國立臺灣大學生物資源暨農學院農業經濟學系

碩士論文

Department of Agricultural Economics
College of Bioresources and Agriculture
National Taiwan University
Master Thesis

越南咖啡產業之研究

A Study on Coffee Industry in Vietnam

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中華民國 112 年 7 月

July, 2023

doi:10.6342/NTU202302451

國立臺灣大學碩士學位論文

口試委員會審定書

Master Thesis Certification by Oral Defense Committee

National Taiwan University

越南咖啡產業之研究

A Study on Coffee Industry in Vietnam

本論文係 阮氏垂玲 君（R08627036）在國立臺灣大學農業經濟學研究所完成之碩士學位論文，於 2023 年 7 月 19 承下列考試委員審查通過及口試及格，特此證明。

This is to certify that the Master thesis above is completed by Nguyen Thi Thuy Linh (Student ID R08627036) during his studying in the Department of Agricultural Economics at National Taiwan University, and that the oral defense of this thesis is passed on July 19th, 2023 in accordance with decisions of the following committee members:

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doi:10.6342/NTU202302451

ABSTRACTS

Currently Vietnam is a major exporter of Robusta which is the main ingredient of instant coffee. However, low profitability from raw material production is restraining the progress of Vietnam's coffee industry. This study aims to provide directions for the future development of the industry. This study applies SWOT analysis to assess the strengths, weaknesses, opportunities, and threats of Vietnam's coffee industry in the past and present.

Through SWOT analysis, this study proposes policies to add value to coffee products in order to enhance the position of Vietnamese coffee in line with the goals of sustainable development and ensure long-term success in the global market. This study present a comprehensive road map of sustainable development entails a multifaceted approach, including training and capacity-building programs for coffee farmers, promoting sustainable certifications and traceability systems in short term; sustainable land management practices, to improve the competence of process industry in order to add value of raw materials and market diversification in medium term and develop climate-smart practices and mitigate the risks posed by changing weather patterns in long term.

Keywords: Coffee, Robusta, Sustainable Development, SWOT, Road map, Vietnam

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Chapter I Introduction

1.1 Backgrounds and Motivation

Coffee is a beverage made by roasting coffee beans, and it has a dark color, bitter taste, and slight acidity. The primary reason why coffee has a stimulating effect on people is due to the presence of caffeine in it. Currently, coffee is among the most popular drinks globally, with a large number of people consuming it and it is also one of the most traded goods on a global scale. Coffee is produced in more than 75 countries, mostly in the tropics. Coffee production provides livelihoods for about 25 million people, mostly small-scale producers. small tissue, small scale, while import, processing and distribution provide livelihoods for about one hundred to one hundred and ten million people. Global coffee production has stabilized at approximately 169.14 million 60-kg bags per year (equivalent to 10.15 million tons) from 2017 to 2019 (ICO, 2021c).

The production and consumption of coffee in the world today is closely related to the development of the capitalist economy and colonialism in the history of the modern world. From the late eighteenth to the nineteenth century, Westerners gradually dominated international trade and coffee consumption became the main object of their colonial policies. Westerners developed coffee production in the colonial countries first to meet the consumption of the mother country, on the other hand to re-export to their colonial countries in Asia, Africa, Europe, and America (Clarence-Smith & Topik, 2003). This fact contributed to making coffee the most popular beverage in the world by far. The largest producing and exporting countries in 2017, irrespective of human development level, were Brazil (USD 4.6 billion), Vietnam (USD 3.5 billion) and Colombia (USD 2.58 billion), while the United States (USD 6.3 billion), Germany (USD 3.5 billion) and France (USD 2.8 billion) were the largest consuming and importing markets globally (Bermudez et al.,2022).

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Vietnam is a South-East Asia country with an area of 331,698 square kilometers of tropical and subtropical climate with a population of 97.47 million people (World Bank, 2021). Arabica *(Coffea Arabica)* was the first coffee variety introduced into Vietnam in 1857 through French missionaries. Then, in 1908, the French brought two other types of coffee to Vietnam: Robusta *(Coffea Canephora)* and Exelsa *(Coffea Excelsa)*. Although possessing a large area of red basalt which is suitable for cultivation and development of coffee, the area of coffee growing only reached 30,000 hectares after 100 years being introduced by the French (ICO, 2019).

After reunification in 1975, the government of the Socialist Republic of Vietnam confronted an economic crisis as a result of the Vietnam War and other objective reasons. In order to overcome the crisis, in 1986, the economic reforms named *"Đổi Mới"* (means "renovate" or "innovate") was introduced and implemented in Vietnam with the target of creating a "socialist-oriented market economy". Developing the coffee industry for economic development became the mission of the Vietnamese government to recover and boost the economy after the crisis. The area of coffee growing in Vietnam by 1987 was only about 100,000 hectares. After ten years, the coffee production of Vietnam increased significantly to 5.8 million bags (approximately about 348 million kilos) making the country rise to the fourth position in coffee production globally, behind Brazil (22.5 million bags), Colombia (10.5 million bags) and Indonesia (6.7 million bags). By 2000, Vietnam overtook Colombia as the world's second-largest coffee producer, despite only being in the commercial coffee industry for nearly twenty years. This is in contrast to Brazil, Colombia, and Indonesia, which have been leading producers for over a century. Additionally, Robusta coffee accounted for the largest share of Vietnam's coffee production which made the country become the largest export of Robusta coffee bean in the world from 2008 (Thurston, 2013).

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After over 150 years since the introduction and cultivation of coffee in Vietnam, and despite achieving numerous accomplishments as the world's largest supplier of Robusta coffee, Vietnam still faces many difficulties in building and positioning its coffee brand on the global coffee map. Additionally, the task of developing a sustainable coffee industry that produces delicious coffee beans and is environmentally friendly is of utmost importance.

1.2 Study Objectives

The key to the success of the Vietnamese coffee industry lies in its rapid growth and large production of Robusta coffee. This is because Robusta varieties are easier to cultivate compared to Arabica varieties. This is due to the fact that the quality of Robusta beans is less affected by external factors such as fertilizers and water sources compared to Arabica varieties. As a result, the lower cost of cultivating Robusta varieties compared to Arabica varieties facilitates rapid growth within a short period of time with large production (ICO, 2019).

Although the rise of Vietnamese coffee on the world map can be attributed to the lowest production cost and highest Robusta productivity, several studies have suggested that this development is unsustainable. The coffee industry in Vietnam has encountered various challenges since it attempted to improve coffee production and quality through low-cost farming methods, such as excessive reliance on fertilizers and intensive irrigation (Thurston et al., 2013). Consequently, what Vietnam has exchanged for the rapid development of the coffee industry are damage to the land, an enormous decline in forest cover which led to erosion, ecological imbalance and unsustainable regional water resources (Vaughn, 2009).

Despite being a leader in coffee production worldwide, Grant (2014) concluded that Vietnam has faced challenges in establishing its coffee brand's position on the global

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coffee map. As a result, the global market for Vietnamese coffee consumption remains largely untapped and is yet to be fully recognized by international consumers. However, there are still some bright spots in an attempt to create local coffee brands with Vietnamese identity, such as: Trung Nguyen, Vinacafe, King Coffee and Highlands Coffee, etc. These local brands are constantly innovating their coffee business by producing high-quality coffee products, planning suitable marketing strategies for both domestic and international markets, and expanding the business map through franchising. Especially, an attempt in introducing "Vietnamese coffee philosophy" along with opening the World Coffee Museum in Buon Me Thuot, Vietnam in 2018 of Dang Le Nguyen Vu - the CEO of Trung Nguyen Legend Group - are proof of a desire to bring Vietnamese coffee to the next level in the world coffee map of local Vietnamese entrepreneurs. To substantiate the aforementioned points, this study will have a dedicated section illustrating the establishment and success of the Vietnamese local coffee brands by Trung Nguyen Legend Group.

In terms of public policy of the Vietnamese government, on 12 March 2023, the Ministry of Agriculture and Rural Development of Vietnam (MARD) held a national conference on the topic of "Building a chain of high-quality Vietnamese coffee products associated with green growth and sustainable development". Many experts pointed out the main issue of Vietnamese coffee was that it had a large output, but mainly focused on green bean exports which did not bring high added value. In addition, coffee farming in the past concentrated on making the most of the productivity potential of coffee without paying much attention to green and sustainable development. In the future, the MARD wishes to build an unique Vietnamese coffee culture that bases on intensive processing of coffee beans and diversifying products, especially high quality "specialty coffee," which can add more value to the Vietnam's coffee industry (Vietnam Coffee Cocoa

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Association [VICOFA], 2023). This study aims to provide directions for the future development of the industry. Taking into account the aforementioned background, this study aims to review the development process of Vietnamese coffee, analyze the strengths and weaknesses of the industry, and subsequently propose suitable directions for the future development of the Vietnamese coffee sector. With the right policies from the government and the resources from private enterprises like Trung Nguyen Legend Group, it is believed that Vietnam's coffee industry is expected to undergo significant changes in the future.

This study applies data, annual reports from Foreign Agricultural Service (FAS) of United States Department of Agriculture (USDA), the International Coffee Organization (ICO), the Food and Agriculture Organization of the United Nations (FAO), the annual reports from the MARD, statistics from the General Statistics Office of Vietnam (GSO), and references to a number of books, journals, theses and dissertations by other scholars. In this study, the SWOT analysis is utilized to identify the determining factors for the development advantages of Vietnam's coffee industry. Previously, Nguyen(2016) used SWOT to analyze Vietnam's coffee industry. However, the focus of that study is mainly on the case of the US export market. This study aims to expand the application of SWOT analysis to explore the short, medium and long term development roadmap for Vietnam's coffee industry. The objective is to enhance the prospects of Vietnam's coffee industry and find sustainable development solutions, aiming to promote and raise awareness of Vietnamese coffee brands globally.

The relevant terms used in this study, such as *"coffee year"* (which means "a period of 12 months from 1st October to 30th September"), are collected in Appendix and will be referred to in the figures and tables expressed as "19XX/XX" or "20XX/XX".

doi:10.6342/NTU202302451

This study is structured in 5 chapters. Chapter I is an introduction about the motivation and objectives of the study. Chapter II is an Overview of the Global Coffee Market, including data about Demand, Consumption, Production. Chapter III is an Overview of the Vietnamese Coffee Industry including Natural condition, History, Production, Coffee Culture in Vietnam. Chapter IV examines Situation Analysis and Policy Recommendation by show up the road map to sustainable development of Vietnam's coffee industry. Finally, Chapter V provides the concluding remarks of this study.

doi:10.6342/NTU202302451

Chapter II Overview of the Global Coffee Market

This chapter provides a comprehensive understanding of the global coffee market, focusing on demand, consumption, and production dynamics. We explore the interplay between these factors, gaining insights into the challenges and opportunities faced by the industry. Additionally, we analyze the impact of the COVID-19 pandemic on the market, considering changes in consumer behavior and the adaptations made by coffee producers. This chapter offers a concise overview of the global coffee market, including the COVID-19 influence on demand, consumption, and production.

2.1 The Demand and Consumption

Coffee is an economically important commodity worldwide, since the tradition of drinking coffee has been around for many years. In addition to drink, coffee is also used for food flavor and pharmaceutical industries recently. Besides being high in demand, coffee is also a strategic commodity in various countries in the world.

Global coffee consumption surpasses 160 million 60-kg bags per coffee year. Through the below analyzes, it can be seen that in terms of consumption by regions, Europe has the largest global coffee consumption in both Arabica and Robusta. In terms of coffee varieties, Arabica coffee has a higher consumption volume than Robusta coffee; however, Robusta still holds a significant position in the global coffee consumption market. The COVID-19 pandemic has negatively affected the global economy and coffee consumption, mainly due to policies during the pandemic.

Table 2.1 extracted data from World Consumption Table and Coffee Market Report released in May, 2021 and February, 2023 by ICO in order to analyze the global coffee consumption. From coffee year 2018/19 to 2019/20, global coffee saw its consumption decrease, which coincided with the onset of the COVID-19 pandemic and its impact on the world economy. During this period of time, global coffee slightly dropped 2.55% from

doi:10.6342/NTU202302451

168.49 million 60-kg bags to 164.20 million 60-kg bags. As the global economy bounced back after recovering from the COVID-19 pandemic, the latest coffee consumption of the world grew 1.31% to reach 166.35 million 60-kg bags in 2020/21, and was expected to rise to 170.30 million 60-kg bags in coffee year 2022/23.

Table 2.1 The Global Coffee Consumption, 2017/18 to 2021/22

Coffee year commencing	2017	2018	2019	*2020**	*2021**
TOTAL WORLD CONSUMPTION	**160,006**	**166,730**	**162,998**	***164,865***	***170,298***
Africa	10,810	12,003	11,101	*11,449*	*11,721*
Asia & Oceania	35,129	36,227	36,350	*39,657*	*40,834*
Mexico & Central America	5,273	5,431	5,346	*5,381*	*5,399*
Europe	53,527	55,452	53,949	*51,983*	*54,206*
North America	29,939	31,789	30,581	*30,292*	*31,913*
South America	25,829	26,324	26,321	*26,603*	*26,724*

** preliminary estimates*
in thousand 60-kg bags

Source: ICO (2021b; 2023)

Throughout history so far, Europe was still the largest consuming region of global coffee consumption which accounted for 32.50% of market share in the coffee year of 2020/21, at 54.07 million 60-kg bags. In the previous coffee year 2019/20, due to the impact of the COVID-19, coffee consumption in Europe decreased approximately 1.30% at 53.37 million 60-kg bags as compared to it in coffee year 2020/21. The cause of the decrease in this period was contributed by a reduction in "out-of-home" coffee consumption(ICO, 2020, 2021a). As the world economy began to adjust after the COVID-19 pandemic, it is expected that coffee consumption in Europe will recover soon.

Figure 2.1 below illustrates the regional coffee consumption for the coffee year 2020/21, with data extracted and compiled from ICO in May, 2021 and February, 2023. Europe is the first place by region. The Asian & Oceania region is the second significant

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area in terms of coffee consumption as. However, determining its ranking as second or third place is quite challenging because if we consider consumption by continent, the combined coffee consumption of the Americas (including North America, Central America, and South America) is still considerably greater than that of Asia & Oceania. In coffee year 2020/21, coffee consumption in Asia & Oceania accounted for 21.94% of global coffee consumption with approximately 36.50 million 60-kg bags. Meanwhile, the combined coffee consumption of the Americas amounted to 63.54 million 60-kg bags, which accounted for 38.19% of global coffee consumption. North America led with approximately 31.00 million bags, representing 18.63% of global coffee consumption with the United States of America as the main consuming country. This was followed by South America with 27.18 million bags (16.34%) and Mexico & Central America with 5.36 million bags (3.22%). Africa occupied for a modest amount of consumption with only 7.36% out of global coffee consumption at 12.24 million 60-kg bags.

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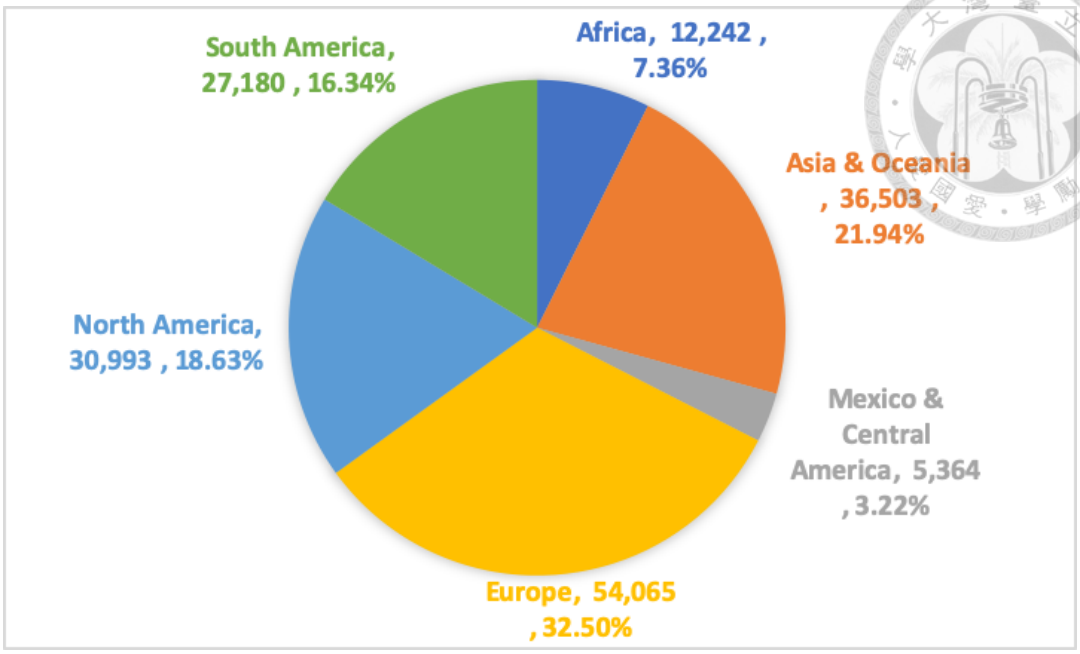

Figure 2.1 Consumption of Coffee by Regions, 2020/21
Unit: in thousand 60kg-bags & percentage share
Source: ICO (2021b, 2023)

Figure 2.2 portrays the export quantities of Arabica and Robusta coffee for the periods of February 2020 to January 2021 and February 2021 to January 2022, measured in 60-kg bags, using data extracted from the ICO's report on “Exports of All Forms of Coffee by Exporting Countries to All Destinations”, released in February 2022. In the 12 months ending in January 2022, exports of Arabica saw a slight decrease to 80.67 million bags compared to 81.17 million bags the previous year, whereas the data for Robusta showed a stability in the amount of exports with 48.31 million bags compared to 48.30 million bags.

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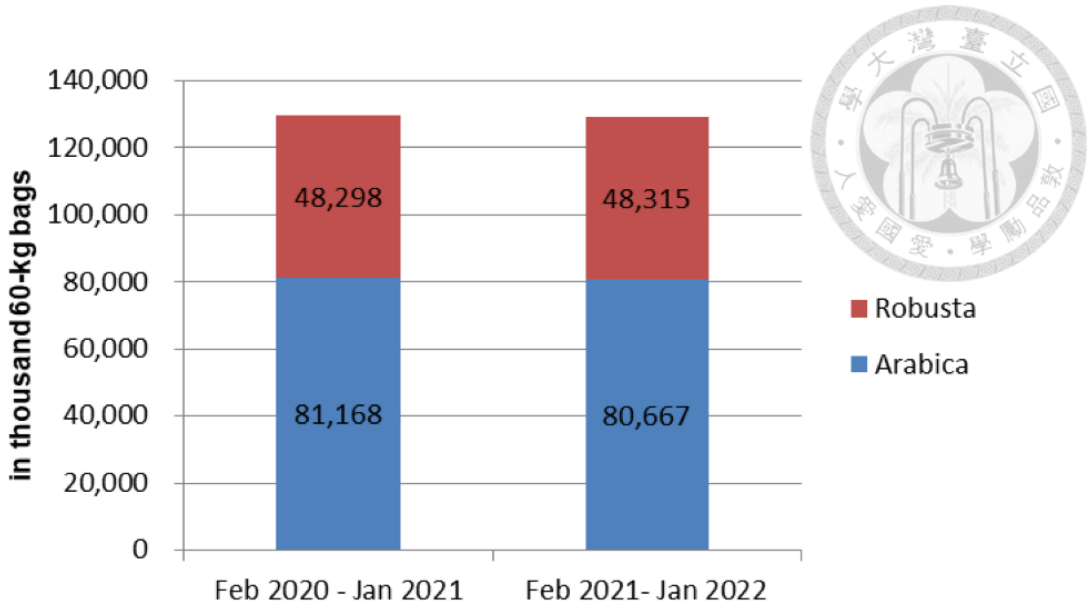

Figure 2.2 Exports of All Forms of Coffee by Varieties, 2020-2022
Unit: in thousand 60-kg bags
Source: ICO (2022a)

Figure 2.3, extracted from the ICO's Coffee Development Report of 2021, indicates the exports of Arabica and Robusta green beans to all destinations during the coffee year 2021/22. For coffee year 2021/22, in terms of exports of Arabica/ Robusta green beans to all destinations, most regions had a greater quantity of Arabica than Robusta. Africa, on the other hand, was an exception with a higher amount of Robusta green beans than Arabica, standing out from the other regions.

Europe is at the top for both amounts of Arabica and Robusta coffee, with approximately 27 million 60-kg bags and 11 million 60-kg bags respectively. North America accounted for the second-largest volume of Arabica coffee, with almost 20 million 60-kg bags. The second-largest volume of Robusta coffee was in Asia and Oceania. It is noteworthy that in North America, the amount of Arabica coffee is 9.5 times higher than that of Robusta coffee, a much higher ratio than those seen in Europe (2.4 times) and Asia (2.8 times).

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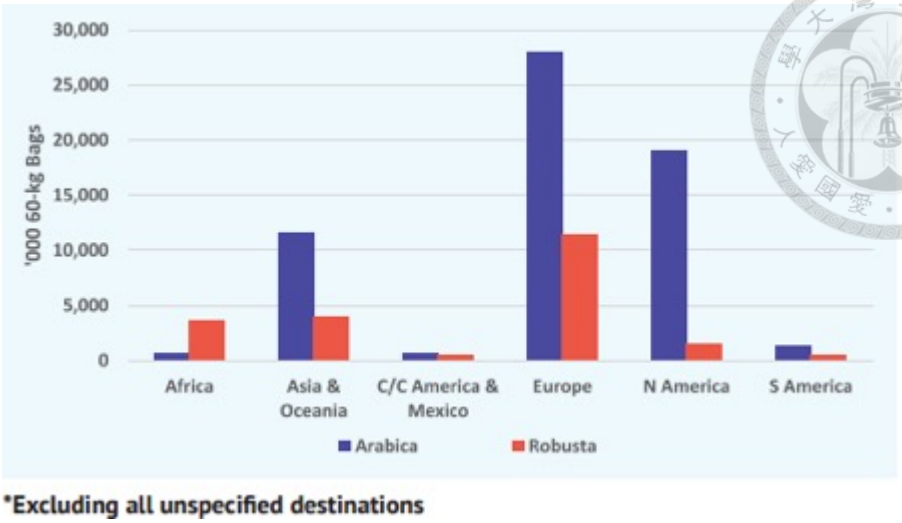

Figure 2.3 Exports of Arabica/Robusta Green Beans in 2021/22
Unit: in thousand 60-kg bags
Source: ICO (2021a)

The COVID-19 pandemic has had a significant impact on the global economy, including the coffee sector. To summarize and analyze this impact, in mid-2020, the ICO released a Coffee Break Series consisting of three research articles. In terms of coffee consumption, ICO (2020a) suggests that there is a relationship between GDP growth and coffee consumption growth. During the pandemic, the decline in GDP growth has led to a decrease in coffee consumption. Specifically, every one-point decrease in GDP growth is accompanied by a decrease of 0.95% points or 1.6 million bags of coffee consumption.

The main reason for this impact is the policies applied during the pandemic, such as social distancing, lockdowns (full and partial), office and factory closures, and working from home. Since offices, restaurants, canteens and coffee shops were closed or had restricted entry, out-of-home coffee consumption was significantly reduced.

Although the decrease in out-of-home coffee consumption may have caused a temporary increase in coffee purchases at retail stores and supermarkets due to people stockpiling after being unable to go out for a long time, this does not effectively boost coffee demand in the long term. On the contrary, it may even lead to a reduction in

doi:10.6342/NTU202302451

demand in the near future, since people need to consume all the goods they had previously stored at home. In addition, the decline in household income is also a contributing factor to the decrease in coffee consumption demand.

2.2 The Production

According to the ICO (2021c), from 2017 to 2020, the world's annual coffee production averaged approximately 169.16 million 60-kg bags, with Arabica and Robusta accounting for around 58% and 42%, respectively. In terms of coffee production, South America is the world's largest producing region, with Brazil as the leading producer not only in the region but also globally. Colombia follows as the second-largest producer in the region and third globally. On the other hand, Asia and Oceania are the world's second-largest coffee producing regions, with Vietnam as the leading producer in the region and the world's second-largest coffee producer. Indonesia follows as the second-largest producer in the region and fourth globally. Regarding coffee varieties, Brazil is the largest producer of Arabica coffee, while Vietnam leads in the production of Robusta.

Table 2.2 displays the production numbers of exporting countries of the ICO for the past five years of coffee seasons (from 2017/18 to 2020/21) measured in units of 60-kilogram bags.

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Table 2.2 World Coffee Production by Coffee Varieties, Regions and Countries, 2017/18 - 2020/21

Coffee year commencing	2017	2018	2019	2020	% change 2019-20
TOTAL	**167 868**	**170 322**	**168 833**	**169 634**	**0.5%**
Arabicas	98 187	99 919	96 930	99 423	2.6%
Colombian Milds	*15 148*	*15 494*	*15 515*	*15 641*	*0.8%*
Other Milds	*31 793*	*31 639*	*29 228*	*29 298*	*0.2%*
Brazilian Naturals	*51 247*	*52 785*	*52 187*	*54 484*	*4.4%*
Robustas	69 680	70 403	71 903	70 211	-2.4%
Africa	***17 461***	***18 579***	***18 681***	***18 539***	***-0.8%***
Burundi	203	221	268	257	-4.0%
Cameroon	370	310	268	280	4.4%
Côte d'Ivoire	1 624	2 175	1 929	1 775	-8.0%
Democratic Republic of Congo	382	397	391	375	-4.0%
Ethiopia	7 347	7 511	7 343	7 375	0.4%
Guinea	229	153	178	150	-15.9%
Kenya	790	930	844	775	-8.1%
Madagascar	398	380	380	366	-3.8%
Rwanda	293	372	353	380	7.4%
Tanzania	862	1 125	921	913	-0.9%
Togo	115	54	41	40	-1.5%
Uganda	4 597	4 704	5 509	5 620	2.0%
Others	253	246	255	234	-8.1%
Asia & Oceania	***52 203***	***48 173***	***49 478***	***48 954***	***-1.1%***
India	5 813	5 325	4 988	5 700	14.3%
Indonesia	10 544	10 071	11 600	11 950	3.0%
Lao People's Democratic Republic	533	647	622	600	-3.5%
Papua New Guinea	783	886	733	683	-6.7%
Philippines	204	226	295	256	-13.4%
Thailand	638	482	517	500	-3.2%
Vietnam	33 432	30 283	30 487	29 000	-4.9%
Yemen	132	86	91	100	9.4%
Others	123	167	145	165	13.4%
Mexico & Central America	***21 752***	***21 636***	***19 557***	***19 544***	***-0.1%***
Costa Rica	1 561	1 427	1 472	1 450	-1.5%
Cuba	116	128	129	126	-2.2%
Dominican Republic	416	425	396	375	-5.3%
El Salvador	760	761	661	600	-9.2%
Guatemala	3 734	4 007	3 606	3 750	4.0%
Haiti	343	347	346	345	-0.3%
Honduras	7 560	7 153	5 931	6 100	2.8%
Mexico	4 485	4 351	3 985	4 000	0.4%
Nicaragua	2 642	2 879	2 882	2 650	-8.1%
Panama	105	128	114	115	0.5%
Others	31	31	35	32	-7.4%
South America	***76 453***	***81 934***	***81 118***	***82 596***	***1.8%***
Bolivia	84	82	80	74	-6.8%
Brazil	57 077	62 709	61 987	63 400	2.3%
Colombia	13 824	13 866	14 100	14 300	1.4%
Ecuador	592	512	544	497	-8.6%
Peru	4 275	4 157	3 827	3 794	-0.9%
Venezuela	572	578	550	500	-9.1%
Others	30	30	30	30	1.7%

Totals may not add up due to rounding.

Unit: in thousand 60-kg bags
Source: ICO (2021c)

Figure 2.4 presents the production of coffee by regions in 2020/21, measured in thousand 60-kg bags, along with the percentage shares, based on data extracted from the ICO's World Coffee Production report in May 2021. In 2020/21, the global coffee

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production reached a record high of 169.34 million 60-kilogram bags (equivalent to 10.16 million tonnes). The largest coffee-producing region in the world is South America, which accounted for 48.69% of the total production, with 82.60 million bags. Following closely is Asia & Oceania, producing 48.95 million bags, which represents 28.86% of the global coffee production. The remaining regions, namely Mexico & Central America and Africa, produced 11.52% and 10.93%, respectively.

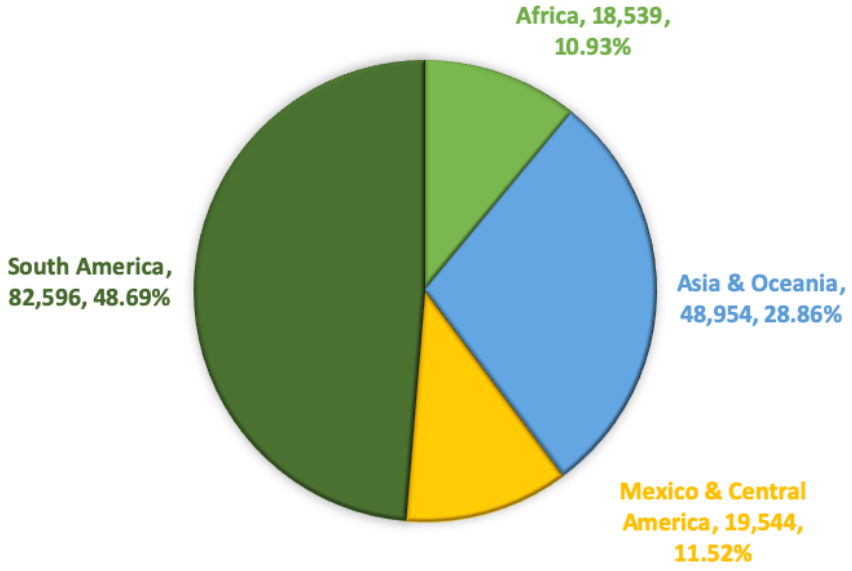

Figure 2.4 Production of Coffee by Regions in 2020/21
Unit: in thousand 60kg-bags & percentage share
Source: ICO (2021c)

In terms of producing countries, Brazil is the world's largest coffee producer with 63.40 million 60-kg bags, followed by Vietnam (29 million 60-kg bags) in second, Colombia (14.3 million 60-kg bags) in third and Indonesia in fourth (11.95 million 60-kg bags). However, there has been a slight change in this result recently. According to the latest statistics from the FAO (2023a), in 2021, Indonesia surpassed Colombia in coffee production and rose to the third position globally, after Vietnam.

doi:10.6342/NTU202302451

Arabica and Robusta are the two main coffee varieties that have come to dominate the market, with global production in coffee year 2020/21 consisting of about 58.6% of Arabica and 41.4% of Robusta (ICO, 2021c).

Although several factors influence the quality of coffee, Arabica beans have traditionally been deemed superior due to their flatter and more elongated shape. When brewed, this shape produces a milder, more flavorful, and aromatic cup compared to Robusta. Robusta coffee contains twice as much caffeine as Arabica, giving it a stronger and more bitter flavor that works well in espresso blends and ready-to-drink beverages. Arabica, on the other hand, is more sensitive to high temperatures and pests, and thus must be grown in subtropical climates at altitudes of 50 to 1500 m above sea level (Davis et al., 2006). It thrives in shaded environments and is often grown in agroforestry systems. In contrast, Robusta is more tolerant of temperature changes and can be grown in full sun at lower altitudes from sea level to 800m (Slipchenko, 2021), resulting in higher yields. Additionally, Robusta is generally more resistant to diseases (Petruzzello, 2021). The export price also partly reflects the value and quality of Robusta coffee compared to Arabica coffee in the market, when the export price of Robusta is only half of the price of Arabica (ICO, 2022b). Table 2.3 summarizes the key differences between Arabica and Robusta Coffee conducted by this study.

Table 2.3 Key Differences between Arabica and Robusta Coffee

	Arabica	**Robusta**
Origin	Ethiopia	Congo
Appearance	Large and flat with a slightly curved shape	Small and rounded in shape.
Time to blossom	7-9 months	9-11 months
Taste	Sweeter & soft with notes of fruit, chocolate, nuts, and	Stronger, harsher taste with a slightly bitter

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	flowers	
Caffeine	0.8-1.5%	twice as much caffeine as Arabica
Altitude	50 to 1500 m above sea level (dry humid forests or gallery forests)	200 – 800 meters
Market share	approximately 59%	approximately 41%
Usage	Gourmet or specialty coffee	Commercial or instant coffee blends.

The Coffee World Markets and Trade Report, released in December, 2022 by Foreign Agricultural Service ([FAS], 2022c), unveils global coffee production by varieties from 2017/18 to 2021/22, depicted Figure 2.5. As shown in Figure 2.5, the global production of Arabica averaged 97.35 million bags per year, with Robusta averaging at 74.61 million bags from 2017/18 to 2021/22. Brazil held the top spot as the largest Arabica producer worldwide, with an average annual yield of 36.95 million bags (accounting for 38.0% of the global production), whereas Vietnam was the leading Robusta producer, averaging 29.52 million bags annually (contributing to 39.6% of the worldwide production).

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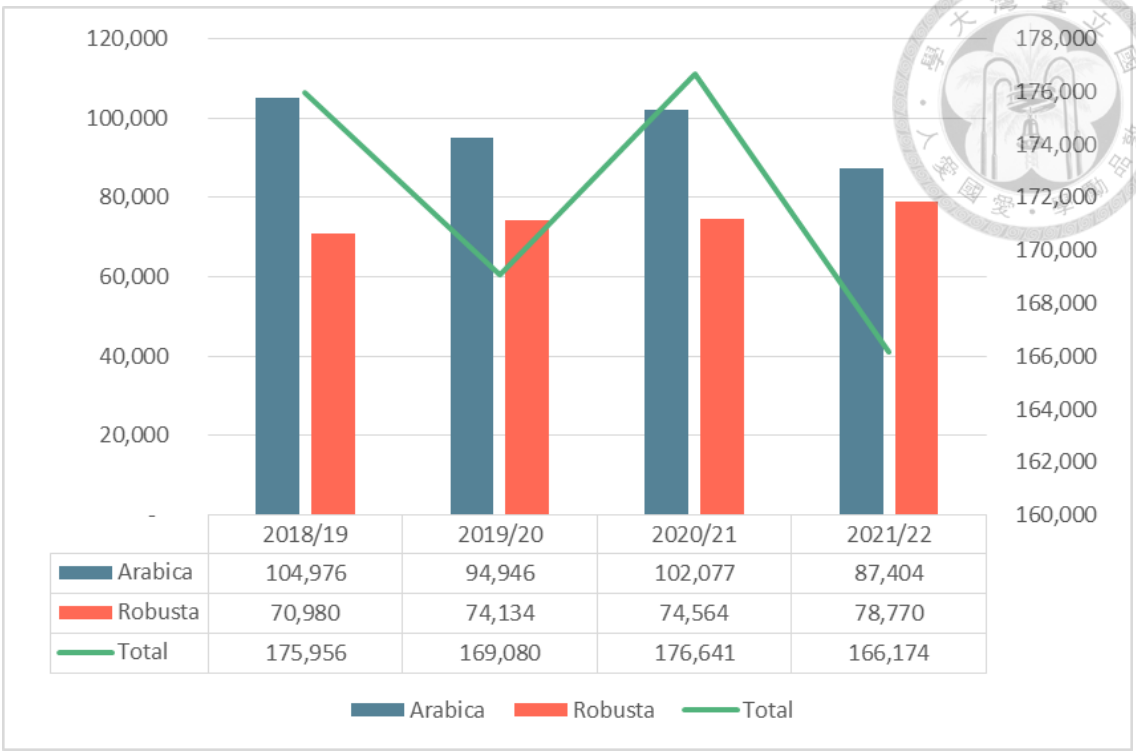

	2018/19	2019/20	2020/21	2021/22
Arabica	104,976	94,946	102,077	87,404
Robusta	70,980	74,134	74,564	78,770
Total	175,956	169,080	176,641	166,174

Figure 2.5 Global Coffee Production by Varieties, 2018/19 - 2021/22
Unit: in thousand 60-kg bags
Source: FAS (2022c)

The coffee industry has faced significant challenges and increased volatility due to the COVID-19 pandemic. Specifically, coffee production has been severely impacted by disruptions to the supply chain, including logistical systems and international trade. Additionally, labor shortages resulting from local lockdowns and safety measures have further hindered production (ICO, 2020b).

Small-scale farmers make up the majority of global coffee producers, comprising 73% of coffee farmers worldwide. Meanwhile, the remaining 27% of coffee production comes from large coffee estates (Panhuysen & Pierrot, 2020). Since the former possesses fewer resources and less capital compared to the latter, it is deemed to be more vulnerable. As a result, they have been the most impacted by the COVID-19 pandemic in the global coffee industry, affecting the everyday lives of people worldwide. Additionally, coffee farmers around the world are struggling to maintain profitability due to rising input costs.

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Unfortunately, coffee prices have been consistently declining since 2016, with a 30% drop below the average of the past decade. This has caused farm incomes to decrease, putting their livelihoods at greater risk. Furthermore, the lack of investment in modernizing farms and adapting to climate change's impact poses a severe threat to the sustainability of the sector and future coffee supply (ICO, 2020a).

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Chapter III Overview of the Vietnamese Coffee Industry

By examining the interplay between natural advantages, historical context, and modern production practices, this chapter provides a comprehensive overview of the Vietnamese coffee industry. Firstly, the unique natural conditions in Vietnam, characterized by diverse climate, fertile soil and optimal altitude, have made Vietnam a world leader in coffee production. Secondly, we delve into the historical journey of the Vietnamese coffee industry, tracing its development and transformation from colonial times to the present day. Understanding this historical context allows us to capture the development of the industry and its profound socio-economic impact on Vietnam. Lastly, we analyze the current manufacturing landscape, considering factors such as manufacturing practices and the position of the industry in the global market. In addition, this chapter also introduces Vietnamese coffee culture and provides a brief overview of the Trung Nguyen coffee case.

3.1 Natural Conditions

Vietnam is located in Southeast Asia, bordered by the South China Sea to the east, Cambodia and Laos to the west, and China to the north. It sits at geographic coordinates $16^0$10'N, 107^0 50'E on the eastern side of the Indochina Peninsula in the tropical belt of the Northern Hemisphere. Despite its tropical location, Vietnam's climate is diverse with differences in temperature, humidity, and rainfall. According to the Köppen climate classification, the country is divided into three distinct zones: subtropical humid climate in the North and North Central regions, tropical monsoon climate in the Central and South Central regions, and tropical savanna in the Southernmost Central and Southern regions. In addition, the climate can vary significantly from low to high altitudes due to the influence of monsoons and complicated topography. Vietnam's low-latitude regions are

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directly impacted by monsoons, leading to significant changes in climate throughout the year, between years, and across different regions, depending on altitude and topography.

Seasonal divisions are more marked in the North than in the South. The Northern half of Vietnam experiences four seasons: spring, summer, autumn, and winter, while the Southern half experiences two seasons: a rainy season and a dry season. Humidity is high throughout the year, with an average of 84%. Annual rainfall ranges from 1,200 mm to 3,000mm, and temperatures can vary between 5^{o}C in December and January to 37^{o}C in April and May.

3.2 History of Coffee Industry

During the late eighteenth to early nineteenth centuries, coffee production in certain Latin American, Asian, and African nations was significantly linked to the economies of the colonial powers of that era. For instance, in Asia, the cultivation of Yemeni coffee was closely associated with the domination of the Ottoman Empire and subsequently extended to the Dutch colony of Java (Indonesia) and the French colony of Vietnam (Clarence-Smith & Topik, 2003).

Coffee cultivation was introduced to Vietnam by French missionaries in 1857. They first brought Arabica to the country, which was then tested in Catholic churches located in northern provinces such as Ninh Binh, Thanh Hoa, Nghe An, and Ha Tinh. Coffee cultivation eventually spread to several central areas and later to southern provinces, including the Central Highlands and the Southeast. In 1908, the French introduced two other varieties of coffee to Vietnam - Robusta and Exelsa. They also brought various other varieties from the Congo to the Central Highlands and discovered that this region was the most suitable place to grow coffee in the country. Over time, coffee cultivation in the area has steadily increased, making it the largest coffee growing region in Vietnam in terms of both scale and reputation, not only in Vietnam but also throughout the world. This area

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is steeped in legends about coffee, such as the renowned Buon Ma Thuot brand. The region is known for its quality coffee, distinguished by its sweet aroma and strong flavor, thanks to the unique characteristics of the soil. Several geographic indications of the coffee regions, including Buon Ma Thuot, Cau Dat-Da Lat, and Son La, are widely recognized for their exceptional coffee (ICO, 2019).

1. The turning point of the coffee industry: from 1986 to 2000

In 1986, Vietnam achieved a significant milestone in its economy with the implementation of economic reforms known as *"Đổi Mới"*. These reforms continued throughout the early 1990s, successfully transitioning Vietnam from a centrally planned economy to a market-based system. After the economic reforms, the coffee industry began to involve the private sector. The transition from a communal farm system with state quotas and low productivity to a more liberalized market was a gradual process. This shift granted farmers ownership rights over their land and the ability to sell their products. As long as farmers were no longer limited by production quotas, they could produce more efficiently and benefit from a more open and free market.

Table 3.1 presents a variety of information regarding the coffee industry in Vietnam, including coffee production and exports, from 1979 to 2006. The table was extracted from a comprehensive study on Vietnam's Robusta coffee conducted by Marsh (2007), which is part of the broader research conducted by FAO in 2007.

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Table 3.1 Vietnam Coffee Production and Exports Data, 1979/80 - 2005/06

Year	Total area (ha)	Harvested area (ha)	Average Yield (Tons/ ha)	Total Production (Tons)	Exports (Tons)	Export Value US$ (Mill)	Average Export Price US$/Ton
1979/80	22 500	10 800	0.78	8 400	n/a	n/a	n/a
1980/81	19 100	9 500	0.49	4 630	4 600	n/a	n/a
1981/82	19 800	9 100	0.51	4 600	4 600	n/a	n/a
1982/83	26 500	9 100	0.44	4 000	3 400	n/a	n/a
1983/84	29 500	19 100	0.65	12 340	9 400	n/a	n/a
1984/85	44 600	19 800	1.03	20 400	23 500	n/a	n/a
1985/86	65 600	26 500	0.84	22 120	26 000	n/a	n/a
1986/87	92 300	29 400	1.15	33 820	30 000	n/a	n/a
1987/88	119 900	44 700	1.07	48 000	45 000	n/a	n/a
1988/89	123 100	65 600	0.95	62 100	56 900	n/a	n/a
1989/90	135 500	92 300	1	92 000	68 700	59.2	861
1990/91	135 000	111 900	1.06	119 000	76 800	65.4	852
1991/92	135 000	123 000	1.11	136 000	87 500	63.7	727
1992/93	140 000	135 500	1.04	140 500	124 300	113	909
1993/94	155 500	135 000	1.34	181 200	163 200	320	1 960
1994/95	205 000	135 000	1.81	245 000	222 900	533.5	2 393
1995/96	228 500	140 000	2	280 000	248 500	366.2	1 473
1996/97	385 000	155 500	2.57	400 000	375 600	479.1	1 275
1997/98	485 000	205 000	2	410 000	387 200	600.7	1 551
1998/99	529 000	285 000	1.75	500 000	464 400	563.4	1 213
1999/2000	533 000	385 000	1.87	720 000	705 300	464.3	658
2000/01	535 000	485 000	1.86	900 000	844 452	338.1	400
2001/02	500 000	450 000	2	750 000	702 017	300.3	428
2002/03	500 000	420 000	1.71	720 000	693 863	446.6	644
2003/04	506 500	420 000	2.1	900 000	870 000	567	649
2004/05	500 000	430 000	1.95	840 000	835 000	614	795
2005/06	n/a	n/a	n/a	n/a	700 000*	n/a	1 100**

Source: Marsh (2007)

It can be observed from Table 3.1 that, overall, the harvested area, total production, and exports of coffee in Vietnam experienced a dramatic increase during the period from 1986 to 2001. Specifically, in the coffee year 1986/87, the harvested area of coffee was only around 30,000 hectares. However, it wasn't until the early 1990s that production saw a significant boost, with the harvested area reaching over 110,000 hectares in the coffee year 1990/91. Over the course of the next decade, the area dedicated to coffee cultivation continued to expand significantly, reaching 485,000 hectares in the coffee year 2000/01,

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which corresponded to an increase in average yield from 1.06 tons/hectare to 1.86 tons/hectare.

During this phase, total coffee production in Vietnam surged from 33,820 tons in the coffee year 1986/87 to 900,000 tons in the coffee year 2000/01. This growth also led to a substantial increase in the country's coffee exports, rising from 30,000 tons to 844,452 tons, making Vietnam the world's second-largest coffee producer after Brazil (Marsh, 2007).

2. The phase of significant and stable development : from 2000 to 2020

Figure 3.1 displays the data on Vietnam's coffee output from 2000 to 2020, extracted from the Socio-economic data of ASEAN member states in the period of 2000-2020 released in 2023 by GSO.

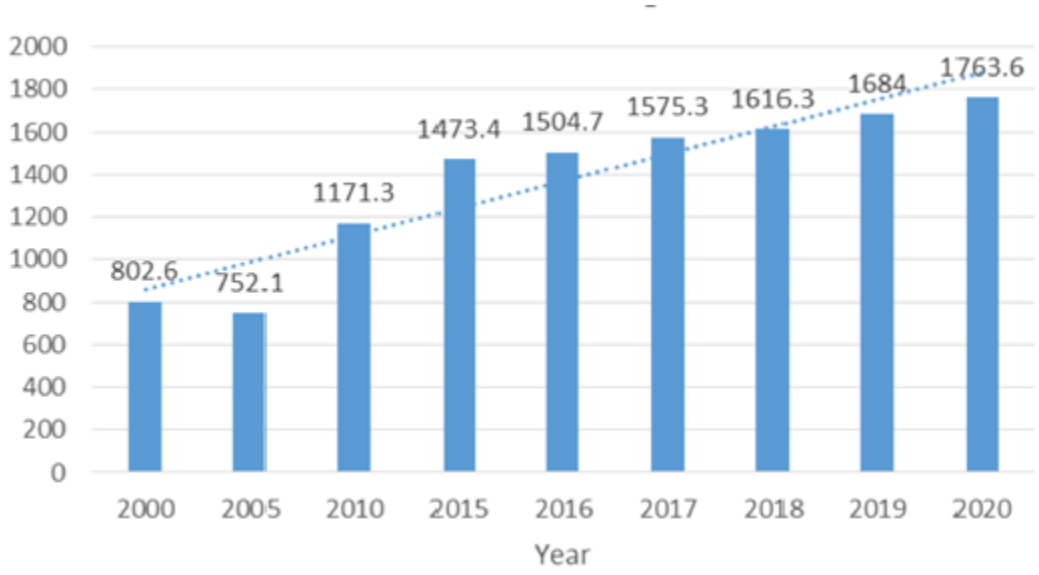

Figure 3.1 Vietnam's Coffee Production, 2000-2020
Unit: in thousand tons
Source: GSO (2023a)

Over the course of two decades, from 2000 to 2020, Vietnam's coffee industry experienced an extraordinary period of growth and stability. With an exceptional increase in coffee output, from 802.6 thousand tons to an impressive 1,763.6 thousand tons, the industry demonstrated its ability to adapt to market changes and capitalize on favorable

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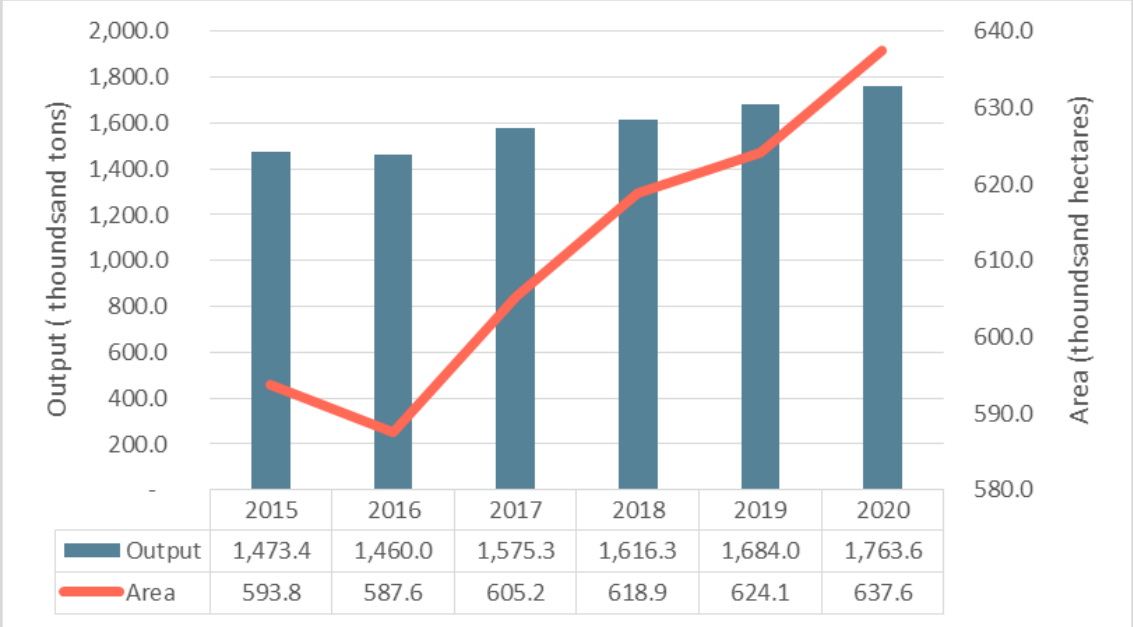
geographic conditions. This expansion was propelled by various factors, including unwavering government support, widespread adoption of sustainable farming practices, and successful branding strategies that established Vietnam's reputation as a producer of high-quality coffee. As a result, the industry effectively met the escalating domestic and international demand for Vietnamese coffee. Vietnam emerged as a major player in the global coffee market, making significant contributions to the country's economy and solidifying its position as a renowned and respected coffee producer on the world stage.

Additionally, Figure 3.2, compiled from the Statistical summary book of Vietnam released in 2020 and conducted by GSO, presents Vietnam's coffee area and output from 2015 to 2020. These two figures will be utilized in this study to analyze the significant and stable development phase of the Vietnamese coffee industry from 2000 to 2020.



	2015	2016	2017	2018	2019	2020
Output	1,473.4	1,460.0	1,575.3	1,616.3	1,684.0	1,763.6
Area	593.8	587.6	605.2	618.9	624.1	637.6

Figure 3.2 Vietnam's Coffee Area and Output, 2015-2020
Unit: Output: in thousand tons; Area: in thousand hectares
Source: GSO (2020)

From 2015 to 2020, the Vietnamese coffee industry continued its steady growth trajectory. The expansion of coffee-growing areas from 593.8 thousand hectares in 2015 to 637.6 thousand hectares in 2020 reflects the industry's efforts to meet the increasing

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demand for Vietnamese coffee. Additionally, coffee output exhibited a consistent upward trend, rising from 1,473.4 thousand tons in 2015 to 1,763.6 thousand tons in 2020. This growth indicates the industry's commitment to improving productivity and efficiency in coffee production. These positive trends in both coffee area and output further strengthen Vietnam's position as a significant contributor to the global coffee market, reinforcing its reputation as a leading coffee producer.

However, the industry must remain attentive to challenges such as climate change, market fluctuations, and the need for sustainable practices to ensure continued growth and success. By addressing these challenges and maintaining a focus on sustainability, innovation, and quality, Vietnam's coffee industry can sustain its upward trajectory and further solidify its position in the global coffee market.

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3.3 Production

Coffee is a crop that grows in plantations and is adapted to various elevations, depending on the coffee variety. Arabica coffee in the wild, it is found mainly in the understory of humid, evergreen forests (but sometimes in seasonally dry humid forests or gallery forests) thrives at elevations between 50 to 1500 m above sea level (Davis, 2006) at the equator, while Robusta coffee, which originated in central Africa, is best suited to hot and humid forests at lower elevations from between 200 – 800 meters (Slipchenko, 2021). Both varieties require well-distributed annual rainfall, a dry season of no more than five months, and an annual temperature between 15 and 30°C. Arabica grows best in temperatures ranging from 18 to 22°C, while Robusta prefers a warmer climate with optimum temperatures between 22 and 30°C. They can grow in shade and have similar growth requirements to forest trees, making them well-suited for agroforestry ecosystems. The ideal soil for coffee should be permeable, not too alkaline or too acidic, have good depth, and be well-drained and well-aerated (Pohlan & Janssens).

Vietnam boasts a tropical climate with distinct rainy and dry seasons, making it an ideal location for growing coffee. During the rainy season, coffee trees have ample access to water, while the dry season promotes the ripening of coffee cherries. Moreover, Vietnam's proximity to the equator ensures plenty of sunlight throughout the year, which is crucial for coffee tree growth. The soil in Vietnam's coffee-growing regions is generally slightly acidic, which is highly suitable for coffee cultivation. For example, the main coffee-growing region, the Central Highlands, is covered by basalt soil rich in organic matter, minerals, and other essential nutrients necessary for producing high-quality coffee beans. Moreover, the soil in this region tends to be well-drained, which is essential for preventing waterlogging and root rot. Another factor that makes Vietnam's soil suitable for coffee is the country's varied topography. The mountainous regions where coffee is

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grown in Vietnam are characterized by steep slopes and high elevations. This topography provides ideal conditions for coffee cultivation, as it promotes good drainage and allows for adequate air circulation around the coffee trees (ICO, 2019).

Overall, the Central Highlands (as known as the Western Highlands or *"Tây Nguyên"* in Vietnamese) is a diverse and significant region in Vietnam, offering a unique blend of natural beauty, rich cultural heritage, and agricultural importance. The region accounts for approximately 16% of the country's arable land and is home to around 22% of the country's total forested land. It is a vast plateau laid on a series of contiguous plateaus located in the South Central region of the country, covering an area of approximately 51,800 square kilometers. This region is characterized by rugged mountain peaks, extensive forests, fertile soil composed of basalt, and a tropical monsoon climate (ICO, 2019).

Table 3.2 below presents the areas of coffee cultivation from 2013 to 2017, utilizing data derived from the document of "Country Coffee Profile: Vietnam," released by the ICO in 2019. From Table 3.2, it is evident that due to its favorable natural, the Central Highlands has become Vietnam's primary coffee-producing region, accounting for an average of 89% of the country's coffee-growing area from 2013 to 2017. Robusta coffee is mainly grown in this region, particularly in five key provinces: Dak Lak, Lam Dong, Dak Nong, Gia Lai, and Kon Tum. Dak Lak province accounts for approximately 31% of the total coffee farming area in Vietnam, while Lam Dong Province accounts for around 19% of the total coffee cultivation area. Together, these two provinces account for approximately 50% of the country's total coffee cultivation area (ICO, 2019).

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Table 3.2 Areas of Coffee Cultivation, 2013 - 2017

Provinces	2013	2014	2015	2016*	2017*
Northwestern Mountain Region	**13,800**	**15,300**	**15,900**	**17,500**	**17,500**
Son La	9,900	11,200	11,700	12,000	12,000
Dien Bien	3,800	4,000	4,100	4,500	4,500
Central Coastal Region	**8,800**	**9,200**	**9,200**	**10,000**	**10,000**
Quang Tri	4,700	4,700	4,800	5,100	5,100
Phu Yen	1,400	1,400	1,400	1,400	1,400
Binh Thuan	1,800	1,800	1,800	1,800	1,800
Central Highlands	**559,400**	**573,000**	**577,700**	**583,000**	**583,000**
Dak Lak	199,900	203,700	204,400	209,000	190,000
Lam Dong	151,500	157,300	158,800	154,000	162,000
Dak Nong	116,900	118,800	119,500	126,000	135,000
Gia Lai	77,700	79,100	79,700	80,000	82,500
Kon Tum	13,400	14,100	15,300	14,000	13,500
Southeastern Region	**42,100**	**43,800**	**42,400**	**51,700**	**51,700**
Binh Phuoc	15,200	15,800	15,900	16,000	16,000
Dong Nai	19,400	20,400	19,700	21,000	21,000
Ba Ria - Vung Tau	6,600	6,700	6,500	7,000	7,000
Total	**623,900**	**641,300**	**645,200**	**662,200**	**662,200**

** Estimate*
Source: MARD of Vietnam

Unit: in hectares
Source: ICO (2019)

As mentioned in the previous parts, Vietnam's coffee industry has its roots in the arrival and cultivation of coffee by French colonialists. After numerous trials and changes, two main varieties of coffee are now grown in Vietnam: Robusta and Arabica. Coffee was cultivated mostly in the Central Highlands, followed by the Southeastern region, the Northwestern Mountain region and the Central Coastal region.

Robusta coffee makes up the largest share of Vietnam's total coffee production. It is predominantly grown in the Central Highlands and Southeastern regions. On the other hand, Arabica coffee is primarily cultivated in the high mountains of the Northern midland and Mountainous region, as well as in the North Central region. A small amount

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of Arabica coffee is also grown in the Central Highlands and Central Coastal regions (ICO, 2019). Figure 3.3 below, also taken from ICO's 2019 documentation, shows agro-ecological regions of coffee cultivation in Vietnam:

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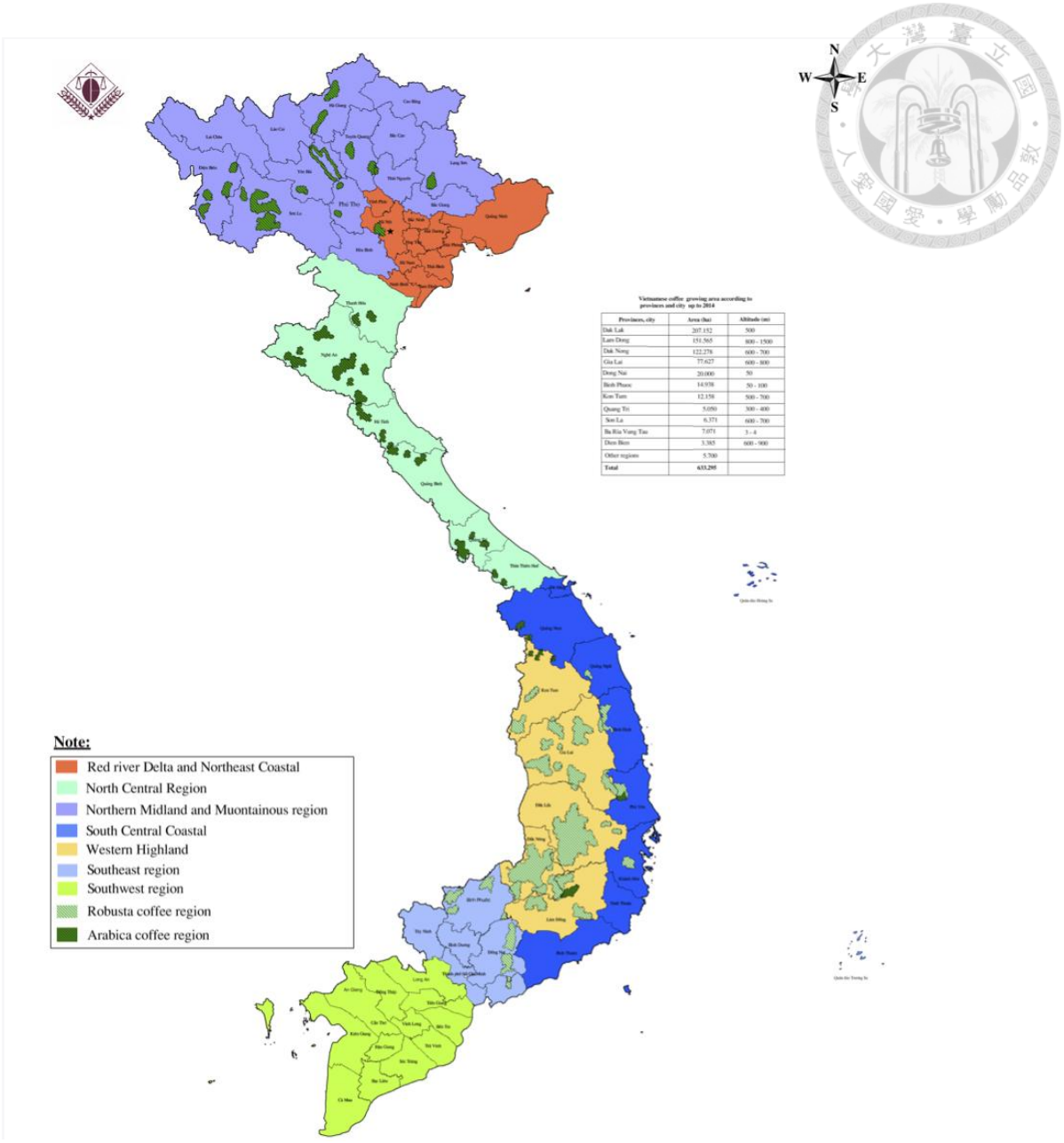

Figure 3.3 Map of Coffee-Producing Areas, 2014
Source: ICO (2019)

Although Vietnam is widely recognized for its Robusta coffee production, Arabica is gradually gaining recognition and becoming an increasingly important part of the country's growing coffee industry. Figure 3.4 below depicts the export volume of Robusta and Arabica coffee from coffee year 2018/19 to 2022/23, based on the data extracted from the report on World Markets and Trade released by FAS in December 2022:

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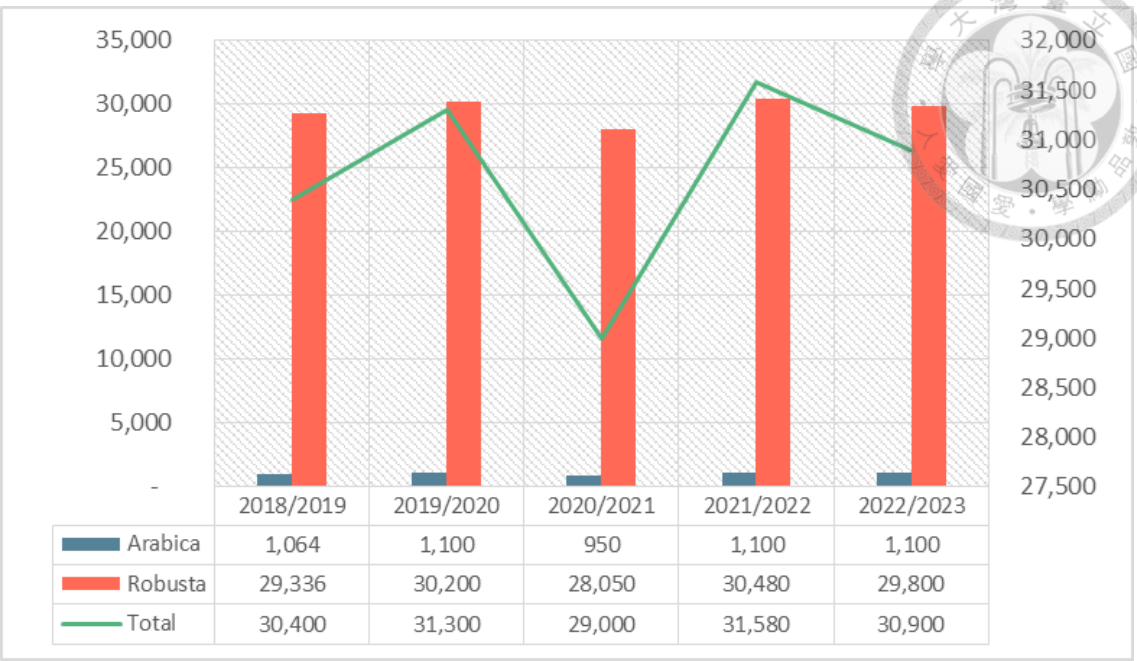

	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023
Arabica	1,064	1,100	950	1,100	1,100
Robusta	29,336	30,200	28,050	30,480	29,800
Total	30,400	31,300	29,000	31,580	30,900

Figure 3.4 Vietnam Coffee Production by Varieties, 2018/19 - 2022/23
Unit: in thousand 60-kg bags
Source: FAS (2022c)

According to data from the Figure 3.4 (FAS, 2022c), generally, Vietnam's total coffee production from coffee year 2018/19 to 2022/23 has averaged approximately 30.63 million 60-kg bags per coffee year. Robusta coffee accounts for approximately 97% of the country's total coffee output volume, which translates to around 29.57 million 60-kg bags per coffee year. Despite the fact that Vietnam's Arabica coffee output is relatively small compared to Robusta, it has remained stable in recent years, typically at around 1.06 million 60-kg bags, which accounts for approximately 3.5% of the country's total coffee production.

It's worth noting that the COVID-19 pandemic had a significant impact on Vietnam's coffee production in 2020, affecting both Arabica and Robusta. Supply chain disruptions, labor shortages, and reduced demand from international buyers led to a decrease in overall coffee production and exports. However, it is expected that Vietnam's coffee industry will recover in the coming years as the global situation stabilizes.

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Overall, Vietnam's Robusta is a popular and significant variety of coffee bean that plays a vital role in the coffee industry. Despite Arabica being a more expensive coffee variety, Vietnam's coffee industry has thrived by focusing on the cultivation of Robusta. Figure 3.5, compiled from the data reported by ICO in 2019, shows that Robusta varieties are predominant and account for 92.9% of the entire coffee plantation area, while Arabica varieties have a significantly smaller percentage. Vietnam was the world's largest producer and exporter of Robusta coffee green beans by the late 1990s (ICO, 2019).

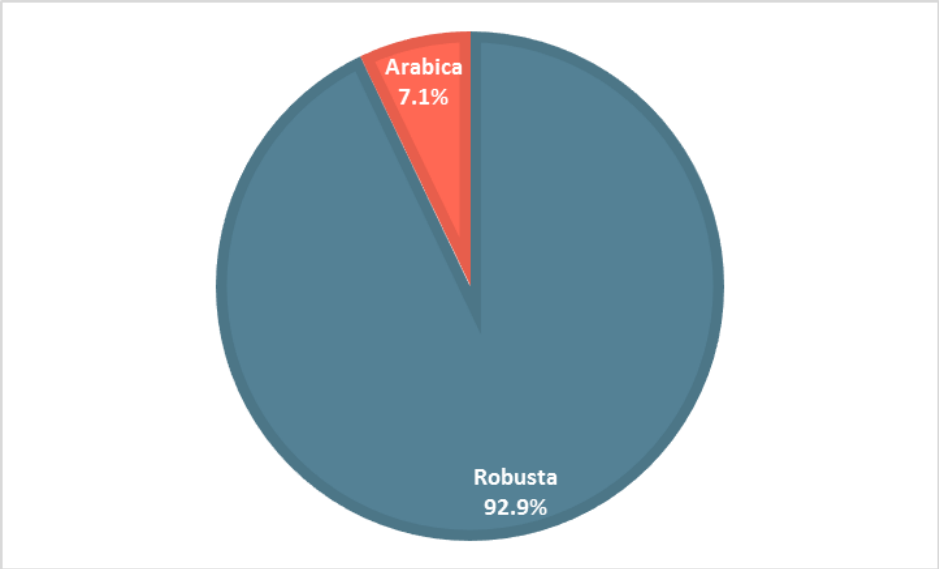

Figure 3.5 Coffee Growing Area in Vietnam by Varieties
Unit: in percentage
Source: ICO (2019)

Robusta coffee beans are known for their strong and bitter taste and are often used in coffee blends to add complexity and depth to the flavor. Additionally, Robusta beans have a higher caffeine content compared to Arabica beans, which is why they are often used in espresso blends and instant coffee products (Marsh, 2007; Petruzzello, 2021). Although traditionally viewed as less valuable than Arabica beans, Robusta beans from Vietnam have gained a strong reputation for their unique flavor profile - described as earthy, woody, and slightly nutty. This shift can be attributed to the development of new Robusta varieties by the Western Highlands Agriculture & Forestry Science Institute (WASI), which have

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earned a total score of 70 or higher and meet the high-quality standards set by the Specialty Coffee Association (SCA) (ICO, 2019).

According to the ICO (2019), the majority of Robusta varieties grown in Vietnam have their origins in Java island, Indonesia. There are currently two main varieties of Robusta. The new Robusta variety, developed by the WASI through grafting multiple Robusta varieties, yields over 3.5 tons per hectare and boasts high resistance to pests and diseases. Moreover, it is adaptable to changing climatic conditions. In contrast, the original Robusta variety with small seeds produces high-quality coffee but with low yields. It has weak disease resistance and is not suitable for cultivation. As a result, the new Robusta variety surpasses the original one in terms of its yield and resilience to pests and diseases.

The majority of Robusta production takes place in the Central Highlands provinces, namely Dak Lak, Lam Dong, Dak Nong, and Gia Lai, which have a combined area of 530,000 hectares, with an additional 70,000 hectares in other provinces (ICO, 2019).

In brief, Vietnam's success in the coffee industry can be attributed to its emphasis on Robusta coffee varieties. Despite the fact that Robusta is less expensive than its premium equivalent, Arabica, it is simpler to cultivate because of its reduced production costs compared to Arabica, as well as its ability to withstand many of the pests and illnesses that afflict Arabica. Furthermore, Robusta plant health can be influenced by altering the quantity of fertilizer and water inputs to increase yield, without affecting plant health, while Arabica plant health can be seriously harmed by drastic modifications in inputs.

Vietnam also produces Arabica coffee beans, although its production is much smaller compared to Robusta. Arabica production in Vietnam is a relatively small segment of the country's overall coffee production, accounting for only 3% to 4% of total output (FAS, 2022c). Arabica beans have a milder and more nuanced flavor compared to Robusta and

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are often considered to be of higher quality. They are known for their sweetness, acidity, and floral notes, making them popular in specialty coffee (Petruzzello, 2021).

In Vietnam, Arabica coffee is mainly grown in remote mountainous areas with elevations above 1,000 meters, which often have ethnic minority populations. The cool climate and high elevation create ideal conditions for growing high-quality Arabica coffee. Some of the main regions for Arabica production in Vietnam include Son La (Northwestern Mountain), Nghe An, Quang Tri (Central Coastal) and Lam Dong (Central Highlands) and some other central regions that are suitable for Arabica varieties (ICO, 2019).

The majority of Arabica coffee cultivated in the country is of the Catimor variety. Catimor is a hybrid of two different coffee varieties, namely Timor (Robusta) and Caturra (Arabica), and it is known for its high productivity and resistance to pests and diseases. (ICO, 2019). Nevertheless, Arabica coffee trees in Vietnam still require a lot of care and attention to thrive. Farmers must carefully manage soil fertility, water supply, pests, and diseases. However, the inaccessibility of remote mountainous regions, as well as challenges with transportation, warehousing, and processing, have limited the potential for expanding Arabica cultivation in Vietnam. The remote locations of Arabica farms make it difficult to transport crops to markets, increasing costs and limiting profitability for growers. Additionally, the lack of infrastructure for coffee processing and storage in these areas can make it difficult to maintain the quality of the beans during the post-harvest process. Despite the potential for high-quality coffee to be grown in these regions, these challenges pose significant obstacles to the expansion of Arabica production in Vietnam.

To expand Arabica production, Vietnamese researchers have spent the last two decades developing new Arabica varieties ideally suited to the local soil and climate,

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rather than relying on the Caltimor variety. These strains were created through hybridization and grafting, resulting in plants that are more productive and resistant to pests and diseases. Today, these new Arabica varieties are already being grown and harvested, improving the quality of coffee production in Vietnam. Some of these varieties have even been rated as specialty coffee, scoring over 80 points on the SCA quality scale, known for their unique flavor influenced by the country's geography, climate, and cultural traditions. They are often characterized as having bright acidity, floral and fruity aromas, and a smooth finish (ICO, 2019). By developing these new varieties to replace Catimor, Vietnamese coffee growers have the potential to significantly enhance the overall quality of Vietnamese Arabica coffee, expand their production of high-quality Arabica coffee, and meet growing demand both domestically and internationally.

3.4 Vietnamese Coffee Culture

Vietnamese coffee is renowned for its distinct taste and preparation method. It is typically made with a blend of Robusta and Arabica beans, which are roasted with butter and sugar, giving the coffee a rich, caramel-like flavor. Vietnamese coffee is not simply a quick energy boost, but rather a cultural experience that involves savoring and reflecting. Vietnamese people enjoy coffee in various settings, such as while reading, listening to music, chatting with friends, or even working. The most popular type of coffee in Vietnam is filter coffee, also known as *"cà phê phin"* in Vietnamese, which can be served hot or cold and customized with milk or other additives according to individual preferences. Figure 3.6 illustrates the set of tools for making Vietnamese coffee. The components of a coffee filter (*"phin"* in Vietnamese) are shown on the left side of the figure. On the right side of the figure is a complete cup of ice condensed milk coffee, with condensed milk at the bottom and coffee dripping from the coffee filter above.

doi:10.6342/NTU202302451

Figure 3.6 Coffee Filter and Ice Condensed Milk Coffee

The most popular ways to serve Vietnamese coffee is as *"cà phê sữa đá"*, which is brewed with a small metal filter called a *"phin"* and served over ice with sweetened condensed milk. This results in a sweet, creamy and refreshing drink that is perfect for a hot day.

Different regions of Vietnam have their own unique coffee-making and drinking preferences, which reflect their personality and culture. For example, Southerners prefer silk-stocking coffee, which is brewed in an earthen pot and filtered using a cloth. This type of coffee was brought to Vietnam by the Chinese living in Saigon and was popular among working-class people as a way to relax before returning to their hardworking lives.

Northern people, on the other hand, prefer hot coffee made with a filter: black coffee, or milk coffee. The famous *"cà phê trứng"* (which literally means "egg coffee") is a specialty of Hanoi and is made by mixing fresh eggs, milk, coffee, and sugar. This drink requires ingenuity to bring out the egg flavor while maintaining the coffee's taste. It is

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typically served hot and is a favorite among Hanoi residents. Figure 3.7 shows a cup of egg coffee made by Café Giang, a coffee shop in Hanoi knowns as the originator of this beverage.

Figure 3.7 "Cà Phê Trứng" as Known as "Egg Coffee"
Source: Café Giang

Overall, Vietnamese coffee is not just a beverage, but an integral part of the country's culture and history. The way coffee is made and enjoyed varies across regions and reflects

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the unique personalities and traditions of each area. Vietnamese coffee is a unique and flavorful experience that many coffee lovers enjoy.

3.5 The Case of Trung Nguyen

One notable local coffee brand in Vietnam that has accomplished the aforementioned aspects is Trung Nguyen, belonging to the Trung Nguyen Legend Group - a local enterprise of Vietnam. It serves as a prime example of successful coffee branding in Vietnam. The brand has effectively positioned itself as a pioneer and ambassador of Vietnamese coffee culture on the global stage. Trung Nguyen's branding strategy revolves around three key elements: authenticity, quality, and innovation.

First and foremost, Trung Nguyen has mastered the art of authenticity. Trung Nguyen's branding strategy revolves around authenticity. The brand takes great pride in showcasing the unique qualities of Vietnamese coffee, highlighting its distinct flavor, aroma and brewing tradition. By emphasizing its Vietnamese heritage, Trung Nguyen creates a sense of exclusivity and authenticity that sets it apart from other coffee brands. This authenticity resonates with consumers looking for an immersive coffee experience that reflects Vietnam's rich cultural heritage. Trung Nguyen's commitment to originality is evident in the meticulous selection of high-quality coffee beans, adherence to traditional brewing methods and dedication to preserving the essence of Vietnamese coffee. Through its unwavering focus on authenticity, Trung Nguyen has established itself as a trusted and respected ambassador of Vietnamese coffee culture.

In terms of quality, Trung Nguyen's dedication to quality extends beyond the beans themselves, encompassing every step of the coffee-making process, from roasting to brewing. This commitment to excellence has earned Trung Nguyen a reputation for delivering exceptional coffee experiences to its customers. To target specific market segments, Trung Nguyen divides the market into three segments: premium coffee, high-

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quality coffee, and instant coffee, corresponding to three brands: *"Trung Nguyen Legend", "Trung Nguyen Coffee"* and *"G7 Instant Coffee"*.

In the premium coffee segment, products from the *"Trung Nguyen Legend"* brand are described as a spiritual beverage, combining ancient Oriental mystical know-how and the world's finest modern roasting and grinding technology. It uses high-quality materials sourced from renowned coffee-producing countries such as Ethiopia, Jamaica, Brazil, Colombia, and Vietnam. The coffee from this premium brand is emphasized to be more than just an ordinary drink; it is an energizing elixir that promotes strong mindfulness and extraordinary creativity.

In the high-quality coffee segment, *"Trung Nguyen Coffee"* has positioned itself as a provider of high-quality coffee products with three elements: localization, sustainability, and internationalization. The brand carefully selects the finest coffee beans from different regions of Vietnam, ensuring high quality and consistency. The selected coffee beans not only possess exceptional taste and quality but are also environmentally friendly agricultural products. Furthermore, *"Trung Nguyen Coffee"* is an international brand with an office in Singapore, and its products are available in over 50 countries worldwide.

In the instant coffee segment, the *"G7 Instant Coffee"* is described as a brand with convenient products used in major regional and global events, such as Asia' Europe' Summit Meeting (ASEM), Asia-Pacific Economic Cooperation (APEC), Global Summit of Women, Association of South East Asian Nations (ASEAN) and World Economic Forum. It is not only widely consumed as a convenient ready-to-drink coffee product but the *"G7 Instant Coffee"* brand also utilizes advanced technology to produce the best quality instant coffee with a distinctive aroma and flavor that is unique to its products.

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Figure 3.8 showcases the logos of the three aforementioned brands from the Trung Nguyen Legend Group, with each logo corresponding to a specific market segment.

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Figure 3.8 The Three Brands of Trung Nguyen
Source: Trung Nguyen Legend

Innovation is another hallmark of Trung Nguyen's branding strategy. The brand constantly pushes boundaries and introduces innovative coffee products and brewing techniques. Trung Nguyen has pioneered the concept of "Creative Coffee", which combines traditional Vietnamese coffee with modern flavors and brewing methods. This innovative approach appeals to adventurous coffee enthusiasts who are seeking unique and exciting taste experiences. Trung Nguyen's ability to blend tradition with innovation allows it to stay relevant in a dynamic and competitive market.

Trung Nguyen branding efforts go beyond its coffee products. The introduction of Trung Nguyen Legend and Trung Nguyen Legend Capsule, alongside the opening of the World Coffee Museum in 2018, solidifies the brand's position as a leader in the Vietnamese coffee industry. Trung Nguyen Legend Capsule provides a convenient and contemporary way for coffee lovers to enjoy the renowned taste of Trung Nguyen coffee, with the capsules designed to maintain the freshness and quality of the coffee. This launch exemplifies Trung Nguyen's commitment to quality, innovation, and the promotion of coffee culture, not only in Buon Ma Thuot City but also in a broader context. From the

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ambiance of its coffee shops to the carefully curated elements that create an authentic Vietnamese coffee experience, Trung Nguyen has successfully crafted a unique brand identity that evokes a sense of nostalgia, comfort, and authenticity.

Furthermore, Trung Nguyen leverages digital platforms and social media to connect with its audience and expand its brand reach. The brand actively engages with coffee enthusiasts through various online channels, sharing coffee-related content, conducting interactive campaigns, and fostering a sense of community. Trung Nguyen's digital presence enables it to communicate its brand values, engage with customers, and attract new coffee lovers who are eager to explore the world of Vietnamese coffee.

Trung Nguyen, in the international market, serves as a shining example of how effective branding can elevate Vietnamese coffee and showcase it to the world. In 2022, Trung Nguyen Legend Group expanded its reach beyond Vietnam with the opening of its first overseas flagship store in Shanghai. This flagship store, known as the Energy Coffee World, offers a unique experience that combines the enjoyment, demonstration, and appreciation of coffee. Visitors to the Coffee World have the opportunity to taste the representative coffee from the "Three Coffee Cultures" series (Ottoman, Roman, and Thiền (which means “meditation” in Vietnamese), allowing them to explore the diverse flavors and characteristics of Vietnamese coffee. Additionally, the store provides a selection of Vietnamese food, allowing customers to indulge in the culinary delights of Vietnam while enjoying their coffee. The atmosphere and ambiance of the store are thoughtfully designed to evoke the Vietnamese style of slow life, creating a tranquil and immersive experience for coffee enthusiasts. Not only does this overseas flagship store expand the presence of Trung Nguyen Legend, but it also serves as a platform to showcase the essence of Vietnamese coffee culture to a global audience.

doi:10.6342/NTU202302451

To sum up, Trung Nguyen exemplifies the success of Vietnam's coffee branding efforts. Through its focus on authenticity, quality, innovation, and creating immersive coffee experiences, Trung Nguyen has established itself as a leading ambassador of Vietnamese coffee culture. The brand's commitment to showcasing the unique qualities of Vietnamese coffee, coupled with its dedication to delivering exceptional quality, has garnered international recognition and a loyal customer base.

doi:10.6342/NTU202302451

Chapter IV Situation Analysis and Policy Recommendation

SWOT analysis is a strategic tool used to assess the strengths, weaknesses, opportunities, and threats associated with a particular industry or business. Applying the SWOT framework to analyze the sustainable development of Vietnam's coffee industry, we can identify the following factors: strengths, weaknesses, opportunities, and threats. Stakeholders in the Vietnamese coffee industry can develop strategies to leverage their advantages, address weaknesses, seize opportunities, and mitigate threats. This holistic assessment can guide decision-making and facilitate the sustainable development of Vietnam's coffee industry.

4.1 SWOT Analysis

Table 4.1 summarizes the four aspects of Vietnam's Coffee Industry, which will be analyzed and presented in detail through the following SWOT Analysis.

Table 4.1 Vietnam's Coffee Industry SWOT Analysis

Strengths	Weakness
● Favorable natural conditions ● Supporting policies from the government: investing in research and development and promoting sustainable coffee farming practices. ● Low labor and production costs ● Major producer of Robusta	● Inefficient technology ● Limited infrastructure ● Low profitability from raw material production

doi:10.6342/NTU202302451

Opportunities	Threats
● Coffee consumption is increasing ● Accessing new markets ● Vietnamese coffee to increase its reputation and expand its product offerings beyond traditional coffee products ● Instant coffee	● Climate change

Strengths

a. Favorable Natural Conditions

Vietnam's coffee industry benefits from favorable natural conditions that make it suitable for coffee cultivation. The country's equatorial location and diverse topography create various microclimates that allow for the cultivation of different coffee varieties. The largest coffee-growing area in Vietnam is the Central Highlands region, particularly the Dak Lak, Lam Dong, Gia Lai, and Kon Tum provinces. Temperature is a critical factor that affects the growth and development of coffee plants, and the region's climate, with an average temperature of 20-24°C, is ideal for coffee cultivation. The region receives a yearly rainfall of 1,500-2,500 mm, and its volcanic soil has high nutrient content and good water retention, providing optimal conditions for coffee growth. Additionally, the dry season from November to April promotes ideal conditions for coffee flowering and bean development.

doi:10.6342/NTU202302451

b. Supporting Policies from the Government

As one of the main agricultural products of Vietnam (after rice), coffee has been subject to various policies by the Vietnamese government aimed at its development and support for farmers.

Firstly, there is a general orientation policy that aims to enhance the competitiveness of Vietnam's coffee industry and promote sustainable development by increasing its added value.

- *Decision No. 1987/QĐ-BNN-TT on Approval of the Development master Plan for the Vietnam Coffee Industry until 2020 and Vision until 2030* (issued by the MARD on August 21st, 2012): according to this plan, the projected coffee cultivation area for 2020 is approximately 500,000 hectares, which is expected to decrease to 479,000 hectares by 2030. The targeted output for 2020 is set at 1.1 million tons, while the processing capacity is planned to be 125,000 tons by 2020 and 135,000 tons by 2030. The export turnover for 2020 is projected to range between 2.1-2.2 billion USD, and the aim is to surpass 2.2 billion USD by 2030.
- *Decision No. 1003/QĐ-BNN-CB on Approval of the Project to Enhance Value-Added in the Processing and Reduce Post-Harvest Losses of Agricultural, Forestry, and Fishery Products* (issued by the MARD on May 13th, 2014): the Decision had two main targets. Firstly, it aimed to increase the proportion of soluble and ground coffee from 10% to 25% by 2020, while balancing the export of Robusta coffee with the import of Arabica coffee for high-quality refined products. Secondly, it focused on enhancing the quality of processed coffee for export by increasing the utilization of certified coffee materials and promoting large-scale wet processing technology with water treatment. The goal was to raise

doi:10.6342/NTU202302451

the proportion of wet processed coffee to 30% by 2020, including 100% of wet processed Robusta coffee.

- *Decision No. 3417/QĐ-BNN-TT on Approval of the Sustainable Coffee Industry Development Project until 2020* (issued by the MARD on August 1st, 2014): an area of approximately 600,000 hectares (80% of the sustainable area), with a productivity of 2.7 tons per hectare, yielding a total output of 1.6 million tons per year. The average output value per hectare is around 120 million VND. Wet processed coffee accounts for 30% of the total, while instant coffee, roasting, and grinding account for 25% of the output. The projected annual export turnover is estimated to be between 3.8 - 4.2 billion USD.

Secondly, regarding production support policies, the government has introduced several policies to support coffee production, especially coffee replanting:

- *Document No. 3227/NHNN-TD* (issued on May 11th, 2015, by the Governor of the State Bank of Vietnam): provided guidance to the Bank for Agriculture and Rural Development of Vietnam on implementing the policy of lending for coffee rejuvenation in the Central Highlands. Additionally, *Document No. 3228/NHNN-TD* was issued for implementing lending policy for coffee rejuvenation in the Central Highlands in the period of 2014 to 2020.
- *Decision No. 1178/QD-BNN-TT on Approval of the Coffee Rejuvenation Project in the Period of 2021 to 2025* (issued on March 31st, 2022 by the MARD): the project aims to replant and graft 107,000 hectares of coffee, primarily in the Central Highlands. The objective is to achieve a post-replanting yield of 3.50 tons per hectare and increase farmers' income by 1.5-2 times compared to the pre-rejuvenating period.

doi:10.6342/NTU202302451

Additionally, in *Decree No. 98/2018/ND-CP on Policies to Encourage the Development of Cooperation and Association in the Production and Consumption of Agricultural Products* (issued on July 5th, 2018 by the Prime Minister), the government also supports businesses in building and developing their brands through communication campaigns, image promotion, training programs, guidance, capacity building, product formats and methods, branding and promotion. Besides, the government also encourages investment in coffee processing and export through policies such as tax incentives, low-interest loans, and infrastructure construction support.

In summary, the government is committed to creating a favorable environment for the coffee industry to thrive and contribute to the country's economic growth.

c. Low Labor and Production Costs

Vietnam has a large and growing labor force. As of 2021, the country's population is estimated to be approximately 97.47 million people, with a total labor force of around 55.03 million people. The labor force participation rate in Vietnam is relatively high, with around 73% of the population aged 15 and above actively participating in the workforce (World Bank, 2021).

The composition of Vietnam's labor force is diverse, with the agriculture sector employing the largest number of workers, followed by the industrial and services sectors. Around 37% of the labor force is employed in the agriculture sector, which includes farming, fishing, and forestry (World Bank, 2019a). The industrial sector employs approximately 27% of the workforce, while the services sector employs approximately 35% (World Bank, 2019b, 2019c). Although agriculture remains the largest employer, its labor force has been declining and undergoing significant changes since the 1990s when the country implemented economic reform policies that encouraged foreign investment and trade liberalization.

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According to the ICO (2019), private coffee farms are generally the main source of coffee production in Vietnam, with smallholdings comprising the majority of these farms. There are over 640,000 smallholdings involved in coffee production in Vietnam, which means that approximately 85% of the coffee areas in Vietnam are cultivated by households and small farms. As the labor force continues to gradually shift from agricultural workers to service and trade workers, Vietnam's coffee production industry is expected to face a significant challenge in terms of human resources in the future.

Table 4.2 Per Capita Income by Urban and Rural Areas, 2012 - 2022

Year	2012	2014	2016	2018	2019	2020	2021	2022
Nationwide	2,000	2,637	3,098	3,874	4,295	4,249	5,388	5,945
Urban (A)	2,989	3,964	4,551	5,624	6,022	5,590	4,205	4,673
Rural (B)	1,579	2,038	2,423	2,986	3,399	3,480	3486	3864
Income Gap (A/B)	1.9	1.9	1.9	1.9	1.8	1.6	1.2	1.2

Unit: in thousand VND
Source: GSO (2023b)

As mentioned earlier, the majority of coffee farms in Vietnam are smallholdings operated by households, which helps to keep production costs down. From Table 4.2, based on the 2022 Vietnam Household Living Standards Survey conducted by the GSO (2023b) and released in 2023, it is evident that nationwide household income per capita has shown improvement during the period from 2012 to 2022. The income has increased from 2 million VND in 2012 to 5.9 million VND (approximately 254 USD, at the exchange rate of 1 USD = 23,400 VND) in 2022, representing a growth of 2.98 times. However, despite this growth, the income level is still considered low. The average income per capita in rural areas has always been lower than in urban areas and below national average. However, over the 10-year period from 2012 to 2022, this gap has narrowed from 1.9 times to 1.2 times, indicating an improvement in living standards in rural areas.

doi:10.6342/NTU202302451

In brief, Vietnam has the largest labor force in the agriculture sector. This labor force is predominantly located in rural areas with relatively low average per capita income compared to the industrial and services sectors, which are concentrated in urban areas. Currently, Vietnam's coffee industry mainly relies on raw production, thus requiring a large number of laborers from the agriculture sector. The combination of these factors contributes to the competitive advantage of Vietnam's coffee production industry due to its reputation for relatively low labor and production costs.

d. Major Producer of Robusta

Vietnam's coffee industry boasts a remarkable strength as a major producer of Robusta coffee, supported by its favorable tropical climate with distinct rainy and dry seasons, ensuring a stable and robust coffee growth. Moreover, the country's diverse terrain offers optimal conditions for coffee cultivation at varying altitudes, providing abundant opportunities for cultivating Robusta beans. The industry's resilience in managing pests, combined with efficient supply chain management and government support, further bolsters its success. Currently, Vietnam stands as the world leader in Robusta coffee production, accounting for an impressive 40% of the total global supply, a testament to the industry's undeniable strength and prowess (ICO, 2022).

Weaknesses

- *Inefficient Technology*

Many Vietnamese coffee farmers still rely on traditional farming methods and equipment, including handpicking and manual processing. However, this approach often leads to lower efficiency and productivity compared to utilizing modern machinery. Limited access to advanced technology and equipment poses a challenge for coffee farmers and processors in Vietnam, primarily due to the high cost of investment.

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Consequently, adopting new technologies that could enhance the quality and productivity of their coffee becomes challenging.

Furthermore, the quality of Vietnamese coffee can vary significantly due to inconsistent quality control measures employed throughout the production process. This inconsistency poses a difficulty for Vietnamese coffee to compete with high-quality coffee from other countries.

Addressing these weaknesses would necessitate substantial investments in modern equipment, research and development, and implementing better quality control measures throughout the entire coffee production process. These efforts could contribute to enhancing the quality and competitiveness of Vietnamese coffee in the global market.

- *Limited Infrastructure*

As mentioned previously in this study, coffee production in Vietnam is primarily concentrated in the remote and mountainous region of the Central Highlands. The limited road infrastructure in this area poses challenges and results in high transportation costs for delivering coffee beans to processing and shipping facilities. Additionally, many small coffee farmers in Vietnam encounter difficulties in accessing proper processing facilities, which hinders their ability to produce high-quality coffee beans. Consequently, the value of their coffee in the market is constrained, leading to reduced income.

Furthermore, inadequate storage facilities among coffee farmers in Vietnam often lead to spoilage and a decrease in quality, negatively impacting the value of their coffee in the market. Moreover, the lack of access to credit for many small coffee farmers in Vietnam restricts their ability to invest in infrastructure improvements or expand their production, thereby limiting their potential to enhance coffee quality and increase their income.

doi:10.6342/NTU202302451

In summary, addressing these issues necessitates significant investments in transportation, processing, storage facilities, and access to credit for small farmers. This would contribute to improving the coffee industry's infrastructure in Vietnam, thereby enhancing the quality and value of Vietnamese coffee and ultimately increasing the income of coffee farmers in the country.

c. Low Profitability From Raw Material Production

Low profitability from raw material production is weakness in Vietnam's coffee industry. Despite being a major producer of Robusta coffee, the industry faces challenges in generating substantial profits at the raw material production stage. Factors such as fluctuating coffee prices, rising production costs, and limited value addition at the primary stage of production contribute to this weakness. The low profitability from raw material production hinders the industry's ability to maximize its potential earnings and invest in sustainable practices or technology upgrades. The oversupply of Robusta coffee may lead to price reductions and decreased profitability for coffee producers and traders in Vietnam. Moreover, the dominance of low-cost coffee can affect the perception of Vietnamese coffee on the global stage, potentially diminishing the demand for coffee originating from the country. Overcoming the weaknesses in Vietnam's coffee industry requires a multifaceted approach aimed at adding value to coffee products and elevating them from raw materials to higher-value offerings. Strategic measures must be taken to improve efficiency, reduce production costs, and differentiate Vietnamese coffee products in the global market. Investing in modern processing facilities equipped with advanced technologies will ensure better quality control and allow for the production of premium coffee products. Moreover, diversifying coffee products, such as ready-to-drink beverages or coffee-infused products, and establishing exclusive coffee shops or cafes dedicated to serving Vietnamese coffee can open new revenue streams and showcase its

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distinct flavors to global consumers. Conducting market research and understanding consumer preferences will provide invaluable insights for targeted product development and tailored marketing strategies.

Opportunities

a. Coffee Consumption Is Increasing

The following figures are extracted from the ICO report released in 2018 on the "Development of Coffee Trade Flows." Figure 4.1 depicts the growth of coffee exports by the leading coffee-producing countries worldwide between 1992-1996 and 2012-2016. Figure 4.2 illustrates the share of global coffee exports by country during the same periods.

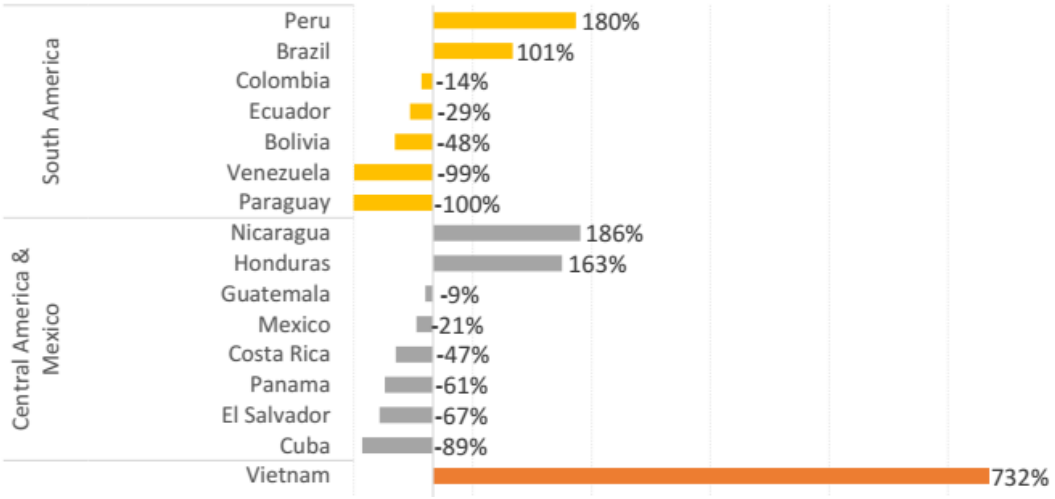

Figure 4.1 Growth of Coffee Exports by Country, 1992-1996 vs 2012-2016
Unit: in percentage
Source: ICO (2018)

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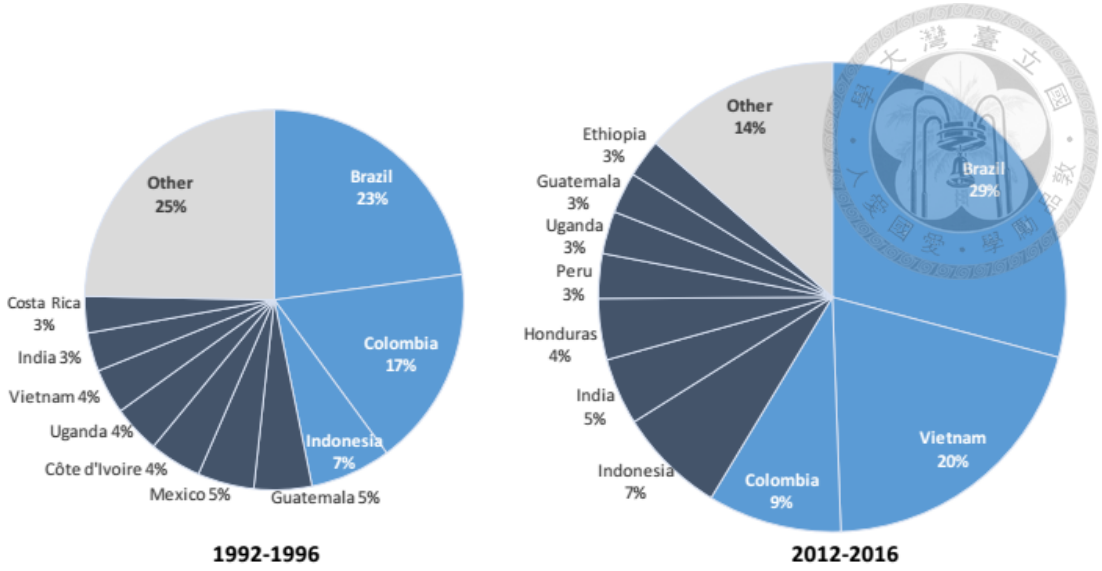

Figure 4.2 Share of Global Coffee Exports by Country, 1992-1996 vs 2012-2016
Unit: in percentage
Source: ICO (2018)

From Figure 4.1, over the course of two decades, during the periods of 1992-1996 and 2012-2016, the coffee industry in Vietnam has witnessed remarkable progress in its export coffee, experiencing a dramatic increase of 732%, far surpassing the growth rates of other coffee-producing countries such as Nicaragua (180%), Peru (186%), and Honduras (163%). Moreover, it can be observed from Figure 4.2 that Vietnam's share of global coffee exports has surged from 4% in 1992-1996 to 20% in 2012-2016.

As mentioned earlier in this study, the COVID-19 pandemic has caused a shift in consumer preferences towards instant coffee and ready-to-drink coffee due to their convenience. In response to this trend, Vietnam has increased its investment in the production of instant coffee to meet both domestic and export demand. Manufacturers of instant coffee are actively developing new products, flavors, and packaging to cater to the diverse needs of customers. In addition, small roasters are introducing new ground coffee brands in 250-500-gram packages for retail, which are often marketed as "pure," "fine," and "single source" to meet the needs of more sophisticated homebrewers. Despite these

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changes, it is estimated that domestic consumption of coffee in Vietnam will remain at 3.30 million bags for MY 2022/23 (FAS, 2022b).

Traditionally, Vietnam is a tea-drinking country, but there has been a significant shift in consumer preferences towards coffee. The younger generation, in particular, has developed a taste for coffee and considers it a fashionable and trendy beverage. This shift has driven the growth of coffee consumption. Changing consumption trends from tea to coffee along with the entry of international coffee chains such as Starbucks, Costa Coffee, The Coffee Bean & Tea Leaf into Vietnam has played a role in promoting coffee consumption. These chains have introduced different types of coffee, brewing methods and coffee culture, thereby influencing the preferences of Vietnamese consumers. As a result, the domestic market for coffee in Vietnam continues to expand, offering opportunities for local coffee producers and businesses to cater to the growing demand.

b. Accessing New Markets

After joining global economic and trade organizations such as the World Trade Organization (WTO), the Asian Development Bank (ADB), the International Monetary Fund (IMF), and the International Coffee Organization (ICO), Vietnam has gained opportunities to access capital resources from investment funds and expand its export markets for agricultural products, including coffee. In addition to the primary European market, with Germany being the largest, Vietnam has also witnessed market growth in countries such as Belgium, Spain, and Russia (FAS, 2022b). Vietnamese coffee is also targeting other new potential markets such as the United States, China and Korea.

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c. *Vietnamese Coffee to Increase Its Reputation and Expand Its Product Offerings Beyond Traditional Coffee Products*

Vietnamese coffee is aiming to improve its image and broaden its range of products beyond the usual coffee offerings. This encompasses branching out into specialty, organic, and single-origin coffee. To increase their popularity and reputation, some Vietnamese coffee producers are engaging more with international markets by participating in coffee fairs and trade shows, as well as forging partnerships with overseas distributors and retailers. Additionally, certain coffee shops and cafes are highlighting Vietnamese coffee as a distinctive and high-quality product to attract customers who want something unique.

In general, Vietnamese coffee is looking to take advantage of its characteristic taste and production techniques to establish a powerful presence in the worldwide coffee market and meet the changing preferences of coffee drinkers.

d. *Instant Coffee*

Vietnam has significant opportunities in the production of instant coffee (coffee soluble). The convenience and ease of use of instant coffee appeal to consumers in various situations where fresh coffee preparation might not be feasible. Leveraging this opportunity, Vietnam can access new markets and cater to regions with limited traditional coffee consumption. Being a major Robusta producers-the main ingredient of instant coffee, Vietnam can meet the global demand for instant coffee, capitalizing on the rising trend of instant coffee consumption worldwide. Additionally, with production volume accounting for 40% of the world's total supply as mention before, Vietnam’s Robusta has the opportunity to lead the world instant coffee supply chain. Producing instant coffee allows for value addition, presenting an opportunity to access higher-value markets and generating greater profits for the coffee industry. Moreover, developing instant coffee brands can enhance Vietnam's presence in the global coffee

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market and increase the country's coffee industry reputation. By producing instant coffee, Vietnam can contribute significantly to its coffee exports, leveraging advancements in processing techniques and product quality to secure a larger market share in international markets. Embracing the potential of instant coffee production will strengthen Vietnam's position in the global coffee industry and foster sustainable economic benefits for the nation.

Threats

a. Climate Change

The coffee industry in Vietnam faces a threat from climate change, as the coffee plant heavily depends on natural factors like temperature, rainfall, humidity, and soil quality. Climate change has led to more frequent and severe droughts, along with heavy rainfall that causes soil erosion and landslides, damaging coffee trees. Moreover, warmer temperatures hasten coffee cherry maturation, reducing yields and quality, and facilitating the proliferation of pests and diseases that can devastate coffee crops.

To mitigate the impact of climate change on the coffee industry, Vietnamese coffee producers are taking action to mitigate the impact of climate change on the industry. They are implementing various adaptation and mitigation measures, such as promoting shade-grown coffee, utilizing efficient irrigation systems, and developing resilient coffee varieties that can withstand changing weather patterns. Additionally, sustainable farming practices are adopted to mitigate climate change's impact and foster long-term sustainability in the coffee industry.

4.2 Road Map of Sustainable Development

Considering the strengths, weaknesses, opportunities and threats analyzed in the SWOT, it is worthy to mention that Vietnamese coffee industry has to target in the instant

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coffee market by applying sustainable development farming practice. Being a major Robusta producers-the main ingredient of instant coffee, Vietnam can meet the global demand for instant coffee, capitalizing on the rising trend of instant coffee consumption worldwide. To ensure the long-term and sustainable development of Vietnam's coffee industry, a comprehensive road map is proposed, encompassing short, medium, and long-term actions.

Short Term (1-3 years)

Firstly, as discussed in previous sections, the role of farmers is crucial in shaping sustainable coffee production. In the pursuit of sustainable development, the primary focus should be on bolstering training and capacity-building programs for coffee farmers. These programs should specifically target the challenges associated with inefficient technology and limited infrastructure. Therefore, it is necessary to conduct comprehensive assessments to identify the specific training needs of farmers. This will enable the implementation of appropriate approaches tailored to their requirements.

For instance, targeted workshops, field demonstrations, and farmer-to-farmer knowledge sharing platforms should be established. These initiatives aim to provide practical knowledge and hands-on experience in sustainable farming practices. This includes training in alternative methods for efficient water usage, appropriate fertilizer application, and pest management strategies that suit the existing limitations of infrastructure and technology.

Simultaneously, with the advancements in information technology and the internet, it becomes imperative to develop and make educational materials and resources available online. This ensures that farmers have access to up-to-date information, while also receiving ongoing technical support for guidance and assistance. Additionally, the

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establishment of model farms and facilitating farmer visits creates further opportunities for learning and knowledge exchange.

By prioritizing and strengthening these programs in the short term, the Vietnamese coffee industry can equip farmers with the necessary skills and knowledge to overcome challenges and adopt sustainable approaches. This concerted effort will pave the way for improved productivity, enhanced quality, and sustainable growth in the industry.

Secondly, the coffee industry will significantly focus on promoting sustainable certifications and traceability systems. This strategic focus acknowledges the growing consumer demand for environmentally and ethically responsible products, as people increasingly seek transparency and assurance in their purchasing decisions. To achieve this, comprehensive awareness campaigns and educational programs will be implemented to inform coffee farmers about the benefits and importance of sustainable certifications such as Rainforest Alliance, Fair Trade. These certifications provide guidelines and requirements that ensure environmentally friendly and socially responsible coffee production.

In addition to raising awareness, financial incentives and support programs will be introduced to assist farmers in adopting sustainable practices and obtaining certifications. This includes funding, subsidies, and preferential loan programs that help alleviate the financial burden associated with transitioning to sustainable farming. Technical support and training will also be provided to guide farmers through the certification process, helping them meet stringent requirements and achieve certification status.

Furthermore, traceability systems will be implemented to monitor the journey of coffee beans, ensuring transparency and accountability throughout the supply chain. By establishing a clear link between the origin of the coffee and its production practices, the traceability system fosters consumer trust and confidence in the ethical sourcing and

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durability of the product. Through these initiatives, the coffee industry aims to strengthen its commitment to sustainability, meet consumer expectations, and gain a competitive advantage in the global market by providing certified and traceable coffee products.

Moreover, by enhancing their knowledge and skills, farmers can improve productivity, reduce environmental impact, and enhance the overall quality of their coffee. Training programs will be implemented to educate farmers on best practices for harvesting, sorting, fermentation, drying, and storage. This will enable them to acquire optimal techniques for selective picking, removing damaged cherries, and appropriately fermenting and drying the beans. Additionally, emphasis will be placed on utilizing suitable equipment and technologies to increase efficiency and minimize waste. These initiatives aim to equip farmers with the necessary expertise and tools to ensure the production of the highest quality coffee beans, thereby fostering increased profitability and sustainability.

Concurrently, efforts will be made to address the challenges associated with low technology and limited infrastructure by investing in the improvement of post-harvest infrastructure, including the upgrading of drying platforms and storage facilities. Collaborative platforms will facilitate the exchange of knowledge and innovative low-tech solutions among farmers, stakeholders, and communities. With support from governmental and private organizations, these initiatives will empower farmers to optimize their post-harvest processes, enhance productivity, and uphold the quality of their coffee beans despite the constraints imposed by limited technology and infrastructure.

Through these comprehensive efforts, farmers will acquire the knowledge, skills and resources needed to optimize post-harvest operations in the short term. This will lead to increased yields, reduced post-harvest losses and improved coffee quality, leading to

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improved marketability and profitability for farmers. Ultimately, these initiatives will contribute to the overall sustainability and competitiveness of the coffee industry in the short term and lay the foundation for long-term growth and success.

Medium Term (3-5 years)

Moving to the medium term, the road map emphasizes sustainable land management practices, processing of instant coffee, and market diversification.

Firstly, the coffee industry will prioritize the implementation of sustainable land management practices to ensure the long-term environmental health and productivity of coffee farms. This will involve adopting holistic approaches that address soil conservation, biodiversity preservation, water management, and climate resilience. Farmers will be trained on the benefits and techniques of agroforestry systems, integrating trees and shrubs into coffee cultivation to provide shade, improve soil quality, and enhance biodiversity. Soil conservation practices such as contour plowing, terracing, and cover cropping will be promoted to prevent erosion and maintain soil fertility. Water management strategies, including drip irrigation and rainwater harvesting, will be encouraging to minimize water waste and ensure use. Furthermore, the conservation of biodiversity and the promotion of climate-smart practices will be key components of sustainable land management. Through these efforts, coffee industry aims to create and prosper the coffee farms that prioritize environmental sustainability in the medium term and beyond.

Secondly, to improve the competence of process industry in order to add value of raw materials. According to the Ministry of Industry and Trade, Vietnam has exported coffee to more than 80 markets worldwide, with Germany and the United States being the leading importers, each accounting for over 10% of Vietnam's coffee exports.

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However, despite being a significant coffee exporter, Vietnam's export value has not reached its full potential, largely due to the predominant export of raw coffee beans, which constitute 71% of the total export value. Other coffee products, such as roasted and ground coffee and instant coffee, have relatively low export proportions, comprising less than 10% combined (Figure 4.3). The COVID-19 pandemic has led to changes in consumer preferences towards ready-to- drink coffee, especially instant coffee, resulting in increased global demand and is expected to continue growing in the future. This presents an opportunity for Vietnam to become a leading producer of instant coffee worldwide, given its abundant Robusta coffee, a primary ingredient for instant coffee production. To capitalize on this opportunity and increase the value of the coffee industry, businesses need to invest in coffee processing, improve quality, build brands, and engage in marketing efforts as well as expand into new markets. Currently, some smaller enterprises have taken steps by collaborating to establish medium-scale processing facilities to purchase coffee beans and process them into raw materials for roasted and ground coffee and instant coffee.

To promote the development and increase the value of the coffee industry, the government needs to play a crucial role in supporting various stages of coffee production and processing. Investing in infrastructure, including storage facilities and processing centers, will ensure efficient preservation and processing of coffee beans, both for roasted coffee and instant coffee production. Encouraging investment in coffee processing industries, especially at the production sites, will help deliver freshly processed coffee and instant coffee with superior quality from the source. Furthermore, the government should support marketing and promotional efforts to raise awareness of Vietnam's coffee products, including instant coffee, in the international market, emphasizing high-quality offerings. Supporting research and development activities in the field of instant coffee

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production will also aid in advancing technology, meeting market demands, and adding more value to the coffee sector. By implementing these measures, the government can drive sustainable growth in Vietnam's coffee industry, including the instant coffee segment, and establish the country as a reliable and premium coffee brand in the global market. After ensuring the quality of coffee beans from cultivation to processing, the value of coffee is increased, and the government emphasizes post-harvest processing.

Finally, efforts to enhance market access and diversification will be made. In particular, market diversification is a crucial strategy for achieving growth and success in the global market for Vietnamese coffee. By diversifying their target markets, Vietnamese coffee producers can reduce reliance on a single market and tap into new opportunities for expansion. This strategy involves identifying and entering new geographic regions and market segments that have untapped potential or align with the unique qualities of Vietnamese coffee. By understanding consumer preferences, cultural nuances, and market trends in different regions, Vietnamese coffee producers can tailor their products, marketing strategies, and distribution channels to effectively engage with diverse consumer groups. Additionally, market diversification helps mitigate risks associated with economic fluctuations and changes in consumer behavior, ensuring a more resilient and sustainable growth trajectory for the Vietnamese coffee industry.

doi:10.6342/NTU202302451

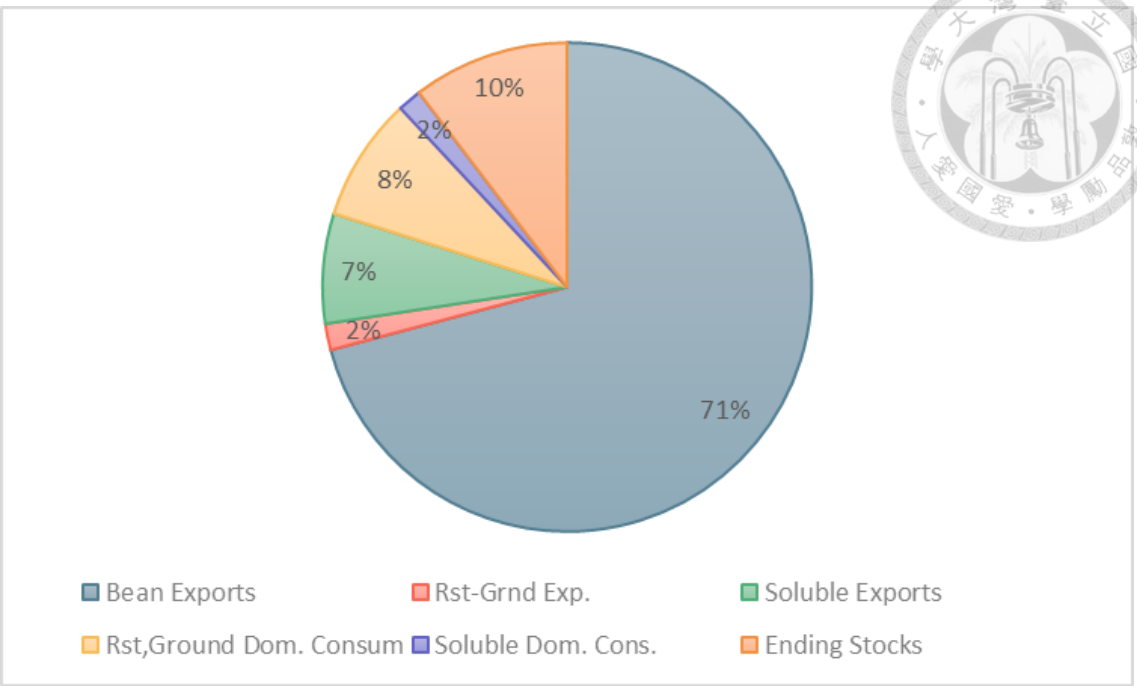

Figure 4.3 Types of Coffee Supply by Vietnam in 2020/2021
Unit: in percentage
Source: FAS (2022b)

Figure 4.3 illustrates the percentage distribution of different types of coffee supply by Vietnam in the 2020/2021 period, based on data released by FAS in November 2022. Vietnam is currently the second-largest coffee exporter globally. However, the majority of its coffee production is in the form of green beans, representing approximately 70% of the total supply. This indicates a limited focus on coffee processing activities after harvesting. The export of roasted and ground coffee accounts for only a small proportion of the total supply (2%), while soluble coffee exports represent approximately 7%.

The export value of green coffee from Vietnam is generally lower than that of processed coffee. This is because raw green coffee requires processing and transformation into the final product, such as roasting, grinding, and packaging, in order to have a higher value in the international market. These processed products, including ground coffee, roasted coffee beans, or prepackaged coffee, typically have higher economic value and are consumed directly by end consumers.

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Despite the lower export value, green coffee exports still play a significant role in Vietnam's coffee industry, contributing to the country's overall export value. Additionally, green coffee exports create opportunities for processors and support the development of the domestic coffee processing sector.

To increase the value of Vietnamese coffee, it is important to shift the export proportion by increasing the volume of processed coffee, including roasted and ground coffee as well as soluble coffee exports. This can be achieved by expanding processing capabilities and investing in facilities and technology for coffee processing. Moreover, Vietnamese coffee can also focus on expanding its presence in the domestic market, which currently accounts for only 10% of the total supply. Increasing domestic consumption can create additional opportunities and contribute to the overall growth and value of the Vietnamese coffee industry.

Vietnamese coffee producers have a significant opportunity to expand their product offerings beyond traditional options like instant coffee and roasted coffee beans. By diversifying their range to include cold brew coffee, iced coffee, flavored coffee, single-origin and specialty coffees, coffee capsules and pods, as well as coffee-related merchandise, they can cater to a wide range of consumer preferences and trends, increasing their market share and ensuring long-term sustainability. This expansion requires thorough market research, investment in product development and quality control, effective branding, and collaborations with local cafes, retailers, and online platforms. By seizing these opportunities and offering a broader array of products, Vietnamese coffee producers can effectively meet the diverse demands of consumers, enhance their position in the industry, and ensure sustainable growth in the long run.

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Long Term (5+ years)

In the long term, collaboration among farmers, researchers, and government agencies will be essential to develop climate-smart practices and mitigate the risks posed by changing weather patterns in the coffee industry.

This collaboration may involve the adoption of drought-tolerant coffee varieties, implementing water-efficient irrigation systems, and utilizing advanced technologies for weather forecasting and pest management. By sharing knowledge and working collectively, the industry can strengthen its capacity to adapt to and mitigate the impacts of climate change. Furthermore, fostering innovation through collaboration will be crucial in the long term. Stakeholders, including coffee producers, researchers, and technology providers, will join forces to develop and implement innovative solutions for sustainable coffee production. This may encompass data-driven approaches, precision agriculture techniques, and advanced farming technologies to optimize resource utilization, improve crop yields, and minimize environmental impact. Collaborative platforms and partnerships will facilitate the exchange of ideas, promote experimentation, and encourage continuous improvement and learning.

Recognizing the significance of collaboration, the Vietnamese coffee industry focuses on promoting environmentally friendly techniques such as agroforestry, organic farming, and water conservation. Stakeholders collaborate with certification organizations to ensure ethical labor practices, environmental conservation, and community development throughout the coffee value chain. Research collaborations address challenges related to climate resilience, pest management, and water usage optimization, while exploring opportunities for value-added products and diversification. Furthermore, public-private partnerships play a vital role in driving sustainable development, enhancing farmer livelihoods, and promoting social inclusivity.

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Collaboration with international stakeholders contributes to the exchange of best practices and participation in global sustainability initiatives.

These collaborative efforts, encompassing sustainable farming practices, certification programs, research collaborations, public-private partnerships, and international engagement, are crucial for the long-term viability of Vietnam's coffee industry. By working together, stakeholders can effectively address environmental, social, and economic challenges while seizing opportunities for innovation and growth. Ultimately, this collective effort ensures a sustainable future for the industry, benefiting both the coffee farmers and the broader community.

Government support and policies : Comprehensive Approaches for Sustainable Development in the Short, Medium, and Long Term

Government support and policies play a pivotal role in the sustainable development of Vietnam's coffee industry in the short, medium and long term.

In the short term, branding efforts will focus on establishing a distinctive and appealing identity for Vietnamese coffee, highlighting its unique quality, cultural heritage and commitment to sustainability. At the same time, the government will provide policy support through the implementation of regulations that encourage and reward sustainability practices, such as providing financial support and creating certification schemes.

Over the medium term, branding strategies will be strengthened to expand market penetration and attract more consumers, fostering partnerships with international coffee associations and retailers. The government will facilitate cooperation, support market research and support favorable policies to enhance the brand and marketing of Vietnamese coffee.

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In the long term, the focus will be on consolidating Vietnamese coffee into a premium and globally sustainable product. The government will continue to support the industry through long-term policies to promote sustainable farming practices, improve infrastructure and protect natural resources. By effectively integrating branding initiatives with government support, Vietnam's coffee industry can achieve sustainable growth, enhance its position in the market and contribute to the welfare of consumers. coffee producers and the environment.

Summary

As the world's largest exporter of Robusta coffee, accounting for 40% of the global supply, Vietnam holds a competitive advantage in the production of instant coffee. By focusing on local processing and branding, Vietnam aims to reduce its reliance on European and American coffee importers, taking charge of its coffee destiny in the global market. With continuous investment in research, innovation, and government support, Vietnam's ambition to become a leading player in the instant coffee sector is well within reach, transforming the coffee industry and contributing to sustainable development.

In summary, the road map for the sustainable development of Vietnam's coffee industry encompasses various key elements across all timeframes. In the short term, the focus is on strengthening farmer training and capacity-building programs, enhancing post-harvest practices, and promoting sustainable certifications in limited infrastructure. This sets the foundation for the medium term, where efforts are intensified in sustainable land management practices, research and innovation, technology adoption, and market diversification. In the long term, the road map emphasizes the consolidation of sustainable practices, resilience to climate change, branding and market positioning, and continuous government support and policies. Collaboration and cooperation among industry

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stakeholders, government agencies, and international partners are crucial during this phase. By integrating these elements, Vietnam's coffee industry strives for long-term viability, environmental stewardship, economic prosperity, and social well-being for coffee farmers and communities. This comprehensive road map ensures a holistic approach to sustainable development, enabling Vietnam's coffee industry to thrive in the global market while preserving its unique qualities and contributing to a more sustainable future.

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Chapter V Conclusions

The remarkable growth and transformation of Vietnam's coffee industry over the years have solidified its position as a significant contributor to the country's economy. Despite being introduced by French colonists over 160 years ago (since 1857), coffee has quickly gained popularity and established itself as a strong industrial crop in Vietnam. Today, Vietnam has emerged as the second largest global exporter of coffee, marking its presence on the world coffee map. This study aims to provide directions for the future development of the industry.

This study then delves into the specificities of the Vietnamese coffee industry, focusing on three important aspects: natural conditions, development history, and production. Furthermore, this study explores the development history of the coffee industry in Vietnam, tracing its journey from colonial times to the present day. This historical context offers valuable insights into the evolution, transformation, and resilience of the industry, as well as its significant role in the socio-economic development of the country. It highlights the challenges faced by the industry over time and the strategies adopted to overcome them, leading to its current position as a major player in the global coffee market. This study also acknowledges the cultural significance of coffee in Vietnam and introduces Vietnamese coffee culture. It explores the rituals, traditions, and unique brewing methods that are deeply ingrained in the local coffee culture. Additionally, this study provides a brief overview of the Trung Nguyen case coffee, a prominent coffee brand in Vietnam, shedding light on its success story and branding strategies.

In this study, the SWOT analysis is utilized to identify the determining factors for the development advantages of Vietnam's coffee industry. Based on the findings of the SWOT analysis, this study proposes that Vietnam should meet the global demand for

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instant coffee, capitalizing on the rising trend of instant coffee consumption worldwide as Vietnam is a major provider of Robusta which is the main ingredient of instant coffee. Therefore, this study presents a road map for the sustainable development of Vietnam's coffee industry. This road map outlines specific recommendations and strategies to address the identified challenges and leverage the available opportunities. It emphasizes the importance of sustainable practices, technological advancements, capacity-building programs, and collaborations among industry stakeholders. The road map of sustainable development entails a multifaceted approach, including training and capacity-building programs for coffee farmers, promoting sustainable certifications and traceability systems in short term; sustainable land management practices and market diversification in medium term and develop climate-smart practices and mitigate the risks posed by changing weather patterns in long term. Furthermore, incorporating environmentally friendly farming practices, supporting the welfare of coffee farmers, and participating in fair trade initiatives need huge supports from government policy. Adding value to coffee products such as processing to instant coffee package, differentiating Vietnamese coffee in the global market, and meeting the preferences of diverse consumers are essential ways for Vietnam's coffee industry to transform from a country that solely exports raw materials to playing an important role in the premium coffee segment. These strategic measures will improve profitability and secure a competitive position in the global coffee market, facilitating the step-by-step sustainable development of Vietnam's coffee industry in the long run. The aim is to promote long-term growth, improve productivity, ensure environmental sustainability, and enhance the livelihoods of coffee farmers.

To sum up, this study provides a comprehensive understanding of the industry, encompassing the global coffee market, the Vietnamese coffee industry. It also highlights the cultural significance of coffee in Vietnam and presents the case of Trung Nguyen as

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a notable example. Through the SWOT analysis and the road map for sustainable development, this study offers valuable insights, situational awareness, and policy recommendations to guide the future growth and sustainability of Vietnam's coffee industry.

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APPENDIXES

This glossary defines and explains terms used in this study:

Arabica(s)

A type of coffee produced from a tree of the botanical species *Coffea Arabica*, including Colombian Mild Arabicas, Other Mild Arabicas, Brazilian Natural Arabicas,

Bag

A bag means 60 kilograms or 132.276 pounds of coffee.

Coffee bean

Commercial term designating the dried seed of the coffee plant.

Coffee varieties

In this study, for statistical purposes, coffee varieties include Arabica coffee (*Coffea Arabica*) and Robusta coffee (*Coffea Canephora*), since other species are grown on a much smaller scale and the demand for them is not commercially significant.

Coffee year

A period of 12 months from 1st October to 30th September.

Consumption

The amount of green coffee entering the market for use in processing and final consumption.

Forms of coffee

The different stages of processing for the fruits and seeds of the coffee tree are denoted by various forms of coffee such as dry cherry, parchment, green, roasted, ground, decaffeinated, liquid, and soluble coffee.

Green bean/coffee

Coffee in the naked bean form (i.e. from which the silverskin has been removed) before roasting.

doi:10.6342/NTU202302451

Processed coffee

Coffee treated through any manufacturing process. To produce green coffee, beans may be processed either by the wet or dry methods of processing, producing washed and unwashed coffees respectively.

Roasted coffee

Green coffee roasted to any degree. The term includes ground coffee.

Robusta(s)

A type of coffee produced from a tree of the botanical species *Coffea Canephora.*

Speciality Coffee

The phrase *"specialty coffee"* or *"speciality coffee"* is utilized to describe coffee that has received a rating of 80 or higher on a 100-point scale by the Specialty Coffee Association (SCA). Coffee that receives a score between 90 and 100 is classified as "Outstanding", coffee that scores between 85 and 89.99 is classified as "Excellent", and coffee that scores between 80 and 84.99 is classified as "Very Good". *(Specialty Coffee Association [SCA], n.d.)*

doi:10.6342/NTU202302451