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Brazil Soybean Transportation Guide

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(Updated July 18, 2005)

Introduction

Brazil, one of the most important U.S. competitors in world grain markets, is the second largest soybean producer after the United States. Brazil is forecast to surpass the United States this year to become the world's largest soybean exporting country.

Noting Brazil's ascendancy in the world soybean market, we have prepared a visual resource to acquaint our readers with this important soybean producer—the *Brazil Soybean Transportation Guide*. Welcome to the world of Brazilian soybean transport.

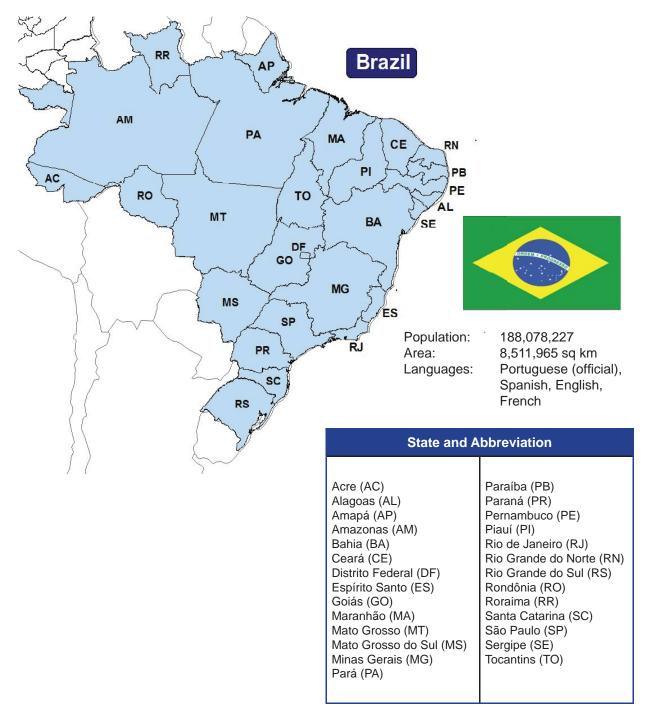
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The authors would like to acknowledge João Paulo de Morales Filho for providing Brazil regional information and maps. Comments and critiques by Allen Baker, Mark Ash, Michael Shean, Keith Menzie, Morgan Perkins, and Sergio Barros are greatly appreciated. The authors would also like to thank Michael D. Smith, our editor. Finally, the authors would like to acknowledge the support and encouragement of Barbara C. Robinson.

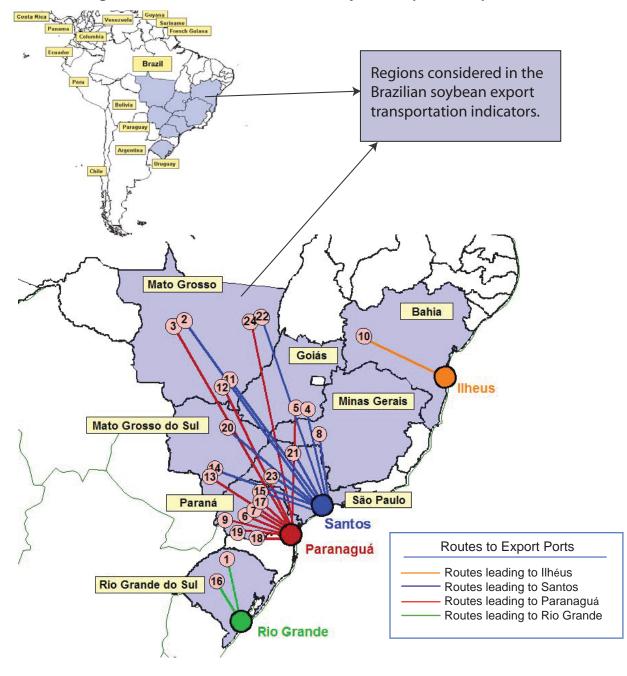
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ii

General Information



Routes and regions considered in the Brazilian soybean export transportation indicator¹



¹Regions comprised 84 percent of Brazilian soybean production, 2003 Source: USDA/AMS & ESALQ - University of São Paulo (USP), Brazil

	Truck rates for selected Brazilian soybean export transportation routes, 2005										
Route #	Origin ¹ (reference city)	Destination	Distance (miles) ²	Share (%) ³	1st	rterly F 2nd (per 100	3rd	4th	Avg		
1	Northwest RS⁵(Cruz Alta)	Rio Grande	288	16.6	4.46	4.40	4.39	4.58	4.46		
2	North MT (Sorriso)	Santos	1190	10.1	5.86	6.80	6.99	6.94	6.65		
3	North MT (Sorriso)	Paranaguá	1262	9.5	5.54	6.27	6.39	6.41	6.15		
4	South GO (Rio Verde)	Santos	587	7.0	4.40	6.83	7.13	7.25	6.40		
5	South GO (Rio Verde)	Paranaguá	726	5.6	3.79	5.29	5.60	5.74	5.11		
6	North Center PR (Londrina)	Paranaguá	268	4.4	7.19	8.51	8.49	7.93	8.03		
7	Western Center PR (Mamborê)	Paranaguá	311	3.9	5.22	5.37	5.88	6.41	5.72		
8	Triangle MG (Uberaba)	Santos	339	3.8	7.28	10.75	9.93	9.98	9.48		
9	West PR (Assis Chateaubriand)	Paranaguá	377	3.7	5.83	5.16	5.95	6.34	5.82		
10	West Extreme BA (São Desidério)	Ilhéus	544	3.6	6.53	7.14	7.56	7.87	7.28		
11	Southeast MT (Primavera do Leste)	Santos	901	3.6	6.18	6.26	6.76	6.97	6.54		
12	Southeast MT (Primavera do Leste)	Paranaguá	975	3.3	6.22	5.63	6.14	6.22	6.06		
13	Southwest MS (Maracaju)	Paranaguá	612	3.1	5.78	6.07	5.69	5.79	5.83		
14	Southwest MS (Maracaju)	Santos	652	2.9	5.84	6.31	5.66	6.24	6.01		
15	West PR (Assis Chateaubriand)	Santos	550	2.5	6.18	5.68	5.65	5.85	5.84		
16	Western Center RS (Tupanciretã)	Rio Grande	273	2.4	5.03	5.49	5.60	5.74	5.46		
17	Southwest PR (Chopinzinho)	Paranaguá	291	2.3	6.00	5.73	8.34	9.17	7.31		
18	Eastern Center PR (Castro)	Paranaguá	130	2.3	10.20	10.77	9.53	9.96	10.12		
19	South Center PR (Guarapuava)	Paranaguá	204	2.1	8.39	7.95	8.32	8.67	8.33		
20	North Center MS (São Gabriel do Oeste)	Santos	720	2.0	5.39	5.60	5.25	5.62	5.47		
21	Ribeirão Preto SP (Guairá)	Santos	314	1.5	6.38	7.59	7.98	8.27	7.55		
22	Northeast MT (Canarana)	Santos	950	1.4	6.66	7.26	7.62	7.87	7.35		
23	Assis SP (Palmital)	Santos	285	1.2	6.16	7.74	8.01	7.85	7.44		
24	Northeast MT (Canarana)	Paranaguá	1075	1.2	5.90	6.34	6.72	6.96	6.48		
	Average		626	100	5.67	6.33	6.48	6.64	6.28		

¹Although each origin region comprises several cities, the main city is considered as a reference to establish the freight price ²Distance from the main city of the considered region to the mentioned ports

³Share is measured as a percentage of total production

⁴US\$ per metric ton (average monthly exchange rate from "Banco Central do Brasil" was used to convert Brazilian reais to the U.S. dollar) ⁵RS = Rio Grande do Sul, MT= Mato Grosso, GO = Goiás, PR = Paraná, MG = Minas Gerais, BA = Bahia, MS = Mato Grosso do Sul, SP = São Paulo

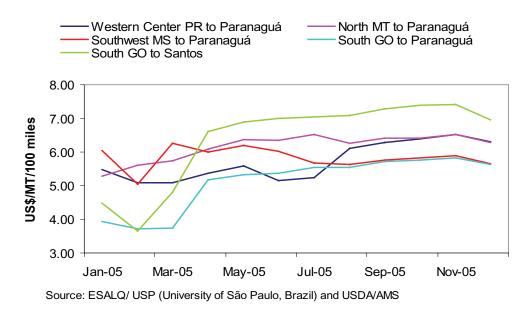
Source: ESALQ/USP (University of São Paulo, Brazil) and USDA/AMS

Qua	rterly co	sts of tr	ansporti	ng soyb	eans fro	m Brazil	to Hamb	ourg, Ge	rmany	
			2005			2005				
	1st qtr	2nd qtr	3rd qtr	4th qtr	Avg	1st qtr	2nd qtr	3rd qtr	4th qtr	Avg
		Northwe	st RS¹ - Rio \$/mt	Grande ²		North MT¹ - Paranagua² \$/mt				
Truck	12.83	12.68	12.65	13.20	12.84	69.96	79.07	80.67	80.86	77.64
Ocean	44.20	44.39	43.04	55.23	46.72	44.64	44.84	43.54	55.73	47.19
Total transportation	57.03	57.07	55.69	68.42	59.55	114.60	123.91	124.21	136.32	124.84
Farm Value 3	202.61	210.19	214.23	206.36	208.35	145.15	161.38	175.08	174.28	163.97
Landed Cost	259.64	267.26	269.92	274.78	267.90	259.75	285.29	299.29	310.90	288.81
Transport % of landed cost	21.97	21.35	20.63	24.90	22.21	44.12	43.43	41.50	43.94	43.25
		Sout	th GO¹ - Sar \$/mt	ntos ²		North Center PR ¹ - Paranagua ² \$/mt				
Truck	25.82	40.11	41.86	42.56	37.59	19.26	22.82	22.76	21.25	21.52
Ocean	45.53	45.84	44.54	56.73	48.16	44.64	44.84	43.54	55.73	47.19
Total transportation	71.35	85.95	86.40	99.29	85.75	63.90	67.66	66.3	76.98	68.71
Farm Value ³	174.70	179.81	188.26	184.89	181.92	196.31	207.04	222.81	214.81	210.24
Landed Cost	246.05	2605.76	274.66	284.18	267.66	260.21	274.70	289.11	291.79	278.95
Transport % of landed cost	29.00	32.34	31.46	34.94	31.93	24.56	24.63	22.93	26.38	24.63

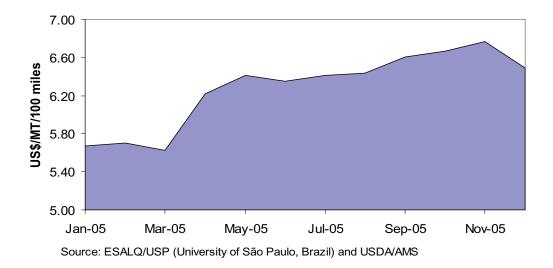
¹Producing regions: RS = Rio Grande do Sul, MT= Mato Grosso, GO = Goiás, PR = Paraná ²Export ports

³Source: Companhia Nacional de Abastecimento (CONAB) Source: ESALQ/ USP (University of São Paulo, Brazil) and USDA/AMS





Brazilian soybean export truck transportation weighted average prices, 2005



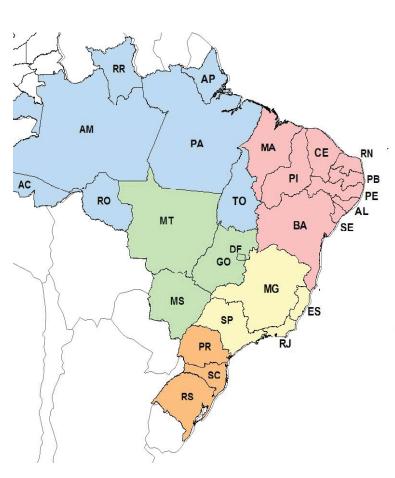
Monthly B	Monthly Brazilian soybean export truck transportation cost index										
Month	Freight price* (per 100 miles)	Index variation (%) (Base: prior month)	Index value (Base: Jan. 05 = 100)								
Jan. 05	5.67		100.00								
Feb. 05	5.71	0.5	100.54								
Mar. 05	5.62	-1.5	99.08								
Apr. 05	6.22	10.6	109.61								
May 05	6.41	3.1	112.96								
Jun. 05	6.35	-0.9	111.90								
Jul. 05	6.41	1.0	112.99								
Aug. 05	6.44	0.4	113.46								
Sep. 05	6.60	2.5	116.36								
Oct. 05	6.67	1.0	117.52								
Nov. 05	6.77	1.5	119.33								
Dec. 05	6.49	-4.2	114.34								

*Weighted average and quoted in US\$ per metric ton Source: ESALQ/USP (University of São Paulo, Brazil) and USDA/AMS

Quarterly oc	Quarterly ocean freight rates for shipping soybeans from selected Brazilian ports to Hamburg, Germany, 2005 (US\$/metric ton)*									
Ports	Ports 1st qtr 2nd qtr 3rd qtr 4th qtr Ave									
Santos	45.53	45.84	44.54	56.73	48.16					
Paranagua	a 44.64 44.84 43.54 55.73 47.97									
Rio Grande	44.20	44.39	43.04	55.23	46.71					

*Correspond to the average actual values negotiated between shippers and carriers and weighted according to the magnitude of the shipped volumes

Source: Sistema de Informações de Fretes, SIFRECA, ESALQ/USP (University of São Paulo, Brazil)



Region/State	Production: 2004-2005 (1,000 mt)						
North							
Amazonas (AM)	8.4						
Pará (PA)	207.0						
Rondônia (RO)	222.8						
Roraima (RR)	56.0						
Tocantins (TO)	910.6						
	Total: 1,404.8						
Northeast							
Bahia (BA)	2,401.2						
Maranhão (MA)	997.5						
Piauí (PI)	554.4						
	Total: 3,953.1						
Center West							
Distrito Federal (DF)	188.2						
Goiás (GO)	6,985.1						
Mato Grosso (MG)	17,705.1						
Mato Grosso do Sul (MS)	3,716.4						
	Total: 28,594.8						
Southeast							
Minas Gerais (MG)	3,021.6						
São Paulo (SP)	1,684.1						
	Total: 4,705.7						
South							
Paraná (PR)	9,541.3						
Rio Grande do Sul (RS)	2,624.8						
Santa Catarina (SC)	630.0						
	Total: 12,793.1						
Total Production: 51,451.5							

Soybean Production

Companhia Nacional de Abastecimento (CONAB) data are used for transportation analysis because they provide information that is broken down regionally. As shown in the two tables below, there are differences in the aggregate data reported by CONAB and USDA/FAS.

	Brazil soybean supply and distribution (1,000 metric tons)										
YearInitial StocksProductionImportsSupplyCrushSeed and OthersTotal 							Exports	Ending Stocks			
00/01	1,461.8	38,431.8	849.6	40,743.2	22,850.0	1,530.0	24,380.0	15,675.0	688.2		
01/02	688.2	41,916.9	1,045.2	43,650.3	25,650.0	1,800.0	27,450.0	15,970.0	230.3		
02/03	230.3	52,017.5	1,189.2	53,437.0	27,800.0	2,350.0	30,150.0	19,890.5	3,396.5		
03/04	3,396.5	49,988.9	349.0	53,734.4	28,700.0	2,480.0	31,180.0	19,247.7	3,306.7		
04/05	3,306.7	51,451.5	368.0	55,126.2	29,050.0	2,610.0	31,660.0	22,435.1	1,031.1		
05/06 (*)	1,031.1	55,713.3	300.0	57,044.4	29,500.0	2,600.0	32,100.0	23,940.0	1,004.4		

Source: Companhia Nacional de Abastecimento (CONAB), Secretaria de Comércio Exterior (SECEX), and Associação Brasileira das Indústrias de Óleos Vegetais (ABIOVE)

Data provided by Companhia Nacional de Abastecimento (CONAB)

(*) = Forecast

	Brazil soybean supply and distribution (1,000 metric tons)											
Year*	Area	Production	Imports	Exports	Crush	Feed Seed and Waste	Total Consumption	Ending Stocks				
93/94	11,440	24,700	900	5,395	18,736	1,651	20,387	589				
94/95	11,680	25,900	900	3,492	21,599	1,650	23,249	648				
95/96	10,950	24,150	1,300	3,633	20,083	1,548	21,631	834				
96/97	11,800	27,300	1,450	8,327	18,944	1,714	20,658	599				
97/98	13,000	32,500	634	9,325	21,832	1,754	23,586	822				
98/99	12,900	31,300	616	8,912	21,645	1,778	23,423	403				
99/00	13,600	34,700	794	11,779	21,578	1,924	23,502	616				
00/01	13,934	39,500	854	15,521	22,773	2,219	24,992	457				
01/02	16,350	43,500	1,100	16,074	25,843	2,459	28,302	681				
02/03	18,448	52,000	1,124	19,987	27,796	2,791	30,587	3,231				
03/04	21,475	51,000	364	19,256	29,172	2,899	32,071	3,268				
04/05	22,800	53,000	408	22,798	29,399	2,783	32,182	1,696				
05/06**	21,500	57,000	425	25,280	29,329	2,912	32,241	1,600				

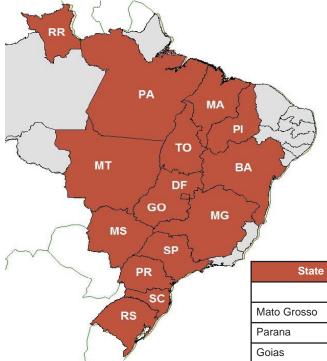
*Marketing year: from October-September

** Forecast, April 2006

Source: USDA/Foreign Agricultural Service/Circular Series



Exports

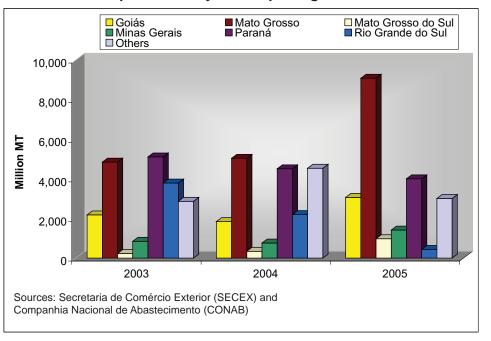


Top 15 Brazilian soybean exporting states

State	2003	2004	2005	Rank
		metric ton		
Mato Grosso	4,848,502	5,041,915	9,086,389	1
Parana	5,111,064	4,513,005	4,006,891	2
Goias	2,183,320	1,843,558	3,066,616	3
Minas Gerais	850,481	762,478	1,417,669	4
Mato Grosso do Sul	233,830	345,325	978,248	5
Maranhao	576,581	676,922	896,838	6
Bahia	52,590	378,147	663,849	7
Tocantins	185,232	362,612	589,965	8
Sao Paulo	369,799	977,322	547,148	9
Rio Grande do Sul	3,792,297	2,200,352	439,739	10
Santa Catarina	41,712	79,622	132,873	11
Para	67,279	15,000	77,876	12
Distrito Federal	37,573	28,601	62,450	13
Piaui	57,853	31,471	32,999	14
Roraima	11	35	11,212	15
Others	1,482,343	1,991,324	424,310	
Total	19,890,466	19,247,689	22,435,071	

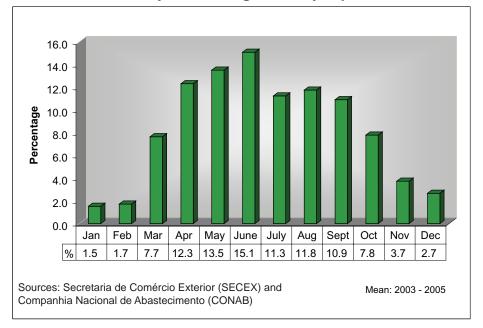
Source: Aliceweb

Modified from data obtained from Companhia Nacional de Abastecimento (CONAB)/Suint/Geint.

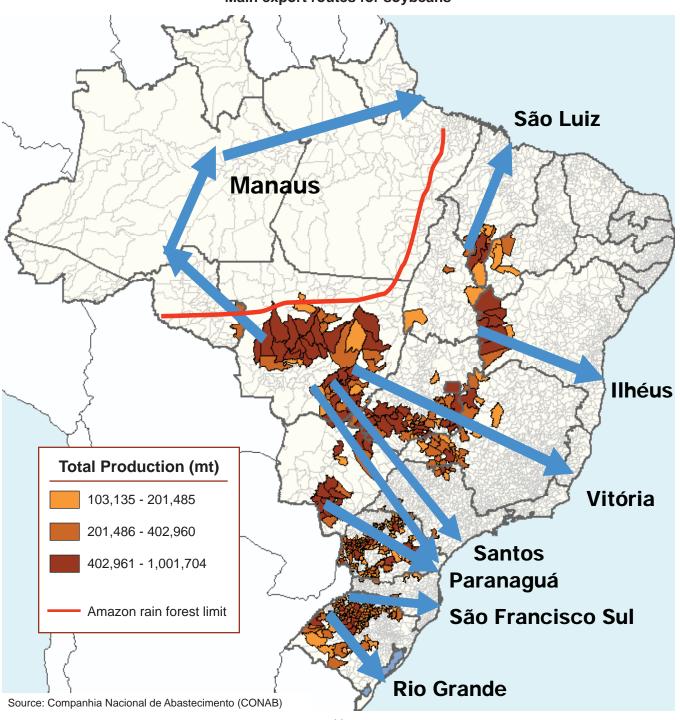


Top 6 Brazil soybean exporting states

Brazil soybean average monthly exports

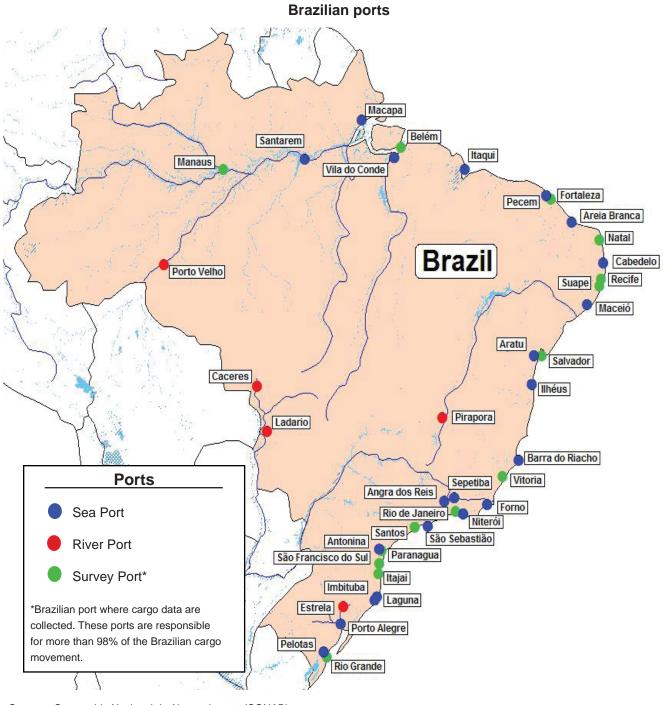


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Main export routes for soybeans

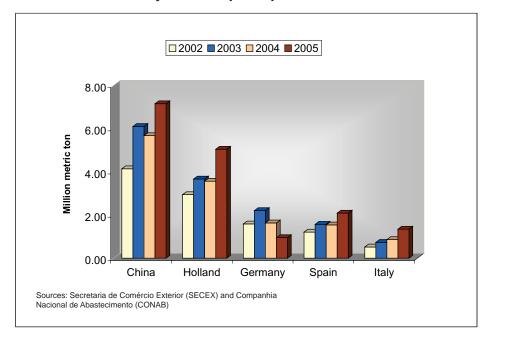
Exports



Sources: Companhia Nacional de Abastecimento (CONAB) Ministério dos Transportes, Brazil

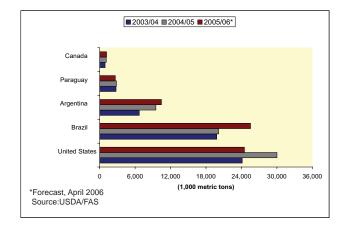
Exports

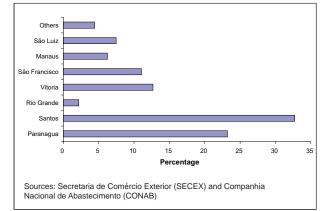
Brazil soybeans: top 5 export destinations



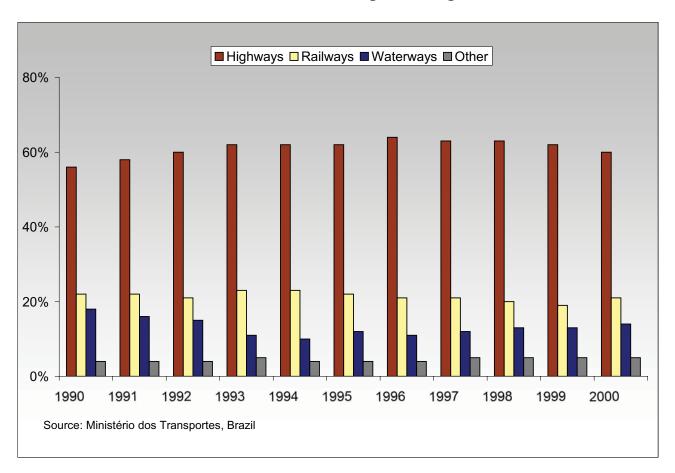
Top 5 world soybean exporting countries

Brazil soybean exports by port, 2005



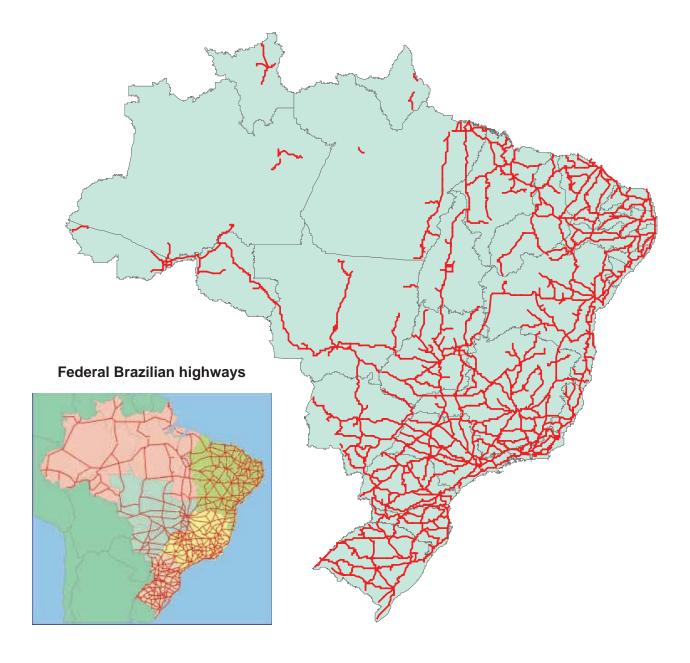


Transportation Modes



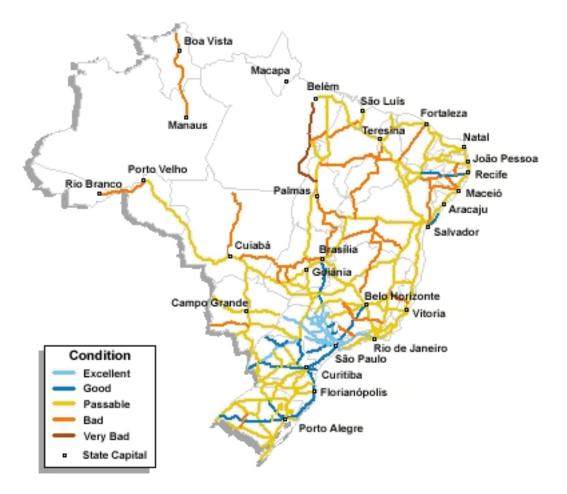
Modal share for Brazil general cargo

Major Brazilian highways



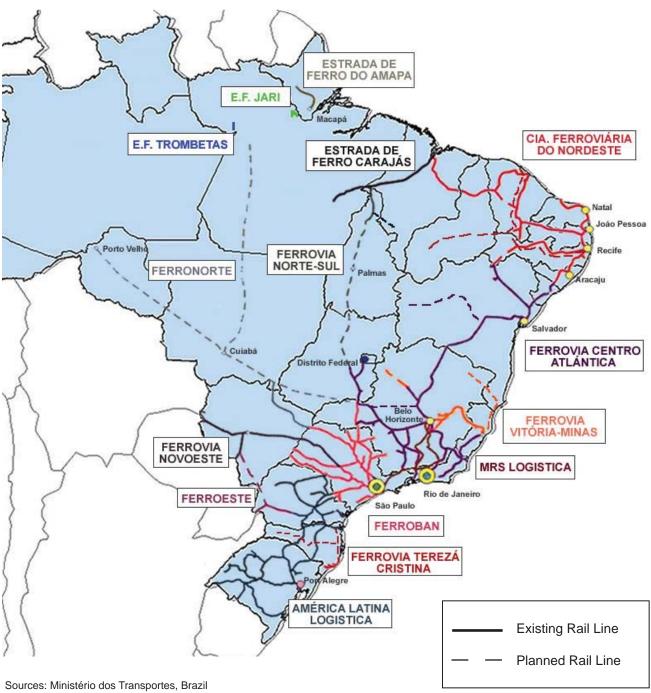
Sources: Companhia Nacional de Abastecimento (CONAB) Ministério dos Transportes, Brazil





Source: Confederação National do Transporte

Brazilian rail system



National Assoication of Rail Transporters (ANTF)

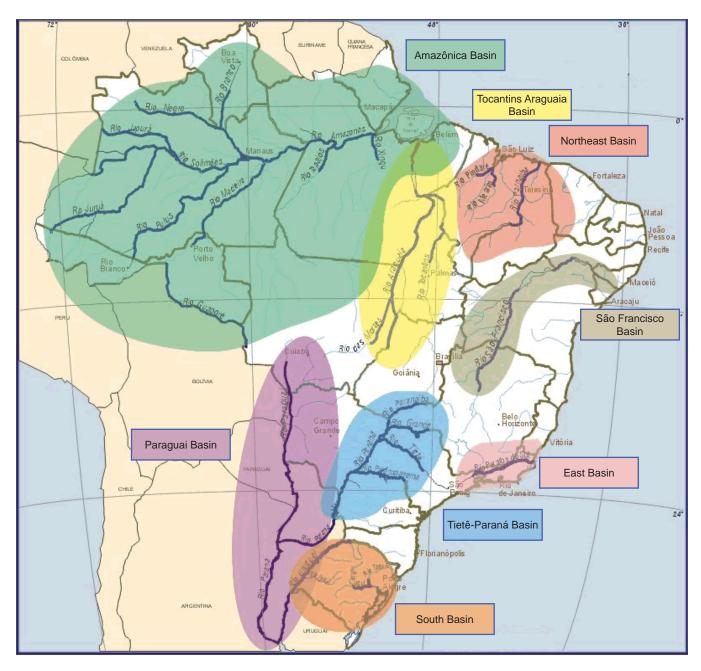
Transportation Modes

VENEZUELA SURIMAME GUIANA FRANCESA GUIANA RR Corredeira sdo AP, Bem Querer COLÓMBIA R. Nearo 40 R. Japurá R. Içà Santarem Solir Manaus R Urucu Tore PA CE Caohoeira do Chaoorão Corr: de Santa i cabe AM RN p MA on Balsas PB Caohoeira Ra deira AC Acre Porto Velho AL RO TO SE 8 Grande BA PERU Gu MT R. Correr Caceres GO BOLIVIA ES Lodario R. Grand MG MS RTiele Pathing do Sul SP PARAGUAY R R. PR **River Port** ad . CHILE R. Paraná SC Sources: Ministério dos Transportes, Brazil Companhia Nacional de Abastecimento (CONAB) 3 V 1 18

Brazilian river system

Transportation Modes

Brazilian river basins



Source: Ministério dos Transportes, Brazil

	United States: soybean supply and distribution (1,000 metric tons)											
Year*	Area	Production	Imports	Exports	Crush	Feed Seed and Waste	Total Consumption	Ending Stocks				
93/94	23,191	50,885	175	16,006	34,716	2,602	37,318	5,691				
94/95	24,609	68,444	149	22,867	38,242	4,063	42,305	9,112				
95/96	24,906	59,174	121	23,108	37,273	3,033	40,306	4,993				
96/97	25,637	64,780	242	24,110	39,080	3,237	42,317	3,588				
97/98	27,968	73,176	135	23,760	43,464	4,237	47,701	5,438				
98/99	28,507	74,598	82	21,898	43,262	5,474	48,736	9,484				
99/00	29,318	72,224	114	26,537	42,927	4,461	47,388	7,897				
00/01	29,303	75,055	97	27,103	44,625	4,578	49,203	6,743				
01/02	29,532	78,672	63	28,948	46,259	4,608	50,867	5,663				
02/03	29,339	75,010	127	28,423	43,948	3,576	47,524	4,853				
03/04	29,330	66,778	151	24,128	41,632	2,963	44,595	3,059				
04/05	29,930	85,013	152	30,011	46,160	5,093	51,253	6,960				
05/06**	28,879	83,999	108	24,494	46,811	4,396	51,207	15,366				

*Marketing year: from September - August **Forecast, April 2006

Source: USDA/Foreign Agricultural Service/Circular Series

	Soybean production: world supply and distribution (1,000 metric tons)										
Country	2000	2001	2002	2003	2004	2005					
United States	75,055	78,672	75,010	66,778	85,013	83,999					
Brazil	39,500	43,500	52,000	51,000	53,000	57,000					
Argentina	27,800	30,000	35,500	33,000	39,000	40,500					
Paraguay	3,502	3,547	4,500	3,911	4,050	4,000					
China	15,400	15,410	16,510	15,394	17,400	18,300					
India	5,250	5,400	4,000	6,800	5,500	6,000					
Other	9,491	8,565	9,513	9,869	11,617	12,459					
Total	175,998	185,094	197,033	186,752	215,580	222,258					

Note: Brazil and Argentina estimates have been adjusted to a consistent October-September marketing year. Estimates of other countries (including the U.S.) are on a local marketing year.

Source: USDA/ Foreign Agricultural Service/Circular Series/FOP 4 - 06/April 2006

	Soybean imports: world supply and distribution (1,000 metric tons)										
Country	2000	2001	2002	2003	2004	2005					
Asia	25,338	23,905	34,365	29,114	37,470	38,979					
China	13,245	10,385	21,417	16,933	25,802	27,000					
Japan	4,767	5,023	5,087	4,688	4,295	4,100					
Taiwan	2,330	2,578	2,351	2,218	2,256	2,440					
Thailand	1,286	1,550	1,779	1,407	1,517	1,575					
Indonesia	1,127	1,414	1,238	1,321	1,251	1,300					
EU-25	17,525	18,539	16,872	14,638	15,500	14,400					
Latin America	6,820	7,512	7,360	5,996	6,076	6,208					
Mexico	4,381	4,510	4,230	3,797	3,640	3,725					
Middle East	1,725	1,828	2,040	2,373	3,172	3,530					
Other	1,749	2,658	2,321	2,119	2,453	2,320					
Total	53,157	54,442	62,958	54,240	64,671	65,437					

Note: Brazil and Argentina estimates have been adjusted to a consistent October-September marketing year. Estimates of other countries (including the U.S.) are on a local marketing year. Source: USDA/ Foreign Agricultural Service/Circular Series/FOP 4 – 06/April 2006

	Soybean exports: world supply and distribution (1,000 metric tons)										
Country	2000	2001	2002	2003	2004	2005					
Latin America	25,690	23,561	31,636	29,734	33,071	39,233					
Brazil	15,469	15,000	19,734	19,816	20,136	25,525					
Argentina	7,415	6,005	8,713	6,710	9,513	10,450					
Paraguay	2,509	2,285	2,806	2,776	2,850	2,650					
United States	27,103	28,948	28,423	24,128	30,011	24,494					
Other	1,069	923	1,127	1,760	1,794	2,042					
Total	53,862	53,432	61,186	55,622	64,876	65,769					

Note: Brazil and Argentina estimates have been adjusted to a consistent October-September marketing year.

Estimates of other countries (including the U.S.) are on a local marketing year. Source: USDA/ Foreign Agricultural Service/Circular Series/FOP 4 – 06/April 2006

Soybean crush: world supply and distribution (1,000 metric tons)						
Country	2000	2001	2002	2003	2004	2005
Latin America	47,171	53,444	58,925	61,843	63,682	66,136
Brazil	22,742	24,693	27,168	29,323	28,972	29,616
Argentina	17,300	20,859	23,527	25,039	27,308	28,800
Mexico	4,450	4,610	4,335	3,889	3,729	3,815
Asia	32,965	35,105	40,337	40,093	43,772	48,421
China	18,900	20,250	26,540	25,439	30,362	34,610
India	4,525	4,629	3,420	5,534	4,710	4,977
United States	44,625	46,259	43,948	41,632	46,160	46,811
EU-25	16,598	17,636	16,325	13,909	14,095	13,400
Middle East	1,451	1,461	1,676	2,018	2,560	3,151
Other	3,899	4,295	4,444	4,105	5,135	5,433
Total	146,709	158,200	165,655	163,600	175,404	183,352

Note: Brazil and Argentina estimates have been adjusted to a consistent October-September marketing year.

Estimates of other countries (including the U.S.) are on a local marketing year.

Source: USDA/ Foreign Agricultural Service/Circular Series/FOP 4 - 06/April 2006

Soybean ending stocks: world supply and distribution (1,000 metric tons)						
Country	2000	2001	2002	2003	2004	2005
Brazil	9,431	12,108	16,033	15,391	16,877	16,419
Argentina	7,928	10,159	12,467	12,790	14,115	14,450
United States	6,743	5,663	4,853	3,059	6,960	15,366
Asia	6,016	3,434	5,371	2,942	5,484	5,359
Other	1,381	1,501	1,341	1,157	1,851	1,909
Total	31,914	33,220	40,354	35,658	45,571	53,749

Note: Brazil and Argentina estimates have been adjusted to a consistent October-September marketing year.

Estimates of other countries (including the U.S.) are on a local marketing year.

Source: USDA/ Foreign Agricultural Service/Circular Series/FOP 4 - 06/April 2006

Quarterly costs of transporting U.S. soybeans to Hamburg, Germany										
	2005					2005				
	1st qtr	2nd qtr	3rd qtr	4th qtr	Avg	1st qtr	2nd qtr	3rd qtr	4th qtr	Avg
	Minneapolis, Minnesota \$/mt					Davenport, Iowa \$/mt				
Truck	7.58	7.82	8.90	10.06	8.59	7.58	7.82	8.90	10.06	8.59
Barge ¹	18.42	18.93	28.88	36.71	25.74	18.16	14.67	23.63	30.91	21.84
Ocean ²	37.46	32.81	21.34	22.81	28.61	37.46	32.81	21.34	22.81	28.61
Total transportation	63.46	59.56	59.12	69.58	62.93	63.20	55.30	53.87	63.78	59.04
Farm Value ³	208.09	230.84	224.26	207.11	217.58	202.22	226.81	225.97	207.60	215.65
Landed Cost	271.55	290.40	283.38	276.69	280.51	265.42	282.11	279.84	271.38	274.69
Transport % of landed cost	23.37	20.51	20.86	25.15	22.47	23.81	19.60	19.25	23.50	21.54

¹The Mississipi River closes from Minneapolis to just north of St. Louis during mid-December to late March ²Source: The Baltic Exchange ³Source: USDA/NASS

Average quarterly exchange rate, 2005					
Quarter	Real per U.S. \$				
1st	2.6692				
2nd	2.4792				
3rd	2.3434				
4th	2.2520				

Source: Banco Central do Brasil

