

# **The History and Origin of Coffee**

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**Bibliography:** The contents of the report were derived from the bibliography quoted herein.

**Scope:** The scope of the research is to assess the coffee production market in Puerto Rico, investigate which country is driving the market, how the price of coffee is set, and what are the opportunities for buying a Coffee Hacienda in Central America or Puerto Rico.

## **Introduction:**

### **Benefits of Drinking Coffee**

A cup of coffee in the morning may pack more than just an energy boost. More and more research is emerging to suggest that there may be several health benefits associated with drinking this dark black beverage, from helping prevent diabetes to lowering the risk of liver disease. The following is a summary of the benefits:

Coffee is rich in numerous bioactive molecules that appear to have anti-cancer properties such as inducing cancer cells suicide. Studies have shown that people with the highest coffee consumption (3 cups/day) have a 33-79% reduction in their risk of colorectal cancer compared to the lowest consumers.

Coffee may protect against cirrhosis. People who drink 4 or more cups per day have up to an 80% lower risk. Bottom Line: Coffee drinkers have a much lower risk of developing cirrhosis, which can be caused by several diseases that affect the liver.

The study's researchers found that people who drink four or more cups of coffee a day reduce their chances of developing Type 2 diabetes by 50 percent. Subsequently, with every additional cup, the risk gets lowered by 7 percent. Drinking coffee could help keep your brain healthier for longer.

In fact, there are many advantages to being one of the 54 percent of Americans over 18 who drink coffee every day. Coffee can be pretty amazing for your brain, your skin and your body.

Americans get more antioxidants from coffee than anything else. According to a study done in 2005, “nothing else comes close” to providing as many antioxidants as coffee. While fruits and vegetables also have tons of antioxidants, the human body seems to absorb the most from coffee.



**Figure 1 – Cup of Java**

### **Just smelling coffee could make you less stressed.**

Researchers at the Seoul National University examined the brains of rats who were stressed with sleep deprivation and discovered that those who were exposed to coffee aromas experienced changes in the brain proteins tied to that stress. Note, this aroma study doesn't relate to stress by itself, only to the stress felt as a result of sleep deprivation. Now, we're not entirely sure if this means you should keep a bag of roasted coffee beans on your nightstand every night, but feel free to try!

### **Coffee could lessen the symptoms of Parkinson's disease.**

Science Daily reported in 2012 that drinking coffee may help people with Parkinson's disease control their movement. Ronald Postuma, MD, the study author said, "Studies have shown that people who use caffeine are less likely to develop Parkinson's disease, but this is one of the first studies in humans to show that caffeine can help with movement symptoms for people who already have the disease."

### **Coffee is great for your liver (especially if you drink alcohol).**

A study published in 2006 that included 125,000 people over 22 years showed that those who drink at least one cup of coffee a day were 20 % less to develop liver cirrhosis-autoimmune disease caused by excessive alcohol consumption that could lead to liver failure and cancer. Arthur L Klatsky, the lead author of the study, told The Guardian, "Consuming coffee seems to have some protective benefits against alcoholic cirrhosis, and the more coffee a person consumes the less risk they seem to have of being hospitalised or dying of alcoholic cirrhosis."

Studies have also shown that coffee can help prevent people from developing non-alcoholic fatty liver disease (NAFLD). An international team of researchers led by Duke-NUS Graduate Medical School revealed that drinking four or more cups of coffee or tea a day may be beneficial in preventing the progression of NAFLD.

### **Coffee can make you feel happier.**

A study done by the National Institute of Health found that those who drink four or more cups of coffee were about 10 percent less likely to be depressed than those who had never touched the java. And apparently it's not because of the "caffeine high" — Coke can also give you a caffeine high, but it's linked to depression. Study author, Honglei Chen, MD, PhD, told Prevention.com that the proposed reason coffee makes you feel good is because of those trusty antioxidants.

### **Coffee consumption has been linked to lower levels of suicide.**

A study done by the Harvard School of public Health determined that drinking between two to four cups of coffee can reduce the risk of suicide in men and women about 50%. The proposed reason is because coffee acts as a mild antidepressant, acts as a mild antidepressant by aiding the production of neurotransmitters like serotonin, dopamine, and noradrenaline.

### **Coffee could reduce your chances of getting skin cancer (if you're a woman).**

Brigham and Women's Hospital and Harvard Medical School followed 112,897 men and women over a 20-year period, and apparently, women who drink three or more cups of coffee a day are much less likely to develop skin cancer than those who don't.

### **Coffee can make you a better athlete.**

The New York Times reports, "Scientists and many athletes have known for years, of course, that a cup of coffee before a workout jolts athletic performance, especially in endurance sports like distance running and cycling." Caffeine increases the number of fatty acids in the bloodstream, which allows athletes' muscles to absorb and burn those fats for fuel, therefore saving the body's small reserves of carbohydrates for later on in the exercise.

### **Coffee could reduce your risk of developing Type 2 diabetes.**

Coffee also lowers risk of Type 2 Diabetes, according to a study from The American Chemical Society. The study's researchers found that people who drink four or more cups of coffee a day reduce their chances of developing Type 2 Diabetes by 50 percent. Subsequently, with every additional cup, the risk gets lowered by 7 percent.

### **Drinking coffee could help keep your brain healthier for longer.**

Researchers from the University of South Florida and the University (USF) of Miami found that people older than 65 who had higher blood levels of caffeine developed Alzheimer's disease two to four years later than others with lower caffeine. Dr. Chuanhai Cao, a neuroscientist at the USF and co-author of the study said: "We are not saying that moderate coffee consumption will completely protect people from Alzheimer's disease. However, we firmly believe that moderate coffee consumption can appreciably reduce your risk of Alzheimer's or delay its onset."

### **Coffee may make you more intelligent.**

You usually drink coffee when you are sleep-deprived, right? Well, that much-needed jolt not only keeps you awake, it makes you sharper. CNN reports that coffee allows your brain to work in a much more efficient and smarter way. Time reporter, Michael Lemonick, says: "When you're sleep-deprived and you take caffeine, pretty much anything you measure will improve: reaction time, vigilance, attention, logical reasoning — most of the complex functions you associate with intelligence."

## Annex A: The History and Origin of Coffee

### Etymology

The word "coffee" entered the English language in 1582 via the Dutch *koffie*, borrowed from the Turkish *kahve*, in turn borrowed from the Arabic "qahwah." The word *qahwah* originally referred to a type of wine. The word *qahwah* is sometimes alternatively traced to the Arabic *quwwa* ("power, energy"), or to Kaffa, a medieval kingdom in Ethiopia whence the plant was exported to Arabia.

These etymologies for *qahwah* have all been disputed. The name *qahwah* is not used for the berry or plant (the products of the region), which are known in Arabic as *bunn* and in Oromo as *būn*. Semitic had a root *qhh* "dark color" which became a natural designation for the beverage. According to this analysis, the feminine form *qahwah* (also meaning "dark in color, dull, dry, sour" was likely chosen to parallel the feminine *khamr* (Wine), and originally meant "the dark one."

The Ethiopian ancestors of today's Oromo ethnic group were the first to have recognized the energizing effect of the native coffee plant. Studies of genetic diversity have been performed on *Coffea arabica* varieties, which were found to be of low diversity but with retention of some residual heterozygosity from ancestral materials, and closely related diploid species *Coffea canephora*; and no direct evidence has ever been found indicating its origin.

The word "coffee" has roots in several languages. In Yemen, which is where the coffee plant was discovered and one of the earliest cultivators of coffee, the bean was called *qahwah*, which was a truncated form of *qawhat al-bun*, meaning "wine of the bean." The Muslim trade routes brought coffee to the Middle East where the Turks called the the liquid *kahveh*. The Dutch called the brew *koffie* and brought the liquid to England along their trade routes with Asia and Africa, which finally became *coffee* in English.

About 800 AD, the coffee cultivation began in Ethiopia. While the coffee cherries may have been used as a beverage, it is believed that the Ethiopians first chewed the beans by grinding and mixing them with clarified butter (ghee) to be consumed for energy and fat replenishment on long journey. Today, some individuals in Kaffa and Sidamo still follow the tradition of consuming ground coffee in ghee remains in some areas of Kaffa and Sidamo, and may add a little melted ghee to their coffee. Slaves transported from Sudan and Ethiopia chewed coffee beans to survive the difficult journeys along the Muslim trade routes, which led to other countries learning of the coffee cherry.

In the 10<sup>th</sup> century, the history of coffee indicates the first use of coffee as stimulant and established its use. The native origin of coffee is thought to have been Ethiopia.

In the 15<sup>th</sup> century, the earliest substantiated evidence of either coffee drinking or knowledge of the coffee tree is from the 15th century, in the Sufi monasteries of Yemen.

In 1414, the beverage was known in Mecca, and in the early 1500s was spreading to the Mameluke Sultanate of Egypt and North Africa from the Yemeni port of Mocha. Associated with Sufism, a myriad of coffee houses grew up in Cairo (Egypt) around the religious University of the Azhar. These coffee houses also opened in Syria, especially in the cosmopolitan city of Aleppo, and then in Istanbul, the capital of the Ottoman Empire, in 1554.

In the middle of the 15<sup>th</sup> century, the earliest credible evidence of either coffee drinking or knowledge of the coffee tree appears in Yemen's Sufi monasteries. Coffee beans were first exported from Ethiopia to Yemen. Yemeni traders brought coffee back to their homeland and began to cultivate the bean.

By the 16th century, it had reached the rest of the Middle East, Persia, Turkey, Horn of Africa, and Northern America. Coffee then spread to the Balkans, Italy and to the rest of Europe, to Indonesia and then to America. The most popular legend of coffee in Ethiopia begins with a goat herder named Kaldi, who noticed that his goats were acting hyper and behaving strangely. He found that the goats were eating from a small shrub with bright red cherries and, after trying them, he, too, felt the stimulating effects of the coffee cherries. He took the cherries to a monastery and one monk called the berries "the Devil's work" and tossed them into the fire. The resulting aroma was so strong that the monks removed the coffee from the fire, crushed them to put out the glowing embers, and covered them with hot water to preserve them. They loved this new concoction which helped them concentrate during their chants and meditations, and decided to drink it each day as part of their religious services.

In the 16th century, the Ottoman Governor of Yemen introduced coffee to Istanbul. The Ottoman Empire developed a new method of drinking coffee, by roasting the beans. Coffee became a vital part of the Ottoman Empire Palace's cuisine. The vibrant trade between Venice and the Muslims brought a huge variety of African goods, including coffee, to Venice in the 16th century.

In 1511, it was forbidden for its stimulating effect by conservative, orthodox imams at a theological court in Mecca. However, these bans were to be overturned in 1524 by an order of the Ottoman Turkish Sultan Suleiman I, with Grand Mufti Mehmet Ebussuud el-İmadi issuing a fatwa allowing the consumption of coffee.

In 1532, Cairo, Egypt, the coffeehouses and warehouses containing coffee beans were sacked. During the 16th century, it had already reached the rest of the Middle East, the Safavid Empire and the Ottoman Empire. From the Middle East, coffee drinking spread to Italy, then to the rest of Europe, and coffee plants were transported by the Dutch to the East Indies and to the Americas.

In fact, Marco Polo brought Mocha coffee beans from the city of Mocha back to his home city of Venice. In 1645, Venetian merchants introduced coffee drinking and brewing to the Venetian aristocrats and the first European coffee house opened in Venice.

In the seventeenth century, Africa coffee grew among the natives might have used it as a stimulant. The original domesticated coffee plant is said to have been from Harar, Ethiopia, as believed by the population.

In the 19<sup>th</sup> century, as the colonization of the Americas spread, settlers brought coffee to cultivate in these regions. Soon, Central and South America were producing a significant percentage of the world's coffee.

In the 1930s, Brazil became the leading producer of coffee in the world. Today, Brazil produces over a third of the world's coffee.

### **Who Brought the Coffee to the Island?**

The first seedling of coffee was of the Arabica kind and was introduced in the island in early 1700 by a French immigrant. Some coffee historians have a different account of the beginning of coffee growing in the island. They believe that its origin dates back to the post Columbus arrival in Puerto Rico. One can reasonably suspect that coffee might have been introduced in Puerto Rico by the Spanish that found the perfect climate and soil conditions in the high altitudes of the Cordillera Central mountain regions in the late 1500's or early 1600's.

However, the introduction occurred, the fact remains that the coffee plant was born in Africa in an Ethiopian region (Kaffa). It spread out to Yemen, Arabia and Egypt and on to other parts of the world and later to the Pacific and Central and South America and the Caribbean. The coffee bean followed the same route except that it was in Europe that it first became a popular drink and later on throughout the rest of the western hemisphere.

## Annex B: History of Puerto Rican Coffee

### First Seed of Coffee

The first seedling of coffee was of the Arabica kind and was introduced in the island in early 1700 by a French immigrant. Some coffee historians have a different account of the beginning of coffee growing in the island. They believe that its origin dates back to the post Columbus arrival in Puerto Rico. One can reasonably suspect that coffee might have been introduced in Puerto Rico by the Spanish that found the perfect climate and soil conditions in the high altitudes of the Cordillera Central mountain regions in the late 1500's or early 1600's. However, the introduction occurred, the fact remains that the coffee plant was born in Africa in an Ethiopian region (Kaffa). It spread out to Yemen, Arabia and Egypt and on to other parts of the world and later to the Pacific and Central and South America and the Caribbean. The coffee bean followed the same route except that it was in Europe that it first became a popular drink and later on throughout the rest of the western hemisphere.

### Coffee Haciendas in Puerto Rico

There are about 11 Haciendas of Coffee cultivation remaining standing producing coffee at a smaller scale. The haciendas are suffering production because of lack of labor skill available on the island. Import labor from the Caribbean islands requires compliances of the immigration laws to include the following: lodging, subsistence, and d care. These benefits add to the cost of coffee production which ripples through the consumer.



Figure 1 – Coffee Zone Towns

### Best Place to Grow Coffee

For growing Arabica coffee beans, there are two optimal growing climates:



The subtropical regions, at high altitudes of 16-24° (Illy, 21). Rainy and dry seasons must be well defined, and altitude must be between 1800-3600 feet. These conditions result in one coffee growing season and one maturation season, usually in the coldest part of autumn. Mexico, Jamaica, the S. Paulo and Minas Gerais regions in Brazil, and Zimbabwe are examples of areas with these climate conditions (Illy, 21).

The equatorial regions at latitudes lower than 10° and altitudes of 3600-6300 feet (Illy, 21). Frequent rainfall causes almost continuous flowering, which results in two coffee harvesting seasons. The period of highest rainfall determines the main harvesting period, while the period of least rainfall determines the second harvest season. Because rainfall is too frequent for patio drying to occur, artificial drying with mechanical dryers is performed in this type of coffee growing environment. Examples of countries that have this climate are Kenya, Colombia, and Ethiopia.



**Figure 2 - Best Climate Conditions for Growing Coffee Beans**

Robusta coffee is grown at much lower altitudes (sea level-3000 feet) in an area 10° North and South of the equator (Illy, 22). It is much more tolerant to warm conditions than Arabica coffee. Coffee plants require specific climatic conditions. The tropical coffee plants make high demands on its environment. There is a specific geographic conditions, sunshine, temperature, wind, precipitation and soil composition, need to prevail to guarantee an excellent quality and good yields from the coffee plants.

### **Climate for Growing Arabica Coffee Beans**

Arabica coffee is grown in relatively cool climates in the region between the Tropic of Cancer and Capricorn. The optimum temperature is between 15-24°C (59-75°F) year round. Photosynthesis is slowed above these temperatures and frost damage can occur when temperatures hover around 0°C. Ideally, 1500-2500 mm of rain will fall over a nine-month period with a three-month dry season coinciding with the harvest. Areas with less rainfall can use irrigation to compensate. A period of moisture stress (rain after a dry spell) helps cause a homogenous flowering and therefore promotes a clearly defined harvesting season. Coffee producing countries with more than one wet and dry season will have more than one harvesting season. There is a direct relationship between extremes of day and nighttime temperatures and coffee quality. Experimental evidence has indicated that a large gap between day and nighttime

temperatures is beneficial to the flavor of fruits. Since a coffee cherry is a fruit and the seed is in contact with the fruit, these benefits will be passed onto the seed and therefore into the cup.

### **Kona Coffee-The Gold Standard**

Missionaries first brought coffee to Hawaii in 1810, fortuitously following Hualalai's most recent major eruption of 1800-1801. Wiping out every living thing in its path including several villages, the eruption covered the slopes with a flow of lava that poured from crater to coast.

When Pele, the mythical Hawaiian volcano goddess, spewed forth fiery molten lava from the Hualalai volcano, did she know she was laying ground for one of the finest coffees in the world? High on the hillside, the Pacific Ocean shining below and the volcano rising above, lies the home of Kona coffee. Flourishing in the cloud forest (one level below the rain forest in elevation), a vine-clad jungle of giant ferns and tropical flowers surrounds the orchards of some very special coffee trees.

Like appellations of French wine, coffee can only be called Kona if it's from the Kona region, a swath of land that stretches in a 30-mile band above the southwest coast of the big island of Hawaii. What's so special about Kona coffee? Like many Central American coffees, it's made from Guatemalan Typica, a strain of Arabica, the granddaddy of coffee beans of ancient origin. Just as early man first stood on two feet in East Africa, the first coffee plant rose off the ground in Ethiopia.

### **Cultivation Process**

Coffee cultivation is both time-consuming and labor-intensive as the plants take years to mature and must be harvested by hand. Only vigorous, healthy plants, aged 6 to 10 years in age, are eventually selected for the final harvest. Cultivators must carefully examine and select only those specimens clearly bearing the most outstanding characteristics of the specific varietal to be produced. Altitude, rainfall, and climate are all critical to the quality of the coffee harvest. Puerto Rico's lofty central mountain range, known as La Cordillera Central, offers one of the world's most idoneous settings for year-round coffee cultivation.

### **Harvest of the Fruit**

The cherry is picked at its optimal stage of ripeness when scarlet-red in color. Fruit are selected from those parts of the branch with the fullest production, while fruit at the extremities of branches is usually left untouched. This technique helps prevent unwanted cross-pollination. In warmer, equatorial climates, trees can display blossoms, ripening fruit, and mature cherries all on the same branch. Pickers must harvest the branches time and again in order to find and pluck only those perfectly-ripened berries from the branch.



**Figure 3 - Farm workers pick up the coffee berries.**

### **Processing: Wet or Dry**

Two principal methods exist for processing coffee beans once they are harvested. Traditional dry processing is less labor-intensive and less expensive. However, due to a loss of quality, dry processing is primarily used today in Brazil and parts of Africa for the mass production of lower-quality beans. Dry processing is also highly climate-dependent, as the beans are ordinarily sun-dried, which renders the process somewhat unpredictable in nature. Wet processing is the much more accepted method for the production of higher-grade coffee. In wet processing, harvested cherries are carefully directed down a series of water channels where they receive an initial cleansing. Unripen fruit tends to sink to the bottom while ripened fruit will continue to float.

### **Pulping**

The coffee bean used for roasting is not the cherry itself-but rather, its enclosed seeds. Seeds are flat in shape and are normally found in pairs: two per cherry. To get ready for roasting, these seeds must first be physically separated from the surrounding fruit flesh. This process, known as 'pulping', should be done the same day of harvest to ensure optimal quality.

### **Washing and Drying**

After fermentation, the beans must be washed and then dried-either on long racks lying in the sun or in rotating mechanical drums which circulate hot air within their chambers. Traditional sun-drying can last up to a full week, depending on the local weather conditions whereas mechanized drum-drying is usually accomplished in a day.

At this stage, the beans themselves are still encased in a silky, protective inner skin known as the "parchment." Hulling is necessary to remove this skin and prepare the beans for roasting. Special machines accomplish this by mechanical friction which physically tears the husk away from the bean. After hulling, the beans are typically olive-green in color and consequently, coffee, once it has been hulled, is often referred to as "green coffee."

## **Roasting**

Now the beans are ready for roasting. The application of smooth, uniform heat elicits qualities of both flavor and aroma from the bean critical to its final performance. The bean physically swells. Color changes as well, now acquiring the characteristic nutty-brown to dark chocolaty-brown tones associated with the beverage itself

Premier Coffee: There are two premier coffee Alto Grande and Yaucono Select.

## **Small Coffee Growers**

Unfortunately, for the small coffee farmers the industry has experienced a steady sharp decline during the last decade and is trying to recuperate from the bad reputation that's been caused by unscrupulous big roasters. They do not sell coffee from every nook and cranny of the world. The super-premium select cultivated and hand-picked Arabica Bourbon grown in the high altitude shaded mountains of the Cordillera Central of Puerto Rico.

The small farmers concede that a shortage of pickers some of the crop is lost and never harvested but they insist that this problem does not affect them directly and they still manage to grow and produce enough to supply the most demanding coffee connoisseur. The demand for Puerto Rican's coffee has dwindled because of the damage done by the deceitful practice of the big roasters of selling coffee with a Puerto Rico label when in fact the content might be coffee mixed with third world countries. The devastating destruction caused by Hurricanes like Hugo and Georges are the reasons for the decay of the coffee industry. It has been a constant adulteration of the product which produces coffee of a lower quality that can't compete in the world markets with roasters from Jamaica, Hawaii, Colombia, etc.

The coffee growing region of Puerto Rico which is located in the Cordillera Central of the island. We recognize the fact that Corsican immigrants in the 1800's settled in the Yauco mountain section and made coffee their main concern and did produce considerable crops of the best qualities. In comparison to Yauco other coffee growing towns produce much more and better coffee than Yauco. Yauco is popular because of the Yaucono brand and the history that was written around the Corsican influence there.

## **Topography**

The topography of the island is very simple, it's mountainous in the center from east to west especially the coffee region, and the coastal areas around the perimeter of the island is mostly plane land where coffee is not cultivated. If you look where Yauco is located, you can see that it's in the south coast near the town of Guanica which is known for having the only Dry Forest in Puerto Rico. Coffee can't survive in this environment conditions.

## **Shading Coffee Plants**

Shaded coffee plantations are a simple but stable agro-ecosystem that can be an important wildlife management tool. A shaded canopy provides most of the ecological functions of the

natural environment, including soil conservation, and nutrient recycling. The benefits of shaded coffee plantations are being lost due to “sun” coffee plantations—monocultures of plants without protection from native shade trees. Without shade trees, critical ecological processes are interrupted or eliminated, resulting in loss of habitat, sedimentation, water pollution, and loss of fertile soils and productive agricultural lands. Although most farmers prefer shaded plantations because they last longer and produce higher quality beans, government subsidies are encouraging conversion to the sun plantations, which generally produce higher yields. The rich volcanic soil and climate of Puerto Rico's interior proved the perfect place to grow coffee.

### **Government Agencies as Partners**

There are several government and private organizations that support the coffee industry:

USDI Fish and Wildlife Service (FWS, USDA Forest Service and USDA Natural Resources Conservation Service, Puerto Rico Departments of Natural Resources, Agriculture, and Extension Service; University of Puerto Rico, Hacienda Central Pellejas Inc., Hacienda Verde Inc., Hacienda Luisa Inc., Café del Alba Coffee Co., Puerto Rico Conservation Trust, Enviro Survey Inc., Puerto Rico Association of Conservation Districts, and hundreds of coffee growers.

The Fish and Wildlife Service’s Partners for Fish & Wildlife Program is working with coffee growers in the Caribbean, encouraging them to voluntarily restore native shading canopy in coffee plantations.

The Puerto Rico Department of Natural Resources, FWS, and non-government organizations are providing the trees, as well as funds and/or technical assistance. Partnering corporations also help by promoting sustainable growing practices. Financial assistance is not provided but their participation is confined to counseling and provide advice how to improve the coffee crop.

### **Maricao Coffee Hacienda**

I have chosen the Maricao Coffee Hacienda from eleven to depict the model how the Haciendas were managed and operated by a patriarch. Today’s management of the haciendas are grandchildren of the patriarch, the original owner of the Hacienda. It is the model how the hacienda was managed during the 1941-1945-time frame which was the peak of coffee production in Puerto Rico.

The Maricao Hacienda is one of the largest coffee plantations in Maricao named Hacienda Juanita. This farm and the town are known for producing the best coffee of Puerto Rico that was exported to Europe and coveted worldwide as the best and was the coffee that was preferred by the Vatican. This coffee was introduced with great acceptance in France, Spain, England and all over the world in the beginning of the 19th century. The Café Arabica de Puerto Rico is a bean that's hard and of the best kind with all the qualities necessary to produce the rich and exquisite flavor and aroma of Puerto Rican coffee.

The coffee growers of Maricao and neighboring coffee growing towns like Las Marias, Lares, Ciales, Adjuntas, Jayuya, and Utuado have dedicated more than 500 years to the perfection of the

production of coffee beans. This coffee can only be achieved when the climate, the soil, and the elevation of the land are favorable and can be controlled for the cultivation of coffee. The town of Maricao is also known for its traditional festival 'La Fiesta del Acabe del Café' which is celebrated every year during the month of February. It had been a tradition of the big coffee plantation owners to celebrate the end of the harvest with a feast for their workers, neighbors and friends 'La Fiesta del Acabe del Café'. The festival is a local celebration of the pride and the hard work associated with coffee farming.

The most adequate and controlled cultivation and of the dedication and efforts of the coffee growers of Maricao and Jayuya. A cup of coffee with the freshness of the mountain. It's a coffee bean exclusively grown in the most perfect soil and high altitude with the climate conditions only found in the Puerto Rico high land and rain forest shadowy characteristics.

This coffee is elaborated in the farm where it's grown and harvested and it's produced by the same family under their strict care and experience.

### **Puerto Rican Coffee Industry Capacity**

The coffee industry of Puerto Rico is very anemic. The source of income and employment for 250,000 people (part time workers) in 21 districts. According to the agriculture census in 2002, it is comprised of approximately 57, 549 farmers in 9800 acres of land that equates to 5.9 acres per farmer. The total number of bushels harvested were 220,523. The total market value of the harvest was \$42, 095,123. The small farms of less than 19 acres produced 44 % of coffee harvest, the median between 20-99 acres on 32.8 % and 22.8 % large farms. The coffee consumption in Puerto Rico is about 325, 000 bushels, equivalent to per capita consumption of 8.15 pounds per person.

The harvest time in Puerto Rico is from August to January. It is paid based on harvest by bushels (almudes), volumetric measure equivalent to 20 liters or 28 pounds. With proper care and management and maintain grain yield can reach about 5 pounds per bushel milled of Bourbon coffee. The coffee zone contributes to the environment in preserving water quality, and preservation of wildlife and flora. The rivers that originate in this area supplement our lakes, satisfy human consumption, agriculture and industrial development. The average coffee yield is about 4.5 pounds per bushel milled coffee.

### **Internal Consumption**

Coffee is the world's favorite beverage and the second most valuable legally traded commodity in the world. Experts estimate that 2.25 billion cups of coffee are consumed each day worldwide. The coffee that is roasted and sold commercially in Puerto Rico for local consumption could be blended with imported coffee from other countries and thus cannot be considered 100% Pure Puerto Rican coffee. The reason for this is that every year the coffee crop in Puerto Rico falls short for local consumption and can't provide enough to supply the local industry and they have to mix it with beans bought and imported from other countries to augment and provide enough to meet the local consumption.

The biggest three roasters, Yaucono, Cafe Rico, and Cafe Crema control 70% of the coffee production in Puerto Rico. When the yearly crop is not enough for the local demand the government imports from other countries. It has been reported in the local press that on several occasions that the government has confiscated shipments of illegally imported coffee that was going to be delivered to some of the big roasters. In summary, the coffee you buy in the supermarkets is not necessarily grown in PR. This practice of mixing is producing coffee of lower qualities that does not compare to the coffee that's grown by the small farms in the mountains of Puerto Rico. The taste and aroma and qualities are not the same as the famous coffee that gave Puerto Rico Coffee its fame worldwide.

### **Cultural Aspects of Coffee Plantations**

It may not be as famous as its Colombian cousin, but Puerto Rico has enjoyed a long association with coffee. The bean came to the island in the 1700s and quickly became its principal export. In the late 1700s, the island began to produce coffee, and it quickly became Puerto Rico's most lucrative export. In addition, the rich soil became a source of tobacco and sugar. The 1800s saw a gradual shift in Puerto Rico from a military fortification to an agricultural resource. And in the middle of this agricultural revolution was a working class that has become synonymous with Puerto Rican culture: The Jíbaro.

It also gave rise to an agrarian mountainfolk who have become romantic symbols of working class Puerto Ricans, called: "The Jíbaros." The jíbaros were country folk who worked the coffee plantations for the wealthy hacendados, or landowners. They were little better off than indentured servants, and since they were uneducated, their most lasting form of expression came through music; the songs of the Jíbaros have endured over time. In the early 1940, the wages for a coffee picker (part time) was based on the number of bushels picked during the harvest per day. Some families brought their own children (ranging from 8-16 years old), at that time there were no restrictions on child labor laws. The permanent employees' wages were one dollar and hour.

The 1800s saw a gradual shift in Puerto Rico from a military fortification to an agricultural resource. And in the middle of this agricultural revolution was a working class that has become synonymous with Puerto Rican culture: The Jíbaro.

### **The Rise of the Jíbaros**

The Jíbaros were the country folk from the interior of Puerto Rico who were principally farmers and laborers. It was largely on their backs that the agricultural boom took place. The Jíbaros worked the fields and plantations of the hacendados, or Spanish landowners. The arrangement was typical for the times: Jíbaros weren't slaves (the Spanish imported slaves from Africa), but they were an impoverished and uneducated group. And, like the slaves, they found their voices in music; today, the songs of the Jíbaros are a celebrated part of the island's culture.

### **Harvest-Lack of Labor**

Thousands of acres of mountainside coffee plantations that once helped make Puerto Rico one of the most prominent coffee producing regions in the world have been untouched in recent

harvests. The demand for Puerto Rican coffee has not declined; in fact, the local demand outweighs what the farmers can produce. But the inability to find enough coffee bean pickers willing to perform the tedious work at minimum wage has crippled the Puerto Rican coffee business over the last decade.

The lack of willing workers exists despite an unemployment rate of 15.2 percent on the island as of this March, according to the Bureau of Labor Statistics, a jobless rate almost twice that on the mainland United States. The dilemma has coffee growers and politicians considering help from abroad -- either from undocumented immigrants or through guest worker programs. The once a flourishing industry has become a struggling trade for farmers whose production is a fraction of what it was in the past.

In Adjuntas, thousands of acres of farmland in the lush central mountains of the island are covered by the small trees. From roadside views it's hard to believe that farmers have actually cut back on what they cultivated; but the reality for farmers, roasters and intermediaries is that the majority of the beans produced on those trees will never be used.

### **A Universal Problem in Agriculture**

Welfare and unemployment has played a major role in the decline of the coffee production. Unemployed people aren't necessarily willing to do anything because the welfare benefits exceed the wage rate offer by the producers.

As a commonwealth of the United States, Puerto Rico residents are eligible to receive government benefits including unemployment compensation, disability payments and food stamps, which Rivera says are discouraging those without a job to take on the grueling labor of working in the fields. Younger generations see coffee harvesting as a very sacrificed way for wages earned. Hence, most coffee pickers are in the 40 plus years of age. The harvest only lasts five months total for Puerto Rico, two months per farm that translates into a part time job. There is no employment stability. These issues are not exclusive to the island. Labor shortages linked to substandard wages and people who take these jobs are universal problem in agriculture including several regions in the United States.

### **Foreign Labor Workers**

In 1980, an influx of undocumented immigrants from the Dominican Republic kept the coffee industry thriving. The industry was dependent on thousands of workers who were in the country illegally. When Hurricane Georges struck Puerto Rico in 1998, it took a toll on the agriculture industry wiping out nearly all of the island's crops. Because it takes a coffee tree three to four years to mature, Puerto Rico did not realize there was a deficit of workers until 2002 when it came time to harvest.

In 1996, Coffee plantations owners were not experiencing a real issue with labor but then the government didn't recognize that the locals were actually absent. But since Hurricane Georges pretty much devastated the area where these immigrants were working, they had to move



elsewhere. They had to work and they came to the San Juan area and now they don't want to know anything about picking coffee.

In February of 2011, the Puerto Rican Senate passed Bill 1038, a measure that would allow farmers to hire foreign laborers to solve the labor shortage. But in order to make an international call for workers, the island first has to prove that both local and national residents do not want to take these jobs. However, all foreign workers are subject to the immigration laws of the United States.

### **2007 Coffee Production**

Coffee is a major crop of Puerto Rico. According to the 2007 Puerto Rico Census of Agriculture, there were 4,094 coffee farms on the island that brought in \$41,721,396 that year just below sales of plantains, which brought in \$44,874,655. As a result of labor shortages during harvest over the last decade, some farmers claim that nearly 75 percent of their crops go unpicked.

### **Global Exchange of Trade of Coffee**

Because coffee is so widely traded and consumed, it has an immense impact on the economic well-being of people in poor countries. It also offers one of the most promising avenues for bringing about positive change. Global Exchange believes that as we criticize free trade and corporate globalization for its lack of democracy and exploitation of poor people around the world, we need to promote our own vision of a just global trade system based on economic justice. In our work against sweatshops, we have struggled for years with the need for a comprehensive system of monitoring of wages and factory conditions that doesn't yet exist for garments as it does for coffee. With the inception of Fair Trade USA, Fair Trade Coffee certification became the first commodity where an independent monitoring system could track and verify that Fair Trade criteria had been met. **Top Ten Countries Coffee Producers**

A team of roasters claim to be the expert in determine what is the best brewing of coffee, however, a conglomerate of coffee roasters conclude the following categories:

| <b>Ranking</b> | <b>Country</b> |
|----------------|----------------|
| 01             | Ethiopia       |
| 02             | Kenya          |
| 03             | Colombia       |
| 04             | Guatemala      |
| 05             | Costa Rica     |
| 06             | Honduras       |

|    |                              |
|----|------------------------------|
| 07 | Indonesia                    |
| 08 | Rawanda                      |
| 09 | Panama                       |
| 10 | USA (Hawaii and Puerto Rico) |

### **What is the commodity chain of the coffee industry?**

Coffee is an extremely powerful commodity, reigning as the world's most heavily traded product, behind petroleum, and the largest food import of the United States. The global commodity chain for coffee involves a string of producers, middlemen, exporters, importers, roasters, and retailers before reaching the consumer.

Coffee is a vital source of export for many of the developing countries that grow it. Some 20 million families in 50 countries now work directly in the cultivation of coffee; an estimated 11 million hectares of the world's farmland are dedicated to coffee cultivation. Arabica and Robusta are the two principle species of coffee harvested today. Approximately 70% of the world's production is the Arabica bean, used for higher-grade and specialty coffees, and 80% of this bean comes from Latin America. Robusta is grown primarily in Africa and Asia.

Most small farmers sell directly to middlemen exporters who are commonly referred to as coyotes. These coyotes are known to take advantage of small farmers, paying them below market price for their harvests and keeping a high percentage for themselves. In contrast, large coffee estate owners usually process and export their own harvests that are sold at the prices set by the New York Coffee Exchange. However, extremely low wages (\$2-3/day) and poor working conditions for farmworkers characterize coffee plantation jobs.

Importers purchase green coffee from established exporters and large plantation owners in producing countries. Only those importers in the specialty coffee segment buy directly from the small farmer cooperatives. Importers provide a crucial service to roasters who do not have the capital resources to obtain quality green coffee from around the world. Importers bring in large container loads and hold inventory, selling gradually through numerous small orders. Since many roasters rely on this service, importers wield a great deal of influence over the types of green coffee that are sold in the US.

There are approximately 1200 roasters in the US today. Large roasters usually have one blend of recipes and sell to large retailers - the Big Three (Kraft, which owns Maxwell House and Sanka, owned by Philip Morris; Procter & Gamble, which owns Folgers and Millstone; and Nestle) maintain over 60% of total green bean volume. Micro roasters, or those who roast up to 500 bags of coffee a year, offer the product we know as specialty coffee. Most roasters buy coffee from importers in small, frequent purchases. Roasters have the highest profit margin in the value chain, thus making them an important link in the commodity chain.

Retailers usually purchase packaged coffee from roasters, although an increasing number of retailers are also roasting their own beans for sale. The Specialty Coffee Association of America estimated that there are 10,000 cafes and 2,500 specialty stores selling coffee. Chains represent approximately 30% of all coffee retail stores. However, supermarkets and traditional retail chains are still the primary channel for both specialty coffee and non-specialty coffee, and they hold about 60% of market share of total coffee sales. Around the globe, the annual consumption of coffee is 12 billion pounds and in the U.S. alone, over 130 million consumers are coffee drinkers.

### **What role does coffee play in the US economy?**

Coffee is the US's largest food import and second most valuable commodity only after oil. According to the International Coffee Organization, the US imported 2.72 billion pounds of coffee from September 2001 to September 2002. The US primarily purchases coffee from Brazil, Colombia, Mexico, Guatemala, and Vietnam. The U.S. also buys coffee from Indonesia, Costa Rica, Peru, El Salvador, Ecuador, Venezuela, Honduras, Uganda, Thailand, Nicaragua, India, and Papua New Guinea. In the U.S. alone, over 130 million consumers are coffee drinkers. In recent years, new cafés have been opening at an explosive rate, making specialty coffee mainstream and increasing profit margins for specialty coffee roasters and retailers. The Specialty Coffee Association of America estimated that there are 10,000 coffee cafes and 2,500 specialty stores selling coffee. Chains represent 30% of all coffee retail stores, but the majority remain in the hands of independent owners or small family businesses.

### **How are coffee prices currently set?**

Coffee prices are set according to the New York "C" Contract market. The price of coffee fluctuates wildly in this speculative economy, generally hovering around fifty cents per pound. Most coffee is traded by speculators in New York, who trade approximately 8-10 times the amount of actual coffee produced each year. The single most influential factor in world coffee prices is the weather in Brazil. Droughts and frosts portend shortages of coffee and the price increases.

Specialty coffee is often imported at a negotiated price over the C market, which is considered a 'quality premium'. Most of those premiums never reach the coffee farmer, but rather stay in the hands of the exporter. This creates a disincentive for farmers to increase their quality, as they do not receive the direct benefits of increased investment in producing better coffee.

## **Annex C – Coffee Production in Costa Rica**

Coffee production has played a key role in Costa Rica's history and continues to be important to the country's economy. In 2006, coffee was Costa Rica's number three export, after being the number one cash crop export for several decades. In 1997, the agriculture sector employed 28 percent of the labor force and comprised 20 percent of Costa Rica's total GNP. Production increased from 158,000 tons in 1988 to 168,000 tons in 1992. The largest growing areas are in the provinces of San José, Alajuela, Heredia, Puntarenas, and Cartago. The coffee is exported to other countries in the world and is also exported to cities in Costa Rica.

### **History**

In 1779, coffee production in the country began in the Meseta Central which had ideal soil and climate conditions for coffee plantations. Coffee Arabica first imported to Europe through Arabia, whence it takes its name, was introduced to the country directly from Ethiopia.

In the nineteenth century, the Costa Rican government strongly encouraged coffee production, and the industry fundamentally transformed a colonial regime and village economy built on direct extraction by a city-based elite towards organized production for export on a larger scale. The government offered farmers plots of land for anybody who wanted to harvest the plants.

The coffee plantation system in the country therefore developed in the nineteenth century largely as result of the government's open policy, although the problem with coffee barons did play a role in internal differentiation and inequality in growth. As early as 1829, coffee became a major source of revenue surpassing cacao, tobacco, and sugar production.



**Figure 1 - Early Plantation Workers in Costa Rica**

In 1821, exports across the border to Panama were not interrupted when Costa Rica joined other Central American provinces in a joint declaration of independence from Spain.

In 1832, Costa Rica, at the time a state in the Federal Republic of Central America, began exporting coffee to Chile where it was re-bagged and shipped to England under the brand of “Café Chileno de Valparaíso.”

In 1843, a shipment was sent directly to the United Kingdom by William Le Lacheur Lyon, captain of the English ship. The Monarch, who had seen the potential of directly cooperating with the Costa Ricans. He sent several hundred-pound bags and the British developed an interest in the country. They invested heavily in the Costa Rican coffee industry, becoming the principal customer for exports until World War II.

Growers and traders of the coffee industry transformed the Costa Rican economy, and contributed to modernization in the country, which provided funding for young aspiring academics to study in Europe. In 1890, the revenue generated by the coffee industry in Costa Rica funded the first railroads linking the country to the Atlantic Coast. The “Ferrocarril al Atlántico” and the National Theater itself in San José is a product of the first coffee farmers in the country.

In the mid-20<sup>th</sup> Century, coffee was vital to the Costa Rican economy by the early to mid-20<sup>th</sup> Century. Leading coffee growers were prominent members of society. The centrality of coffee production in the economy, price fluctuations from changes to conditions in larger coffee producers, like Brazil, had major reverberations in Costa Rica. When the price of coffee on the global market dropped, it could greatly impact the Costa Rican economy.

In 1955 an export tax was placed on Costa Rican coffee. This however was abolished in 1994. In 1983, a major blight struck the coffee industry in the country, throwing the industry into a crisis that coincided with falling market prices; world coffee prices plummeted around 40% after the collapse of the world quota cartel system.

By the late 1980s and early 1990s, coffee production had increased, from 158,000 tons in 1988 to 168,000 in 1992, but prices had fallen, from \$316 million in 1988 to \$266 million in 1992. In 1989, Costa Rica joined Honduras, Guatemala, Nicaragua, and El Salvador to establish a Central American coffee retention plan which agreed that the product was to be sold in installments to ensure market stability. There was an attempt by the International Coffee Organization in the 1990s to maintain export quotas that would support coffee prices worldwide.

At present, the production of coffee in the Great Metropolitan Area around the capital of San José has decreased in recent years due to the effects of urban sprawl. As the cities have expanded into the countryside, poor plantation owners have often been forced to sell up to the real estate developers to build commercial and private real estate properties.

## **Production**

Coffee production in the country relies on cheap, seasonal labor: Nicaraguan immigrants are often employed on these plantations. Coffee cultivators in the country are paid very little, often as little as US\$1.5 per basket picked, but the wages are not less than in many other industries of

the Costa Rican primary sectors. The berries are picked by the workers and are transported to processing plants to be washed and to remove the pulp around the beans.

In Costa Rica the processing plants where this process is done are called “beneficios”; but the effects of pulp removal may result in non-beneficial environmental effects (see below). The beans are then laid out to dry in the sun, then sorted according to size and shape.

Although mechanical drying is gradually replacing manual labor in places, time consuming sun drying, and equipment are required to dry the wet seeds after pulping. Once processing is complete, the coffee is bagged into burlap sacks (with or without a moisture barrier bag) and stored until exported.

### **Reputation**

Costa Rican coffee beans are considered among the best in the world. Tarrazú is thought to produce the most desirable coffee beans in Costa Rica. In 2012, Tarrazú Geisha coffee became the most expensive coffee sold by Starbucks in 48 of their stores in the United States, using the Clover automated French press.

The Agriculture and Livestock Ministry and the Costa Rican Coffee Institute organize an annual festival: National Coffee Day, during which a producer is awarded the Cup of Excellence for the highest quality of coffee produced in Costa Rica. The winner sells their coffee through an auction to the international community.

### **Major Growing Regions and Seasons**

The major growing regions and season are illustrated in the table below. The finest coffee is typically grown at altitudes of 1200 to 1700 meters, in a shorter winter growing season; the lower quality coffee is typically grown at altitudes below 1200 meters, in a longer growing season that lasts from late summer through to winter.

**Table I - Growing Coffee Regions**

| <b>Region</b> | <b>Altitude</b> | <b>Harvest season</b> | <b>Blend nature</b>                                    |
|---------------|-----------------|-----------------------|--|
| West Valley   | 1200-1650m      | Nov-March             | High fine acidity<br>Very good body<br>Very good aroma |
| Tarrazu       | 1200-1700m      | Dec-March             | High fine acidity<br>Very good body<br>Very good aroma |

|                    |            |           |  |
|--------------------|------------|-----------|--|
| Tres Ríos, Cartago | 1200-1650m | Dec-March | High fine acidity<br>Very good body<br>Very good aroma |
| Orosí              | 900-1200m  | Sept-Feb  | Good acidity<br>Good body<br>Good aroma                |
| Brunca             | 800-1200m  | Aug-Jan   | Normal acidity<br>Normal body<br>Normal aroma          |
| Turrialba          | 600-900m   | July-Dec  | Normal acidity<br>Poor body<br>Good aroma              |

## Annex D: Tour of Coffee Production in South America

### Brazil

Coffee production in Brazil is responsible for about a third of all coffee, making Brazil by far the world's largest producer, a position the country has held for the last 150 years. Coffee plantations, covering some 27,000 km<sup>2</sup> (10,000 sq mi), are mainly located in the southeastern states of Minas Gerais, São Paulo and Paraná where the environment and climate provide ideal growing conditions.

The crop first arrived in Brazil in the 18th century and the country had become the dominant producer by the 1840s. Production as a share of world production peaked in the 1920s, with the country supplying 80% of the world's coffee, but has declined since the 1950s due to increased global production.

| <b>Coffee Production in Brazil</b> |                     |
|------------------------------------|---------------------|
| <b>2011</b>                        |                     |
| <b>Production</b>                  |                     |
| <b>Total production</b>            | 2,609,040 tonnes    |
| <b>Types produced</b>              | Arabica and robusta |
| <b>Total area planted</b>          | 2,339,630 ha        |
| <b>Harvesting year</b>             | April–March         |
| <b>Processing method</b>           | Dry and wet         |
| <b>Exports</b>                     |                     |
| <b>Green (total)</b>               | 1,808,462 tonnes    |



|                           |  |
|---------------------------|--|
| <b>Green (arabica)</b>    | 1,648,262 tonnes                       |
| <b>Green (robusta)</b>    | 160,199 tonnes                         |
| <b>Processed coffee</b>   | 201,989 tonnes GBE <sup>[note 1]</sup> |
| <b>% of total exports</b> | 3.5%                                   |
| <b>% of GDP</b>           | 0.35%                                  |

Coffee is not native to the Americas and had to be planted in the country. The first coffee bush in Brazil was planted by Francisco de Melo Palheta in the state of Pará in 1727. According to the legend, the Portuguese were looking for a cut of the coffee market, but could not obtain seeds from bordering French Guiana due to the governor's unwillingness to export the seeds. Palheta was sent to French Guiana on a diplomatic mission to resolve a border dispute. On his way back home, he managed to smuggle the seeds into Brazil by seducing the governor's wife who secretly gave him a bouquet spiked with seeds.

#### Share of major Brazilian exports of total exports 1821–1850 (%)

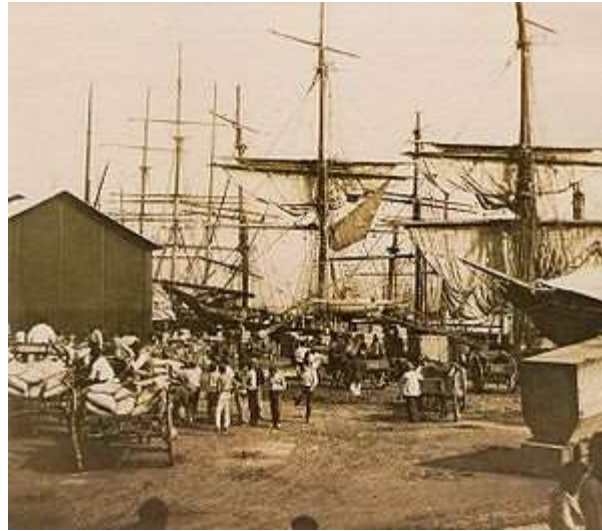
|           | <b>Sugar</b> | <b>Cotton</b> | <b>Coffee</b> | <b>Others</b> |
|-----------|--------------|---------------|---------------|---------------|
| 1821–1830 | 30.1         | 20.6          | 18.4          | 30.9          |
| 1831–1840 | 24.0         | 10.8          | 43.8          | 21.4          |
| 1841–1850 | 26.7         | 7.5           | 41.4          | 24.4          |

Source: Bethell 1985, p. 86

Coffee spread from Pará and reached Rio de Janeiro in 1770, but was only produced for domestic consumption until the early 19th century when American and European demand increased, creating the first of two coffee booms. The cycle ran from the 1830s to 1850s, contributing to the decline of slavery and increased industrialization. Coffee plantations in Rio de Janeiro, São Paulo and Minas Gerais quickly grew in size in the 1820s, accounting for 20% of worlds production.

By the 1830s, coffee had become Brazil's largest export and accounted for 30% of the world's production. In the 1840s, both the share of total exports and of world production reached 40%, making Brazil the largest coffee producer. The early coffee industry was dependent on slaves; in the first half of the 19th century 1.5 million slaves were imported to work on the plantations. When the foreign slave trade was closed off by the British in 1850, plantation owners began

turning more and more to European immigrants to meet the demand of labor. However, internal slave trade with the north continued until slavery was finally abolished in Brazil in 1888.



**Figure 1 - Coffee being embarked in the Port of Santos, São Paulo, 1880**

The second boom ran from the 1880s to the 1930s, corresponding to a period in Brazilian politics called *café com leite* ("coffee with milk"). The name refers to the largest states' dominating industries: coffee in São Paulo and dairy in Minas Gerais.

The Zona da Mata Mineira district grew 90% of the coffee in Minas Gerais region during the 1880s and 70% during the 1920s. Most of the workers were black men, including both slaves and free. Increasingly Italian, Spanish and Japanese immigrants provided the expanded labor force.

The railway system was built to haul the coffee beans to market, but it also provided essential internal transportation for both freight and passengers, as well as develop a large skilled labor force. The growing coffee industry attracted millions of immigrants and transformed São Paulo from a small town to the largest industrial center in the developing world. The city's population of 30,000 in the 1850s grew to 70,000 in 1890 and 240,000 in 1900. With one million inhabitants in the 1930s São Paulo surpassed Rio de Janeiro as the country's largest city and most important industrial center.

By the early 20th century, coffee accounted for 16% of Brazil's gross national product, and three fourths of its export earnings. The growers and exporters played major roles in politics; however, historians are debating whether not they were the most powerful actors in the political system.

The February 1906 "valorization" is a clear example of the high influence on federal politics São Paulo gained from the coffee production. Overproduction had decreased the price of coffee, and to protect the coffee industry – and the interests of the local coffee elite, the government was to control the price by buying abundant harvests and sell it at the international market at a better opportunity. The scheme sparked a temporary rise in the price and promoted the continued

expansion of the coffee production. The valorization scheme was successful from the perspective of the planters and the Brazilian state, but led to a global oversupply and increased the damages from the crash during the Great Depression in the 1930s.

In the 1920s, Brazil was a nearly monopolist of the international coffee market and supplied 80% of the world's coffee. Since the 1950s, the country's market share steadily declined due to increased global production. Despite a falling share and attempts by the government to decrease the export sector's dependency on a single crop, coffee still accounted for 60% of Brazil's total exports as late as 1960.<sup>1</sup>

## **Colombia**

Coffee production in Colombia has a reputation as producing mild, well balanced coffee beans. Colombia's average annual coffee production of 11.5 million bags is the third total highest in the world, after Brazil and Vietnam, though highest in terms of the arabica bean. The beans are exported to United States, Germany, France, Japan, and Italy. Most coffee is grown in the Colombian coffee growing axis region. In 2007, the European Union granted Colombian coffee a protected designation of origin status. In 2011 UNESCO declared the “Coffee Cultural Landscape” of Colombia, a World Heritage site.

The coffee plant had spread to Colombia by 1790. The oldest written testimony of the presence of coffee in Colombia is attributed to a Jesuit priest, José Gumilla. In his book *The Orinoco Illustrated* (1730), he registered the presence of coffee in the mission of Saint Teresa of Tabajé, near where the Meta river empties into the Orinoco. In 1787, the coffee production was registered with the Spanish authorities where the first coffee crops were planted in the eastern part of the country.

In 1835, the first commercial production was registered with 2,560 green coffee bags that were exported from the port of Cucuta, near the border with Venezuela. A priest named Francisco Romero is attributed to have been very influential in the propagation of the crop in the northeast region of the country. After hearing the confession of the parishioners of the town of Salazar de la Palmas, he required as penance the cultivation of coffee. Coffee became established in the departments of Santander and North Santander, Cundinamarca, Antioquia, and the historic region of Caldas.

Despite these early developments, the consolidation of coffee as a Colombian export did not come about until the second half of the 19th century. The great expansion that the world economy underwent at that time allowed Colombian landowners to find attractive opportunities in international markets. The United States became the most important consumer of coffee in the world, while Germany and France became the most important markets in Europe.

The then large Colombian landowners had already tried to exploit the new opportunities that the expansion of the international markets offered. Between 1850 and 1857 the country experienced a significant increase in tobacco and quinine exports, and thereafter leather and live cattle. These early efforts in the export of agricultural commodities turned out too fragile; they in fact were

only reactionary attempts to find the greatest profitability from the high international prices of the time, rather than attempts to create a solid and diversified export platform.

From the 19th to the 20th century, the fall of coffee international prices, that registered the transition the profitability of the large estates plummeted. The Thousand Days War was another factor that contributed to the fall of coffee prices and decay of farm production of coffee. In summary, these circumstances caused these producers that had incurred in large amounts of foreign debt in order to further develop their plantations, which finally ruined them. The coffee estates of Santander and North Santander entered into crisis and the estates of Cundinamarca and Antioquia stalled.



**Figure 2 - A Coffee Plantation in Quimbaya, Quindío**

The crisis that affected the large estates brought with it one of the most significant changes of the Colombian coffee industry. Since 1875 the number of small coffee producers had begun to grow in Santander as well as in some regions of Antioquia and in the region referred to as Viejo or Old Caldas.

In the first decades of the 20th century, a new model to develop coffee exports based on the rural economy had already been consolidated, supported by internal migration and the colonization of new territories in the center and western regions of the country, principally in the departments of Antioquia, Caldas, Valle, and in the northern part of Tolima. Both the expansion of this new coffee model and the crisis that affected the large estates allowed the western regions of Colombia to take the lead in the development of the coffee industry in the country.

This transformation was very favorable for the owners of the small coffee estates that were entering the coffee market. The cultivation of coffee was a very attractive option for local farmers, as it offered the possibility of making permanent and intensive use of the land. Under this productive model of the traditional agriculture, based on the slash and burn method, the land remained unproductive for long periods of time. In contrast, coffee offered the possibility of having an intense agriculture, without major technical requirements and without sacrificing the cultivation of subsistence crops, thus generating the conditions for the expansion of a new coffee culture, dominated by small farms.

Although this new breed of coffee made of country farmers demonstrated a significant capacity to grow at the margin of current international prices, Colombia did not have a relatively important dynamism in the global market of this product. During the period between 1905 and 1935, the coffee industry in Colombia grew dynamically thanks to the vision and long term politics derived from the creation of the Federación Nacional de Cafeteros de Colombia (National Federation of Coffee Growers of Colombia) in 1927.

The union of local farmers and small producers around the Federation has permitted them to confront logistical and commercial difficulties that would not have been possible individually. In 1938, the research enterprise was founded, called Cenicafe. Moreover, the Federation's agricultural Extension Service, improved cultivation systems. They developed efficient spatial patterns that permitted the differentiation of the product and supported its quality. Currently the Land of Coffee in Colombia includes all of the mountain ranges and other mountainous regions of the country, and generates income for over 500,000 coffee farming families.

### **Climate Change**

Regional climate change associated with global warming has caused Colombian coffee production to decline since 2006 from 12 million 132-pound bags, the standard measure, to 9 million bags in 2010. Average temperatures have risen 1 degree Celsius between 1980 and 2010, with average precipitation increasing 25 percent in the last few years, disrupting the specific climatic requirements of the *Coffea arabica* bean.

### **Colombian Coffee Growing Axis**

The coffee growing axis (Spanish: *Eje Cafetero*), also known as the coffee triangle (Spanish: *Triángulo del Café*) is a part of the Colombian Paisa region. There are three departments in the area: Caldas, Quindío and Risaralda. These departments are among the smallest departments in Colombia with a total combined area of 13873 km<sup>2</sup> (5356 mi<sup>2</sup>), about 1.2% of the Colombian territory. The combined population is 2,291,195 (2005 census). In 2011, UNESCO declared the region a World Heritage site.

### **National Federation of Coffee Growers of Colombia**

The National Federation of Coffee Growers of Colombia is a non-profit business association, popularly known for its "Juan Valdez" marketing campaign. In 1927, the federation was founded, as a business cooperative that promotes the production and exportation of Colombian coffee.

It currently represents more than 500,000 producers, most of whom are small family owned farms. The federation supports research and development in the production of coffee through grants to local universities and through federation sponsored research institutes. The federation also monitors production to ensure export quality standards are met.

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