

FOOD INDUSTRY IN DEVELOPING COUNTRIES: OPPORTUNITIES AND CHALLENGES IN BRAZIL

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Where is Brazil?



Introduction

- Area: 8,511,965 sq km (slightly smaller than US)
- Population: 186 million inhabitants
 - 80% urban
 - 20% rural
 - annual growth rate: 1.06%
- Literacy rate (above 15 years): 86.6%
- GDP (2005)
 - total: US\$ 1.58 trillion
 - per capita: US\$ 5,500
 - Growth rate (2005): 2.6%
- Brazilian Agribusiness...
 - 40% of GDP
 - 37% of jobs

Agricultural production (main products only)

- Crop production
 - Fruits: 35 million mt
 - Vegetables: 7.5 million mt
 - Cereals: 55.7 million mt
 - Oil crops: 60.6 million mt
 - Pulses: 3,095,310 mt
 - Roots and tubers: 30 million mt
 - Tree nuts: 284 thousand mt
- Animal production
 - Meat: 20 million mt
 - Eggs: 1.6 million mt
 - Milk: 23.5 million mt
- Fishery production: 1.5 million mt

Exportation of raw materials

- Crops:
 - Soybeans, maize, coffee, wheat, bananas, apples, etc.
- Animal products
 - Chicken meat, beef, pork, etc.

Are there additional natural resources available for agricultural production?

- Yes!

- 70% of territory is arable land
- only about 15% is being used for agricultural production.
- In most regions, there is sufficient fresh water to practice agriculture in at least one cropping season (3 – 5 months) without irrigation.

Role of organic farming

- Brazil has about 100,000 hectares (0.04% of total arable land) and involves 4,500 producers
- Main constraint: certification procedures are quite expensive, considering that producers have small areas.
- In Latin America, Argentina has the largest organic farming area (about 3 million hectares)

Post harvest losses

- The losses are similar to other Latin American countries (30% for vegetables and below for grains).
- The main causes are related to precarious logistics in transportation and insufficient storage capacity.

Processing of raw materials

■ FRUITS

- Oranges: 60%
- Bananas: 22%
- Papayas: 40%
- Pineapples: 20%
- Tangerines/Mandarines/Clementines/Satsumas: 30%
- Grapes: 50%
- Lemons and Limes: 23%
- Apples: 12%

■ VEGETABLES

- Tomatoes: 10%

Processing of raw materials (cont.)

■ CEREALS

- Maize: 2%
- Rice (paddy): 2%
- Oats: 52%
- Rye: 33%

■ OIL CROPS

- Soybeans: 54%
- Coconuts: 15%
- Groundnuts in shell: 70%
- Sunflower seed: 97%
- Oil of Palm: 20%

Processing of raw materials (cont.)

■ PULSES

- Beans (dry): <1%

■ ROOTS & TUBERS

- Cassava: 71%
- Potatoes: 6%
- Sweet potatoes: 51%
- Yams: 50%

■ TREE NUTS

- All together: 76%

Processing of raw materials (cont.)

■ MEAT

- Chicken Meat: 36%
- Beef and Buffalo Meat: 17%
- Pigmeat: 29%

■ MILK

- Cow Milk (whole, fresh, including UHT): 95%

The Food Industry in Brazil

- = one of the economic driving forces in Brazil
- = the biggest amount of VAT paid in Brazil
- = the more interiorized and decentralized branch of industry in Brazil.
 - 20% of all industrial establishments
 - 600.000 jobs (12% of industrial jobs)
 - 14% of production value of the total transformation industry in Brazil
 - 25% in Brazilian exports in last years

The Food Industry in Brazil (cont.)

■ Types:

- **Exporters**: 20% of food industry, 100% of exporters. They follow all internationally required standards.
- **Traditional local processors**: 80% of processors, supply the domestic market.
- **Institutional processors**: deliver products to the social programs of the Government, mainly in nutrition of infants (meals for children at public schools), pregnant woman and workers.

Quality standards

- Good Hygienic Practices (GHPs): implementation is ensured by official regulations of National Agency of Sanitary Monitoring (ANVISA) of the Ministry of Health.
- Hazard Analysis Critical Control Point (HACCP): implemented by exporting industries
 - Integrated Fruit Production (IFP) system based on experiences in Integrated Pest Management (IPM) in production. IFP includes Good Agricultural Practices (GAPs), GHPs as well as HACCP.
 - Integrated Production is available for:
 - Apples (since 1998)
 - Pears (since 1999)
 - Grapes
 - Mangoes and
 - Tomatoes.
 - In near future (2-3 years): many other products (grains and animal products).

Exports of processed or marketable packed fresh food

- Sugar (raw and refined)
- Chicken meat
- Oil of soybeans
- Orange juice (concentrated)
- Beef
- Pork

Lines of food business development

- Priority areas:
 - Improvement, storage and processing of cereals
 - Extraction of edible oils and vegetal proteins from oilseeds
 - Processing of fruit and vegetables
 - Extraction of starch and scraps of cassava
 - Fermentation
 - Meat and poultry
 - Dairy
 - Seafood
 - Stimulating non-alcoholic food
 - Essential oils

Lines of food business development (cont.)

- Public funding
 - Specific lines of funding (see priorities)
 - Special conditions (interest rate, payback conditions, tax reduction etc.)

Production of technical equipment for food processing industry

- There are industrial plants producing equipments for almost all of the priority food industries in Brazil
- In some areas, some equipments are being imported mainly from USA and Germany

Main potential for the developing of the food producing and processing industry in Brazil

- A agricultural production is able to offer different raw materials at low prices and required standards
- => **food industry based on the use of crops and animal products** to elaborate refined food with added value seem to be the more promising sector.

Training/education in the field of food technology

- The technical training (public and private):
 - 2 – 3 years.
- The academic education (public and private):
 - 58 B.Sc. Programs
 - 31 M.Sc. Programs
 - 19 PhD Programs

Need contact in Brazil?

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Thank you!

Agricultural production & consumption - FRUITS

Food (primary)	Production (metric tons)	Domestic consumption, fresh (% of production)*
Oranges	17,804,600	40
Bananas	6,702,760	78
Papayas	1,650,000	60
Cashewapple	1,610,000	n.a.
Pineapples	1,418,420	80
Tangs/Mands/ Clems/Sats	1,270,000	70
Grapes	1,208,680	50
Lemons and Limes	1,000,000	77
Mangoes	850,000	n.a.
Apples	843,919	88
Peaches and Nectarines	216,000	n.a.
Avocados	175,000	n.a.
Grapefruit and Pomelos	67,500	n.a.
Figs	25,000	n.a.
Pears	22,000	n.a.
Quinces	4,800	n.a.
Strawberries	2,750	n.a.
<i>Sub-total fruits</i>	<i>35,423,429</i>	-

Agricultural production & consumption - VEGETABLES

Food (primary)	Production (metric tons)	Domestic consumption, fresh (% of production)*
Tomatoes	3,303,530	90
Vegetables Fresh nes	2,250,000	100
Onions, Dry	1,058,960	104
Watermelons	622,000	96
Cantaloupes&oth Melons	180,000	n.a.
Garlic	88,471	n.a.
<i>Sub-total vegetables</i>	<i>7,502,961</i>	-

Agricultural production & consumption - CEREALS

Food (primary)	Production (metric tons)	Domestic consumption, fresh (% of production)*
Maize	34,859,600	98
Rice, Paddy	13,140,900	98
Wheat	5,200,840	167
Sorghum	1,529,600	n.a.
Oats	547,456	48
Barley	389,090	-
Buckwheat	48,000	n.a.
Rye	6,775	67
<i>Sub-total cereals</i>	<i>55,722,261</i>	-

Agricultural production & consumption – OIL CROPS

Food (primary)	Production (metric tons)	Domestic consumption, fresh (% of production)*
Soybeans	50,195,000	2
Seed Cotton	3,726,930	n.a.
Coconuts	3,033,830	85
Cottonseed	2,246,000	n.a.
Oil Palm Fruit	550,000	n.a.
Groundnuts in Shell	291,966	30
Sunflower Seed	200,000	3
Castor Beans	176,743	n.a.
Oil of Palm	140,000	80
Palm Kernels	121,500	n.a.
Rapeseed	59,500	n.a.
Sesame Seed	15,500	113
Oilseeds nes	10,000	n.a.
Linseed	5,500	n.a.
Tung Nuts	400	n.a.
Olives	5	n.a.
<i>Sub-total oil crops</i>	<i>60,632,874</i>	-

Agricultural production & consumption – PULSES

Food (primary)	Production (metric tons)	Domestic consumption, fresh (% of production)*
Beans, Dry	3,076,010	100
Broad Beans, Dry	11,000	n.a.
Peas, Dry	8,300	n.a.
<i>Sub-total pulses</i>	<i>3,095,310</i>	-

Agricultural production & consumption – ROOTS & TUBERS

Food (primary)	Production (metric tons)	Domestic consumption, fresh (% of production)*
Cassava	26,644,700	29
Potatoes	2,950,990	94
Sweet Potatoes	500,000	49
Yams	230,000	50
<i>Sub-total roots and tubers</i>	<i>30,325,690</i>	-

Agricultural production & consumption – TREE NUTS

Food (primary)	Production (metric tons)	Domestic consumption, fresh (% of production)*
Cashew Nuts	251,268	24
Brazil Nuts	28,500	
Walnuts	2,150	
Nuts nes	1,800	
<i>Sub-total tree nuts</i>	<i>283,718</i>	

Agricultural production & consumption – MEAT

Food (primary)	Production (metric tons)	Domestic consumption, fresh (% of production)*
Chicken Meat	8,668,000	64
Beef and Buffalo Meat	7,774,000	83
Pigmeat	3,110,000	71
Turkey Meat	220,000	n.a.
Mutton and Lamb Meat	76,000	146
Goat Meat	40,500	n.a.
Horse Meat	21,200	n.a.
Duck Meat	7,410	n.a.
Rabbit Meat	2,025	n.a.
<i>Sub-total meat</i>	<i>19,919,135</i>	-

Agricultural production & consumption – EGGS, MILK & OTHERS

Type	Food (primary)	Production (metric tons)	Domestic consumption, fresh (% of production)
Eggs			
	Hen Eggs	1,560,000	n.a.
	Other Eggs	59,500	n.a.
	<i>Sub-total eggs</i>	<i>1,619,500</i>	
Milk			
	Cow Milk, Whole, Fresh (without UHT)	23,320,000	5
	Goat Milk	135,000	n.a.
	<i>Sub-total milk</i>	<i>23,455,000</i>	
Others			
	Honey	32,290	35

Agricultural production & consumption – FISHERY

Seafood (primary)	Production (metric tons)*
Marine fishes	531,927
Freshwater fishes	388,747
Molluscs	26,644
<i>Crustaceans</i>	135,882
<i>Diadromous fishes</i>	2,675
<i>Miscellaneous aquatic animals</i>	629

* There is no information on share of production consumed fresh

Exportation of raw materials - CROPS

Raw product	Exports (metric tons)		Raw product	Exports (metric tons)
Soybeans	19,247,690		Cashew Nuts Shelled	47,442
Maize	5,030,999		Pepper, White/Long/Black	43,003
Coffee, Green	1,410,801		Lemons and Limes	37,326
Wheat	1,323,433		Papayas	35,930
Bananas	188,087		Groundnuts Shelled	35,408
Apples	153,043		Rice, Broken	30,870
Cantaloupes & other Melons	142,587		Grapes	28,815
Sorghum	133,264		Mate	28,552
Mangoes	111,181		Pineapples	23,375
Cottonseed	106,355		Tang.Mand.Clement.Sats ma	18,014
Oranges	90,119		Watermelons	16,143

Exportation of raw materials – ANIMAL PRODUCTS

Raw product	Exports (metric tons)
Chicken Meat	2,424,520
Beef and Veal, Boneless	923,659
Pork	335,684
Pigmeat	135,283
Turkey Meat	134,339
Offals of Cattle, Edible	63,009
Honey	21,029
Horsemeat	20,514
Cattle	19,831
Offals of Pigs, Edible	18,890
Fat of Pigs	10,929
Chickens	5,931
Hen Eggs	3,364
Beef and Veal	1,413
Horses	749
Pigs	543
Cow Milk, Whole, Fresh	51

Exports of processed or marketable fresh food

Processed food	Quantities exported 2004 (metric tons)	Main destination countries
Sugar (Centrifugal, Raw)	9,565,749	Russia, United Arab Emirates, Nigeria, Egypt
Sugar Refined	6,198,182	
Sugar Confectionery	155,792	
Sugar and Syrups nes	25,866	
Oil of Soya Beans	2,517,244	China, Iran, India
Chicken Meat	2,424,520	Saudi Arabia, United Arab Emirates, Kuwait, Russia
Meat Canned Chicken	47,547	
Oranjuice Concentrated	1,010,258	Belgium, Netherlands, USA
Oranjuice Single-Strengt	573,799	
Beef and Veal, Boneless	923,659	Russia, Egypt, Chile
Beef Preparations	171,176	
Pork	335,684	Russia, Ukraine, Hong Kong, Argentina
Pigmeat	135,283	
Sausages Pig Meat	60,522	

Exports of processed or marketable fresh food (cont.)

Processed food	Quantities exported 2004 (metric tons)	Main destination countries
Bananas	188,087	Argentina, Uruguay, UK, Italy
Apples	153,043	Netherlands, UK, Germany, Sweden, Italy
Cantaloupes & other Melons	142,587	n.a.
Turkey Meat	134,339	Germany, Netherlands, South Africa
Mangoes	111,181	Netherlands, USA
Oranges	90,119	Netherlands, UK, Spain
Coffee Extracts	80,350	Russia, EUA, Ukraine
Chocolate Products	54,623	USA, Argentina, Paraguay
Cashew Nuts Shelled	47,442	USA, Canada, Italy
Beverages Non-Alcoholic	46,672	USA, Libya, Angola
Meat Meal	44,505	n.a.

Exports of processed or marketable fresh food (cont.)

Processed food	Quantities exported 2004 (metric tons)	Main destination countries
Oil of Cotton Seed	44,410	Iran, Egypt, South Korea
Pepper, White/Long/Black	43,003	Germany, USA, Spain
Pastry	37,571	n.a.
Lemons and Limes	37,326	Netherlands, UK, Canada
Flour of Maize	36,850	Angola, USA
Cocoa Powder and Cake	36,730	Chile, Paraguay, Uruguay
Oil of Maize	36,550	Turkey, France, Malaysia
Papayas	35,930	n.a.
Groundnuts Shelled	35,408	n.a.
Cocoa Butter	34,131	USA, Argentina, Netherlands
Margarine + Shortening	34,084	Venezuela, Chile, Uruguay
Applejuice Concentrated	31,503	USA, Japan, Canada
Whole Milk, Condensed	31,297	Angola, Trinidad and Tobago, USA

Exports of processed or marketable fresh food (cont.)

Processed food	Quantities exported 2004 (metric tons)	Main destination countries
Grapes	28,815	Netherlands, UK, USA
Mate	28,552	n.a.
Beer of Barley	28,300	Paraguay, Canada, USA
Pineapples	23,375	Argentina, Italy, Netherlands
Dry Whole Cow Milk	21,923	Iraq, Algeria, Venezuela
Honey	21,029	Germany, USA, UK
Horsemeat	20,514	Belgium, Netherlands, Japan
Tang.Mand.Clement.Satsma	18,014	Indonesia, Canada, Philippines
Watermelons	16,143	Netherlands, UK, Argentina, Germany
Tomato Paste	13,940	Paraguay, Uruguay, Chile
Oil of Palm	13,669	Germany, Mexico
Infant Food	11,584	Dominican Republic, Ecuador, Colombia
Fat of Pigs	10,929	Russia, Bolivia
Wafers	10,598	USA, Uruguay, Paraguay