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BRAZIL'S Coffee Industry



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BRAZIL'S COFFEE INDUSTRY

By Winfield C. King*

Brazil has long been the major coffee producer in the world. In recent years, production has been on a very high level, reaching an alltime peak in 1959-60. In fact, recent production has been so large that world markets cannot readily absorb it, and there has been a large build-up in coffee stocks in Brazil and expanded production in other countries.

This overproduction is the latest of a series of similar occurrences. Too much production and lowered prices, followed in a few years by short supplies and higher prices, have characterized the coffee industry for many years.

At the beginning of the present century a plethora of Brazilian coffee caused world market prices to fall to an alltime low. The dominant position of Brazil as a producer and the economic importance of coffee to that country led to regulation of production and marketing.

The coffee situation in 1961 differed somewhat from those of earlier years. Past surplus periods were caused by rapid increases in Brazilian production with little change in the output of other areas. From 1949 to 1961, however, production in almost every other coffee growing country increased substantially. Consumption has risen also, but at a much slower rate than production. By the end of 1961 the accumulated supplies of coffee from the millions of new trees planted since the end of World War II had resulted in one of the world's greatest marketing problems.

Brazil's production played a dominant role, yet it was only a part of the world coffee developments. To illustrate these facts, comparisons and contrasts have been freely used in this report. Both Brazil and Brazilian coffee have always influenced and been influenced by events in other producing areas.

CHARACTERISTICS OF BRAZILIAN COFFEE

Brazilian coffee production, harvesting, and processing methods differ from those of most Latin American countries. As a result, Brazilian coffee has a unique taste and aroma. Partly because of these differences and partly because Brazil's arabica coffees account for nearly half the coffee on world markets, the arabicas are classed as "Brazils" if they come from there and as "milds" if they originate anywhere else.

Brazils are intermediate in price and quality between the better grade mild coffee of Colombia and Central America and the much-lower-priced robusta coffees produced in Africa.

Quality is rated largely on the basis of taste and appearance. In the U. S. market, taste is the most important characteristic but in European countries the appearance of the roasted bean is often important. Flavors ranging from strictly soft to Rio-flavored are attributed to differences in soils and drying methods. Some production areas and ports are known for certain coffee types: São Paulo is known for its soft coffees, Paraná for hard, and Espírito Santo for Rio. Coffee is also rated on type, color, roasting quality, and amount of foreign material or imperfect beans. These factors are expressed as a grade between 2 and 8, with 4 as the basic grade.

* Mr. King, now Assistant U. S. Agricultural Attaché, The Hague, Netherlands, was the U. S. Agricultural Officer, São Paulo, Brazil, in 1955-59 and a commodity analyst with the Import Division, Foreign Agricultural Service, in 1959-60.

INFLUENCES ON PRODUCTION

A combination of factors, both natural and man-made, have made Brazil the world's leading coffee producer. Its climate and soils are ideally suited to coffee production and a number of political and economic developments in the 19th century further stimulated the development of a coffee industry.

Climate and Geography

Coffee grows best on tropical and subtropical plateaus with temperatures ranging from 60° F. to 80° and annual rainfall about 70 inches. It should get little direct sun and seems to thrive best in deep, porous, permeable soils at altitudes of 3,000 to 6,000 feet above sea level.

The coffee-producing areas of Brazil lie almost wholly north of the Tropic of Capricorn at elevations of 1,000 and 3,500 feet. Average annual temperatures range from 66° to 70° and the 50-inch average rainfall comes mostly in the 3 summer months -- when it is most needed. The only serious weather problems are frosts. In 1918, 1942, 1953, and 1955 severe frosts damaged large numbers of trees in São Paulo and Paraná, two big coffee-producing States.

Brazilian coffee soils are generally classified into three groups; (1) The terra roxa and other red soils, (2) the clayey yellow to reddish massape and greyish salmourao, and (3) the sandy soils.

The terra roxa soils are the classical coffee lands of southeastern Brazil. These soils are very deep, up to 60 feet or more, have excellent internal drainage, and usually occur in rolling or hilly land between 1,500 and 3,000 feet altitude. There are about 4 million acres of the pure and mixed terra roxa in São Paulo and smaller amounts in Paraná and Minas Gerais. Terra roxa is derived from diabasic rocks, is very rich in mineral nutrients, and is neither acid nor alkaline to any great extent.

The massape and salmourao soils are derived from granites, gneisses, or megachists. These soils are somewhat acid, high in potassium and magnesium, but relatively poor in phosphorus. These are mainly in São Paulo and neighboring States. They are extensively used for coffee when topography and elevation are suitable.

Sandstone soils occur over large areas, especially in western São Paulo and usually at elevations of 1,200 to 2,000 feet. Most sandy areas are less rugged than those occupied by the heavier soils. These soils rapidly lose fertility after being planted to coffee and usually erode severely if not protected. Many areas of western São Paulo originally planted to coffee were converted to pasture land when yields declined.

The better coffee soils almost always lie on the upper slopes of hills. This natural feature affords these areas adequate air drainage when temperatures approach freezing and enables the coffee plant to escape the higher heat of the valleys. Farm buildings, grazing land, and other crops occupy the lower slopes.

Production Practices

In the past, coffee growers have constantly migrated to new lands in the south and west as soil fertility declined with excessive cultivation and erosion. New land was prepared by cutting and burning underbrush and small trees. The remaining trees, killed by the fires, were felled for timber, and the land was held out for planting among the stumps and remaining unburnt material.

Planting, both now and in the past, is either by direct seeding or the use of nursery-grown seedlings. Generally four plants are placed in each hole, about a foot apart to form a "hill". Between 320 and 350 hills are planted per acre of land, generally in straight rows, spaced far enough apart to allow carts to pass through to remove brush, carry manure, or bring harvested coffee to the drying platforms.

Once planted, Brazilian coffee requires little care: Some pruning; cultivation, usually hand hoeing, about three times a year; and some application of both natural and chemical fertilizers and mulches. Except for the leaf-cutting ant and the coffee bean borer, there are few insects or other pests and the very destructive coffee fungus, common in Asia and Africa, is unknown in Latin America.

Harvesting begins in April or May and lasts until July or later, depending on the size of the crop and supply of labor. The large size of the early plantations, with the resident labor force sufficient for cultivation but inadequate for the picking and processing of the ripe cherries, led to the practice of stripping the berries from the trees at varying stages of ripeness.

The coffee is then cleaned of dirt, twigs, and leaves and spread on a terrero, a paved area specially built for drying coffee, and left to dry in the sun for 3 to 4 weeks.

Nearly all Brazilian coffee is prepared by either the wet-rinse or the dry method. In the wet-rinse process the coffee is washed to remove dirt and to separate to some extent, by flotation, the green, ripe, and over-ripe cherries. The cherries of different stage or ripeness are dried separately.

In the dry method, the coffee is not washed or separated. It is spread for drying as it comes from the field, and then depulped and fermented. This is the most common method in Colombia and Central America.

After drying, coffee is milled to remove the husk and the parchment-like endocarp and then graded for size. The larger fazendas have coffee processing and grading equipment operated by electrical or mechanical power. The smaller grower sells unhulled coffee, cafe em casca, to a buyer in a nearby town. Payment is based on the outturn of green coffee¹ and size and appearance of the coffee bean. Some buyers also cup-test samples to determine flavor.

Since the end of World War II considerable changes have taken place in methods of production and processing of Brazilian coffee. New, higher yielding varieties have been developed and are widely planted. The old variety,² typica or comum, has been partially replaced in the southeastern States, first by the bourbon variety introduced about 1890 and more recently by other high yielding varieties and strains developed by the Instituto Agronómico de Campiñas. The most important of these new varieties are mundo nova caturra, red and yellow, and bourbon amarella.

Shortages of good soils in favorable climatic areas has almost completely halted immigration and led to rehabilitation of old plantations or the planting of new varieties on land previously occupied by coffee. New plantings on the older soils, as a rule, are made on terraced or contoured land with closer than average spacing. Exceptionally high yields, 5 to 10 times the average, are secured in some cases by the use of fertilizers and other recommended practices.

Mechanical dryers have replaced the terreiros and many farms and tractors and horse-drawn tools for cultivation are fairly common. A very few farms in São Paulo have supplemental irrigation facilities, which are used during the occasional dry periods in the early spring months.

DEVELOPMENT OF THE INDUSTRY

Early Expansion

Coffee has been grown in Brazil since 1727. Rapid expansion of plantings led to Brazil's primacy as a producer by 1800. Reports of the success of coffee plantings in the Caribbean islands stimulated interest in the crop and several attempts were made to establish plantations, usually near the coast.

¹ "Green coffee" is the term used for the unroasted coffee of commerce.

² These are all varieties of coffea arabica, the species that provides all commercial coffee in Brazil.

A lucky accident--or acute foresight--led to the transfer of coffee from the tropical lowlands of Pará and Maranchao, the original planting sites, to the cooler areas of the mountains near Rio de Janeiro. Other factors included the ready acceptance by European markets of small shipments of Brazilian coffee.

The development of beet sugar in Europe after the Napoleonic War threatened the established sugar industry of northeast Brazil. The growing importance of U. S. competition in cotton and the exhaustion of the mines of Minas Gerais, which freed a huge slave labor force, also contributed to greater interest in coffee. Finally the appearance of the destructive coffee fungus Hemileia vastratrix in Asia and Africa focused world attention on Western Hemisphere coffee.

Coffee exports increased steadily after the first shipment of 13 bags in 1800. The ever increasing foreign exchange revenue from this source caused an economic readjustment. Emperor Don Pedro gave titles of nobility to coffee fazendeiros, and the political, social, and economic centers of Brazil shifted from the sugar producing areas of northern Brazil to São Paulo and Rio de Janeiro. Vast areas of tropical hardwood forests were slashed and burned, and the land planted to coffee. Land was plentiful, available almost for the asking, and little investment other than labor was required to establish a coffee fazenda.

Increasing world consumption resulted in profitable returns for all the coffee Brazil could produce during the 19th century and encouraged further expansion. The major expansion took place in São Paulo State.

Railroad construction closely followed the advancing coffee frontier. Cities sprang up and roads were built. The first major railroad in southern Brazil followed the advance of coffee through the Paraíba Valley between the cities of Rio de Janeiro and São Paulo. The city of São Paulo became the hub of a railroad system built primarily to move coffee to the ports of Santos and Rio de Janeiro and to service the producers. European immigrants and capital assisted in this great agricultural development.

The American Civil War closed U. S. markets for a few years but did not check expansion. Demand increased sharply after the war and accumulated stocks were quickly absorbed.

The Brazilian monarch failed to survive the abolition of slavery by royal decree in 1888. Emperor Don Pedro II was exiled in 1889 and a republic replaced the monarchy. The labor vacuum created by emancipation was quickly filled by hundreds of thousands of European immigrants brought in by the growers and the government.

In the years following the establishment of the First Republic the Brazilian currency unit (milreis)³ depreciated rapidly, shrinking in value from 60 cents in 1888 to 15 cents in 1897. Internal costs to growers rose little but high profits and adequate labor supply encouraged even more rapid expansion than in the past. Tree numbers rose from 27 million in 1850, to 70 million 20 years later. They reached 220 million by 1890 and 525 million by 1900. The 1900-01 crop exceeded 11.3 million bags--slightly larger than the previous record crop of 11.2 million bags in 1897-98.

Less than a century after Brazilian coffee appeared in the world's markets, Brazil was supplying about three-fourths of all coffee entering world trade. Coffee became important in every phase of Brazilian life, especially in the production areas. Cities, plazas, and streets were named for it and it became a popular artistic motif.

Then, in the first years of the 20th century, coffee production exceeded demand, largely as a result of the increased Brazilian output. Prices fell to an alltime low in the New York market in September 1903.

The dominant position as a producer, and the economic and social significance of coffee, led Brazil to try to regulate marketing and production. These efforts were only partially successful, because prices fluctuated widely and additional expansion occurred during the periods of higher prices.

³ The milreis was replaced by the cruzeiro as the monetary unit in October 1942.

The loss of European markets, caused by the outbreak of World War I, was partially offset by the frost of 1918 which greatly reduced yields the next 2 years. The postwar depression brought about another severe drop in prices, and the Brazilian Government again tried to stabilize prices.

Rising prices after mid-1921 encouraged additional expansion. This resulted in another period of oversupply, one that coincided with the beginning of the Great Depression. Drastic efforts to deal with the huge production of the depression years included storage of large quantities and the destruction of 78 million bags of coffee during a 14-year period.

World War II, again closed the European markets, leaving the United States as the principal remaining buyer of Brazilian coffee. Brazil entered this period with large quantities of stored coffee accumulated during the 1930's. Price ceilings on coffee in the United States prevented any appreciable upward price trend, thus discouraging new plantings and proper care of existing farms.

Recent Trends

The modern coffee era may be considered as having begun immediately after the end of World War II, although it was 1949 before the results of the various forces affecting coffee became apparent. Years of neglect or indifferent care of the plantations because of the depressed prices during the 1930's and the limited marketing possibilities during the war years left the Brazilian coffee industry in poor condition. New plantings barely maintained tree numbers, and average tree age increased.⁴ In 1949 tree numbers were only 2 percent higher than in 1942. Several years of drought during the 1940's tended to further discourage adequate care or rehabilitation of run-down farms. Crops were relatively small from 1949 to 1954.

While Brazilian production fell, most other producing countries began expanding coffee plantings, stimulated by expanding world trade and the desire to develop exports.

PRICES AND PRICE CONTROLS

Early Efforts at Control

Coffee has been subject to artificial controls for longer than any other commodity of world importance. The first known proposal for regulation of production and marketing of coffee was advanced in 1898 by J. A. Olavarria, a Venezuelan, but it was a São Paulo merchant and coffee planter who put forward the idea of "valorization," in which the government would purchase and store surplus coffee during periods of large production and market these stocks when prices advanced.

Government intervention saved farmers in 1901-2 when the Brazilian crop amounted to almost 16.1 million bags, the bulk of which was produced in São Paulo State. Price fell, reaching the alltime low of 3.55 cents per pound on the New York market in September 1903. São Paulo, Minas Gerais, and Rio de Janeiro prohibited new plantings. In São Paulo the ban on new plantings stayed in effect for at least 5 years. Agitation for state aid to growers increased.

An International Coffee Conference was held in New York in 1902. The governors of Brazil's three most important coffee producing States met at Taubate soon after. Neither meeting resulted in any concrete action. In 1906 the Governor of São Paulo launched the first valorization scheme.

Under the valorization program, the State purchased coffee in the world market and stored it for later resale. The coffee was purchased by means of foreign loans and assistance from the Federal Government and the State. By the end of 1908 São Paulo owned almost 11 million bags. This coffee was sold beginning in 1911 and the loan repaid in full by 1914, with substantial profits accruing to banks, merchants, and the State.

⁴ Highest yields occur when trees are 8 to 10 years old, then decline for several years.

TABLE 1.--Coffee area, tree numbers,¹ and yield 1949-59

Year	Producing coffee trees			Yield of coffee		
	Area	Number of trees	Trees per acre	Per 1,000 trees	Per acre	Total
	<i>1,000 acres</i>	<i>Million</i>	<i>Number</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Million pounds</i>
1949.....	6,271	2,147	342	1,096	375	2,354
1950.....	6,581	2,241	341	1,054	362	2,381
1951.....	6,766	2,313	342	1,030	351	2,375
1952.....	6,976	2,376	342	1,045	356	2,480
1953.....	7,213	2,452	340	998	339	2,448
1954.....	7,424	2,521	340	906	308	2,286
1955.....	8,069	2,711	336	1,113	374	3,019
1956.....	8,430	2,839	337	761	256	2,158
1957.....	9,074	² 3,000	331	1,063	342	3,106
1958.....	10,077	² 3,200	318	1,240	371	3,738
1959 ³	10,694	² 3,400	318	1,653	438	4,685

TABLE 2.--Area in producing coffee trees in major producing States, 1949-59

Year	São Paulo	Paraná	Minas Gerais	Espirito Santo	All others
	<i>1,000 acres</i>	<i>1,000 acres</i>	<i>1,000 acres</i>	<i>1,000 acres</i>	<i>1,000 acres</i>
1949.....	3,267	598	1,383	563	460
1950.....	3,476	660	1,410	542	493
1951.....	3,498	722	1,454	573	519
1952.....	3,533	821	1,501	593	528
1953.....	3,605	920	1,541	604	543
1954.....	3,624	963	1,625	655	557
1955.....	3,739	1,402	1,669	668	591
1956.....	3,847	1,570	1,697	672	644
1957.....	3,937	1,995	1,758	696	688
1958.....	4,002	2,552	1,932	795	796
1959.....	4,067	3,041	1,946	814	826

¹ Producing trees only.

² Estimated - official data not available.

³ Preliminary.

Ministerio da Agricultura, Rio de Janeiro, Brazil.

TABLE 3.--Coffee, registrations¹ by State and marketing year 1949-59 (year beginning July 1)

State	1949	1950	1951	1952	1953	1954
	1,000 bags ⁴	1,000 bags ⁴	1,000 bags ⁴	1,000 bags ⁴	1,000 bags ⁴	1,000 bags ⁴
São Paulo.....	7,391	8,118	6,261	7,187	6,162	7,329
Minas Gerais...	3,214	2,751	3,373	1,838	3,372	3,172
Paraná.....	2,318	4,026	2,842	5,047	3,198	1,336
Espirito Santo..	2,543	1,388	2,033	1,466	1,828	1,837
Liode Janeiro ..	586	210	324	208	235	287
Goiás.....	28	45	22	91	97	208
Bahia.....	102	115	87	131	197	185
Pernambuco.....	99	96	64	60	50	132
Mato Grosso.....	18	7	5	2	5	7
Paraiba	---	---	---	---	4	3
Santa Catarina	4	2	---	---	---	---
Total "new crop"	16,303	16,758	15,011	16,030	15,148	14,496
"Old crop" registrations ⁵	(⁶)	(⁶)	7	70	34	16
Total registrations.	16,303	16,758	15,018	16,100	15,182	14,512

State	1955	1956	1957	1958 ²	1959 ^{2 3}
	1,000 bags ⁴	1,000 bags ⁴	1,000 bags ⁴	1,000 bags ⁴	1,000 bags ⁴
São Paulo.....	9,269	6,010	9,507	10,689	15,553
Minas Gerais.....	3,742	1,929	3,676	4,231	4,456
Paraná.....	6,305	2,178	4,719	8,586	20,342
Espirito Santo.....	2,048	1,556	2,196	2,571	1,871
Liode Janeiro.....	231	159	156	247	301
Goiás.....	93	218	659	363	737
Bahia.....	234	252	164	52	88
Pernambuco.....	129	214	142	48	118
Mato Grosso.....	8	2	12	1	86
Paraiba.....	4	1	0	---	---
Santa Catarina.....	---	---	---	---	4
Total "new crop".....	22,063	12,519	21,231	26,788	43,556
"Old crop" registrations ⁵	31	16	397	21	(⁶)
Total registrations.....	22,094	12,535	21,628	26,809	---

¹ Registrations include all coffee destined for sale in the seaport markets.

² Includes the expurgo quota of 10 percent of total registrations.

³ July 1, 1959 to May 30, 1960.

⁴ Bags of 60 kilograms (132.276 pounds).

⁵ "Old crop" coffee is arbitrarily designated as the previous year's production and credited to the year of production instead of year of registration.

⁶ Not available.

Reports of Departamento Nacional do Cafe and Instituto Brasileiro do Cafe.

Toward the end of World War I, when production exceeded exports by a substantial margin the Federal Government loaned enough money to the São Paulo State Government to purchase 3 million bags of coffee. These purchases constituted the second valorization plan.

The third valorization program grew out of the post-World War I depression. A drop in coffee prices from 23 cents per pound in mid-1920 to about 9 cents in the early months of 1921 led the Federal Government to take the initiative. In this program nearly 5 million bags were purchased and stored. Stocks were held in Brazil during the second and third valorization but in overseas market centers during the first.

The three interventions are reported to have been highly profitable for their promoters. These profits, plus the realization that temporary measures were inadequate, led to the formation of policies for a permanent "defense" of coffee. Shipments to ports were limited and a system of establishing minimum coffee prices was inaugurated.

A National Coffee Institute was established in 1922, as a lending agency for State Institutes. However, São Paulo growers, who produced about three-fourths of all Brazilian coffee, apparently had more confidence in State intervention than producers of other States, and in 1925 the responsibility for the coffee program was given over to the São Paulo Institute for the Permanent Defense of Coffee. During 1925 and 1926, mechanisms for control were perfected. Port entries were continued in modified and more flexible forms.

The newly created Institute received its first real test with the 1927-28 bumper crop of 27.6 million bags. Through heavy buying made possible by a 1-year loan of 5 million pounds sterling, prices, which had dropped from 22 cents per pound in September 1926 to 16 cents in mid-1927, recovered to an average of 23 cents a pound in 1928.

Stocks held by the Institute totaled 13.5 million bags by mid-1928. The bumper crop of 29 million bags harvested in 1929 and the October stock market crash marked the end of the São Paulo Institute. A coffee realization loan of 20 million pounds sterling was finally arranged by São Paulo in May 1930, at 7 percent interest. In July the Federal Government assumed control of coffee defense.

The Brazilian Government created a National Coffee Council (CNC) in April 1931 to administer the program. The CNC was ordered to reduce the quantity of coffee by destroying low grades. Export taxes were assessed and new plantings were taxed at the rate of 1 milreis per tree in 1931 and later at 5 milreis per tree. This tax continued in effect until July 1, 1943.

The apparently unwieldy type of organization represented by the CNC, in which the States still maintained some control, led to the organization of an autonomous National Coffee Department (DNC) in the Ministry of Finance of the Federal Government in February 1933, when it became evident that the situation would be aggravated by a crop of nearly 30 million bags.

The destruction program was stepped up. Growers were required to sacrifice portions of their crops, receiving only the cost of bags and transportation. More than 78 million bags of coffee were destroyed, principally by burning, between 1931 and 1944. The cost of the destruction program is estimated at \$18 million, not including the value of the coffee.

The National Coffee Department engaged in many activities in addition to its efforts to improve the statistical position of Brazilian coffee. It established a coffee classification and standardization program, encouraged the production of higher quality coffee, initiated publicity programs to increase consumption, and performed other services for growers and the trade.

DNC was dissolved in March 1946, at the request of representatives of the coffee-producing States meeting in convention. Its work, however necessary, but disagreeable, was done; stocks and annual production had been reduced to manageable size; and the coffee fazendeiro was anxious to forget those 14 years clouded by the smoke of burning coffee.

Brazil, however, did not free coffee of all controls. Certain features of the regulatory programs were continued as desirable for the welfare of the country and the coffee industry. A Division of Coffee Economy in the Ministry of Finance, established in September 1946, continued the system of regulating shipments to port, supervision of quality standards, and verification of export prices, until superseded in 1952 by the creation of an autonomous agency known as the Brazilian Coffee Institute (IBC).

Current National Policy

The IBC now carries out policy and administers controls. These actions directly affect the welfare of producers, exporters, and importers of Brazilian coffee, and indirectly influence both the prices received by growers in other countries and the prices paid by consumers.

IBC regulates and supervises the move of coffee within the country, controls port stocks, and may fix quotas by port or exporter. The agency may also maintain coffee prices by buying up and withholding stocks, fix prices at which foreign sales can be made, and apply penalties for infraction of any of its regulations. It engages in many other activities, including promoting and financing research in production and quality improvement, conducting publicity campaigns and internal marketing programs, and estimating annual production.

The Institute is a joint government-industry organization made up of five directors appointed by the President of Brazil, and an administrative board representing the principal coffee-producing States and representatives of the growers and the trade. The president of the administrative board is appointed by the Brazilian Chief Executive.

The Bank of Brazil and the Superintendency of Currency and Credit (SUMOC) coordinate activities with IBC in fiscal matters relating to coffee. Since March 28, 1949, the Bank of Brazil has had charge of all foreign exchange. Exports and imports are licensed by the Bank, and for all commodities except coffee, the Bank fixes the acceptable minimum export prices. The Bank of Brazil extends credit and financing to coffee growers, merchants, and exporters. SUMOC establishes the rate in local currency at which the Bank of Brazil will buy foreign exchange resulting from exports of coffee and other commodities.

Present marketing regulations set up the following procedure:

The grower registers his coffee (in terms of 60-kilogram bags) with IBC.

The coffee is dispatched to port by rail or licensed truck line. The grower receives certificates for the shipment. Carriers cannot accept unregistered coffee.

IBC assumes physical control of the coffee after it is dispatched. The shipment moves to one of the warehouses operated by IBC in the interior.

Coffee is shipped to the port and liberated for export by IBC in the same chronological order as it was registered. This is possible because of a vast network of storage warehouses in the producing areas.

The quantity of stocks in each of the coffee ports is fixed by IBC at the beginning of each marketing year, and the amount of coffee liberated or available for export at any given time is also controlled.

Minimum export prices are fixed by IBC with schedules of discounts and premiums for quality and grade. Lots to be exported are inspected by IBC to determine that grade and quality are as stated in the shipping documents.

Exchange resulting from export sales is purchased by the Bank of Brazil for payment in cruzeiros at the rate established. The rate of Cr\$90.00 per dollar, fixed July 1, 1960, applied to exports from July 1960 to June 30, 1961⁵. The rate of exchange was near the fall rate for the 1961-62 crop, with an export tax of \$22.00 per bag.

Transportation certificates (equivalent to bills of lading) and warehouse warrants are required by the Bank of Brazil to finance the harvested crop. The rate of interest is fixed by law, and a scheduled value prepared by IBC determines the amount the bank will loan on the coffee. This usually amounts to about 80 percent of the estimated cruzeiro market value.

⁵The exchange rate for all exports, including coffee, has been modified several times during the period covered by this report. The coffee export rate was again changed beginning in July for the 1961-62 marketing year. Foreign exchange from coffee exports is sold at the free market rate. However, a "contribution quota" of \$22.00 per bag is withheld by the Bank of Brazil on all coffee exports regardless of quality.

The coffee export exchange rate up to July 1961 has been based on the official rate of Cr\$18.36 per dollar, plus bonuses. From time to time the government has increased the bonuses paid for exchange from coffee exports. The rate exporters receive has averaged 50 percent or less of the free market value.

IBC assesses and collects various charges levied on exported coffee. These include certain port charges and inspection fees and the equivalent of 25 cents per bag paid to the Pan-American Coffee Bureau.

During recent years IBC has been conducting research on preventing frost damage. Research on production and processing of coffee is financed by IBC but is usually carried out by established state and national research institutes. IBC has no central research center.

IBC launched a campaign in 1958 to increase coffee consumption within the country by subsidizing sales to roasters, who agree in turn to supply retail outlets at fixed prices. This program, now country-wide, has increased internal consumption, although the increase is difficult to measure.

IBC conducts an aggressive market development program. Tie-in sales of coffee are made from a supply consigned to a warehouse maintained in Trieste. Similar depots are reported to be under consideration in other areas. Barter transactions exchanging coffee for commodities such as wheat and petroleum and for capital goods, including ships and power plants, have been made with countries which formerly had little trade with Brazil. These bilateral arrangements are made with the understanding that the coffee will not be re-exported. In 1958 IBC announced a policy of purchasing all unsold coffee from producers and exporters at the end of the marketing year. IBC also bought coffee from growers when it became apparent that the supply might tend to depress prices.

The overall policy initiated at the beginning of the 1958-59 crop year was a combination of measures to support prices to growers at different levels for portions of the crop. Growers were permitted to sell 60 percent of the crop to exporters or merchants at the market price, which is supported by the loan rates announced by the Bank of Brazil and by the export minimum prices fixed by IBC every 2 weeks. Growers were required to surrender 30 percent of the production (internal consumption quota) to IBC at the prices fixed for the type and origin of the coffee, and somewhat lower than market price.

IBC designated 10 percent of the total production as an expurgation quota (expurgo) and purchased this at a price slightly greater than the cost of the bag and delivery to the railroad. This expurgation quota provision was an effort to remove the lowest quality, extract the oil and caffeine, and use the resulting cake as animal food or fertilizers.

The distribution of the quotas was changed by IBC for the 1960-61 marketing year to 70 percent market quota, and 20 percent internal consumption quota. The expurgo was unchanged. In 1961-62 IBC will not purchase the expurgo.

IBC announced, in 1959, a program of replacing old trees at the rate of one newly planted tree for three old plants. A budget of Cr\$1 billion was adopted. Loans are to be made to growers in the amount of Cr\$50.00 per new tree planted, spread over a 3-year period. The loan is to be repaid over a 3-year period, beginning the 4th year after planting. Financing will be limited to a maximum of 50,000 new trees per farm and to a minimum of 5,000. IBC and State departments of agriculture determine varieties, spacing, soil types, methods of planting, and other practices to be used. The program had not been put into effect by late 1960.

International Coffee Agreements

In November 1937, after an unsuccessful attempt to get a control program adopted at the Havana Conference, Brazil reduced the export tax on its coffee. Due to the resulting price drop, exports from Brazil increased. The price differential between Brazils and milds was reestablished with a fall in price of Brazilian coffees, rather than a rise in the price of milds.

The outbreak of World War II led to another Pan-American conference in June 1940. From this and later meetings came the Inter-American Coffee Agreement, an embodiment of the export quota idea, signed by the United States and 14 Latin American coffee-producing countries.

The agreement was designed to assure each of these countries, including Brazil, a market for a definite amount of coffee. The agreement remained in effect until September 1948.

Interest in coffee control programs lagged for the next few years. Annual exports exceeded production as demand rose sharply after World War II. The Brazilian coffee producer received prices which enabled him to properly maintain and expand his plantations and obtain a satisfactory return. No international control program was needed.

However, the 1955-56 Brazilian crop of 21.3 million bags exportable production again focused attention on the possibility of mounting surpluses with the accompanying problems. Brazil was committed to a forced-draft industrialization program for which high levels of exchange earnings were of vital importance.

To prevent a repetition of the situation of the 1930's, a number of informal meetings were held and "gentlemen's agreements" on the marketing of pending surpluses became the order of the day. The Brazilian Government again resorted to retiring stocks from the market, although it is uncertain that any other country did likewise.

In September 1957 Brazil and six other Latin American countries signed the Mexico Agreement, in which they subscribed to export quotas or other limitations on exports. This agreement marked the beginning of voluntary peacetime international coffee marketing control.

The Latin American coffee agreement was signed by 15 Latin American Republics in September 1958. Each of these countries agreed to regulate its exports. This demonstration of solidarity among the coffee producing countries of the Western Hemisphere led to the adoption of the International Coffee Agreement in September 1959 under which each signatory country received an export quota⁶. This agreement, which expired in 1960, was extended for another year, or until September 30, 1961. It was then again extended for the October 1961-September 1962 year. The International Coffee Agreement of 1960 was signed by the countries that produce about 95 percent of the world's coffee. Efforts are now being made to develop a long-term (5-year) agreement with consumer and producer participation.

World Coffee Prices

Historically, all coffee prices have been influenced primarily by the production of Brazil and Colombia and the marketing policies of these two countries. However, other factors have become important since 1949 and especially after 1955.

In the early years of the present era, coffee prices were relatively stable after rising somewhat with the suspension of U. S. price controls after World War II.

The first major change, an upward swing, took place in 1949. Early that year the National Coffee Department (DNC) of Brazil announced the sale of the last of the stored stocks. This announcement had little effect, as a large harvest was foreseen for 1950. Reports from Brazil that the crop would be smaller than expected caused a sharp rise in the last 3 months of 1949. Santos 4's spot prices rose 80 percent above the levels of early in the year, remaining above 45 cents until the outbreak of the Korean War in June 1950 when they rose to 50 cents per pound. Approximately equal world trade and supply tended to maintain prices between 50 and 60 cents per pound until late 1953. Prices rose sharply in the first month of 1954 after the damage done by the frost of the preceding July was evident, and reached almost 90 cents per pound on the New York spot market in April. A decrease in demand caused prices to drift downward during the remainder of the year.

The frosts in Paraná in 1955 served to help maintain prices between 55 and 60 cents during 1955 and 1956. A short supply of mild coffees in 1956 caused the price differential for milds to rise sharply. This helped to maintain Brazilian coffee prices and stimulated exports.

Increasing world production after 1956 forced all coffee prices downward. Santos 4's dropped below 50 cents, spot, New York, in June 1958, the lowest price since July 1950. The downward trend continued; coffee sank below 40 cents per pound in early 1959, and has remained around 36 to 37 cents since that time. In 1960, prices were lower than at any time

⁶ The quotas apply to sales of green coffee in established markets. Both sales to new markets and sales of soluble coffee are outside the quotas.

since November 1949, and about 40 percent of those in mid-1954. Prices continued a gradual decline in 1961.

Brazilian coffee prices in world markets are closely tied to the base price established by IBC for the registration of export sales, and the amount of coffee available to the market. These supplies are the amounts liberated by IBC in the Brazilian ports, the stocks from which sales can be made.

IBC generally announces these base minimum export prices at fixed intervals, usually weekly. Prices are quoted in cruzeiros per 10 kilograms and represent the equivalent amounts of dollars an exporter must sell to the Bank of Brazil at the exchange rate established for coffee exports. During the 1959-60 marketing year the price was approximately Cr\$588.00 per 10 kilograms for Santos 4's or the equivalent of about 35 cents per pound to be surrendered at the exchange rate of Cr\$76.00 per dollar.

On July 1, 1960, the exchange rate applicable to coffee exports was changed to Cr\$90.00 per dollar. The new registration basis in dollar equivalent value is approximately the same. The Santos price was increased to Cr\$694.00 per 10 kilograms. The rate of exchange was near the free rate for the 1961-62 crop, with an export tax of Cr\$22.00 per bag.

Brazilian coffee prices and their relationship to the prices of milds, as well as exports, have reacted to the increase in output of non-Brazilian coffees. During the 6-year period 1949-55, prices of Santos 4's averaged 3.2 cents per pound less than those of Colombian Manizales on the New York spot market. From 1955-59 the price differential averaged 8.7 cents per pound. Average annual Brazilian exports during the earlier 6-year period were 15.5 million bags with the lower price differential, and 15 million bags during the latter 5-year period with the higher differential.

EXPORTS

Exportable Production

Exportable production⁷ was remarkably stable during the 7 years beginning with the 1948 harvest. Maximum variation in annual yield during this period barely exceeded 10 percent, in contrast with the widely fluctuating yields from 1928 to 1934. In 1949 the National Coffee Department announced the final liquidation of all stored stocks. As world exports had exceeded annual production for several years, and the 1950 Brazilian harvest was estimated to be smaller than first expected, a sharp price rise occurred. This price increase was sufficient to encourage a boom in new plantings and better care of older plantations. However, new plantings do not bear until they are 3 to 5 years of age and total Brazilian output did not immediately expand. World trade continued larger than annual production, and carryover stocks declined still further. Brazilian stocks were reduced to a bare minimum and total world stocks reached the lowest level in many years.

World trade and production were in close balance when a severe frost occurred in São Paulo and Paraná in July 1953. About three-fourths of the estimated 800 million trees damaged were young trees planted in western Paraná over the years following the price rise of 1949.

The 1953 harvest was almost complete at the time of the frost, and little coffee was lost. However, the damage done to the affected area caused a small 1954 crop. Prices again rose and new plantings continued to accompany rising prices.

The 1954 harvest was approximately equal to that of 1953 as an increasing number of young trees came into bearing in the areas not affected by the past year's frost. Registrations⁸ from São Paulo State were over a million bags higher than in the preceding year. Registrations from Paraná were 1.8 million bags less.

⁷ Exportable production is total production less domestic consumption. This report deals primarily with exportable production.

⁸ Under Brazilian law all coffee, except some sales for local use, must be registered with the Brazilian Coffee Institute.

TABLE 4.--Green coffee exports by month 1949-60 marketing year beginning July 1

Year	July	August	September	October	November	December
	1,000 bags ¹	1,000 bags ¹	1,000 bags ¹	1,000 bags ¹	1,000 bags ¹	1,000 bags ¹
1949.....	1,732	1,864	2,265	1,972	2,033	1,399
1950.....	1,507	1,569	1,858	1,626	1,132	1,475
1951.....	892	1,407	1,533	1,764	1,652	1,682
1952.....	1,073	1,468	1,627	1,443	1,372	1,435
1953.....	876	1,368	1,662	1,656	1,792	1,659
1954.....	626	518	838	855	1,548	1,220
1955.....	954	1,065	1,962	1,878	1,425	1,222
1956.....	1,275	1,450	1,348	1,299	1,362	1,606
1957.....	976	1,161	1,290	1,490	1,645	1,189
1958.....	869	1,173	1,041	1,539	1,413	1,057
1959.....	1,892	2,180	1,697	1,190	1,757	1,261
1960.....	1,932	1,507	1,611	1,137	1,313	1,360

Year	January	February	March	April	May	June
	1,000 bags ¹	1,000 bags ¹	1,000 bags ¹	1,000 bags ¹	1,000 bags ¹	1,000 bags ¹
1949.....	1,044	721	1,190	756	844	1,116
1950.....	1,241	1,598	1,489	1,012	1,173	914
1951.....	1,510	1,405	1,496	939	965	1,087
1952.....	1,204	1,206	1,359	991	792	998
1953.....	1,125	944	1,375	998	474	396
1954.....	784	547	881	983	675	1,320
1955.....	1,255	1,838	1,276	1,151	1,347	1,597
1956.....	1,667	1,297	991	875	919	819
1957.....	740	710	956	1,216	1,378	799
1958.....	1,387	1,669	1,176	1,297	1,158	772
1959.....	1,027	1,462	1,321	1,305	1,531	1,313
1960.....	1,047	1,210	1,507	1,322	1,139	1,028

¹ Bags of 132.276 pounds each.

Source: Reports of Departamento Nacional do Cafe and Instituto Brasileiro do Cafe.

TABLE 5.--Value of Brazil's total exports compared with volume and value of coffee exports¹ 1949-60

Year	Total exports	Coffee exports				
	Value	Value	Share of total value	Volume	Value per bag ²	Value per pound
	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>Percent</i>	<i>1,000 bags³</i>	<i>Dollars</i>	<i>Cents</i>
1949.....	1,096,468	631,688	57.61	19,369	32.62	24.66
1950.....	1,355,467	865,483	63.85	14,835	58.34	44.10
1951.....	1,769,002	1,058,587	59.84	16,358	64.71	48.92
1952.....	1,418,117	1,045,305	73.71	15,821	66.07	49.94
1953.....	1,539,120	1,090,164	70.82	15,562	70.05	52.96
1954.....	1,561,836	948,077	60.70	10,918	86.84	65.65
1955.....	1,423,246	843,938	59.29	13,696	61.62	46.58
1956.....	1,481,978	1,029,782	69.49	16,805	61.28	46.33
1957.....	1,391,607	845,531	60.76	14,319	59.05	44.64
1958.....	1,242,985	687,515	55.36	12,882	53.37	40.34
1959.....	1,281,969	744,029	58.04	17,436	42.67	32.25
1960.....	1,269,000	712,744	56.17	16,819	42.38	32.03

¹ Includes green, roasted, and soluble coffee. Roasted and soluble coffee are converted to green-coffee equivalent.

² Green coffee only.

³ Bags of 60 kilograms (132.276 pounds).

Instituto Brasileiro do Cafe, Relatorio da Diretoria, 1960.

The 1955 harvest of 22 million bags registered production was 50 percent larger than the 1954 outturn. Hundreds of millions of young trees, including those damaged in 1953 which had partially recovered, contributed to the crop, the largest since 1938-39. Paraná producers alone registered 6.3 million bags (about double the previous year's production), and São Paulo farmers harvested almost 2 million bags more than the year before.

Frosts in July 1955 struck approximately the same area hit 2 years earlier, and extensive new plantings further west in Paraná that had not been established in 1953 as well. Frost damage, while severe, was not wholly the cause of the small 1956 harvest. Conditions other than frost were partially responsible for the smallest crop since the mid 1940's. Unfavorable moisture conditions and the off-year cycle⁹ reduced yields in Minas Gerais, Espírito Santo, and Rio de Janeiro. None of these states were affected by the frost, nor did they have large numbers of young trees.

Favorable climatic conditions beginning in 1957, combined with the increasing production of large scale plantings of higher yielding varieties, resulted in steadily increasing production for the next 3 years. Yields in 1957 were almost equal to those of 1955 except in Paraná where the younger trees had not completely recovered from the effects of frost. In 1958-59 production in most states was larger than in the previous year¹⁰, and in 1959-60 a record crop of almost 44 million bags was harvested. Paraná became the leading producer, exceeding the production of São Paulo by almost 5 million bags. Outturn from Paraná closely approached the huge output of 21.8 million bags from São Paulo in 1933-34.

Most of the increases that led to the record crop in 1959-60 took place in only two States, São Paulo and Paraná. The increase in São Paulo came largely from plantings of higher yielding varieties and better production practices. The area increased slightly less than 25 percent from

⁹ Coffee tends to yield heavily in alternate years. The tendency is very apparent in trees more than 10 years old.

¹⁰ Beginning in 1958 registrations included grades of very low quality. These grades, termed "expurgo," made up 10 percent of total registrations. Prior to 1958-59, most coffee of this low quality was retained on farms and, therefore, not registered. The 1958-59 and later registrations represent almost total production while the data for earlier years represent exportable production less most of the internal consumption.

1949 to 1959 but the yield more than doubled. The increase in yield from Paraná came both from greatly increased plantings and the use of newer varieties. Most of the expansion in Paraná was on virgin land, much of it terra roxa. The new plantations were usually large in size and planned as commercial ventures to take advantage of attractive prices. Almost all of the Paraná farms were planted to the high-yielding mundo nova variety.

Trade Patterns

Coffee has been Brazil's most important export item since it displaced rubber about 1900. In the 1950's coffee exports made up 63 percent of the total value of all exports, and still account for well over 50 percent of the total value.

The quantity of coffee exported from Brazil during any given period is influenced by at least three factors: (1) Available supply of Brazilian coffee, (2) total supply of coffee, and (3) the relationship existing between the prices of Santos 4's (the standard Brazilian grade) and the mild coffees. The influence of the price of African robusta coffee is more difficult to assess.

The large exports of 1949-51 reflect the increased demand developed after the war and the short supply of non-Brazilian coffee. Brazil exported considerable quantities of old-crop coffee during these 3 years as annual exports exceeded production.

Exports and production were approximately equal in 1952 and 1953. The small differential paid for Columbian coffee in 1952 decreased further during 1953, as supplies of all coffee declined. The relatively large Brazilian exports, in view of the existing price relationship, indicates the tight world supply situation. Brazil's exports, however, dropped sharply during 1954, as consumer resistance increased because of rising costs of coffee and the price margin between Brazils and milds decreased even further¹¹. Non-Brazilian coffee was also more plentiful.

World coffee exports decreased during the marketing year 1954-55 by 4.2 million bags, as compared with the previous period. Brazilian exports, however, decreased by 3.5 million bags, while exports from all other countries were down only slightly as non-Brazilian supplies rose. Exportable production from all other countries was almost 3 million bags larger than in 1950-51.

Beginning in 1955, coffee was again plentiful. Large quantities were carried over as a result of the drop in demand in 1954, and world production increased steadily. Brazil's exports rose and remained at fairly high levels except in 1958 when fewer than 13 million bags were shipped. Significant price differentials between Brazil and milds prevailed during most of this period. In 1959 Brazil's exports were the highest since 1949, as a result of aggressive marketing and a wide price differential.

Brazilian exports, however, have not increased to the same extent that production has grown. During the 2 marketing years beginning in July 1952, when world supplies were short, Brazilian exports were equal to production. Beginning in 1954, production has exceeded exports every year except 1956-57 when the crop was severely reduced by frost damage. Large quantities were carried over at the same time that Brazilian coffee was decreasing in importance in world markets, having fallen from over half of total exports in 1949-50 to a little more than one-third at the end of the 1958-59 marketing year.

Since 1958 Brazil has made vigorous efforts to increase exports to established markets and to such new markets as Eastern Europe.

Brazilian Coffee in World Markets

United States. -- The United States is the world's largest consumer of coffee, annually importing about half of all coffee entering world trade. The United States imports coffee from practically every commercial coffee producing area. Brazil, however, is by far the largest supplier. Over 70 percent of all coffee imported into the United States in 1914-15 came from Brazil. In the 1930's about 60 percent came from Brazil. In the years following World War II,

¹¹ The price margin did not reflect a demand-supply situation, but was caused by administrative actions of Brazilian and Colombian coffee authorities.

56 percent of U. S. coffee imports were Brazilian coffee. In the last 10 years Brazil has supplied somewhat less than half of total U. S. imports.

The downward trend of the Brazilian position as a supplier of coffee has coincided with a sharply increased production in other areas. Western Hemisphere countries, especially Colombia, increased production during the period 1925 to 1950. The decline in the relative importance of Brazilian coffee in the U. S. market has been accompanied by larger imports of Western Hemisphere milds.

In volume, imports of Brazilian coffee have increased, but at a much slower rate than total imports. Total coffee imports during the last 5 years averaged 7 million bags more than in 1935-39. Imports from Brazil increased less than 1 million bags a year in the same period.

The growth of the U. S. instant coffee industry coincided with the increase in imports from Africa. The cheaper robusta coffee of Africa is extensively used in the manufacture of instant coffee.

A very important factor affecting U. S. imports of Brazilian coffee is the price relationship between Brazils and milds. Mild coffees, typified by high-grade Colombians, traditionally are higher in price than Brazils. As the price differential decreases, buyers prefer milds; with a wide price difference, buyers purchase more Brazils.

The nature of the U. S. coffee consumer market is probably the deciding factor affecting imports and use of Brazilian coffee. Nearly all of the coffee sold at retail is prepackaged; that is, roasted, ground, and packed before delivery to the retail store. A large majority of the commercial brands are blends, made up of two or more different types. Consequently, price and available supply of the types regularly used in any given brand are significant in the highly competitive U. S. coffee trade, as the roaster can substitute coffee of similar qualities without changing the cup quality of the blend.

Brazilian coffee consumption in the United States has evidently been affected by such substitutions. During the 5-year period 1945-49, when relatively small quantities of coffee were available from Africa and Asia, Brazilian coffee made up over 55 percent of all U. S. coffee imports. A decade later, during the 5-year period 1955-59, Brazilian coffee made up 42.5 percent of U. S. imports. Imports of African coffee increased over 70 percent, and imports of Latin America milds increased 5 percent in volume during this period.

Europe. --Europe is Brazil's second most important coffee market. Imports of Brazilian coffee into Europe have averaged about 5 million bags a year during the past decade. Some countries, notably in Scandinavia, have increased their imports of Brazilian coffees, while others, including Belgium-Luxembourg, the Netherlands, the United Kingdom, and Switzerland, have bought smaller quantities in the past few years. Several countries which imported little Brazilian coffee in the early years of the period have become substantial customers. These include Hungary, Czechoslovakia, Austria, Poland, Spain, and Yugoslavia.

Africa and Asia. --Imports of Brazilian coffee by Asia and Africa decreased by more than half between 1949 and 1959. Many of these countries have increased production, and some which formerly imported coffee are now exporters. Some have shifted to other suppliers because of lower transportation costs from the near-by areas, political ties, or for financial reasons. In Asia, the Federation of Malaya, the Arabian Peninsula States, Iraq, and the Republic of the Philippines no longer import Brazilian coffee to any extent. In Africa, Brazil's most important customer, the Union of South Africa, has shifted largely to other sources of supply. Morocco and Sudan have also reduced imports. Brazil has, however, substantially increased exports to Japan and the United Arab Republic.

South America and Oceania. --South American imports are limited to three nations: Argentina, Uruguay, and Chile. Most of the coffee used in these countries comes from Brazil. In general, imports of Brazilian coffee increased appreciably during the past decade. Australia and New Zealand have never been important markets for Brazilian coffee because of their political ties with British Commonwealth producers in nearby African and Asian countries.

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