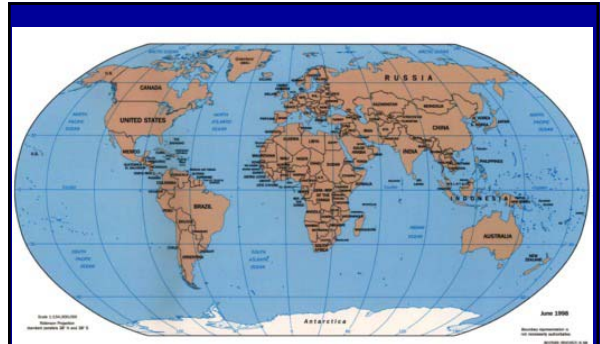


# SEED INDUSTRY IN BRAZIL



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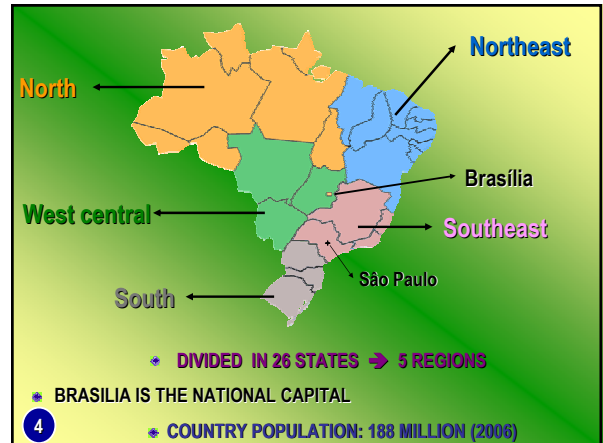


**THE FIFTH LARGEST COUNTRY IN THE WORLD**

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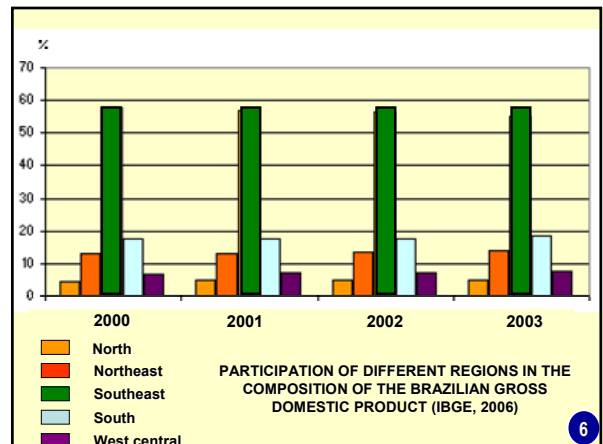
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- \* DIVIDED IN 26 STATES → 5 REGIONS
- \* BRASILIA IS THE NATIONAL CAPITAL
- \* COUNTRY POPULATION: 188 MILLION (2006)

## DISTRIBUTION OF GROSS DOMESTIC PRODUCT AND POPULATION OF BRAZILIAN REGIONS

Region	Percentage of Brazilian Gross Domestic Product	Population (1,000 people)
North	4.5	12,900.704
Northeast	13.0	47,741.711
Westcentral	6.9	11,636.728
Southeast	58.2	72,412.411
South	17.4	25,107.116
Total	100	169,799.178

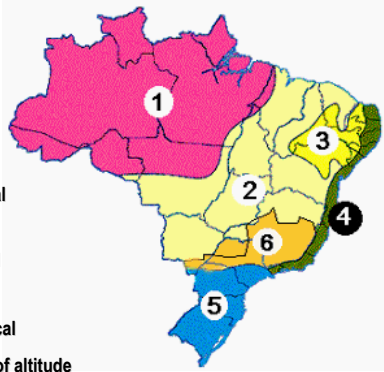
5 Statistics and Geography Brazilian Institute (IBGE, 2000)



PARTICIPATION OF DIFFERENT REGIONS IN THE COMPOSITION OF THE BRAZILIAN GROSS DOMESTIC PRODUCT (IBGE, 2006)

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## BRAZILIAN CLIMATE



1. Equatorial
2. Tropical
3. Semi-arid
4. Humid
5. Subtropical
6. Tropical of altitude

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## AGRICULTURE IN BRAZIL



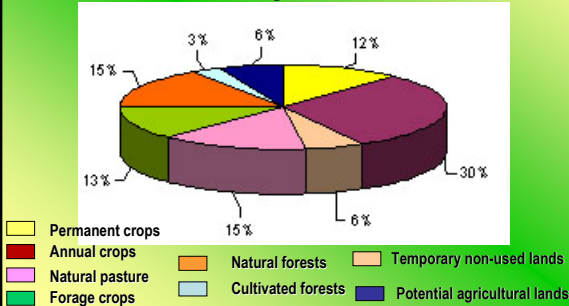
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## AGRICULTURE IN BRAZIL

➔ CONTRIBUTION OF THE AGRIBUSINESS TO THE GDP: 26%

➔ Available area for Agriculture  $\approx$  340 million ha



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## AGRICULTURE IN BRAZIL

➔ THE TEN MOST IMPORTANT CROPS in BRAZIL:

**Soybean, Sugarcane, Maize, Coffee, Rice, Cassava, Field Bean, Cotton, Fruit Citrus, Tomatoes**

➔ Country is one of the 10 largest world producers, but the position in the productivity world ranking is not this high

## WORLD AND BRAZILIAN TOTAL PRODUCTION OF SELECTED GRAINS CROPS IN YEAR 2004 (FAO, 2006)

Crop	Production (1000 t)		Percentage Brazil/World
	World	Brazil	
Cotton	71,981	3,621	5.0
Rice	605,758	10,490	2.2
Coffee	7,761	2,475	31.9
Field bean	18,438	2,998	16.2
Maize	721,379	41,683	5.8
Soybean	204,266	49,205	24.0
Sorghum	58,884	2,138	3.6
Wheat	627,130	5,962	1.0
<b>Total</b>	<b>2,015,597</b>	<b>121,333</b>	<b>6.0</b>

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## AGRICULTURE IN BRAZIL

Crop	Total Production (2004)	Mean World Productivity (kg/ha)	Brazilian Productivity (kg/ha)	Best Brazilian State Productivity (kg/ha)
Cotton	5 <sup>th</sup>	2,062	3,138 (8 <sup>th</sup> )	4,011 (MT)
Rice	9 <sup>th</sup>	4,003	3,552 (47 <sup>th</sup> )	6,705 (SC)
Field bean	1 <sup>st</sup>	697	746 (76 <sup>th</sup> )	2,009 (GO)
Maize	4 <sup>th</sup>	4,906	3,373 (59 <sup>th</sup> )	5,059 (GO)
Soybean	2 <sup>nd</sup>	2,233	2,291 (15 <sup>th</sup> )	2,888 (RO)
Coffee	1 <sup>st</sup>	760	1,038 (10 <sup>th</sup> )	1,914 (MS)

Brazilian position in the world ranking of total production and productivity of important crops, in 2004. IBGE (2006); FAO (2006)

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## AGRICULTURE IN BRAZIL

### CROP PRODUCTIVITY HAS INCREASED OVERTIME

1990 – 2002: increase of 7.9% in cultivated area and 74.5% on crop productivity

#### MAIN REASONS

Efforts and success in plant breeding programs; research for crop technology improvement; investments directed in transportation infrastructure; plant cultivar protection law (1997); enhancement and availability of modern inputs (SEEDS)

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### PRODUCTIVITY INDICES OF FOUR MAJOR CROPS IN BRAZIL, 1986/1998

Crop	Year		
	1986	1990	1998
Cotton	100	116	152
Field Bean	100	122	158
Maize	100	100	131
Soybeans	100	112	124

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CROP	Mean (kg/ha)		
	1991 to 1993	2002 to 2004	Variation (%)
Cotton	987.7	2,933.3	197.0
Rice	2,269.8	3,371.3	48.5
Field bean	524.3	714.0	36.2
Maize	2,111.3	3,246.7	53.8
Soybean	1,919.0	2,573.3	34.2
Sorghum	1,706.2	2,063.7	21.0
Wheat	1,351.7	2,007.3	48.5

Variation of selected crops productivity in Brazil, as considering the periods 1991/93 and 2002/04 (Peske and Levien, 2005)

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## SEED INDUSTRY IN BRAZIL

### BEFORE 1995:

National and International companies active and competitive

### AFTER 1995:

Most Brazilian companies incorporated into international

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## SEED INDUSTRY IN BRAZIL

In 2004:

- World Seed Market: ± US\$ 30 billion
- Brazilian Seed Market: ± US\$ 1.9 billion (7.6% of world market)
- Soybean and maize seed: ± US\$ 1.5 billion (75%)
- Vegetable seed: ± US\$ 100 million (4% of the vegetable seed world market): tomato seeds represent 30% of the vegetable seed Brazilian market, followed by melon, sweet corn, carrot and bell pepper

Around 30% of the Brazilian demand of vegetable seeds is supplied by imported seeds, mainly tomato hybrids

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## SEED INDUSTRY IN BRAZIL

### Tropical Forage Grasses

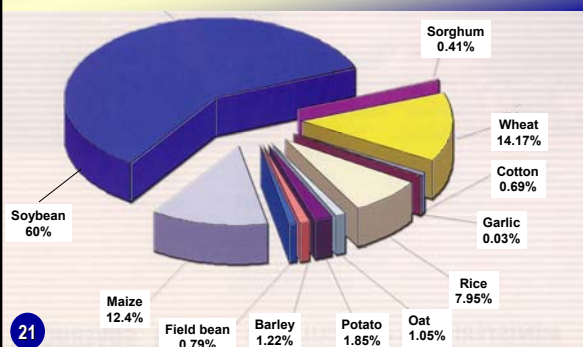
- Brazilian Market: ± 75 to 85,000 t
- Value: ± US\$ 110 million
- Brachiaria* and *Panicum* are the most important

Seeds are exported to different countries of Americas, Africa (Madagascar, Angola), Asia (Rep. Laos, Camboja, Okinawa); China is a potential market

Preferences: *Brachiaria brizantha*, *Panicum maximum*

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DISTRIBUTION OF SEED PRODUCTION OF DIFFERENT IMPORTANT CROP SPECIES IN BRAZIL, 2000/2001. (ABRASEM, 2001)



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	1998	2002	2004
Members (Seed Companies)	612	512	554
Seed Producers by Contract	41,200	36,350	38,000
Seed Processing Plants	1,045	692	300
Storage Facilities	1,215	982	---
Storage Capacity	5,072,000 t	3,900,000 t	---
Seed Testing Laboratories	208	231	300
GMO Laboratories	---	---	53
Agronomists and Technicians	2016	2650	4,000

Structure of the Brazilian Seed System (AbraseM, 2005)

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BRAZILIAN SEED PRODUCTION OF SELECTED GRAIN CROPS, PLANTED AREA, SEED DEMAND AND INDEX OF USE OF HIGH QUALITY SEEDS, IN 2004/05

Crop	Seed Production (1,000 t)	Area (1,000 ha)	Real Demand (1,000 t)	Use of Seeds (%)
Cotton	14.8	1,166	6,252	49
Field bean	16.5	3,718	11,789	13
Maize	241.3	12,148	213,948	85
Rice	114.3	3,856	162,158	43
Soybean	820.0	23,103	666,387	50
Wheat	288.0	2,756	201,225	71
Total	1,494	46,747	1,261,759	

(ABRASEM, 2006)

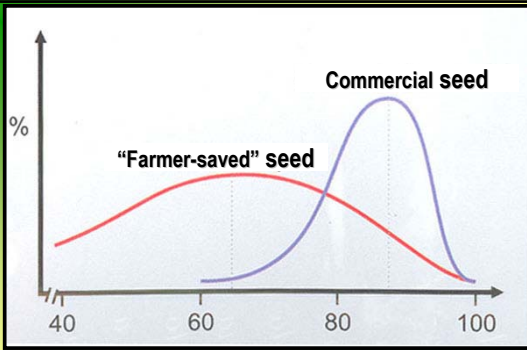
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## SEED INDUSTRY IN BRAZIL

### USE OF HIGH QUALITY SEEDS:

- ✓ Technology level of crop production
- ✓ Seed and crop market prices
- ✓ Relationship seed prices/crop production costs
- ✓ National and international demand for the crop
- ✓ Degree of success by using high quality seeds
- ✓ Prevailing climate conditions

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Comparison between the physiological potential (G, TZ, EM) of commercial and "farmer-saved" soybean seed lots used in Bahia State, Brazil (data collected in a drill box survey (Villas Bôas and Peske, 2006))

## CONCLUSION

The use of high quality seeds is a permanent challenge to Agriculture

**This situation will not change in the years to come**

Brazil usually faces socio-economic difficulties and this may be reflected in the Agriculture results

In spite of these possible problems, the seed industry is well established to guarantee a successful future