers by liberalizing the agri-inputs sector and lowering import tariffs, providing low-interest financing for irrigation equipment to encourage better water-use and the plantation of higher quality seedlings. These all helped Vietnam to rapidly improve its productivity; in 2013, yields reached 2.4 T/ha, compared to 1.8 T/ha in Brazil's Robusta production (ED&F Man-Volcafe, 2013) (See Section 4.2 for case study on Vietnam's upgrading in the coffee industry)
WET/DRY PROCESSING (FUNCTIONAL UPGRADING)	• Processing, including wet and/or dry processes and milling must be completed shortly after picking to maintain product quality, so this activity must be located near production operations. Moving from dry processing to wet processing can significantly improve the quality and thus price of the green bean on the global market. The quality of these processes influences the price that buyers will pay for coffee.
	Example: In 1972, a partially funded World Bank project in Ethiopia upgraded sun drying with washing stations (Common Fund for Commodities et al., 2000). Today, washed Ethiopian coffee is amongst the finest in the world (Coffee Review), and in the past five years has earned amongst the highest prices for its coffee (Figure 4).

ROASTING (FUNCTIONAL UPGRADING)	• Most roasting is done in or near the end-market, due to rapid quality decline, although improved packaging technologies can increase shelf life. • Requires capital and knowledge investments. • Roasting potentials are limited in many producing countries due to low domestic demand.
	Example: Costa Rican firms began roasting coffee in the 1980s, to target local and tourist markets. Today, there are over 27 SME roasters in the country. One of the most successful, Café Britt, built its export business on direct orders to US customers, and through airport retailing in Latin America.
MARKETING (FUNCTIONAL UPGRADING)	• Marketing creates brand identity, according to quality and taste characteristics. Effective marketing initiatives rely on distinguishability of coffees from particular origins, thus traceability measures must be implemented to ensure value capture.
	Example: In 2003, the Guatemalan Coffee Growers Association (ANACAFE) launched a traceability project with SGS using a Geographic Information System (GIS) database to identify the precise characteristics and location of all coffee grown in 8 regions in the country. These characteristics were used both for marketing campaigns, as well as for to establish grounds for denomination of origin of coffee from Guatemala (See Section 4.1 for case study on Guatemala's rise in the coffee sector).
ENVIRONMENTAL UPGRADING[29]	• This involves adoption of safer or less harmful practices to toxic fertilizers and sprays, the clearing of land for non-shade grown coffee, and water pollution associated with wet processing. • Often a pre-condition to certification.
	Example: Water pollution was a key factor affecting Central American coffee growing areas in the early 2000s. During the 2000s, initiatives from USAID, IDB and other development agencies played a strategic role in decreasing water pollution from wet-processing operations. Key aspects of these projects included the installation of eco-pulping machines and awareness training on where and how water was disposed of after use.

Source: Authors.

The potential upgrading trajectories open to a country at any one time, however, depend on the country's specific position in the value chain, a wide range of institutional factors, including infrastructure, the business environment, and trade and investment policy and importantly, the governance structure of the chain (Bamber, Fernandez-Stark, et al., 2013; Gereffi et al., 2005). For example, functional upgrading, that is, incorporating additional functional activities of the chain (e.g. moving into roasting or branding activities), while a highly sought after trajectory by developing countries, is often difficult for them to pursue because there tend to be higher barriers to entry in the higher-value stages of GVCs due to higher capital, skill and raw material requirements on the supply side and concentrated markets on the buyer side. In developing countries, product and process upgrading can be a more attainable short to mid-term goal, since they may require relatively minor investments in skills, equipment, or adjustments to the production process.

[29] Inefficient use of water, contamination of water sources and use of polluted water in the processing of coffee cherries are all major issues in coffee producing countries (M. Flores et al., 2013; TechnoServe, 2011).

In analyzing different prospective paths for upgrading for the Philippines in the coffee industry, it is therefore useful to look more in depth at specific examples from countries at similar levels of development and facing similar questions of how to integrate into coffee GVCs. Two cases were selected here for further examination:

- *Guatemala*, like the Philippines, was engaged in the mixed supply of Arabica/Robusta beans for the commodity coffee market. After the country's prospects were damaged by events that culminated with the coffee crisis of 2001, it shifted from commodity production into becoming a high value specialty coffee exporter. This strategy has involved primarily product and process upgrading.

- *Vietnam*, on the other hand, provides an example of strong entry into the commodity coffee segment as well as subsequent functional upgrading into processing and the production and export of lower value, instant coffee. Vietnam also has a growing domestic consumer base for both instant and specialty coffee.

Table 10 provides a summary of these countries compared with the Philippines. Having achieved relative success, these cases offer insights for the Philippines for alternative paths; their experiences, policy approaches and key lessons are discussed in the following sections.

Table 10. Guatemala, Vietnam and the Philippines in the Coffee GVC

Indicator	Guatemala	Vietnam	Philippines
GDP/Capita (2015, Current US$)[a]	US$3,903	US$2.111	US$2.899
Green Coffee Production Volume (2015/6), 60kg bags [c]	3.4 million	29.3 million	475,000
Green Coffee Exports Volume (2015/16) [c]	86%; 3.1 million 60 kg bags	26. million 60 kg bags	0
Price paid to farmers (US$/kg) (2013/14) (ICO)	US$2.80/kg	US$1.98/kg	US$1.98/kg
Primary Export Products [b]	Green Coffee	Green coffee; Soluble coffee	Roasted Coffee
Green Coffee Exports (US$, 2015) [b]	US$805.5 million	US$2,541 million	US$0.11 million
Unit Value Green Coffee Exports (US$/kg) [b]	US$4.49/kg	US$2.05/kg	NA
Key Markets [b]	US	EU (Germany, Italy, Spain) & US	US, Canada

Source: [a] (World Bank, 2016b); [b] (UNComtrade, 2016); [c] (USDA, 2016c)

Note: Export value data is based on import data. Downloaded on Oct. 19, 2016.

4.1. Guatemala: Product Upgrading into Specialty and Certified Coffee

At the turn of the century, Guatemala's coffee sector, initially dependent on commodity plantation coffee destined for the drip and instant coffee markets, was at a crossroads. A 1970s outbreak of coffee rust, the end of the ICA and the coffee crises of 1993 and 2001 had steadily undermined the sector's development and competitiveness.

By 2016, however, the country had turned this around. Guatemala had become the sixth exporter of green coffee in the world by value (UNComtrade, 2016), and tenth by volume, exporting 186 million MT of green coffee (USDA, 2016c; World Bank, 2014). That year, coffee accounted for 1.6 % of the country's GDP and was one of the country's most important exports (Fischer & Victor, 2014; World Bank, 2014). Coffee production was also an important source of employment, particularly for the rural population, engaging up to 30% of the workforce and generating close to half a million jobs (Fischer & Victor, 2014; World Bank, 2014).[30]

Like the Philippines, Guatemala can produce a number of different coffee varieties thanks to its varied geographical conditions; though in the 1970s and 1980s, it produced Arabica coffee primarily in the country low-lands (Fischer & Victor, 2014). Faced with weak competitiveness in the mid-1990s, however, Guatemala began to focus its production on higher value, washed Arabica coffee, grown between 1,370m and 2,000m above sea level. Since then, it has refined this strategy as the global market has become increasingly differentiated; first through the adoption of certifications, and more recently through the division of its key coffee producing regions into specific branded 'origins'. This strategy has facilitated access to high prices and reduced the drive for functional upgrading into roasting activities. In 2015, exports of green coffee were US$805 million, compared to roasted coffee of just US$14,131 (UNComtrade, 2016). Guatemala has thus focused on product and process upgrading rather than functional upgrading.

The coffee sector today is built on a smallholder model, with the majority of coffee being produced by some 90,000 farmers with an average of 3 hectares (Grabs et al., 2016; USDA, 2016b). More than half of these smallholders have entered the sector over the past 20 years with the shift towards high quality coffee. The sector continues to expand, reaching an estimated 305,000 ha in 2016, up 10% from the past decade (USDA, 2016b). These smallholders often were former plantation workers, with tiny land holdings in mountainous regions considered inappropriate for commercial agriculture (Fischer & Victor, 2014). While there are still some large farm in Guatemala's coffee production,[31] for the most part, larger plantations exited the industry in favor of more profitable crops, including sugar, rubber and palm oil (Fischer & Victor, 2014; USDA, 2016b).[32]

Guatemala's upgrading from a commodity producer to a specialty coffee leader can be divided into three key trajectories: (1) *product & process upgrading*: improving quality to move into the specialty coffee segment; (2) *product, process and environmental upgrading:* entry into certified coffee and; (3) *functional upgrading into marketing and denomination of origin:* Support of regional sales to the single-origin premium market. Each of these are examined in further detail below:

[30] Specifically, it accounts for 150,000 full-time and 300,000 part-time workers (USDA, 2016b).
[31] For example, the largest individual certificate holder had 990ha (Grabs et al., 2016).
[32] Producers tend to operate individually, although cooperatives are also common These are relatively large cooperatives, with 54% of certified cooperatives in Guatemala in 2014 having more than 350 members (Grabs et al., 2016).

1. **Improving quality for specialty coffee:** The shift into quality coffee corresponded to changes in the global market, with the emergence of second wave coffee shops. Upgrading efforts were mostly focused on improving quality at the production stage since wet-processing was already widespread among Arabica producers. This was relatively slow in implementation as smallholders gradually expanded into the sector, allocating more land and effort to their coffee crop over time (Fischer & Victor, 2014). As mostly subsistence farmers operating with outdated production techniques, these producers had to learn to manage the risk of selling into a market with fluctuating prices. In addition, these farmers had to access better quality seedlings, improve their agricultural practices and learn how good harvesting techniques could contribute to higher returns by separating cherries according to their grades at the farm level (Bamber & Fernandez-Stark, 2012). In 1979, just 16% of coffee production was of specialty grade. By 2014, it was estimated that 50% of the coffee produced in Guatemala was specialty coffee (Fischer & Victor, 2014). Although statistics are limited, in 2008, it was estimated that Guatemala accounted for 20% of the global specialty market (Bamber, Guinn, et al., 2013) and the country continued to score highest in the Cup of Excellence auctions for its specialty coffee (Wilson & Wilson, 2013). Overall, the country now secures the third highest price for its coffee by unit value in exports (UNComtrade, 2016), a significant share of which is passed along to its producers. According to the ICO, 2016, the price paid to producers on average between 2012 and 2014 has been US$3.21/kg, compared to the export price of US$4.49/kg.

2. **Entry into certified coffee:** In addition to improving the quality of its production, Guatemala was also at the forefront of the certified coffee movement, particularly with its uptake of Rainforest Alliance (RA) and UTZ certifications. By 2012, 13% of its coffee was certified, mostly with UTZ (6.9%), RA (6.8%) and IFOAM (2.6%) (Potts et al., 2014). RA and UTZ certificates were held by 16,618 producers by 2012, covering an area of almost 30,000 ha (Grabs et al., 2016). That same year, although it produced just 3% of global production, it provided 7% of RA global coffee supply (Potts et al., 2014). Certification compliance required training in new production and harvesting techniques, as well as quality control. Certification was achieved in a number of different ways: individual farmers and cooperatives sought support from organizations such as ANACAFE or USAID to obtain individual/cooperative certification, accounting for 61% and 13% of certifications respectively; traders and roasters jointly supported farmer groups to obtain certification, holding their certifications as traders (7.9%) (Grabs et al., 2016). In addition, environmental upgrading was required for achieving certification as producers and traders were already also engaged in wet processing. Typically, the pulp and wastewater from this process was dumped into local rivers, contaminating the water supply (Bamber & Fernandez-Stark, 2012; Bamber, Guinn, et al., 2013). Certification required adequate treatment of these waste products, further improving the sustainability and reputation of the country's coffee.

3. **Functional upgrading into marketing & denomination of origin:** To reap the rewards of improving their coffee quality, the country has launched marketing efforts to brand its product. Branding Guatemalan coffee has two layers: (1), a national brand which represents a minimum quality level; and (2) regional brands. ANACAFE began to promote the different origins in the country (Fischer & Victor, 2014), thus helping to add value to specific zones. Eight regions were scientifically defined, based on specific conditions and characteristics for coffee production. These regions are promoted internationally on both an individual basis as well as collectively under the national Guatemalan coffee trademark (Marescotti & Belletti, 2016).

Programs and Policies for Upgrading

The shift in strategy from commodity coffee to specialty coffee was the result of several prominent factors, including a strategic approach by ANACAFE, the national coffee producers association; support from a wide range of international development organizations alarmed by the impact of the coffee crisis on smallholders around the world, and opportunity costs that saw larger plantation owners exit commodity coffee for more profitable alternatives. The government has played a minimal direct role in the development of the industry, with most efforts channeled through ANACAFE.[33] This strategy has held up over time, despite pressure from coffee rust crises to shift to more resistant Robusta varieties (USDA, 2016b).

Due to its central role, a brief note on ANACAFE is appropriate. Representing all coffee producers, ANACAFE was established in the 1960s by the Coffee Law and is responsible for establishing coffee policy for production and trade and advising the government on coffee issues. A legislative decree provides tax exemptions on the import of fertilizer and equipment. The organization is financed by a coffee export tax, which levies a fee equivalent to US$0.08/60kg bag. It is responsible for issuing export licenses and shipping permits, setting minimum purchase prices, controlling export quality (coffee that can be sold under the 'Guatemala' brand), and it must provide a wide range of services to producers, including technical services (e.g. R&D, trials, demonstrations, cupping, milling, financing solutions, warehousing, etc.) (USDA, 2016b). In practice, ANACAFE has been central to the development of the sector, setting strategy, supporting quality improvement, branding the countries coffee and collaborating with a number of international agencies to support process and product upgrading across the country. By 2012, the organization had some 300 employees, 117 of whom were technicians.

ANACAFE has played a critical role in facilitating the three upgrading trajectories in Guatemala's coffee industry described earlier. The paragraphs that follow provide

[33] While there are government programs in place, these are limited in their efficacy due to corruption and misappropriation. For example, close to half of the fund allocated for farmers to survive the recent coffee rust crisis were redirected to other means instead of to coffee farmers (Grabs et al., 2016).

additional detail about the strategies used to accomplish each. The majority of initiatives have been carried out to improve product quality, which have taken place at both the production and post-harvest levels, and branding; there have been fewer initiatives beyond NGO work in the expansion of certified coffee in the country.

Process, product and environmental upgrading to improve quality: Achieving this upgrading required not only improving farmer skills and knowledge regarding the production, harvesting, and processing stages, but also providing access to quality seedlings, equipment and infrastructure. A second stage of training was also essential to help quality producers become sustainable by ensuring access to finance to support these investments and to teach producers to operate as economic agents or business owners, rather than as subsistence farmers (USAID, 2010a). The latter has helped to increase youth interest in the sector. Over the twenty-year period in which this has been achieved, numerous programs have been carried out by a variety of actors. Many of the efforts to improve product quality and quantity are ongoing today. A few select initiatives are highlighted below; where international organizations have been involved, ANACAFE has typically played the role of local counterpart.

Agricultural Production

- Ongoing technical training through demonstration plots run by ANACAFE in each of the production areas (USDA, 2016b). These plots are supported by research undertaken in Analab which carries out soil, water and plant analysis to ensure the correct distribution and use of higher quality seedlings, and to mitigate disease and water challenges.
- The introduction of the 1997 Small Farmer Improvement Program, focused on increasing coffee productivity and quality (USAID, 1997). The initiative provided credit specifically for coffee smallholders for a total amount of US$13.75 million. The project targeted approximately 8,000 small farmer and required farmers to replace 1.72 acres of aged trees with new, higher quality seedlings (USAID, 2010a).
- Traders also played a key part in providing financing for coffee producers. A 2010 USAID evaluation suggests that as much as 50% of the available financing for coffee sector is provided by downstream actors such as these, which help to fund seedlings, fertilizers and other inputs (USAID, 2010a).
- The Guatemala Coffee Trust Fund was established by the government in 2001[34] and will operate until 2026 to support coffee farmers in the event of coffee rust outbreaks. The trust fund provides for a) non-reimbursable funds for assistance to coffee production for inputs and productive processes, b) low interest loans for coffee producers, set on 2 % annual rate for small ones and 3 % for medium and big producers, and c) to increase public transfers up to US$100 million.
- The 2013 coffee rust outbreak reinforced the need for good agricultural practices in the Guatemalan coffee sector (USDA, 2016b). FEDECOCAGUA (Federación de cooperativas agrícolas de productores de café de Guatemala, with 20,000 members (+/1 1.32 ha), organized through 150 cooperatives) played a key role in this, working

[34] This is administered by the Rural Development Bank under the Ministry of Agriculture.

with support from USAID, to provide training and equipment for fumigation of coffee plantations (Feed the Future, 2015).

Post-Harvest Processing

- Larger traders such as Neumann, Ecom and Volcafe played an important role in driving product upgrading. Many of these traders invested in washing stations, thus ensuring proper technique was instituted (USAID, 2010a).
- An Inter-American Bank (IDB)-funded initiative with ANACAFE and Technoserve in five Central American countries between 2003 and 2006 provided both technical assistance—particularly on harvesting techniques and the correct use of wet processing, as well as connected producers directly with buyers in the US. The project also introduced the Cup of Excellence awards to the region. 360 farmers participated in this initiative in Guatemala (Bamber & Fernandez-Stark, 2012). ANACAFE continues to manage the Cup of Excellence Awards.
- ANACAFE established a Coffee school in 2003 to train cuppers; the availability of qualified cuppers is essential for helping coffee mills to determine the quality of their own products, thus allowing them to negotiate higher price.
- 2012-2016 "the Rural Value Chains Project", together with Coffee Cooperatives, supported close to 8,000 farmers (+/-10%) to access the specialty trade market, helping producers to increase their average sales price by US$0.16/kg in 2014. The program included classes on export procedures, how to maximize participation in international fairs, and a course on the production and sale of differentiated coffee, while commercial alliances were developed with two coffee buyers (AGEXPORT, 2013).
- Recognizing that not all producers are ready to interact with the high demands and sophistication of the global market, FEDECOCAGUA helps cooperatives gain access to direct trade. This support has included providing technical and financial support, as well as milling, storage, grading and export procedures for its cooperatives (Loranger-King, 2008). It has also provided organizational and managerial support and training for its members.

Entry into Certified Coffee: ANACAFE and FEDECOCAGUA specifically provide technical assistance to farmers and associations to support the following certifications: Rainforest Alliance, GLOBAL GAP, Utz Certified Good Inside, Organic Coffee (IFOAM), Café Bird Friendly, Fair Trade, Private Standards for Nespresso, Naturaland, Bio Suisse, and Demeter.

Branding & Denomination of Origin: Branding efforts have been led by ANACAFE (Fischer & Victor, 2014). Early work on building the Guatemalan brand began with the country's shift towards specialty coffee, with the launch of a marketing campaign by ANACAFE[35] at the SCAA Annual Conference (Pugash, 1990). The approach was a business-to-business focus, aimed at improving traders, roasters and distributors

[35] Under the banner "The Coffee World's Best Kept Secret: Guatemala's Regional Qualities"

knowledge of Guatemalan coffee, rather than a broad based marketing campaign aimed at the consumer ("Guatemala's specialty campaign in full swing," 1990). Since that time, all coffee exports are tested by ANACAFE and only coffee that meets the particular quality, taste and aroma requirements may be exported under the Guatemala brand. All other coffee must be exported without regional designation. Since then, in 2006, ANACAFE pioneered a marketing effort to define Guatemala's coffee producing regions based on coffee characteristics, defined by geography and climate, reflecting in an exclusive cup profile. Eight distinctive regions of quality coffees have been identified, which are promoted as Guatemala's regional coffees. The first two regions obtained recognition in 2011 and 2012.

4.2. Vietnam: Entry into Commodity Coffee and Upgrading into Production of Instant Coffee

In the early 1990s, Vietnam was a relatively insignificant participant in the global coffee industry, accounting for just 1.5% of global production (ICO, 2016).[36] Just two decades later, Vietnam is the world's second largest producer of coffee overall, with 17-20% of the global production. It is also the world's largest producer of Robusta, accounting for between 40-44% of global production over the past five years. The sector contributes over US$2.5 billion in export revenue and employs an estimated 2-3 million people (Summers, 2014; World Bank, 2004).

Like much of global coffee production, Vietnam's coffee is dominated by smallholders. Estimates suggest that these actors account for 90% of production, with the vast majority (90%) on farms under 2 ha (Baffes & Onal, 2012a; Ipsos, 2013). The remainder is produced by state-owned enterprises, including Vinacafe. Although representing just 5% of total production, some of Vinacafe's plantations are as large as 500 ha.

The country's strategy has been to focus aggressively on entry and upgrading within Robusta products by first engaging in developing a strong agricultural base before seeking to upgrade into the processing stage of the chain. These two key upgrading trajectories are discussed below:

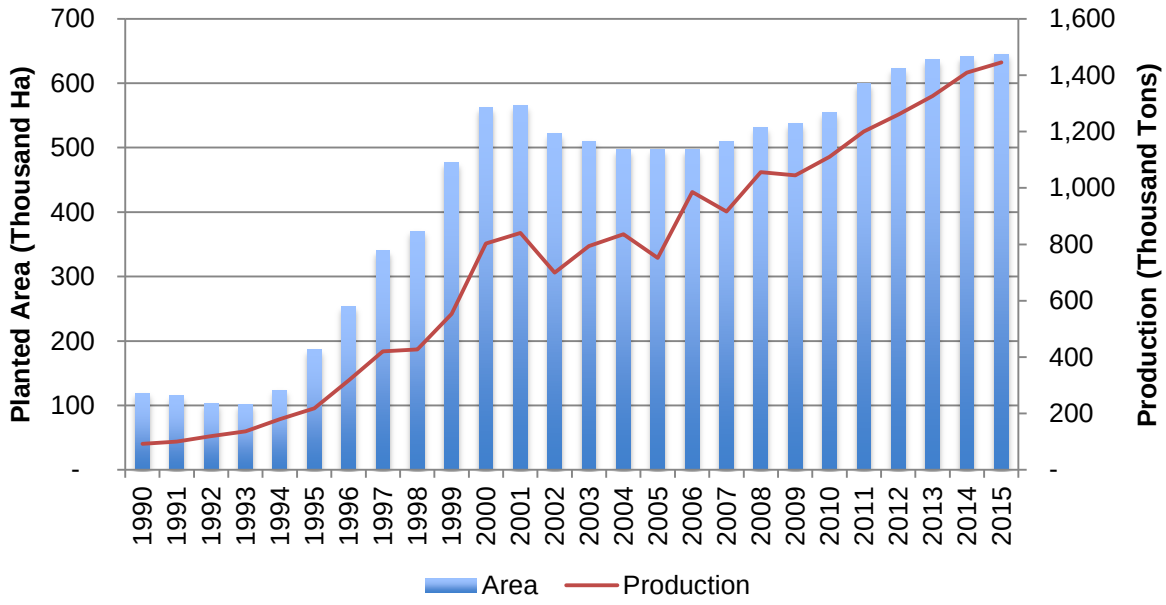
1. **Entry and expansion of Robusta production:** Robusta accounts for close to 96% of Vietnam's production, the majority of which is destined for export markets (USDA, 2016a).[37] Entry and expansion was rapid with production output increasing by a factor of ten between 1990 and 2000 (see Figure 9 below) (ICO, 2016). Small producers were increasingly attracted to the sector, as they were able to remain at home rather than having to migrate to work on plantations or in the cities (World Bank, 2004).

[36] It produced 78,000 MT, just 5% of what it generates today (ICO, 2016).
[37] While Vietnam began to experiment with specialty Robustas and Arabicas in the 2000s/2010s, the bulk of its operations concentrate in Robusta (Gonzalez-Perez & Gutierrez-Viana, 2012).

This rapid increase has been cited as one of the leading reasons behind the international coffee crisis in 2000/1, when the massive increase in the global supply of Robusta coffee pushed global prices below production costs (Luong & Tauer, 2006). The crisis led to significant structural changes in the industry, with many countries all but exiting the commodity coffee sector and accelerating the growth in high value specialty coffee, which was then in its nascent stage. Unlike other countries, Vietnam's Robusta producers weathered the storm, with very few exiting the industry—production decreased by just 44,000 hectares during this period (Luong & Tauer, 2006). Vietnam's resilience can be attributed to high productivity of young trees, with high volumes offsetting low prices, government stockpiling of coffee, interest-free loans provided to exporters to purchase and inventory coffee, freezing of credits repayments for three years, and a reduction in import taxes on key inputs such as fertilizer (Baffes & Onal, 2012a; Luong & Tauer, 2006; World Bank, 2004).

Production continued to scale up after the crisis. By 2015, the country had over 600,000 ha under production (USDA, 2015), one of the five largest countries by production area globally to account for 15% of total global coffee plantations by area (Panhuysen & Pierrot, 2014). Growth continued in the mid 2010s; the industry has expanded by about 30,000 ha between 2014 and 2016 (USDA, 2015).

Figure 9. Vietnam's Entry and Expansion into Coffee Production, 1990-2000



Source: (GSO-Vietnam, 2007, 2009, 2015).

2. **Functional upgrading into the production of soluble/instant coffee:** Building on its solid supply of green coffee beans, Vietnam has begun functionally upgrading in the GVC in recent years, moving into the soluble coffee segment.

This was driven first by the emergence of a strong domestic market for instant coffee— Vietnam is projected to be the second fastest growth market globally for instant with project growth of 9.6% between 2015 and 2020 (Euromonitor, 2016b; Ngoc Pham, 2015).[38] However, regional demand has helped to foster the development of an export-oriented processing sector, establishing Vietnam as a participant in the roasting segment of the chain. Vietnam exported only 597 MT of soluble coffee worth nearly US$1.7 million in 2001 (World Bank, 2004). Since 2011/12, however, the volume of the country's exports of soluble coffee has grown by 233% to reach 35,000 tons (USDA, 2016c), [39] making it the fastest growing participant in the product segment. 10% of recent exports of Vietnam's soluble coffee was destined to the Philippines, followed by Taiwan (6%), China (5%), Thailand (5%) and Singapore (4%) (USDA, 2015). At the same time, the share of green beans absorbed domestically has grown from 4% in 2006 (Luong & Tauer, 2006) to 12% in 2016 (USDA, 2016a).

Although there were only two instant coffee producers in Vietnam in 2004 (World Bank, 2004), there were approximately 20 firms in the country by 2016. Some estimates suggest recent investments in the sector have totaled as high as US$1 billion (VNA, 2015). These include both global and local coffee firms. Nestle has five processing plants in Vietnam, including its only decaffeination plant outside of Germany,[40] in 2010, Olam established and expanded a soluble coffee plant in Vietnam for export (Ngoc Pham, 2015; Olam International, 2016) and Trung Nguyen, a local firm, has also begun exporting its instant coffee around the world, including selling to Walmart stores in Brazil, Chile, China and Mexico (USDA, 2015). Vietnam's low labor costs, and ample supply of raw materials bode well for its expansion in this segment; nonetheless, it has tough competition from existing operations both by leader Brazil and other regional leaders such as Malaysia and Indonesia, which currently export twice the soluble coffee volume of Vietnam (USDA, 2016c).

Policy and Programs for Upgrading

Coffee policy and programming has mostly been oriented toward facilitating smallholder success in the Robusta segment, with functional upgrading resulting from general competitiveness conditions such as the availability of raw materials, low costs and proximity to market. Government policy in the latter upgrading has been slightly behind actual upgrading. Overwhelmingly, production was driven by government engagement in its first 10 to 20 years. The government was responsible for engaging in both upstream

[38] There is also a strong specialty coffee market, with an estimated 11,000 specialty coffee shops, such as Vinacafe (Euromonitor, 2016b).
[39] This figure is calculated based on the USDA database; a factor of 2.6 is used to convert soluble coffee to 60 kg bag equivalents. The database reports Vietnam's exports at 1.5million 60 kg bags in 2015/16.
[40] In total, Nestle alone purchases approximately 25% of Vietnam's coffee annual production (USDA, 2015). Nestle entered Vietnam in 1997 with its Nescafe brand, quickly consolidating a 60% market share (World Bank, 2004)

and downstream in the value chain; additionally, it created the institutions that help govern the industry (World Bank, 2004). Private sector contributions to growth were minimal, with private sector financing accounting for just 5% of the total cost of expansion in the early years (World Bank, 2004).

Overall, initial impetus was given to the industry from the broader *Doi Moi* policies toward liberalizing agriculture. These measures included shifting from cooperatives to household operations—individual farmers earned the right to independently sell a portion of their crop—recognizing farmers' ownership rights over their land and other productive assets, and reducing input costs through the elimination of import tariffs (World Bank, 2004).[41] In addition, the government implemented a series of transversal liberalization steps, which allowed new actors to enter the country and broaden the market potential for Vietnamese goods. For example, several bi- and multi-lateral trade and investment agreements with key end-markets, including the EU and the US,[42] were signed providing market access for the country's crop. That was significant for coffee in particular, since Vietnam's largest two markets for green beans are the EU and the US (UNComtrade, 2016).

While the *Doi Moi* policies provided the foundation for many Vietnamese agricultural sectors, there have been more targeted efforts that have assisted the country's coffee sector in its upgrading trajectory. Some of the prominent are outlined below.

Entry and expansion in Robusta production: As part of the market-oriented policy initiatives, the government focused on stimulating its agricultural sector to boost rural employment and income. Coffee was identified as a priority sector. The end of the ICA and a steep rise in global prices as a result of weather changes in Brazil created an opportunity for the Vietnamese to enter a growing export-oriented sector with returns that could support smallholder production (Baffes & Onal, 2012a). The government actively promoted migration to key areas it had identified for coffee-growing (Rios & Shively, 2005).

An initial boost was provided with well-established extension packages, including inputs such as seedlings, fertilizer, and irrigation equipment as well as free training services in coffee production. The active promotion of production techniques provided a significant boost to output in early years—productivity was amongst the highest for global producers. Import tariffs on fertilizer were reduced to 5%. Some state-owned plantations converted to outgrower programs in 1995, under which farmers received a

[41] In 1993, changes to the Land Law allowed for Land Use Rights (LUR) to be traded, inherited, and used as collateral, although actual ownership remains with the State.

[42] In 1995 Vietnam strengthened its relations with Europe, signing a cooperation agreement with the European Community, which unilaterally granted to Vietnam the Most Favored Nation (MFN) treatment. In 2000, a bilateral trade agreement was signed with the US, paving the way for MFN access of Vietnamese exports to the US market (World Bank, 2004). In 2007, Vietnam became a member of the World Trade Organization (MUTRAP, 2011).

range of extension benefits in return for delivering a pre-agreed amount of coffee (World Bank, 2004).

A number of financing instruments were also put in place to ensure that smallholder farmers could afford to implement the high-input intensity techniques being promoted by extension agents. In the early stages, the Vietnamese Bank of Agriculture and Rural Development (VBARD) supplied some 75% of coffee producers with credit. The Vietnam Bank for Social Development also provided a source of finance for those that could not access it through other channels (Baffes & Onal, 2012a).[43] Annual crop finance loans were just 1-1.1% percent per month for a period of less than one year, while development loans were charged at 1.1% for up to five years. In the mid-90s, farmers reported having paid off loans for new developments in two years following the price rises in that period (World Bank, 2004).

During the coffee crisis, the government kept cash in the rural economy by freezing any outstanding coffee loans for a period of three years, allowing producers to wait out low market prices.[44] By maintaining credit access through formal channels—and thus lower interest rates—this helped producers keep their costs lower. By 2004, after the sector had begun to recover, VBARD adjusted their credit lending to weed out the least productive producers, by only loaning to producers with a feasible business plan and productivity over 1 ton/ha (World Bank, 2004). While these were expensive policies that resulted in a loss for the state budget (Luong & Tauer, 2006), they allowed the country to get through the crisis and continue to build the industry.

In addition to production improvements, policies were put in place to help promote exports and connect producers to global markets by allowing foreign-owned firms to engage in coffee exportation. The government limited regulation and taxes in the sector to a US$0.30/ton export tax on exporters used to fund the country's ICO membership (World Bank, 2004). The influx of both foreign and local traders led to considerable competition amongst buyers for coffee, and information mechanisms were put in place to help farmers understand fluctuations in global prices. Producers were thus able to secure a higher share of the export price than most coffee producing countries (World Bank, 2004). This helped to keep more producers in the market. Furthermore, as the country's position as a leading robusta supplier strengthened, the government sought to increase the role of local actors more in the chain, banning foreign traders from directly engaging with local producers in 2012 to help create space for local aggregators and exporters to grow their presence in the industry (Ipsos, 2013).

More recently, the government launched the Agricultural Master Plan for 2020 with a vision to 2030, which targeted 500,000 ha of total coffee production. The plan aims to increase sustainable certification of the supply base to 80% by 2020, boosting

[43] In addition, the government established a Price Stabilization Fund, however, this was only operative in the 1990s while prices were high. By 2004, this was not being used (World Bank, 2004).
[44] It was estimated that there was nearly US$170 million in open loans to farmers, approximately 25% of which were under-performing (World Bank, 2004).

productivity to 2.7 MT/h and increasing the rate of wet-processing from 10% to 20% (Cong Thang & Huy Phuc, 2016). A key element for increasing quality and productivity is tree renewal; as the country's coffee crop has aged—approximately one third of planted land is comprised of trees of 15+ years (USDA, 2015)—the government has launched a replanting program that targets tracts (120,000 ha) in the Central Highlands with low interest loans (Cong Thang & Huy Phuc, 2016; Ipsos, 2013; USDA, 2015).[45] In addition, during the 2012-13 crop year, the Western Highlands Agriculture & Forestry Science Institute provided farmers with nearly 300,000 seedlings free of charge. Funding for the initiative was provided by the Vietnam Coffee Association (VICOFA) and Nestle Vietnam. While mainly focused on Robusta, the government is also actively supporting the plantation of higher value Arabica coffee in order to further increase the returns from the industry—the Agricultural Master plan targeted a total area of 60,000 hectares in Arabica production (Ipsos, 2013).

Functional upgrading into soluble coffee: Functional upgrading to date has been the result of a combination of the general competitiveness conditions in the country, including the wide availability of raw materials, low costs, proximity to market and, more recently, government policy. Numerous investments were made prior to the 2012 Agricultural Master Plan, which first set out the government's intentions to promote coffee processing. The 2015 Coffee Master Plan was more specific, attempting to increase domestic consumption of green beans to 25% by 2020 (Ipsos, 2013; Ngoc Pham, 2015) while also increasing roasted ground output to 50,000 MT and instant output to 255,000MT. Additionally, the plan covered the production of 3-in-1 and 2-in-1 blends.[46]

The goal is for this output to net US$1 billion over the next 15 years, by improving productivity and standards of existing roasters (rather than promoting new investments), and undertaking trade promotion activities in ASEAN and beyond to help market the country's instant coffee production. The plan was developed by the Department of Agro-Forestry, Seafood Processing and Salt Industry at the Ministry of Agriculture (Cong Thang & Huy Phuc, 2016). The government has promoted the domestic consumption of instant coffee to help drive demand (Cong Thang & Huy Phuc, 2016; Ngoc Pham, 2015).

4.3. Key Lessons for the Philippines from Guatemala and Vietnam

The global section of this report highlighted important recent trends in the coffee industry, including the premiumization of the market associated with the second and third waves of coffee consumption as well as moves to sustainability standards and direct sourcing. While the section on the Philippines' coffee sector outlined the variety of reasons why the country has not become a significant player in the industry, the

[45] This is being administered by VBARD although farmers have complained that it is inadequately designed and thus it has been less effective to date than planned.
[46] Core elements of this plan were first introduced in the Agricultural Master Plan for 2020 with a vision for 2030 unveiled in 2012 http://faolex.fao.org/docs/pdf/vie112552.pdf .

examples of Guatemala and Vietnam provide context as to how the Philippines might overcome some of these obstacles.

First, both countries focused initially on securing their supply of green bean coffee at their target quality level. That is—they were focused on process upgrading. Extension services, access to quality seedlings and access to credit were key elements for achieving this upgrading in both countries, even if the stakeholders behind each varied. Extension services were essential in teaching smallholder farmers about modern farming and harvesting techniques to increase their quality and yields, while access to credit—particularly development credit in Vietnam—was essential for small farmers to invest in new coffee plantations, and other inputs, implementing the good agricultural practices taught to them via extension services. In addition, both countries focused on sustainability and certification. Thus, while sales into the commodities market continue to account for the lion's share of global sale, any long-term strategy in the coffee industry must consider these certifications, particularly for the higher value products required by these buyers. Smaller production operations that may not be able to afford this costly process may prefer to sell into the commodity market.

Second, each country adopted a specific strategy for entry and upgrading. Guatemala pursued specialization, a niche strategy aligned with the emergence of the second and third wave coffee shops. With a focus on quality and origin, the country was able to differentiate its exports and in doing so, isolate itself to a degree from the intense competition in the commodity sector. Vietnam's strategy has focused on dominating the global growth of the emerging coffee demand. First, it expanded rapidly into the Robusta sector—destined for the growing instant market; once its supply was secured it has focused on upgrading into the production of this particular coffee for the region. The growth in the production of instant coffee is particularly noticeable and suggests this segment of the chain is going to become even more competitive. Vietnam has catapulted into the top five and had ambitious plans to expand its production from 35,000 tons to 225,000 tons, buoyed by its readily available local supply. While instant coffee demand in ASEAN is high today and expected to grow over the next five years, the longer term trends suggest that the shift to higher quality products and away from instant will happen much more quickly in Asia than it did in other parts of the world.

Third, market access has been an important driver for both countries. In Guatemala, this occurred on several levels; traders were engaged in investing in washing stations and providing trade finance; FEDECOAGUA provided market linkages, and exports support for smaller producers that were not yet in position to engage directly with buyers; and finally, ANACAFE played a strong role in branding the country's coffee and engaging traders and roasters directly in a business to business model to promote the particular characteristics of Guatemalan coffee. In Vietnam, the country specifically changed legislation to allow foreign traders to enter the market, creating competition and improving the market price achieved by farmers.

Finally, the two cases offer alternative approaches to policy development for upgrading. Guatemala's growth was driven by a multi-stakeholder approach, loosely coordinated through a centralized institution, ANACAFE. While this has ultimately been successful, the piecemeal approach has also meant that it took a significant period of time to drive product and process upgrading—this strategy is over 20 years old, and specialty coffee only accounts for half of the country's production. Vietnam's policy approach, on the other hand, has been significantly more centralized and top-down. Indeed, the Coffee Master Plan unveiled in 2015 was directly coordinated by the Ministry of Agriculture, even though it dealt significantly with downstream processing. This overall coordination has allowed the country to roll out resources more strategically and achieve its goals more quickly, although it has required significant resources on the part of the government to do so.

5. Preliminary Upgrading Trajectory Recommendations

5.1. Upgrading Trajectories

1. **Short Term: Process Upgrading (Natural Robustas & Arabicas):** Aging trees, and inefficient agricultural operations have undermined productivity of the sector. In numerous key coffee producing countries improved agricultural practices have proven to increase yields significantly; for example, in East Africa, GAP training in 11 best practices led to a 42% increase in productivity on average and as much as 75% amongst high performers (TechnoServe, 2011). In Kenya, a shorter program carried out by a consortium of value chain actors, including a roaster (Tchibo), trader (ECOM), an international development agency (GIZ), the 4Cs certification association and partially funded by the World Bank, saw increases of 15% in production after just two years, while the prices in cherries tripled (GIZ, 2013). Increasingly yields is particularly important in improving the competitiveness of the Robusta crop. Any corresponding increased supply of Robusta has a local market, providing producers with a higher potential for sales as they build up skills for the more sophisticated international market. However, this must be assessed realistically—Vietnam, Brazil and Indonesia control 77% of the Robusta market (USDA, 2016a). Vietnam offers a considerable discount on its coffee vis-à-vis even Indonesia, and its growers have continued to expand production despite government efforts to slow this to help buoy local prices. Furthermore, the country has the highest yields for Robusta production globally, around 2.6 tons/hectare helping them to remain competitive in the face of rising production costs (ED&F Man-Volcafe, 2013). There are also global concerns that with the current prices of natural Robustas and Arabicas, producers are operating at both a short term and long-term loss (ICO, 2016a). For the Philippines, a short-term strategy would be to maximize trees that are already growing, but in the long term, a shift towards Arabica production may be more appropriate.

2. **Short Term: Product Upgrading:** Continued shift into higher value specialty Arabica for export market. Even though the country has the potential to grow

both Arabica and Robusta varieties, the long-term prospects for Robusta are not as promising as Arabica. The strong shift towards product differentiation throughout the industry indicates that forward-looking investments need to be towards a higher quality product, particularly as trees take four or so years to become productive and then last up to 15 more. Even Vietnam has begun to shift its focus to Arabica production. Specialty coffee offers a promising alternative because prices are determined by the quality of the lot and the exclusivity of supply, rather than the NYFOB price. Growing local demand for specialty coffee, and third wave coffee shops can provide an outlet for local coffee while producers increase skills and production to export abroad. Improved returns for coffee production can help to retain young individuals in agriculture; anecdotal examples such as Kickstart, illustrate the high potential of these younger players applying their technical, marketing and interpersonal skills to the sector. Of course, achieving success in this area will require overcoming constraints such as weak rural infrastructure to ensure that high quality cherry beans can reach washing stations within 24 hours to maintain their quality.

3. **Short-Medium Term: Process Upgrading (Processing):** Introduction of environmentally friendly washing stations for the processing of both Arabica and higher quality Robusta varieties. Currently, the over-reliance on dry processing undermines any efforts in improving quality at the production level. The Philippines is far behind global producers with respect to wet processing, regardless of their environmental sustainability. Even small countries such as Guatemala and Burundi have an extensive network of washing stations and over twenty years of experience in operating them. Fortunately, the Philippines can draw on the experiences of these countries to establish sustainable operations from their first installation, saving time and cost later. In Ethiopia, to improve compliance with the growing market shift towards improved environmental practices at the washing station level, processors introduced sustainability practices and installed "eco-pulping" equipment in the new stations, reducing water use by 80% to 90 % compared to traditional wet milling equipment (TechnoServe, 2013). This upgrading will be necessary not only to begin to serve the global market but also to serve the growing specialty market in the country. This segment —which includes multinational brands such as Starbucks, in addition to local brands such as Bo's Coffee—draws on global specialty supply. Starbucks and Coffee Bean & Tea Leaf have centralized sourcing operations globally, meaning that for domestic brands to compete at the retail level with Starbucks, they must to sell coffee that competes with those from Guatemala, Colombia, Honduras etc.

4. **Medium Term: Functional Upgrading (Branding):** Although once known as a coffee exporter, the Philippines has lost its reputation for coffee. This needs to be developed again once the country has improved it production and processing techniques. However, these efforts need to be tailored to the coffee segments where origin is of importance—specialty and sustainable coffee, most prominently in Arabica. This requires raising the Philippines profile as a specialty

producer, drawing buyers and roasters to see the country for themselves and creating linkages between producing organizations and buyers. These include organizing trade missions for buyers to the country, hosting of the Cup of Excellence competition and developing a "compelling story" to engage socially and environmentally conscious buyers. This has been a key part of the upgrading strategy of several coffee producing countries that have sought to enhance their competitiveness. As seen in the case study, this was central to Guatemala's success in establishing the country as an important supplier of specialty coffee. Likewise, Ethiopia saw success upgrading via the specialty market segment during the first decade of the 2000s by both creating mechanisms to incentivize production of high-quality coffee and also moving into the marketing section of the value chain, through its branding initiatives and aggressive efforts to build marketing channels with buyers (Light Years IP, 2011).[47] No marketing efforts are necessary for the Robusta operations. If the country can provide a competitively priced product in Robusta, it will have a market in the region's instant coffee industry.

[47] Ethiopia also expanded certification efforts during the 2000's in order to expand access to the certified coffee segment. Thus, certification and quality strategies are not mutually exclusive.

6. Appendix

Table A-1. CAGR of Volume Demanded Calculated by various different sources and periods

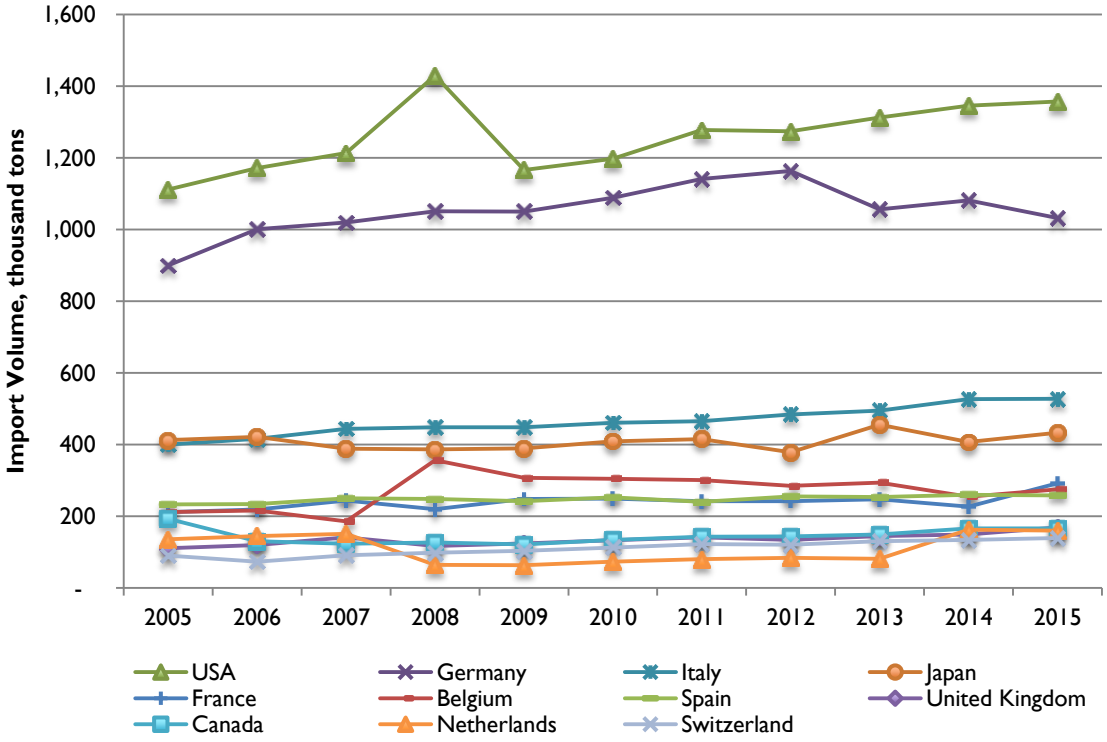
Period	Starting Volume (kg)	Ending Volume (kg)	CAGR	Data Source (2016)
2011/12-2015/6	5,900,580,000	6,292,500,000	1.62%	USDA
2011-2015	6,281,021,835	6,648,247,831	1.43%	UN Comtrade
2003-2013	5626020000	7006380000	2.22%	ICO
2005-2015	5,364,847,170	6,648,247,831	2.17%	UN Comtrade

Table A-2. Specialty Coffee Production Volume, by Country 2008

	Country	Volume (60 kg bags)	% World Specialty Production
1	Colombia	3,450,000	34.34%
2	Guatemala	2,000,000	19.91%
3	Brazil	1,000,000	9.95%
4	Costa Rica	850,000	8.46%
5	Nicaragua	400,000	3.98%
6	Ethiopia	400,000	3.98%
7	Kenya	350,000	3.48%
8	Mexico	300,000	2.99%
9	El Salvador	300,000	2.99%
10	Peru	250,000	2.49%

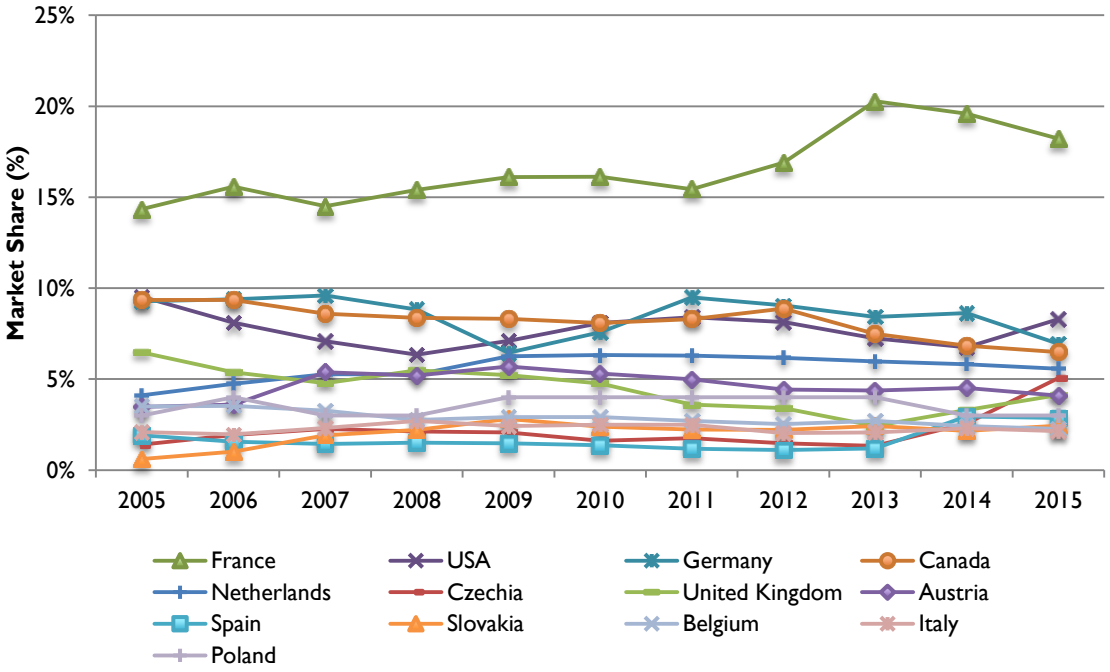
Source: Authors, based on information from USAID, 2010e.

Figure A-1. Leading Importers of Green Coffee Beans, by Volume 2005-2015



Source: UN Comtrade, HS2002- 90111. Downloaded Oct. 19, 2016.

Figure A-2. Leading Importers of Roasted Coffee, Market Share by Value, 2005-2015



Source: UN Comtrade, 2016, Downloaded Oct. 19, 2016; HS 2002 90121, leading importers of roasted coffee

Table A-3. Leading Importers of Soluble/Instant Coffee, 2011-2016, 60kg bag equivalent

	2011/12	2012/13	2013/14	2014/15	2015/16	Jun 2016/17
Philippines	2770	3400	3025	3660	4500	4000
Russia	1980	1900	1735	1550	1800	1800
China	396	615	791	984	1500	1500
Canada	1165	1225	1350	1280	1100	1200
Japan	590	750	840	815	800	825
Indonesia	470	630	555	720	650	700
US	125	340	365	485	450	450
Ukraine	1000	785	690	570	400	400
Argentina	240	260	260	250	270	250
Australia	310	310	250	275	260	250
South Africa	165	210	220	250	250	250
Mexico	175	230	190	165	190	200
Guatemala	180	185	215	185	190	180
El Salvador	170	160	190	170	190	175

Source: (USDA, 2016c).

Table A-4. Profile of Leading Coffee Exporters to the Philippines

Category (HS codes)	Export Value (US$, millions)				Share of Product Category			
	2007	2010	2012	2014	2007	2010	2012	2014
Indonesia								
Extracts (210111 & 210112)	14	35	120	186	48%	48%	67%	77%
Green Coffee (090111)	10	8	19	2.1	26%	21%	29%	14%
Vietnam								
Extracts (210111 & 210112)	0.009	0.3	0.5	18	0%	0.5%	0.3%	8%
Green Coffee (090111)	28	33	46	12	72%	78%	69%	81%
Thailand								
Extracts (210111 & 210112)	1.6	7	21	16	5%	10%	12%	7%
Green Coffee (090111)	0	0.2	0	0	0%	0.5%	0%	0%
Malaysia								
Extracts (210111 & 210112)	7	21	28	15	26%	29%	16%	6%
Green Coffee (090111)	0.003	0.01	0	0	0%	0%	0%	0%

Source: UN Comtrade. **Note:** 2005 data was unavailable. Retrieved on December 1, 2016.

Table A-5. Coffee Nursery Operators in the Philippines

Location	Business Name
Region I	Pangasian Organic Seed Growers and Nursery Multi-Purpose Cooperative
Region IV-A	Cavite State University Plant Nursery
	DR Agricultural Merchandising
	Greenwood Agri-Farm Center Nursery
Region IV	Ulysses L. Valdez Farm
Region XI	Nestle Experimental and Demonstration Farm
Region XII	Elan's Farm Coffee Nursery (Sultan Kudarat)
	Kalamansig Coffee Nursery
	Sarangani Coffee Farm & Nursery Station (SC)
	Tupi Coffee Growers Association
CAR	Benguet State University—Coffee Nursery Operator

Source: DTI, 2012.

Table A-6. Production and Sales of Certified Coffee and CAGR, 2008-2012

	Production (MT)	Sales MT	CAGR Production	CAGR Sales
2008	1,300,000	410,000		
2009	1,800,000	440,000	8.48%	1.78%
2010	2,200,000	510,000	5.14%	3.76%
2011	2,700,000	630,000	5.25%	5.42%
2012	3,300,000	840,000	5.14%	7.46%

Source: (Potts et al., 2014)

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