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# Brazilian Agriculture and Policy Changes under GATT

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# Brazilian Agriculture and Policy Changes under GATT

## **Abstract**

Agriculture has been central to Brazil's development from the 1500's to the mid-1900's. During this period, Brazil's economy was geared toward exporting a small number of primary products and its society was predominantly rural (Baer 1989). Since the Great Depression, and more rapidly since World War II, Brazil's population has become urbanized and the economy has been dominated by an expanding industrial sector. Many policies and investments needed to fuel industrial growth have been at the expense of, or have conflicted with, agricultural growth and development. Industrial policies have drawn resources away from agriculture. Industrial and urbanization have taken the population away from rural area, leaving fewer farmers with the enormous task of producing food and fiber for the sixth-largest population on earth. Since the mid-1900's, the government has provided incentives to increase agricultural production, incorporate new technologies, utilize untapped resources and redistribute existing resources. Various agricultural policy tools have been used, and government programs have been successful but expensive.

## **Keywords**

Agriculture, Policy

## **Disciplines**

Agricultural and Resource Economics | Agriculture

# **Brazilian Agriculture and Policy Changes under GATT**

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## **BRAZILIAN AGRICULTURE AND POLICY CHANGES UNDER GATT**

Agriculture has been central to Brazil's development from the 1500s to the mid-1900s. During this period, Brazil's economy was geared toward exporting a small number of primary products and its society was predominantly rural (Baer 1989). Since the Great Depression, and more rapidly since World War II, Brazil's population has become urbanized and the economy has been dominated by an expanding industrial sector.

Many policies and investments needed to fuel industrial growth have been at the expense of, or have conflicted with, agricultural growth and development. Industrial policies have drawn resources away from agriculture. Industry and urbanization have taken the population away from rural areas, leaving fewer farmers with the enormous task of producing food and fiber for the sixth-largest population on earth. Since the mid-1900s, the government has provided incentives to increase agricultural production, incorporate new technologies, utilize untapped resources, and redistribute existing resources. Various agricultural policy tools have been used, and government programs have been successful but expensive.

Brazil has had severe economic problems, particularly throughout the 1980s, and expensive programs have added extra burdens to strained government finances. By the end of the decade, agricultural program policies stabilized the economy, but producers' income declined. Although this eases the budget burden, it places the Brazilian farmer at a disadvantage to farmers in other countries, particularly those countries that support or otherwise subsidize their agricultural sectors.

The 1986 session of the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) tried to reduce trade barriers, including those restricting agricultural trade. Positions of

various countries range from protectionist (e.g., the European Community and Japan) to supporting relatively free trade (e.g., the United States and the Cairns Group).

Brazil's recent reductions in agricultural support and more liberal trade policies are consistent with the philosophies of the Cairns Group, of which Brazil is a member. Although the GATT talks are not the only or perhaps the most important reason for Brazil's new agricultural policies, they offer an opportunity for the effects of agricultural policy changes to be dampened, allowing Brazilian farmers to become more competitive.

This paper presents an overview of Brazilian agriculture. The first section describes Brazilian agriculture and its importance. The second section deals with the evolution of agricultural policies and outlines some of the recent, ongoing changes. The final section briefly discusses how specific policies distort trade and presents policy changes that would be necessary in the context of a GATT agreement.

### **Brazilian Agriculture**

The Federative Republic of Brazil covers 8,511,965 square kilometers. There are 24 states, two territories, and one federal district. Brazil's climate, vegetation, and topography are varied. Dense forests dominate the northern region, including the rain forests of the Amazon Basin. The northeastern coast is semiarid and subject to recurrent droughts. The southwest has mountains, hills, and rolling plains and is a major agricultural region. The Brazilian climate is generally tropical or semitropical, but there is a temperate zone south of the Tropic of Capricorn. Brazil is richly endowed with natural resources, both renewable and nonrenewable, providing enormous production potential in industry and agriculture.

Brazil's economy, made up of large developing agricultural and industrial sectors, is a combination of private enterprises of various sizes and extensive government intervention. During the 1980s, Brazilian economic performance was hampered by periods of low or declining real growth,

hyperinflation, foreign debt obligations that could not be met, and uncertain and often changing economic policy. The new administration, under President Fernando Collor de Mello, is attempting to restore economic health through increasing the pace of privatization, encouraging foreign trade and investment, and establishing a more realistic exchange rate. In the long run, the vast natural resource base is a strength.

Gross domestic product (GDP) in 1989 totaled U.S. \$377 billion with an annual real growth rate of 3 percent. This growth rate is considerably less than the 6 percent per year of the mid-1980s. During the 1970s, the combination of rising labor productivity in agriculture and the transfer of labor out of agriculture into more productive sectors was a major source of economic growth (The World Bank 1982). Since World War II, economic growth has been supported mainly by the industrial sector, yet agricultural growth has been more than adequate to keep pace with a growing population. Since the 1940s, production of agricultural value-added products increased at an estimated average annual rate of 4.5 percent, compared with a 7 percent growth rate of GDP (Baer 1989). This trend explains the decline of agriculture's share in GDP, from 27 percent in the 1940s to the current level of 12 percent, even while employing 35 percent of the labor force in 1989. Much of the decline in the relative importance of agriculture in the Brazilian economy coincides with the period of import substitution industrialization of the 1950s and 1960s, during which resources were drawn away from agriculture.

During the 1960s, growth rates in the Brazilian economy began to decline and industry alone was no longer sufficient to sustain economic growth. Around this time, the Brazilian economy opened, and exports of manufactured goods began to increase. Agricultural exports grew as well, providing an incentive to expand crops produced for export markets. Although the expansion of export crops increased the amount of agricultural land, intensification of agriculture on existing cropped area began as capital moved from the industrial sector into agriculture.



After the 1973 oil crisis, agricultural production for export became increasingly important as a means of improving the deteriorating balance of trade brought about by increased oil prices. Production for import substitution increased rapidly with the creation in 1977 of PROALCOOL, a program to replace petroleum imports with ethanol produced from sugarcane.

In the late 1970s, bad weather, a second oil crisis, and reduced cultivated area amplified a problem that originated in the early 1960s: insufficient food crops for domestic consumption. The cultivation of food crops had begun to decline as that of export crops began to expand. An agricultural priority program was designed to increase the rate of growth of food crop production and to renew emphasis on energy crops (sugarcane) and export crops.

Brazil's extensive land base is the reason that agriculture could expand at the rate of 4.5 percent per year over a 40-year period, despite most resources being allocated to industry. As Figure 1 illustrates, agricultural expansion since 1960 has made it necessary to increase the area used

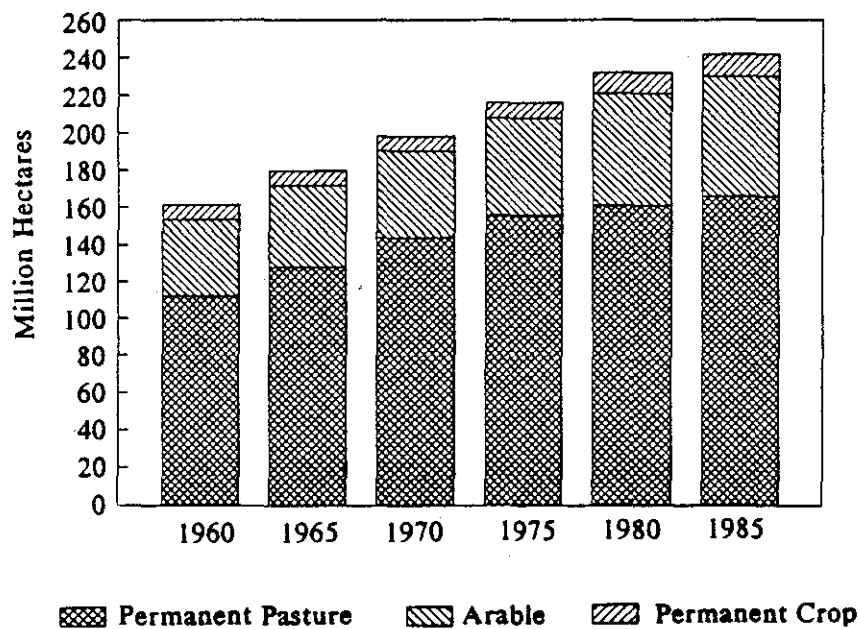


Figure 1. Agricultural area in Brazil

for crop and livestock production by approximately 50 percent. As Table 1 illustrates, approximately 20 percent of Brazilian land area was involved in some aspect of agriculture in the early 1960s. This level increased to nearly 30 percent by the end of the 1980s. Of the total expansion of nearly 85 million hectares between 1961 and 1988, permanent pasture increased by 54 million hectares, arable land by 26 million hectares, and permanent crop area by roughly 4 million hectares. During this same period, forest and woodland area declined by 46 million hectares, or 8 percent. Although this pattern is common in developing nations with expanding agricultural sectors, it is notable in Brazil because of the controversial deforestation of the Amazon Basin, which continues today.

Ownership of agricultural land has created some politically sensitive issues. Large-scale landowners control huge tracts of land, whereas many peasants have little. Although agricultural incomes in Brazil have increased in the 1970s and 1980s, the pattern of land ownership has contributed to an increase in income inequality. Some of the largest income gains were made in the soybean sector as the export market enlarged over the past 20 years. Because soybeans are produced on relatively large farms, the income from this crop went to large-scale landowners. In order to expand soybean area, particularly in the mid-1970s, coffee area was decreased, and income for this labor-intensive crop declined as well, leaving the small-scale coffee producer relatively worse off than the large-scale landowner.

As Table 2 illustrates, since 1970 more than 50 percent of farms have been less than 10 hectares in size, yet these farms accounted for less than 3 percent of land. The largest 1 percent of farms (1,000 hectares and larger) contain more than 40 percent of the land. Many small-scale farmers survive on subsistence agriculture, without clear title to their land and without access to inputs or credit (Allen 1988). Without credit, small-scale farmers cannot increase production beyond the quantities needed for family consumption, exacerbating the income distribution problem.



Table 2. Size distribution of rural properties by number of establishments and total area, 1950-85

Area (hectares)	Percent of Establishments					Percent of Area				
	1950	1960	1970	1975	1985	1950	1960	1970	1975	1985
Fewer than 100	34.0	44.7	51.2	52.1	52.9	1.3	3.4	3.1	2.8	2.7
10 to 100	50.9	44.6	39.3	38.0	37.1	15.3	19.0	20.4	18.6	18.5
100 to 1,000	12.9	9.4	8.4	8.9	8.9	32.5	34.4	37.0	35.8	35.1
1,000 to 10,000	1.5	0.9	0.7	0.8	0.8	31.5	28.6	27.2	27.7	28.8
10,000+	0.7	0.4	0.4	0.2	0.3	19.4	15.6	12.3	15.1	14.9

SOURCE: Baer 1989; Instituto Brasileiro de Geografia e Estatística 1976, 1981, 1986.

Brazil's agricultural sector is well-developed, and this country is self-sufficient in food, except for wheat. Major agricultural products include coffee, soybeans, sugarcane, cocoa, rice, beef, corn, dry beans, oranges, cotton, and wheat. Corn and dry beans are grown throughout Brazil, mostly by small-scale farmers. Rice and wheat are produced mainly by modern farmers, especially in the southern state of Rio Grande do Sul, where soybean production first expanded. Coffee and cotton are largely grown in the southeast—the states of Parana, Sao Paulo, and Minas Gerais—also a major soybean-producing area.

Specifically, five agricultural production regions are generally recognized by climate and soil (Ruff and Mielke 1984).

**Southeast** (Sao Paulo, Minas Gerais, Espirito Santo, and Rio de Janeiro). This area has a subtropical to temperate climate. It includes large areas of export crops such as sugarcane, coffee, soybeans, oranges, and cotton, as well as domestic food crops such as rice, corn, dry beans, and potatoes. Much of Brazil's dairy production takes place in this region. The major poultry and cattle slaughter areas are located here.

**South** (Parana, Santa Catarina, and Rio Grande do Sul). This area includes the most southern states and has a temperate climate. Rice, corn, and wheat are its major domestic crops. Rio Grande do Sul has irrigated rice areas with high yields. Parana and Rio Grande do Sul are the major soybean and wheat states. Western Parana has some of Brazil's best soils and produces coffee, peanuts, corn, cotton, soybeans, and wheat. Rio Grande do Sul is a major beef

production area and the center for poultry exports. The southern region contains two of Brazil's export corridors, providing a channel for traded products.

**Northeast.** The northeast is the dry area of Brazil, and agriculture here is characterized as subsistence farming. A narrow, rain-fed coastal region is the most productive area and produces a substantial amount of sugar and practically all the cocoa.

**North** (Acre, Amazonas, Para, Amapa, and Roraima). This largest and least productive of Brazil's agricultural regions has a humid, tropical climate. Rice is produced here as well as manioc, pepper, and Brazil nuts in isolated areas. The region is becoming an area of cattle production as deforestation makes way for grazing lands. Soil quality is generally poor, and little crop production takes place on a piece of land for more than a few years. Even grazing depletes the soil, but the vastness of this area has encouraged abandonment and slash-and-burn operations on new lands, causing an international controversy.

**Central-West** (Goias, Mato Grosso, Mato Grosso do Sul, and Rondonia). This area contains the *cerrado*, a vast savannah. Although there are soil imbalances here, appropriate fertilizer application has proven effective. Wheat, rice, soybeans, corn, and cattle are major products.

Table 3. Area harvested of major Brazilian crops

Crop Year	Corn	Soybeans	Rice	Wheat	Dry Beans	Sugar Cane	Coffee	Cotton	Cocoa Beans
(1,000 hectares)									
1970/71	10,550	1,716	4,764	1,895	3,485	1,725	2,403	2,469	444
1975/76	11,118	6,417	6,000	2,931	4,146	1,969	2,169	1,815	451
1980/81	12,810	8,501	6,100	3,062	4,643	2,608	2,207	2,015	483
1981/82	13,382	8,202	5,963	1,922	5,027	2,826	2,618	2,070	505
1982/83	11,050	8,136	5,100	2,828	5,926	3,084	1,857	2,113	533
1983/84	12,700	9,421	5,350	1,900	4,064	3,479	2,279	1,960	591
1984/85	12,000	10,153	4,760	1,750	5,320	3,656	2,452	2,420	586
1985/86	12,500	9,450	5,585	2,800	5,316	3,912	2,534	2,290	649
1986/87	13,500	9,270	5,980	3,900	5,485	4,201	2,461	2,130	657
1987/88	13,180	10,524	5,961	3,475	5,202	3,706	2,876	2,156	649
1988/89	12,900	12,170	5,300	3,450	5,905	3,459	2,957	2,367	668
1989/90	12,100	11,400	4,300	3,400	5,212	2,990	3,039	1,900	696
1990/91	13,000	9,900	4,800	2,700		2,990		2,100	

SOURCES: U.S. Department of Agriculture 1990b; Foreign Agricultural Organization, various issues.

Cropping patterns have changed in the past several decades, the most notable being the rapid expansion of soybean area (Table 3). Expanding export markets have made it possible to increase export earnings by trading soybeans and soybean products. Although a general increase in cropped area has occurred to accommodate soybean (and other crop) expansion, increasing soybean area has also been at the expense of other crops during some periods. During the early 1970s, soybeans were more profitable than coffee. Some old coffee trees were uprooted and plantations replaced with soybeans. In 1970/71, Brazil produced less than 5 percent of the world's soybeans (Table 4). By 1975/76, Brazil's share had increased to 17 percent and remains slightly higher at the present time.

Since the late 1970s, coffee area has recovered. As coffee area began to expand in the early 1980s, coffee production increased slowly at first as new plantings matured. Despite some large fluctuations in annual coffee production attributable to weather and prices, Brazil produces roughly 30 percent of the world's coffee (Table 4).

Sugarcane production has also expanded rapidly. Brazil is currently the world's largest producer of sugarcane, but only one-third to one-half of the cane is used to produce sugar (Allen 1988); Brazil's energy policy is mainly responsible for the production increase. Raw sugar production peaked in 1983, but sugarcane area continued to expand through 1986/87 (Tables 3 and 4). Large quantities of gasoline refined from imported oil have been replaced by ethanol. The government subsidizes not only sugarcane planting, but the ethanol industry as well. Besides ethanol production, Brazil refines and exports large quantities of sugar. Approximately 7 percent of the world's raw sugar comes from Brazil. Although this percentage is down from the early 1980s, it is approximately the same as in the early and mid-1970s.

Important food crops such as corn, rice, and dry, edible beans show year-to-year fluctuations in area but have changed relatively little over the past decade (Table 3). Changes in relative support prices ensure that adequate supplies of these commodities are produced. Wheat has shown relatively

Table 4. Brazilian production of major export crops

Crop Year	Cocoa Beans	Coffee	Cotton	Oranges	Soybeans	Raw Sugar
(1,000 metric tons)						
1970/71	151	775	490	3,099	2,077	5,447
1975/76	266	1,263	395	6,333	11,227	6,186
1980/81	296	998	622	8,858	15,200	8,547
1981/82	336	2,032	645	9,286	12,835	8,393
1982/83	364	927	650	9,444	14,750	9,314
1983/84	380	1,665	556	9,562	15,541	9,576
1984/85	345	1,339	963	13,372	18,278	9,332
1985/86	431	1,911	830	14,214	14,100	8,274
1986/87	460	977	680	13,327	17,300	8,649
1987/88	329	2,280	765	14,714	18,021	8,458
1988/89	334	1,500	735	15,110	23,200	8,572
1989/90	355	1,560	660	16,807	19,300	7,793
(percent of world production)						
1970/71	11.8	19.6	4.1	12.1	4.7	7.3
1975/76	17.3	28.3	3.3	19.4	17.1	7.6
1980/81	18.5	21.3	4.4	23.2	18.8	10.1
1981/82	19.5	33.7	4.2	24.5	14.9	9.0
1982/83	22.9	18.8	4.4	26.0	15.8	9.1
1983/84	24.1	29.8	3.9	24.1	18.7	9.8
1984/85	19.6	26.1	5.0	33.9	19.6	9.3
1985/86	21.5	32.2	4.7	34.3	14.5	8.3
1986/87	22.7	19.0	4.4	31.1	17.6	8.5
1987/88	16.1	36.8	4.3	32.5	17.4	8.3
1988/89	13.5	26.8	4.0	31.8	24.3	8.1
1989/90	14.8	27.0	3.8	33.2	18.2	7.2

SOURCES: Foreign Agricultural Organization, various issues; PS&D View 1990; U.S. Department of Agriculture 1990b.

larger fluctuations in area than have the other food crops because wheat and soybeans are competing crops in some areas. Wheat support prices have been increased more than those for many other crops to maintain wheat production. Despite these support increases, wheat production still lags behind consumption, and a large percentage of this commodity must be imported each year, using valuable foreign exchange.

Other important Brazilian crops are oranges, cotton, and cocoa beans. Orange groves have increased steadily since the 1960s. In 1970/71, Brazil produced 12 percent of the world's oranges (Table 4). Today, Brazil produces 33 percent of all oranges, most of which are juice oranges for frozen concentrate.

Cotton area has changed relatively little during the past 20 years, and production increases have been attributable mainly to yield increases. Cotton production has increased at approximately the same rate in Brazil as it has in the world as a whole, and Brazil continues to produce approximately 4 percent of total cotton.

Although much less land is devoted to cocoa bean production than to other major crops, Brazilian cocoa beans account for a large share of total world production. Cocoa bean production increased slowly in the 1970s and early 1980s before declining in 1987/88. Production has since recovered.

Brazil has maintained a positive trade balance since 1981. The 1989 trade surplus amounted to approximately U.S. \$16 billion, with the total value of exports exceeding U.S. \$34 billion. Agricultural exports of more than U.S. \$11 billion accounted for much of this trade surplus, while the value of agricultural imports exceeded U.S. \$2 billion. The growing value of agricultural exports has been minimal over the past decade, although year-to-year fluctuations have been several billion dollars.



Brazilian trade surplus growth during the 1980s came from sectors other than agriculture. Agriculture has accounted for a declining share of the total value of exports in the past two decades (Table 5), while agricultural imports have remained a fairly stable proportion of the total value of imports. In 1970, nearly three-fourths of the value of exports was from agricultural products. In 1989, two-thirds of the value of exports came from sectors other than agriculture.

Because of the huge resource base and the ability to open new areas to crops and grazing, Brazil's agriculture is export oriented. Exports of agricultural products have been important not only as a source of foreign exchange, but also of direct government revenues through the export tax system.

Table 5. Value of Brazilian trade

Year	Total Exports	Total Imports	Trade Balance	Ag. Exports	Ag. Imports	Trade Balance	Total Ag. Exports	Total Ag. Imports
	----(million U.S. dollars)----			----(million U.S. dollars)----			---(percent)---	
1970	2,739	2,507	232	1,972	301	1,672	72	12
1975	8,670	12,210	-3,540	5,096	1,103	3,993	59	9
1980	20,132	22,955	-2,823	10,375	2,834	7,541	52	12
1981	23,293	22,091	1,202	10,788	2,536	8,252	46	11
1982	20,175	19,395	780	8,893	2,172	6,721	44	11
1983	21,899	15,429	6,470	9,951	1,670	8,282	45	11
1984	27,005	13,916	13,089	11,641	1,719	9,922	43	12
1985	25,639	13,153	12,486	10,397	1,562	8,835	41	12
1986	25,594	14,044	11,550	8,743	2,826	5,917	34	20
1987	26,229	15,052	11,177	9,830	1,848	7,982	37	12
1988	33,783	14,605	19,178	11,834	1,504	10,330	35	10
1989	34,393	18,281	16,112	11,431	2,336	9,095	33	13

SOURCES: International Monetary Fund 1990; Foreign Agricultural Organization, various issues.

Soybeans and soybean products are the most important exports in total value (Table 6). Most soybeans are exported as products higher in value than raw soybeans. Brazil is currently the world's leading exporter of soybean meal, exporting approximately 20 percent of the soybeans it produces, crushing the majority domestically and exporting the products, especially meal. Three-fourths of the soybean meal produced in Brazil is traded on the world market, giving Brazil a world market share that fluctuated between 30 percent and 40 percent throughout the 1980s.

Until the mid- and late 1970s, coffee was traditionally Brazil's leading export commodity. Although currently the second-leading export, coffee is still produced primarily for export, with 60 percent being sold abroad in the late 1980s (Table 7). Brazil is the world's leading coffee exporter, with more than 20 percent of world market sales.

Table 6. Value of Brazilian exports

Year	Total	Ag.	Soybeans and Prod.	Coffee	Cocoa	Juices	Sugar	Cotton	Beef	Poultry Meat
(million U.S. dollars)										
1970	2,739	1,972	72	939	110	15	127	154	70	0
1975	8,670	5,096	1,304	855	294	86	1,100	98	9	3
1980	20,132	10,375	2,277	2,486	697	364	1,288	11	18	209
1981	23,293	10,788	3,191	1,517	596	NA	1,062	41	124	356
1982	20,175	8,893	2,122	1,858	429	NA	560	62	188	282
1983	21,899	9,951	2,563	2,096	555	NA	527	189	210	244
1984	27,005	11,641	2,566	2,564	662	NA	587	42	214	265
1985	25,639	10,397	2,540	2,369	779	793	369	77	263	246
1986	22,349	8,743	1,640	2,006	631	718	382	17	166	236
1987	26,225	9,830	2,325	1,959	584	894	325	160	208	227
1988	33,783	11,834	3,046	1,998	519	1,189	346	31	374	253
1989	34,392	11,431	3,646	1,610	334	1,045	306	158	138	286

SOURCES: Total, coffee, soybeans and products: International Monetary Fund 1990; juices: U.S. Department of Agriculture 1990b; all other items: Foreign Agricultural Organization, various issues.  
NA = not available.

Table 7. Brazilian raw agricultural exports

Crop Year	Cocoa Beans	Coffee	Cotton	Soybeans	Raw Sugar
	(1,000 metric tons)				
1970/71	120	963	220	230	1,126
1975/76	177	782	78	3,328	1,750
1980/81	124	784	9	1,502	2,626
1981/82	125	825	30	797	2,781
1982/83	143	887	222	1,316	2,677
1983/84	153	940	17	1,580	2,572
1984/85	107	1,032	77	3,456	3,165
1985/86	172	1,034	78	1,192	2,652
1986/87	135	478	66	3,290	2,535
1987/88	143	988	130	3,020	2,291
1988/89	134	904	101	5,081	1,371
1989/90	107	943	131	3,500	1,400
	(percentage of world exports)				
1970/71	10.6	29.5	5.7	1.8	6.5
1975/76	15.4	21.9	1.9	17.3	8.1
1980/81	11.4	21.1	0.2	6.1	9.5
1981/82	10.0	22.2	0.7	2.7	9.5
1982/83	11.5	22.4	5.3	4.6	8.7
1983/84	12.7	23.3	0.4	6.0	8.7
1984/85	7.9	24.5	1.7	13.9	11.0
1985/86	12.3	23.3	1.8	4.6	9.4
1986/87	9.0	11.8	1.2	11.5	9.2
1987/88	9.1	22.1	2.6	9.9	8.0
1988/89	8.2	21.3	1.8	21.3	4.8
1989/90	6.4	20.4	2.5	13.3	4.7
	(percentage of Brazilian production)				
1970/71	79.5	124.3	44.9	11.1	20.7
1975/76	66.5	61.9	19.7	29.6	28.3
1980/81	41.9	78.6	1.4	9.9	30.7
1981/82	37.2	40.6	4.7	6.2	33.1
1982/83	39.3	95.7	34.2	8.9	28.7
1983/84	40.3	56.5	3.1	10.2	26.9
1984/85	31.0	77.1	8.0	18.9	33.9
1985/86	39.9	54.1	9.4	8.5	32.1
1986/87	29.3	48.9	9.7	19.0	29.3
1987/88	43.5	43.3	17.0	16.8	27.1
1988/89	40.1	60.3	13.7	21.9	16.0
1989/90	30.1	60.4	19.8	18.1	18.0

SOURCE: Foreign Agricultural Organization, various issues; PS&D View 1990; U.S. Department of Agriculture 1990b.

Although Brazil is the world's leading orange producer, it exports a relatively small quantity of them. As is the case with many of Brazil's agricultural commodities, oranges are processed domestically and exported as higher value products. Fruit juices, mostly orange juice and orange juice concentrate, have become the third-highest valued agricultural export, with sales of more than U.S. \$1 billion in 1989.

Sugar has declined in value as an export, but not in importance as a crop. Brazil's energy policy has switched the emphasis on cane production from sugar to alcohol production to meet domestic fuel needs. Brazilian sugar production and exports have declined both in absolute quantities and relative to the size of the export market (Table 7). Although sugarcane has contributed less export value since the early 1980s, it remains important to maintaining Brazil's positive trade balance through import substitution by lowering the quantities of imported oil. Brazil still produces 7 percent of the world's raw sugar and holds nearly a 5 percent market share.

Relatively little of the cocoa exports are in bean form. Like soybeans and oranges, much of the increased cocoa exports since the 1970s are in value-added products. Despite a slowly declining market share for cocoa beans, Brazil maintains cocoa export value at generally more than U.S. \$0.5 billion annually (Table 6) through exports of cocoa powder, cocoa butter, and other cocoa products.

Exports of fresh poultry meat increased rapidly in the 1970s and have leveled off somewhat over the last 10 years, despite continuing increases in poultry production. More processed poultry products are being exported, making the actual value of poultry exports higher than that shown in Table 6. The expanding poultry industry is another instance of Brazil's capturing the potential value of primary agricultural commodities by producing and exporting higher value products.

Expansion in Brazil's beef industry is perhaps one of the best examples of increasing the value of agricultural products and selling them on the world market. Because most Brazilian cattle are

grass fed, there is relatively little purchased input cost associated with beef production, especially with the slash-and-burn grazing system of the Amazon Basin. The value added by these lands through grazing is large, even after deducting transportation costs to markets and ports.

Wheat is the major imported agricultural commodity, accounting for 13 percent of the value of agricultural imports in 1989. As recently as 1985, however, nearly 50 percent of agricultural import expenditures were for wheat. Brazil must import large percentages of its domestic requirements annually. Often, debt problems constrain how much can be imported. Increases in support prices have proven only partly successful in increasing the amount of wheat produced in Brazil, and imports have often been at or near 50 percent of domestic consumption, although self-sufficiency improved in the late 1980s before declining again in 1990 (Table 8).

Table 8. Brazilian wheat consumption and imports

Crop Year	Consumption (1,000 metric tons)	Imports (1,000 metric tons)	Imports (percent of consumption)
1970/71	3,689	1,710	46.4
1975/76	5,598	3,752	67.0
1980/81	6,600	3,910	59.2
1981/82	6,300	4,382	69.6
1982/83	6,300	4,000	63.5
1983/84	6,400	4,196	65.6
1984/85	6,300	4,690	74.4
1985/86	6,800	2,200	32.4
1986/87	8,000	2,800	35.0
1987/88	7,100	1,270	17.9
1988/89	7,800	1,100	14.1
1989/90	7,300	1,800	24.7
1990/91	7,600	3,200	42.1

SOURCE: PS&D View 1990; U.S. Department of Agriculture 1990b.

### Agricultural Policies

Agricultural policy in Brazil is changing significantly. Under President Collor de Mello, agricultural policy is becoming more open, allowing increasing response to market signals. Over the last several decades, however, there has been substantial government intervention in and control of agriculture.

Throughout the 1950s, agricultural policies were subordinate to the major goal of industrialization (Baer 1989). Some of the policies used to achieve industrial goals conflicted with agricultural policy tools, and some of the agricultural policy tools conflicted with one another.

Since 1964, government policies have been more supportive of agriculture. More emphasis has been placed on stimulating production through the market mechanism. Minimum price programs have been used with varying degrees of success. Perhaps the most widely used and effective incentives have been the credit programs.

Agricultural policies are generally one of three types: internal support policies, border measures, and export subsidies.

#### Internal Support

As described next, internal support measures in Brazil are in the form of input subsidies, low-interest credit for inputs including machinery, and minimum support prices.

Rural Credit. Subsidized credit has been the most frequently used support. Loan rates below commercial rates and even below the rate of inflation have been used. The most commonly used loans are short-term coverage of production costs (Table 9). Repayment terms range from six months to two years, depending on the crop being financed. Longer term investment credit has been available for from five to 12 years. Marketing credits have been associated mainly with the minimum price program.

Table 9. Real agricultural credit in Brazil

Year	Total	Production Costs	Capital Expenditure	Crop Marketing
(billion cruzeiros) <sup>a</sup>				
1980	493.0	279.0	92.5	121.6
1981	427.6	250.8	66.1	110.7
1982	414.1	266.4	54.3	93.4
1983	312.6	194.4	52.2	66.0
1984	191.0	134.6	23.5	32.9
1985	272.3	193.6	35.3	43.4
1986	406.0	227.1	130.1	48.8
1987	320.1	224.5	54.7	40.8
1988	176.0	144.4	27.8	3.8

SOURCE: *Estudos Apec* 1990.

<sup>a</sup>Deflated by the General Price Index for domestic supply for January 1990.

In the 1960s and 1970s, credit was used to stimulate agriculture. Between 1960 and the mid-1970s, the real value of new agricultural loans increased more than sixfold. The proportion of agricultural credit to total credit grew from 11 percent to approximately 25 percent over this period, and agricultural credit as a proportion of agricultural GDP fluctuated between 65 percent and 94 percent in the 1970s (Baer 1989).

The National System of Rural Credit comprises the Central Bank, the Bank of Brazil, other federal and state financial institutions, and private commercial banks. Agricultural credit policy is determined by the National Monetary Council; control over executing that policy is vested in the Central Bank (World Bank 1982). Most agricultural credit has been through the Bank of Brazil, which was solely responsible for credit under the minimum price program until 1980. However, all Brazilian banks are required to keep some of their portfolios (the percentage has fluctuated) in agricultural loans. The majority of agricultural loans have interest rates well below the rate of inflation. In the mid-1970s, loans for agricultural inputs had interest rates of 7 percent, while

inflation was more than 35 percent. The result was a substantial subsidy to producers that increased from 2 percent to nearly 20 percent of agricultural GDP from 1970 to 1980. During the 1980s, however, the real value of agricultural credit generally declined (Table 9). In 1989, the Summer Plan contributed to a further large decline in available credit as well as a sharp increase in loan costs. Traditional agricultural policy tools based on credit have gradually become less important.

During the 1980s, interest rates charged to farmers were increased to levels closer to the government's cost of borrowing. In 1987, interest rates were 10 percent higher than the inflation rate, compared with rates lower than the inflation rate in the early 1980s. Even at 10 percent higher than the inflation rate, this level was considerably lower than commercial interest rates. As of 1988, only in the Northeast and Amazon were interest rates still subsidized at less than the inflation rate.

Prior to 1979, the level of financing that a producer could receive was determined by the formula

$$C = A * Y_{rc} * bP_c, \quad (1)$$

where  $C$  is the amount of credit,  $A$  is area planted,  $Y_{rc}$  is the expected average yield for the crop and region,  $b$  is a policy-determined coefficient, and  $P_c$  is the minimum crop price set by the National Monetary Council. Beginning in 1979/80, available production credit was tied to average production costs (*valor basico de custeio*, or VBC) for the region. Farmers could borrow up to 100 percent of the VBC in 1979 (World Bank 1982).

Although the rural credit subsidy has increased mechanization and technology adoption and improved farming practices leading to expansion of agriculture, distribution of the subsidy has not been equitable. Large-scale farmers have been by far the greatest beneficiaries of the credit system. Not only has this situation allowed the rapid expansion of export commodities from larger farms, it has also widened the income gap between large-scale and small-scale farmers. The share of total



credit for crops allocated to small loans was 34 percent in the mid-1960s and declined to 11 percent by the mid-1970s. The decline for livestock credit over that same period was from 33 percent to 12 percent. Baer (1989) points out that noninterest transaction costs were several times the nominal interest rate for small-scale farmers and practically zero for large-scale farmers. In effect, small-scale farmers were discouraged from participating in the credit system because of the high relative costs of smaller amounts of credit.

The larger scale farmers also tend to be more technologically advanced and are better able to respond to market signals. These producers seem to have taken advantage of the credit and improved their productivity. For many Brazilian farmers, market incentives are not adequate to increase productivity. Incentives must be accompanied by extension services, education, research, and other factors that use advanced technology.

Table 10 presents the percentage of credit going to major crops. Crops such as manioc and black beans, which are grown by small-scale subsistence farmers, receive relatively little credit. Soybeans, rice, wheat, sugarcane, and coffee, which are grown on larger farms, receive a substantial amount of credit. There was also a tendency to treat basic food crops less favorably when setting the coefficient of credit eligibility [b in Equation (1)]. This treatment resulted in overreporting wheat and soybeans and underreporting beans and manioc, so that credit was diverted to crops other than those for which it was intended, or outside of agriculture altogether.

The Minimum Price Program. The Commission for Production Financing (CFP) was created in 1943. The first minimum prices were set in 1945 to be applied to 1946 harvests of rice, black beans, corn, peanuts, soybeans, and sunflower seeds. Over time, the minimum price coverage has been expanded to include more than 40 crops, but excludes sugar, coffee, wheat, and cocoa, which have specialized agencies to administer them.

Table 10. Rural credit by commodity

Year	Corn	Soybeans	Wheat	Rice	Coffee	Cotton	Sugar Cane	Beans	Manioc	Oranges	Other
1975	6.1	9.5	8.0	11.6	5.3	2.5	4.5	0.9	0.3	NA	51.4
1980	7.1	10.1	4.6	7.9	8.7	3.4	4.4	3.6	1.3	1.1	47.8
1981	8.0	9.5	3.0	7.0	4.3	4.4	5.1	5.1	1.6	1.1	50.9
1982	10.3	16.6	3.2	9.5	8.3	7.9	7.9	3.6	1.2	0.8	30.8
1983	7.7	20.0	2.2	10.4	6.9	6.1	7.3	2.2	0.6	1.0	35.4
1984	9.5	19.2	3.5	11.9	5.8	8.6	5.3	2.9	1.1	0.7	31.4
1985	13.1	23.8	4.4	16.2	4.5	7.0	6.5	3.0	1.1	1.0	19.4
1986	10.6	15.1	1.3	11.6	3.9	7.3	5.9	3.2	0.8	1.3	39.0
1987	10.2	18.4	5.5	13.3	6.4	6.8	5.4	2.9	0.5	1.0	29.6

SOURCE: Instituto Brasileiro de Geografia e Estatística, various issues.

The minimum price system was not designed to subsidize crop production, nor was it meant to transfer income to farmers, although this occurs. The system was meant to reduce risk and uncertainty at the beginning of the planting season so that investment and production would increase. The minimum price system and its accompanying storage facilities and loans are also intended to reduce sharp price fluctuations during the crop year (World Bank 1982).

Until 1980, the Bank of Brazil was the sole financial agent of the CFP, but since then commercial banks have been able to participate in the minimum price program. Minimum prices are set each year and announced prior to the planting season by the National Monetary Council. Until recently, minimum prices were only infrequently adjusted for inflation over the crop year, but in the last two years indexing has become a regular feature. The minimum price is based on the VBC for each crop and region, adjusted for expected inflation plus a profit margin.

Farmers and cooperatives can sell covered products to the market at the going price, sell to the CFP at the guaranteed minimum price, or borrow from the CFP against the minimum price value of the stored crop for later sale to the market or to the government (World Bank 1982). Truckers and processors of the commodities may also participate, but they must pay the farmer at least the minimum price for the crop.

The sales option is the Federal Government Acquisitions Program (AGF), and the more widely used storage credit option is the Federal Government Loan Program (EGF). Under the EGF, the owner of the crop usually borrows money for four to six months. During that period, the loan plus interest and storage costs may be repaid if market prices are above the minimum price. The crop is then sold on the market. If the market price remains below the minimum, the crop is sold to the CFP at the minimum price, without paying either interest or storage costs. The interest rates for EGF loans, as for other rural credits, have been heavily subsidized. Soybeans are the single largest crop covered by the EGF, and together with corn, rice, and cotton absorb the vast majority of EGF credit.

In 1978, a pre-EGF was started to provide small-scale farmers with credit during the period required to classify and deliver the grain and process the EGF loan. Because these steps could take a month or more, they were believed to inhibit many small-scale farmers' entry into the program. The pre-EGF provides funds for the time required to receive regular EGF payments.

A Special Purchase Program (POVOC) was introduced during the 1979/80 crop year to supplement marketing services available in the recently settled frontier areas. POVOC adds drying, grading, storage and bagging, subsidized shipping, and rapid disbursement of funds to the producer to the minimum price program.

In 1988, Brazilian farmers had stable agricultural policies, despite the general economic problems. Major agricultural policy instruments such as minimum prices were indexed to keep pace with monthly inflation changes.

Wheat Subsidy Policy. Wheat production in Brazil is technologically intensive because of the ecology of the main wheat-producing regions. Because of the large quantities of fertilizer and pesticides needed to produce wheat in Brazil, producer subsidies are necessary, particularly in times of low world wheat prices. Underlying Brazilian wheat policy often conflicts with the national goals of self-sufficiency and maintaining low food costs for consumers.

Although wheat has been a major beneficiary of Brazil's credit system, the primary policy tool is setting prices. The government is the only purchaser of both domestic and imported wheat, making it the sole supplier of wheat to mills. Since 1963, guaranteed producer prices have increased domestic production toward self-sufficiency. Although most Brazilian crops are supported at levels at or below U.S. loan rates, wheat guarantee prices are generally well above these levels and usually exceed the world price significantly (Table 11). The major exceptions occurred in 1973 and 1974, when the rapid increase in international wheat prices reduced the real Brazilian guarantee price to less than world price levels.

Table 11. Brazilian support and world wheat prices

Crop Year	Guaranteed Producer Price		FOB Gulf (U.S. \$/mt)
	(CR \$/mt)	(U.S. \$/mt)	
1970/71	490	115	63
1975/76	1,670	184	161
1980/81	11,833	196	183
1981/82	28,500	228	173
1982/83	40,500	160	166
1983/84	170,417	204	165
1984/85	536,700	224	152
1985/86	1,203,000	206	143

SOURCE: International Wheat Council, various issues.

The retail price is controlled to provide wheat products to consumers at lower prices, thus stimulating demand. The retail price policy conflicts with the guaranteed producer price policy and has resulted in large subsidies for consumers. Wheat consumption has increased faster than production, and Brazil still imports up to one-half of its annual wheat requirements.

Sugar and the Alcohol Program. Brazil has for a long time been one of the world's major sugar producers, accounting for more than 7 percent of the world's sugar in 1990. Alcohol was a spinoff product from the sugar industry through the early 1970s. In 1975, the National Alcohol Program (PROALCOOL) was established to pay large subsidies to distillers for alcohol production to encourage them to partially replace gasoline with alcohol. New distilleries, production incentives, and low world sugar prices combined to increase production sixfold between 1975 and 1979 (World Bank 1982).

Anhydrous alcohol is blended with gasoline at ratios of up to 20 percent. This type of alcohol is produced in existing distilleries, mostly in combination with sugar mills. Hydrus alcohol cannot be blended with gasoline and requires engines that can burn 100 percent alcohol. The quantities of each

type of alcohol produced are considered flexible and can be modified, depending on the relative prices of alcohol, gasoline, and sugar, as well as the availability and cost of 100 percent alcohol-burning engines.

The sugarcane area required for both sugar and alcohol production made it necessary to expand sugarcane production in the traditional northeast and south-central areas, with much of the new area planted in Sao Paulo and Parana. Area planted increased from less than 2 million hectares in 1979 to more than 4.2 million hectares in 1985 before declining in the latter half of the 1980s. These recent declines in sugarcane area have resulted from increased yields, decreased sugar production, and low world oil prices.

The new land area for sugarcane production came from a combination of expanding existing area associated with sugar mills and distilleries and new projects. Although not quantified, there has been concern that concentration of these lands by large distilleries presents potential social problems, particularly at regional levels.

Fertilizer Subsidy. From the 1960s to the early 1980s, input subsidies were important in the expansion of Brazilian agriculture. Fertilizer consumption increased rapidly and the fertilizer industry became a target of import substitution policies as it attempted to expand with rising demand. Fertilizer prices in Brazil are commonly higher than the world price of equivalent products, but they generally decreased relative to crop prices in the 1960s and early 1970s.

In 1974, world fertilizer prices increased dramatically and crop prices weakened. The Brazilian government offered direct 40 percent subsidies for fertilizer in 1975 and 1976. Farmers were given six-month credit for the remaining 60 percent from the Bank of Brazil. After 1976, farmers could finance 100 percent of fertilizer costs through zero interest loans from the Bank of Brazil, resulting in a substantial subsidy and partially compensating for differentials between world and domestic prices. By the early 1980s, fertilizer loans carried interest charges at the same rate as other agricultural

production loans did, but were still substantial subsidies because of accelerating inflation. In the mid-1980s, the democratic government began to place more importance on minimum price programs. Input subsidies were phased out and available loan funds were greatly reduced.

### **Border Measures**

Authorization to export or import has been controlled by the government through CACEX, the trade arm of the Bank of Brazil. Because CACEX controlled the opening and closing of import and export registrations, it could prevent world price variability from being transmitted to the domestic market and thus it could lower domestic prices and increase supplies in the short run. However, this practice discouraged domestic production. Since taking office in March 1990, President Collor de Mello has stated his intention to liberalize trade and open the economy.

Import Policies. In 1953, Decree Law 1427/75 and Central Bank Resolution 1485 established CACEX to control external trade. These decrees provided that all imported goods require a CACEX-controlled import license. Originally, 5,600 items were under this licensing law. This number was reduced to 2,370 in 1987, to 1,150 in 1988, and to 500 in 1989. Among the commodities that still have import prohibitions are wheat, tobacco, citrus, dairy products, meat and fish preparations, sugar and confectionery products, and oilseeds. CACEX allows imports of these commodities only as necessary.

Several decrees have liberalized some portions of Brazilian trade. In November 1981, Decree Law 66 extended import duty concessions to Latin American Association for Trade Integration (ALADI) members. Under these concessions, ALADI members enjoy preferential rates while nonmembers pay 10 percent to 85 percent ad valorem tariffs on some industrial and agricultural products.

In May 1988, Resolution 155 created an intervention price system, replacing import prohibitions on soybeans, corn, and rice with a variable tax mechanism. The resolution required that imports be

taxed at rates that prevent them from having a clear price advantage over domestic products (Foreign Agricultural Organization, various issues). When domestic prices reach the intervention level, the government will either release government-held stocks or allow imports. As long as the government has stocks to release, imported products cannot have a price advantage.

The government is defining a new import policy and has renounced its policy of import substitution. Decree 99.180 of March 15, 1990, provides that CACEX no longer will control import and export licenses in cases of national interest. All nontariff barriers will be abolished on both industrial and agricultural products.

Export Policies. In the mid-1960s, raw crop exports accounted for approximately 85 percent of all agricultural exports from Brazil. By 1977, less than 60 percent of agricultural exports were raw commodities. This reduction in export share was largely a result of export policies that encouraged exports of semiprocessed and manufactured goods. Because Brazil's general policy framework favored the industrial sector over the agricultural and export sectors, agricultural support and credits became necessary to increase agricultural production, thereby influencing agricultural exports. These exports have also been affected by various policy instruments, including taxes and subsidies on farm inputs and output, market guarantees for local input manufacturers, supply guarantees for local agro-industries, export taxes, quotas, and quality controls and other prohibitions.

In general, credit from the Central Bank created net export subsidies for semiprocessed and manufactured products with an agricultural product base, more than compensating for the state value-added tax (ICM) and the federal industrial products tax (IPI). In the past, these taxes have often been reduced or eliminated for exports of processed products, but these tax rebates have been phased out over the past few years. Exports of raw agricultural products, on the other hand, have enjoyed no such tax rebates, and export taxes for raw products are often higher than those for their derivatives. In addition, specific export quota restrictions were applied to a number of commodities including beef



products, soybeans and products, sugar and sugarcane, coffee, cocoa, cattle, and rice. The application of these quotas has been primarily to raw farm products to ensure supplies to the domestic market and promote a higher level of processing (World Bank 1982). Preferential taxes and subsidies for processed products favored processed and manufactured exports and discouraged raw product exports.

Government involvement in exports is greatest for commodities such as coffee, sugar, and cocoa. The government taxes and controls coffee exports through the Brazilian coffee institute. The institute for sugar and alcohol controls sugar exports. Because of low world prices, however, sugar exports are subsidized.

Perhaps the best example of export policies as they relate to agricultural products and their derivatives is that for the soybean complex. Production and exports of soybeans and products increased rapidly in Brazil in the 1970s and 1980s. Before 1975, most exports were as soybeans. After 1975, however, the promotion of industrial production and exports sharply decreased soybean exports and increased meal and oil exports. Some incentives to increase soybean processing were undoubtedly a result of the expanding domestic oil market; nevertheless, promotion of manufactured exports has been a major factor. Incentives to soybean processors have included subsidized credit and reduction or elimination of the ICM and IPI taxes for meal and oil exports. Soybeans and products are still subject to export taxes, but the tax rate for meal and oil is less than that for beans. This export tax differential is added incentive to crush soybeans domestically and export products.

### **Multiple Exchange Rates**

Brazil has used a multiple exchange rate system whereby exporters must convert foreign exchange earnings to domestic currency at an official exchange rate. This exchange rate was usually different from the market rate, resulting in exchange losses for the exporter and gains for the

government. These policies were used to target specific commodities or products. Coarse grain, primarily corn, exports were discouraged with this multiple exchange rate system.

Allowing the cruzeiro (or cruzado) to be overvalued allowed a multiple exchange rate system, but without the ability for commodity-specific targeting. This system discouraged exports of all products by acting as an implicit export tax. When exports were encouraged, the currency underwent frequent devaluations to keep export product prices competitive on the world market.

### **GATT Effects on Brazilian Agriculture**

Although Brazil has complex agricultural policies, relatively few changes will likely be required by a GATT agreement. Under the administration of President Collor de Mello, agriculture has been liberalized. Depending on the reference period used, even if Brazil were to maintain some current restrictions, necessary reductions may already have been achieved for many commodities.

Because most crops are supported at levels below world prices, aggregate measure of support (AMS) reductions will not affect most minimum prices. The major exception is wheat, which is usually supported at levels well above world prices.

The value of rural credit programs to producers has been substantial. However, the decline in the amount of available credit and the narrowing of the interest rate differential between commercial and agricultural loans has dramatically reduced the effective support from these programs.

In the mid-1970s, agricultural loans carried interest rates of 7 percent, while the rate of inflation was generally more than 35 percent. By the end of that decade, interest rates had increased to between 13 percent and 18 percent, depending on whether loans were for inputs, investment, or storage. These interest rates were still much less than the inflation rate. In 1982, farmers paid a 45 percent interest rate, compared with commercial rates of 125 percent to 140 percent, and more than 100 percent inflation. By 1987, however, most agricultural loans were 10 percent above the inflation rate, with some farmers in the north and northeast still receiving loans at rates below the rate

of inflation. In the 1990-91 marketing year, agricultural loans carried real interest rates of between 9 percent and 26 percent.

These loans are becoming more of a means of short-term financing for agriculture, and not a subsidy or transfer of income to producers. Although agricultural loans may still carry interest rates below those of commercial loans, this gap has been narrowing. As a means of agricultural support, loans contribute little to the AMS and likely would not be subject to reductions under a GATT agreement.

The minimum prices for most crops are generally set below world prices. As trade continues to be liberalized in Brazil, the domestic market will be less isolated from world prices and minimum prices in most of the country will provide support only during periods of extremely low world prices. In the newly opened crop areas, however, minimum prices might continue to be important, at least until the transportation infrastructure develops to the point at which transportation costs create less of a gap between farm and major market prices. These policies are income stabilization schemes and usually do not contribute to the AMS.

Several crops have programs specifically designed for support above world prices. The most notable, wheat, has a subsidy policy that is necessary not only to induce wheat production in a country whose climate is not particularly suited to wheat, but also to offset the effects of policies to provide wheat and products to consumers at low costs. The government acquisition price is intentionally set above world prices, thereby significantly contributing to the AMS. In the context of a GATT agreement, these wheat price policies would have to be reduced for Brazil to meet international standards of agricultural support. This step would lower the wheat price relative to competing crop prices, and less wheat production would be likely in some areas. But because of double-cropping of wheat with soybeans and the fact that wheat is the off-season crop, reductions in wheat area would not be large. Decreases in production likely would result from reduced yields as

fewer inputs are used. Because wheat is grown mostly on larger farms, income losses from the lower acquisition price would affect large-scale landowners more than the small-scale farmers.

Alcohol subsidies rapidly increased sugarcane production between the mid-1970s and the mid-1980s. These subsidies to distillers were for alcohol production only and not for increased sugar production. Much of the area expansion related to increased alcohol production was from projects on lands managed by distilleries, although some cane sugar producers switched to supplying local distilleries. For the most part, alcohol subsidies did not benefit production of cane for sugar and did not add to the AMS for sugar specifically or for agriculture generally. In years of extremely low world sugar prices, however, Brazilian sugar was supported at levels high enough to require subsidizing exports to clear the internal market of excess sugar supplies.

Imports and exports of most products no longer require licensing; however, tariffs on some items would have to be reduced to allow required levels of import access. The variable tax mechanism under the intervention system for corn, rice, and soybeans would have to be replaced with an ad valorem or fixed tariff to allow world price variability to be passed to the domestic market. This tariff would have to be reduced in accordance with market access requirements.

Those items that still have quantitative import restrictions or prohibitions, such as wheat, tobacco, citrus, dairy, meat and fish preparations, sugar, and oilseeds, would be subject to liberalization. These import restrictions would be made into tariffs and reduced in accordance with agreed-upon rules.

Export restrictions such as quotas or taxes offer no advantage to the exporting country, and in fact usually penalize it. Brazil, however, has manipulated these policy instruments to favor exports of processed products over raw agricultural commodities. In cases where export quotas restrict exports and channel the commodity to processors at an effectively subsidized price, the exporter has the advantage. The same is true of using differential export taxes, as Brazil does with soybeans and

products. Together with export quotas, differential taxes provide incentive to process soybeans and sell the products on the world market. These are effective production subsidies for meal and oil and would be reduced under a GATT agreement. Reducing the differential in export taxes applied to the oilseed complex would result in less processing of oilseeds and more exports. At the same time, smaller quantities of oilseed meals and oils would be exported because of reduced production.

Most other policies either are not trade-distorting or have been phased out over the past few years. Input subsidies are no longer used. Exchange rate policies such as overvaluation or multiple exchange rate regimes have been dropped and the cruzeiro has become a floating currency under President Collor de Mello's administration.

### Conclusions

Agricultural policies since World War II increased food and fiber production, despite general economic policies favoring industrialization. Although resources and people have been drawn away from rural areas, Brazilian agriculture has expanded and is self-sufficient in most commodities. Agricultural credit is perhaps the most important element of agricultural expansion, especially during periods of high inflation when low interest rates effectively subsidize agricultural production.

While industrial policies conflicted with agriculture, agricultural policies sometimes conflicted with one another. Value-added and export taxes reduced incentives to produce crops, but the higher the production, the more tax revenue was available for the government. Brazilian agriculture has nevertheless expanded, particularly on large farms. Gains have been made in efficiency as technology has been adopted.

Over the last several years, agricultural policy has changed. Subsidies are being phased out and credit is no longer offered at reduced interest rates to most farmers. Import and export restrictions are being liberalized, and Brazil is on a course toward more market-oriented agriculture. However,

several policies still protect commodities such as wheat. Programs for coffee, cocoa, and sugar continue to be administered by their respective institutions.

Although Brazil still protects some agricultural commodities, it is participating in the Uruguay Round of GATT as part of the Cairns Group. This group supports a multilateral dismantling of virtually all agricultural policies that distort trade. The most notable policies that still need to be addressed by Brazil are its wheat subsidy program, differential export taxes for oilseeds, and remaining import prohibitions. In many instances, Brazil is moving toward liberalized rules that could result from the re-opening of trade negotiations.

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