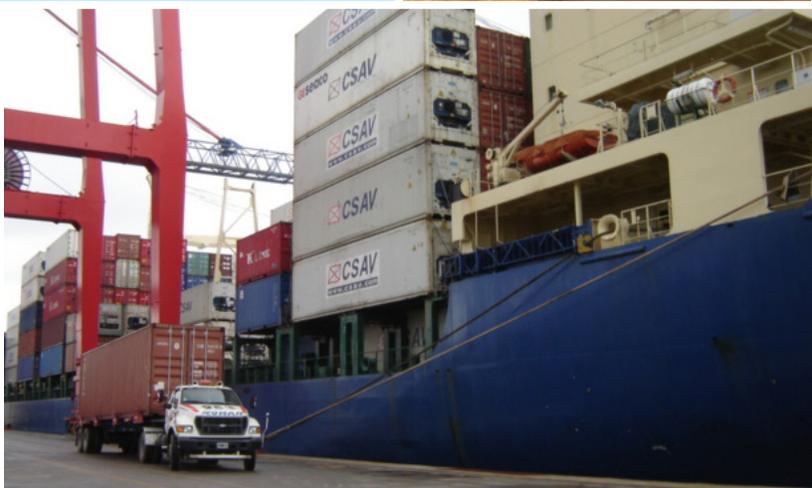
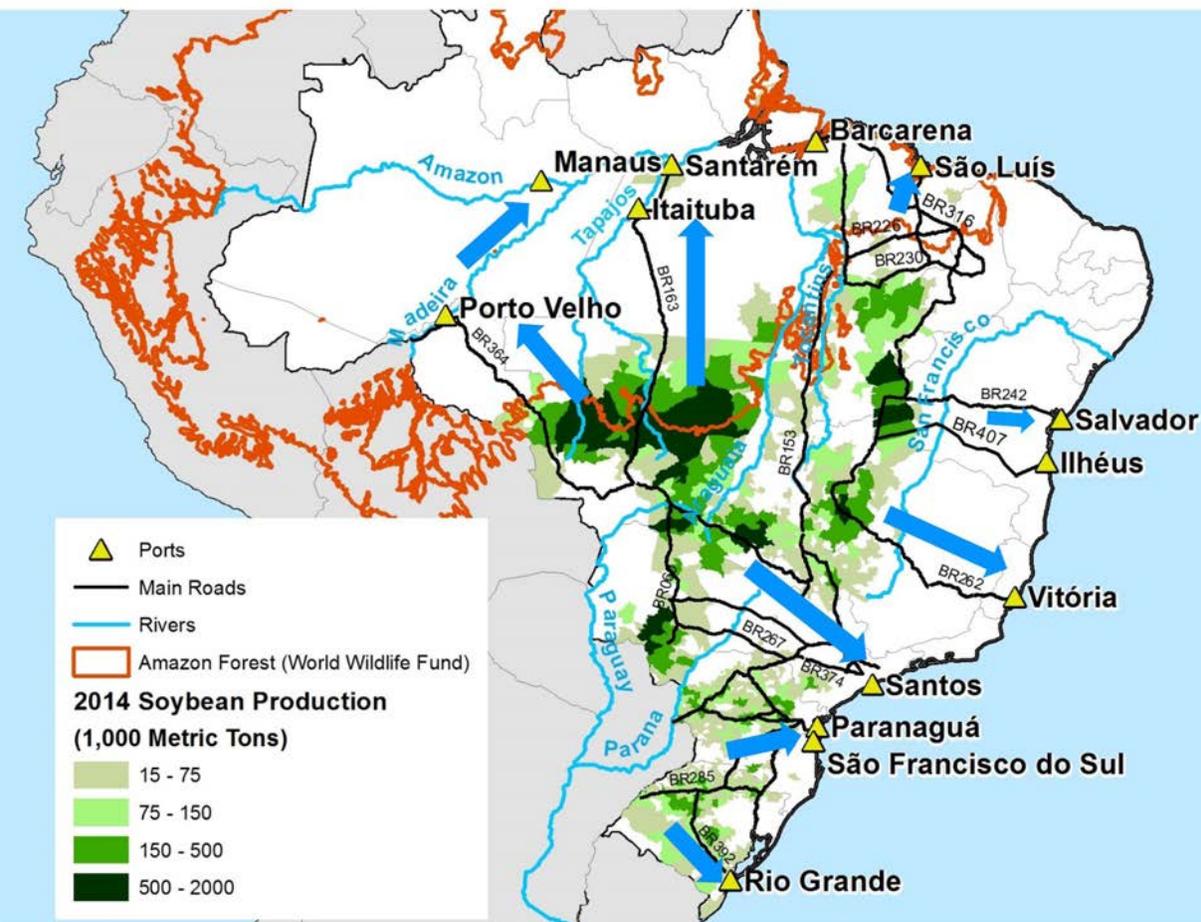




Soybean Transportation Guide: Brazil 2015



United States Department of Agriculture
Marketing and Regulatory Programs
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Soybean Transportation Guide: Brazil

Executive Summary

The *Soybean Transportation Guide* is a visual snapshot of Brazilian soybean transportation in 2015. It provides data on the cost of shipping soybeans via highways and ocean to Shanghai, China, and Hamburg, Germany. It provides information about soybean production, exports, railways, ports, and infrastructural developments.

Brazil is one of the most important U.S. competitors in the world oilseeds market. Brazil's competitiveness in the world market depends largely on its transportation infrastructure and cost. Small differences in transportation costs can make Brazil soybean exports more or less competitive, than U.S. soybeans, diverting soybean trade from the United States to Brazil or Argentina, or vice versa.

In 2015, Brazil increased its competitiveness over the United States in the world soybean market. Furthermore, the U.S. Department of Agriculture (USDA) forecast that Brazil is expected to sustain its leadership position through 2025 (USDA Agricultural Projections to 2025). The market shares for Brazil, the United States, and Argentina were 40.2, 39.8 and 8.4 percent, respectively. In the last 2 years, world soybean supply growth outpaced demand, resulting in a drop of soybean export prices. World soybean production increased 13 percent to 319.5, from 282.4 million metric tons (mmt) in 2014. Soybean trade volume increased 9 percent from 112.9 mmt in 2014 to 123.3 mmt in 2015 and is forecast to increase to 131 mmt in 2016. However, this 9 percent increase was not large enough to offset the 24 percent drop in average soybean export prices, lowering the value of exports to US\$19.1 billion, from US\$23.2 billion in 2014. However, a weaker currency raised domestic farm prices, and transportation costs lowered as Brazil's economy fell deeper into recession in 2015.

Brazil's Recession and Transportation Infrastructure Improvement

According to the Brazilian Institute of Geography and Statistics (IBGE) and the International Monetary Fund (IMF), the Brazilian economy entered a recession in 2015 with an estimated contraction of 3.8 percent and is projected to contract 3.8 percent in 2016. The inflation rate increased to 10.71 percent from 6.46 percent last year. Unemployment rose to 6.9 percent in December compared with 4.3 percent in the same month in 2014. Brazil's resource-rich economy is affected by (1) the slowdown and rebalancing of the Chinese economy, moving away from investment and manufacturing toward consumption and service, (2) lower commodity prices, and (3) political uncertainty amid continued fallout from the Petrobras investigation, which is proving to be deeper and more protracted than previously expected.

Brazil's recession, high unemployment, and double-digit inflation did not appear to have a significant impact on Brazil's soybean exports. However, *Petróleo Brasileiro SA* (Petrobras), Brazil's largest oil company, plans to cut investment by 37 percent for 2015-2019 to US\$130.3 billion. This adds uncertainty to the scale and timing of the future of Brazil's transportation infrastructure plans. Petrobras is important to the Brazilian economy because for the last decade it has been the center of the state industrial policy plan that intends to use the oil industry as a vehicle for broader economic development. Petrobras is Brazil's single largest source of investment, supporting a huge network of suppliers and construction.

In 2007, the Brazilian government began a comprehensive infrastructural improvement strategy with major institutional and regulatory changes to facilitate agricultural exports. But the impact of the Brazilian government strategic plan on the world soybean market is uncertain because the scale and timing of improvements in Brazil's infrastructure remains unclear. We also do not know how much Brazil's freight rates might be reduced in the future as a result of improvements to its transportation infrastructure. We only know that it is improving and Brazil has been gaining in soybean market share as a result.

Soybean Transportation Cost and Export Demand

Strategic transportation infrastructure improvements, lower ocean rates, and a weaker currency that supported domestic farm prices facilitated the 2015 Brazilian record-high soybean exports. The cost of shipping a metric ton (mt) of soybeans 100 miles by truck dropped from \$9.87 in 2014 to \$7.65 in 2015. In 2015, Brazilian soybean transportation costs to Shanghai, China, as a percentage of total landed costs from the routes of North Mato Grosso (MT) and South Goiás to Santos and North Central Paraná to Paranaguá decreased 2-12 percent due to lower transportation costs and farm prices, compared with 2014. However, soybean transportation costs increased by 10 percent from Northwest Rio Grande do Sul–Rio Grande due to higher truck rates. In Sorriso, North MT (the largest Brazilian soybean-producing State) transportation costs represented 27 percent of the total landed costs of shipping soybeans to Shanghai through Santos, compared with 34 percent in 2008 and 45 percent in 2006.

Ocean rates from the southern Brazilian ports plunged 27-31 percent to Hamburg and 30-36 percent to China because of a Dry-bulk's excess vessel capacity. The Panamax vessel's excess market capacity for grains is estimated to be greater than 15 percent. Brazilian farmers also benefitted from the 43 percent loss in value of the Brazilian Real (R\$) against the U.S. dollar because soybeans are priced in U.S. dollars but paid in Reais. Soybean farm price—measured in U.S. dollars—dropped nearly 25 percent, to \$313.57/mt from \$416.56/mt in 2014. On the other hand, the 2015 average farm prices—in Brazilian Real (R\$)—increased 6 percent, to R\$1,034.31/mt from R\$976.81/mt. In 2015, the Brazilian Real (R\$) weakened against the U.S. dollar compared with 2014, from R\$2.3303 per U.S. dollar to R\$3.3316.

China is Brazil's major soybean buyer, accounting for 75 percent of total exports, followed by Spain, Thailand, Netherlands, and Taiwan. China bought 54.3 mmt of Brazilian soybeans in 2015, valued at US\$15.8 billion. Mato Grosso, the largest Brazilian exporting State, accounted for 27 percent of total Brazilian soybean exports, followed by Rio Grande Do Sul, Paraná, Mato Grosso Do Sul, Goiás, and São Paulo. Rio Grande Do Sul was the top exporter to China, surpassing Mato Grosso by a slight margin, accounting for 23 percent of total Brazilian soybean exports to China. Mato Grosso exported 22.5 percent of soybeans to China.

In 2015, Santos was the largest Brazil soybean export port, followed by Rio Grande, Paranaguá, São Luís, and São Francisco do Sul. These five ports accounted for nearly 87 percent of total exports. Soybean trade to China is dominated by the southern ports of Santos, Rio Grande, Paranaguá, and São Francisco do Sul, accounting for 79 percent of Brazil's soybean exports to China. The northeastern ports of São Luís, Vitória, Salvador, and Barcarena accounted for 20 percent of exports to China.

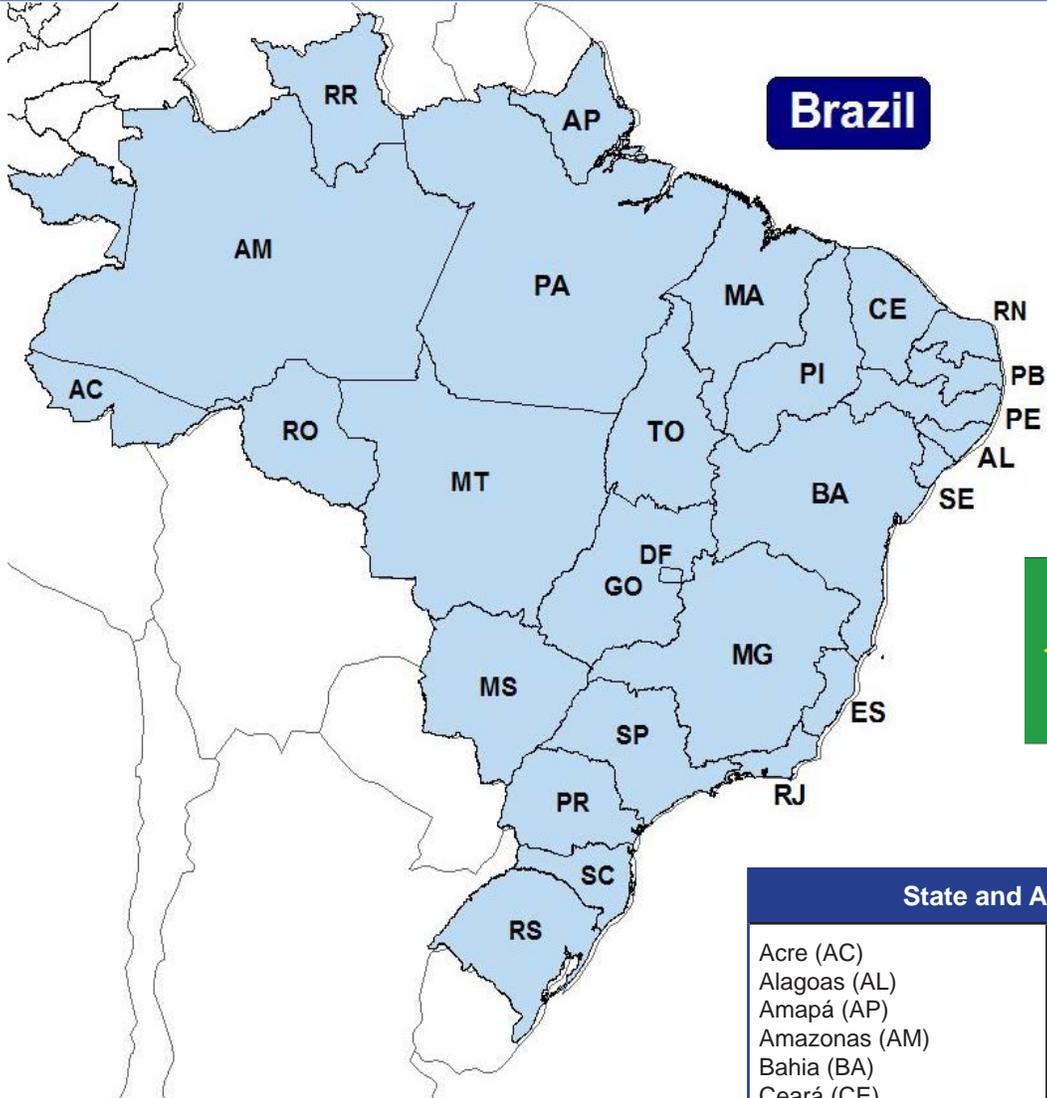
The port of São Luís accounted for 9 percent of Brazilian Soybean exports mostly originated from Maranhão, Tocantins, Mato Grosso, Piauí, and Pará. China was the major destination followed Spain, Saudi Arabia, United Kingdom, Thailand, France, Netherlands, and Egypt. The Amazon River ports of Manaus exported less than 1 percent and Santarém did not export soybeans to China.

Overall, Brazil's transportation infrastructure is improving. However, transportation costs in their Midwest region, especially in MT, are still higher than Iowa in the United States and also higher than in the southern Brazilian State of Rio Grande do Sul and the northeastern State of Maranhão. Rio Grande do Sul and Maranhão exporters have lower transportation costs than the United States' routes to China through the Pacific Northwest and from Iowa through the U.S. Gulf to Shanghai.



Acknowledgments

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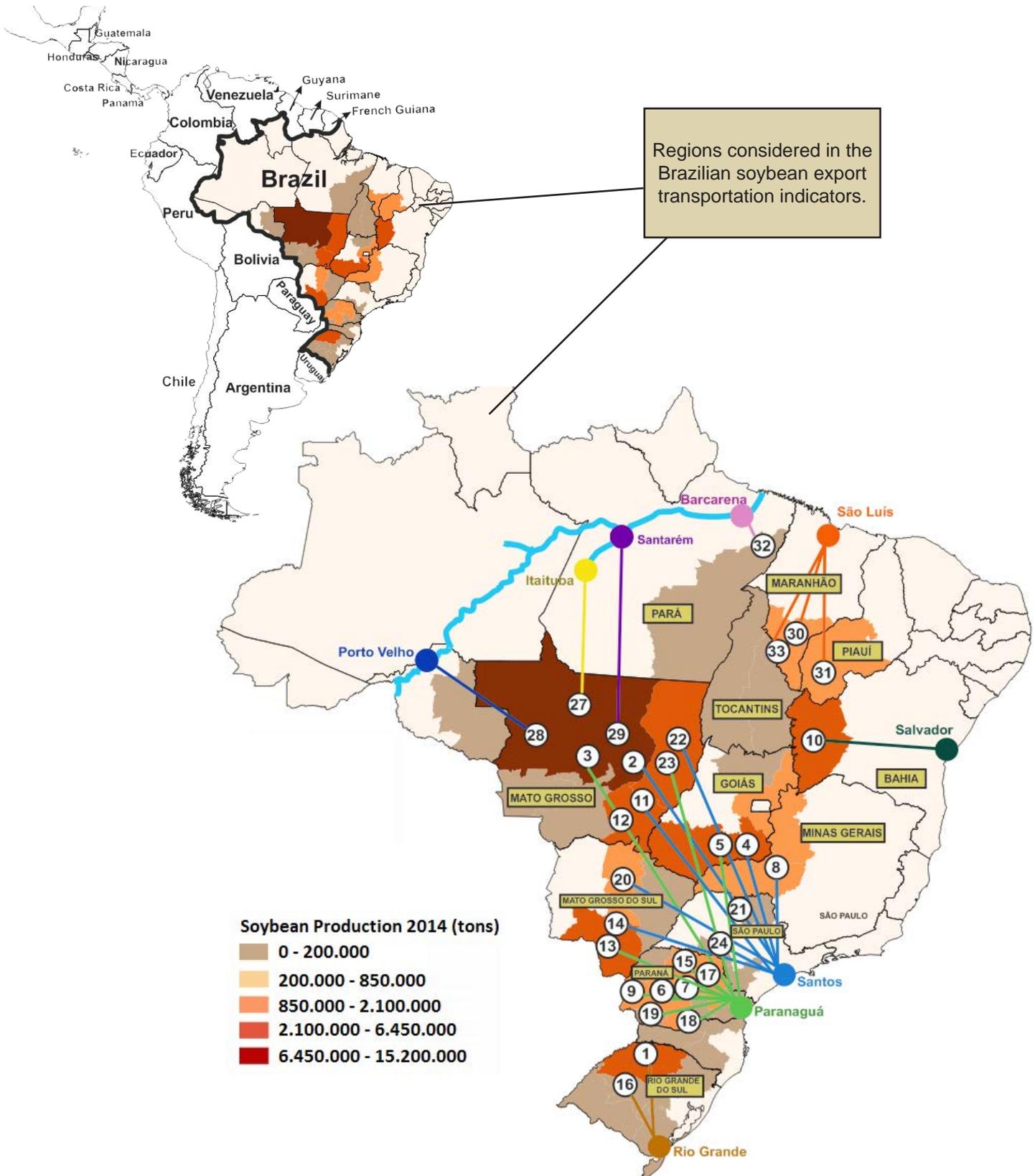
Brazil



State and Abbreviation	
Acre (AC)	Pará (PA)
Alagoas (AL)	Paraíba (PB)
Amapá (AP)	Paraná (PR)
Amazonas (AM)	Pernambuco (PE)
Bahia (BA)	Piauí (PI)
Ceará (CE)	Rio de Janeiro (RJ)
Distrito Federal (DF)	Rio Grande do Sul (RS)
Espírito Santo (ES)	Rondônia (RO)
Goiás (GO)	Roraima (RR)
Maranhão (MA)	Santa Catarina (SC)
Mato Grosso (MT)	São Paulo (SP)
Mato Grosso do Sul (MS)	Sergipe (SE)
Minas Gerais (MG)	Tocantins (TO)

Population:	204,490,000 (April 14, 2016 est., Census, Instituto Brasileiro de Geografia e Estatística (IBGE))
Gross Domestic Product per Capita, 2015:	US\$15,800 (est.)
Inflation, 2015:	10.71 percent (Banco Central do Brasil)
Area:	8,514,877 sq km
Languages:	Portuguese (official), Spanish, English, French

Routes¹ and regions considered in the Brazilian soybean export transportation indicators²



¹Table defining routes by number is shown on page 25

²Regions comprised about 83 percent of Brazilian soybean production, 2014

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

In 2015, Brazilian soybean transportation costs to Shanghai, China, as a percentage of total landed costs from the routes of North Mato Grosso (MT) and South Goiás to Santos and North Central Paraná to Paranaguá decreased 2-12 percent due to lower transportation costs and farm prices, compared with 2014. However, the transportation costs increased up to 10 percent from Northwest Rio Grande do Sul–Rio Grande because of higher truck rates. In Sorriso, North MT (the largest Brazilian soybean-producing state) transportation costs represented 27 percent of the total landed costs of shipping soybeans to Shanghai through Santos compared with 34 percent in 2008 and 45 percent in 2006.

Cost of transporting soybeans from Brazil to Shanghai, China																	
	2009	2010	2011	2012	2013	2014	2015	Percent change 14-15		2009	2010	2011	2012	2013	2014	2015	Percent change 14-15
	North MT ¹ - Santos ² —US\$/mt—							Northwest RS ¹ - Rio Grande ² —US\$/mt—									
Truck	97.00	116.78	123.31	111.78	116.40	103.90	86.04	-17.2	24.50	28.18	38.94	25.83	23.26	24.56	26.37	7.4	
Ocean	58.78	55.84	50.50	49.70	40.96	36.85	23.81	-35.4	59.42	58.21	51.10	49.69	41.52	37.02	25.31	-31.6	
Total transportation	155.78	172.62	173.81	161.48	157.36	140.75	109.86	-22.0	83.92	86.39	90.03	75.51	64.79	61.58	51.68	-16.1	
Farm price ³	324.34	318.15	392.10	483.31	415.28	388.33	295.17	-24.0	359.51	344.90	415.87	483.22	459.33	442.52	331.55	-25.1	
Landed cost	480.12	490.77	565.91	644.80	572.64	529.08	405.02	-23.4	443.43	431.29	505.90	558.73	524.11	504.10	383.23	-24.0	
Transport % of landed cost	32.6	38.6	30.6	28.4	28.4	27.8	27.1	-2.7	19.0	20.1	17.8	13.7	12.3	12.2	13.5	10.2	
North Center PR ¹ - Paranaguá ² —US\$/mt—																	
Truck	27.37	34.51	39.54	34.76	32.26	30.98	24.07	-22.3	50.83	64.71	63.92	55.02	58.90	62.57	39.82	-36.4	
Ocean	59.00	58.92	57.32	55.20	43.88	39.21	24.92	-36.4	58.78	55.84	50.50	49.70	40.96	36.85	23.81	-35.4	
Total transportation	86.37	93.43	96.86	89.96	76.15	70.19	48.99	-30.2	109.62	120.56	114.42	104.72	99.86	99.42	63.63	-36.0	
Farm price ³	372.46	350.44	431.66	513.81	470.66	433.91	323.15	-25.5	338.31	324.27	412.89	479.80	428.06	401.49	304.36	-24.2	
Landed cost	458.83	443.87	528.52	603.76	546.80	504.10	372.14	-26.2	447.93	444.82	527.31	584.52	527.93	500.91	368.00	-26.5	
Transport % of landed cost	18.9	21.2	18.4	15.1	13.9	13.9	13.1	-5.5	24.6	27.4	21.7	18.1	18.9	19.8	17.2	-12.8	

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

²Export ports

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

2015 Summary

In 2015, Brazilian soybean transportation costs from Mato Grosso (MT), South Goiás (GO), and Paraná (PR), as a percentage of total landed costs decreased 1–10 percent, but increased nearly 18 percent from Rio Grande do Sul (RS) to Hamburg, Germany, and by 4 percent from MT, from a year earlier.

Cost of transporting soybeans from Brazil to Hamburg, Germany																
	2009	2010	2011	2012	2013	2014	2015	Percent change 14-15		2010	2011	2012	2013	2014	2015	Percent change 14-15
	North MT ¹ - Santos ² —US\$/mt—							Northwest RS ¹ - Rio Grande ² —US\$/mt—							South GO ¹ - Santos ² —US\$/mt—	
Truck	97.00	116.78	123.31	111.78	116.40	103.90	86.04	-17.2	24.50	28.18	37.54	25.83	23.26	24.56	26.37	7.4
Ocean	32.48	33.63	34.65	31.75	29.50	27.75	19.75	-28.8	33.79	36.03	36.12	33.15	29.50	27.00	20.25	-25.0
Total transportation	129.48	150.40	157.96	143.53	145.90	131.65	105.79	-19.6	58.30	64.21	73.65	58.97	52.76	51.56	46.62	-9.6
Farm price ³	324.34	318.15	392.10	483.31	415.28	388.33	295.17	-24.0	359.51	344.90	415.87	483.22	459.33	442.52	331.55	-25.1
Landed cost	453.82	468.55	550.06	626.84	561.18	519.98	400.96	-22.9	417.80	409.11	489.52	542.19	512.09	494.08	378.17	-23.5
Transport % of landed cost	28.7	32.6	28.7	23.3	26.0	25.3	26.3	4.1	14.0	15.8	15.0	11.0	10.3	10.5	12.3	17.8
North Center PR ¹ - Paranaguá ² —US\$/mt—																
Truck	27.37	34.51	39.54	34.76	32.26	30.98	24.07	-22.3	50.83	64.71	63.92	55.02	58.90	62.57	39.82	-36.4
Ocean	33.34	35.08	34.95	33.80	29.50	28.75	19.75	-31.3	32.48	33.63	34.65	31.75	29.50	27.75	19.75	-28.8
Total transportation	60.71	69.59	74.48	68.56	61.76	59.73	43.82	-26.6	83.32	98.34	98.57	86.77	88.40	90.32	59.57	-34.0
Farm price ³	372.46	350.44	431.66	513.81	470.66	433.91	323.15	-25.5	338.31	324.27	412.89	479.80	428.06	401.49	304.36	-24.2
Landed cost	433.17	420.03	506.15	582.36	532.42	493.64	366.97	-25.7	421.63	422.61	511.46	566.57	516.47	491.81	363.94	-26.0
Transport % of landed cost	14.1	16.8	14.7	11.9	11.6	12.1	11.9	-1.5	19.8	23.6	19.3	15.6	17.1	18.3	16.3	-10.8

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

²Export ports

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

In 2015, U.S. soybean transportation costs from Iowa through the U.S. Gulf to Hamburg, Germany, as a percentage of total landed costs decreased 3 percent due to lower transportation cost and farm prices. The U.S. soybean transportation costs from Minnesota and Iowa through the U.S. Gulf to Shanghai, as a percentage of total landed costs decreased 3-6 percent compared with 2014.

Average cost of transporting U.S. soybeans to Hamburg, Germany, and Shanghai, China														
	2010	2011	2012	2013	2014	2015	% Change 2014-15	2010	2011	2012	2013	2014	2015	% Change 2014-15
	To Hamburg, Germany													
	Minneapolis, Minnesota —US\$/mt—							Davenport, Iowa —US\$/mt—						
Truck	9.45	11.38	11.29	11.56	13.04	10.23	-21.5	9.45	11.38	11.29	11.56	13.04	10.23	-21.5
Rail ¹	10.86	10.86	10.86	36.48	42.08	42.09	0.0	10.86	23.84	23.84	27.93	30.77	31.20	1.4
Barge ²	31.25	31.93	28.53	25.79	37.45	27.49	-26.6	25.45	25.99	22.89	21.38	32.80	22.15	-32.5
Ocean ³	28.94	23.42	20.29	22.87	20.24	14.32	-29.3	26.22	23.42	20.29	22.87	20.24	14.32	-29.3
Total transportation	72.36	75.39	68.02	69.34	81.25	62.56	-23.0	63.83	67.40	60.52	62.79	73.77	54.50	-26.1
Farm price ⁴	353.90	446.13	507.43	511.04	455.47	342.91	-24.7	362.78	458.68	510.13	517.78	458.07	344.69	-24.8
Landed cost	426.26	521.52	575.45	580.38	536.72	405.47	-24.5	426.62	526.08	570.64	580.57	531.84	399.19	-24.9
Transport % of landed cost	17.0	14.5	11.9	12.0	15.3	15.3	0.4	15.0	12.8	10.7	10.9	14.1	13.6	-3.4
	To Shanghai, China													
	Minneapolis, Minnesota —US\$/mt—							Davenport, Iowa —US\$/mt—						
Truck	9.45	11.38	11.29	11.56	13.04	14.13	8.4	9.45	11.38	11.29	11.56	13.04	10.23	-21.5
Rail ¹	10.86	34.74	31.61	36.48	42.08	42.09	0.0	10.86	10.86	24.16	27.93	30.77	31.20	1.4
Barge ²	41.41	31.93	28.53	25.79	37.45	27.49	-26.6	35.61	25.99	22.89	21.38	32.80	22.15	-32.5
Ocean ³	54.56	53.08	46.98	46.76	45.72	30.09	-34.2	51.84	53.08	46.98	46.76	45.72	30.09	-34.2
Total transportation	108.13	105.05	94.71	93.23	106.72	78.33	-26.6	99.61	97.06	87.20	86.69	99.25	69.67	-29.8
Farm price ⁴	355.37	446.13	507.43	511.04	455.47	342.91	-24.7	364.16	458.68	510.13	517.78	458.07	344.69	-24.8
Landed cost	463.51	551.18	602.14	604.28	562.19	421.24	-25.1	463.77	555.74	597.33	604.46	557.32	414.96	-25.5
Transport % of landed cost	23.3	19.1	15.8	15.5	19.1	18.5	-3.2	21.5	17.5	14.7	14.4	18.0	16.9	-6.3

¹Rail rates include fuel surcharges, but do not include the cost of purchasing empty rail cars in the secondary rail markets, which could exceed the rail tariff rate plus fuel surcharge shown in the table.

²The Mississippi River closes from Minneapolis to just north of St. Louis during mid-December to late March; The distance by barge between Minneapolis and Davenport to the Port of New Orleans is 1,713 and 1,343 miles, respectively.

³Source: The Baltic Exchange and O'Neil Commodity Consulting; excludes handling charges.

⁴Source: USDA/NASS/Quick Stats database

2015 Summary

The U.S. soybean transportation costs from North and South Dakota via the Pacific Northwest to Shanghai, China, as a percentage of total landed cost increased 8-10 percent from a year earlier.

Average costs of transporting U.S. soybeans to Shanghai, China										
	2012	2013	2014	2015	% change 2014-15	2012	2013	2014	2015	% change 2014-15
	To Shanghai, China via PNW									
	Fargo, ND --US\$/mt--					Sioux Falls, SD --US\$/mt--				
Truck	11.29	11.56	13.04	10.23	-21.5	11.29	11.56	13.04	10.23	-21.5
Rail ¹	55.24	57.92	59.19	55.98	-5.4	57.01	59.38	60.74	57.20	-5.8
Ocean ²	24.93	24.93	24.21	16.34	-32.5	24.93	24.93	24.21	16.34	-32.5
Total transportation ²	91.46	94.41	96.43	82.55	-14.4	93.23	95.87	97.99	83.77	-14.5
Farm price ³	496.65	497.79	421.91	322.98	-23.4	502.78	504.56	437.89	329.87	-24.7
Landed cost	588.11	592.20	518.34	405.52	-21.8	596.00	600.43	535.88	413.64	-22.8
Transport % of landed cost	15.6	16.0	18.8	20.4	8.5	15.7	16.0	18.5	20.3	9.5

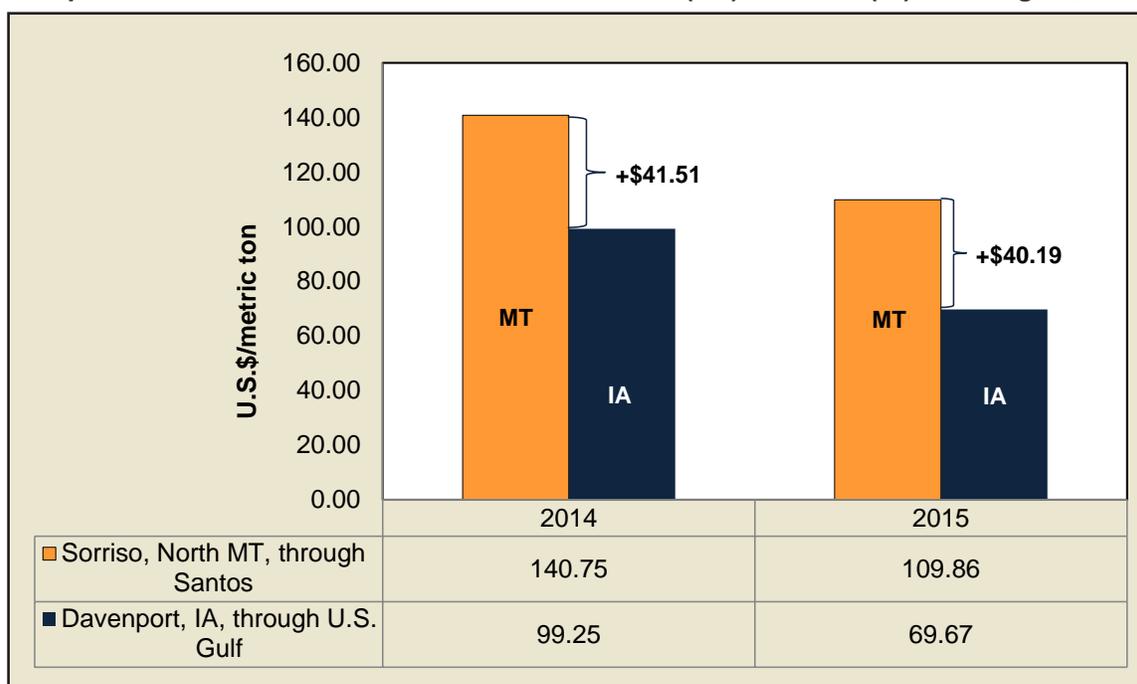
¹Rail rates include fuel surcharges, but do not include the cost of purchasing empty rail cars in the secondary rail markets, which could exceed the rail tariff rate plus fuel surcharge shown in the table.

²Source: O'Neil Commodity Consulting

³Source: USDA/NASS/Quick Stats database

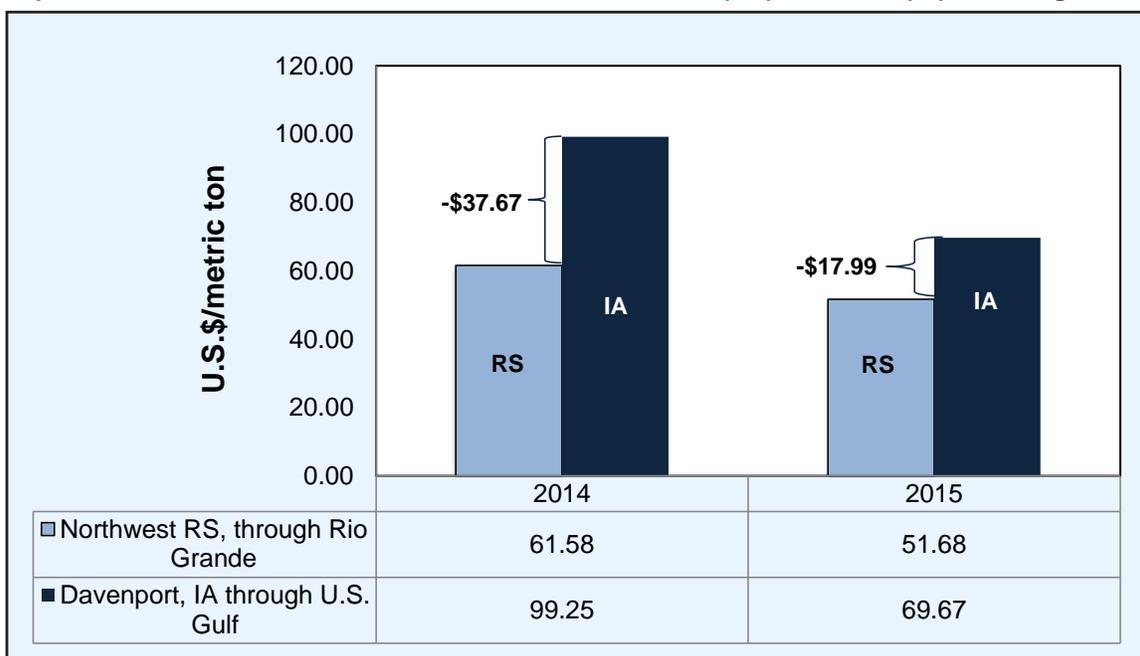
In 2015, the cost per metric ton to ship soybeans from Sorrison, North Mato Grosso (MT) to Shanghai, China, was \$40.19 more than from Davenport, IA. Sorrison is located 1,190 miles from the port of Santos. Davenport is about 900, 908, and 1,343 miles from the Port of New Orleans by truck, rail, and barge, respectively.

Transportation cost differences between Mato Grosso (MT) and Iowa (IA) to Shanghai, China



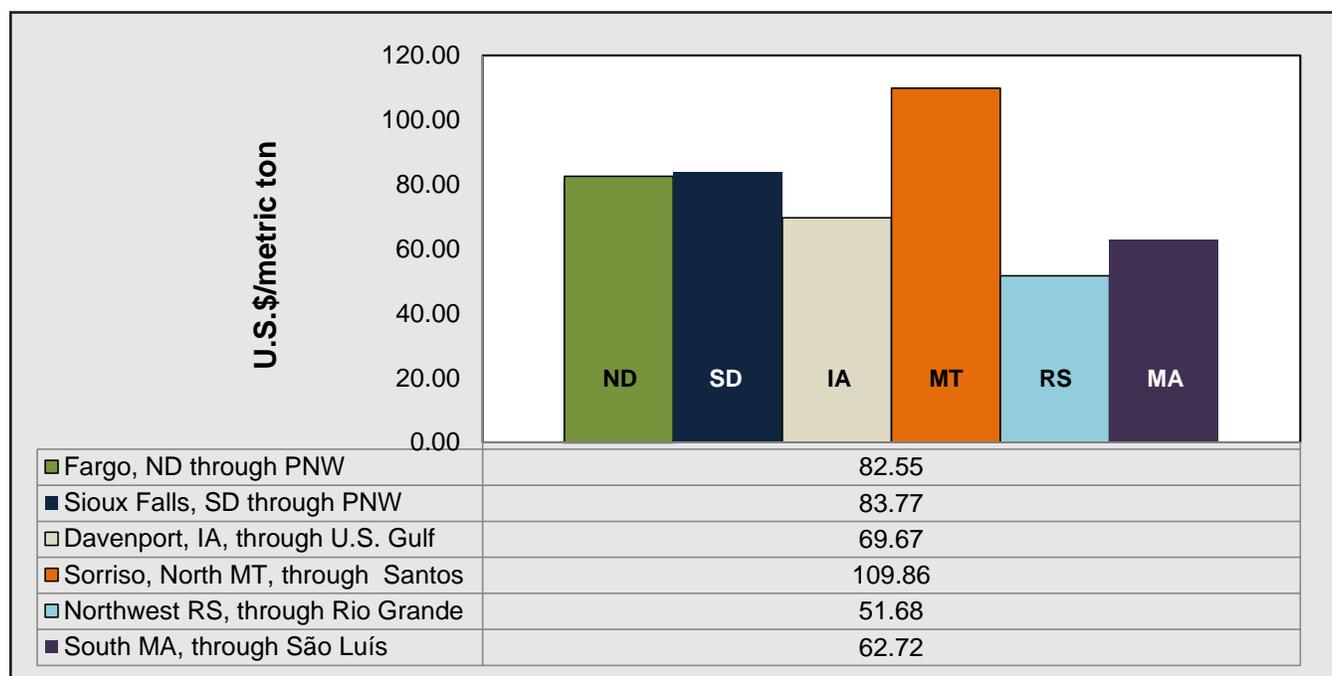
In 2015, the cost of shipping a metric ton of soybeans from Cruz Alta, Northwest Rio Grande do Sul (RS), to Shanghai, China, was \$17.99 less than from Davenport, IA. The distance from Cruz Alta to the port of Rio Grande is 288 miles.

Transportation cost differences between Rio Grande do Sul (RS) and Iowa (IA) to Shanghai, China



During 2015, Sorriso, North MT, soybean shippers to Shanghai paid \$27-\$40 per metric ton more than U.S. exporters through the U.S. Gulf and PNW routes; \$58 more than the transportation cost paid by Cruz Alta (RS) shippers; and \$47 more than the transportation cost paid by South Maranhão (MA) shippers.

Transportation cost differences between selected Brazil-United States Routes to Shanghai, China, 2014



2015 Summary

In 2015, truck rates (valued in reais) from Cruz Alta, Rio Grande do Sul (RS) to Rio Grande and Londrina, North Center Parana (PR) to Santos and Paranaguá, increased significantly. Truck rates from Rio Verde, South Goiás (GO) and Primavera do Leste (Southeast MT) decreased 10 and 57 percent, respectively.

Truck rates for selected Brazilian soybean export routes, 2009-2015

Route #	Origin ¹ (reference city)	Destination	Distance (miles) ²	2009	2010	2011	2012	2013	2014	2015	Percent Change 14-15
				Reais/metric ton							
1	Northwest RS3(Cruz Alta)	Rio Grande	288	48.32	49.58	62.44	50.35	49.90	57.52	87.26	51.7
2	North MT(Sorriso)	Santos	1190	191.73	205.40	206.03	218.00	250.60	243.68	283.84	16.5
3	North MT(Sorriso)	Paranaguá	1262	180.30	195.09	197.09	212.49	241.25	236.81	282.66	19.4
4	South GO(Rio Verde)	Santos	587	100.36	113.85	106.57	107.31	126.98	146.51	130.98	-10.6
6	North Center PR(Londrina)	Paranaguá	268	54.50	60.70	66.07	67.92	69.02	72.47	163.99	126.3
11	Southeast MT(Primavera do Leste)	Santos	901	147.22	164.18	159.93	164.92	190.65	185.01	79.44	-57.1
29	North MT(Sorriso)	Santarém	876	--na--	--na--	--na--	--na--	--na--	--na--	193.85	-
30	South MA(Balsas)	São Luís	482	--na--	--na--	--na--	--na--	--na--	--na--	190.47	-
31	Southwest PI (Bom Jesus)	São Luís	606	--na--	--na--	--na--	--na--	--na--	--na--	119.23	-
32	Southeast PA(Paragominas)	Barcarena	249	--na--	--na--	--na--	--na--	--na--	--na--	141.03	-
33	East TO(Campos Lindos)	São Luís	842	--na--	--na--	--na--	--na--	--na--	--na--	65.77	-

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.

³RS = 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

In 2015, selected Brazilian export truck routes, measured in reais (R\$), saw proportionally lower transportation costs, than those estimated in U.S. dollars due to the depreciation of the Brazilian Real (R\$) against the U.S. dollar. Truck rates from Cruz Alta, Rio Grande do Sul (RS) to Rio Grande increased 7 percent. In 2014, the Brazilian Real (R\$) depreciated 8.1 percent against the U.S. dollar compared with 2013. In 2015, the Brazilian Real (R\$) depreciated 43 percent against the U.S. dollar compared with 2014, from R\$2.3303 per U.S. dollar to R\$3.3316.

Truck rates for selected Brazilian soybean export routes, 2009-2015

Route #	Origin ¹ (reference city)	Destination	Distance (miles) ²	2009	2010	2011	2012	2013	2014	2015	Percent Change 14-15
				US\$/metric ton							
1	Northwest RS3(Cruz Alta)	Rio Grande	288	24.50	28.18	37.54	25.83	23.26	24.56	26.37	7.4
2	North MT(Sorriso)	Santos	1190	97.00	116.78	123.31	111.78	116.40	103.90	86.04	-17.2
3	North MT(Sorriso)	Paranaguá	1262	91.36	110.94	117.90	108.93	111.93	100.89	85.68	-15.1
4	South GO(Rio Verde)	Santos	587	50.83	64.71	63.92	55.02	58.90	62.57	39.82	-36.4
6	North Center PR(Londrina)	Paranaguá	268	27.37	34.51	39.54	34.76	32.26	30.98	49.65	60.3
11	Southeast MT(Primavera do Leste)	Santos	901	74.39	93.41	95.82	84.42	88.66	79.00	24.07	-69.5
29	North MT(Sorriso)	Santarém	876	--na--	--na--	--na--	--na--	--na--	--na--	58.82	-
30	South MA(Balsas)	São Luís	482	--na--	--na--	--na--	--na--	--na--	--na--	58.12	-
31	Southwest PI (Bom Jesus)	São Luís	606	--na--	--na--	--na--	--na--	--na--	--na--	36.15	-
32	Southeast PA(Paragominas)	Barcarena	249	--na--	--na--	--na--	--na--	--na--	--na--	43.04	-
33	East TO(Campos Lindos)	São Luís	842	--na--	--na--	--na--	--na--	--na--	--na--	19.82	-

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.

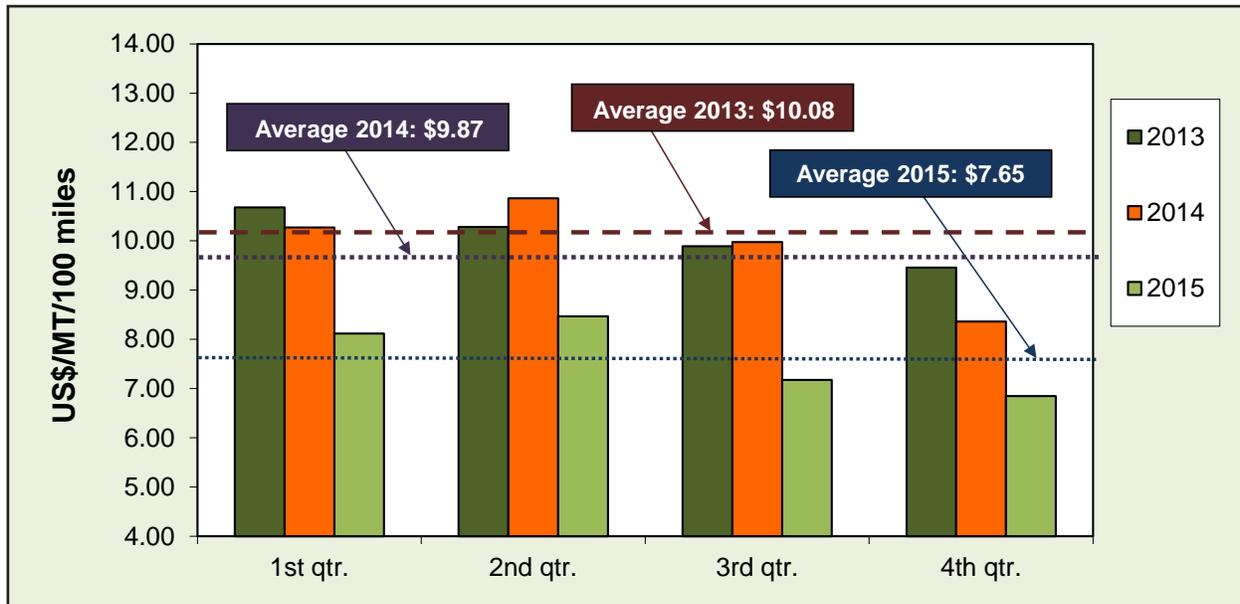
³RS = Rio Grande do Sul, MT= Mato Grosso, GO = Goiás, PR = Paraná, MG = Minas Gerais, BA = Bahia, MS = Mato Grosso do Sul, SP = São Paulo

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

2015 Summary

The Brazilian soybean export transportation cost index decreased in 2015. The cost of shipping a metric ton (mt) of soybeans 100 miles by truck dropped, from \$9.87 in 2014 to \$7.65 in 2015.

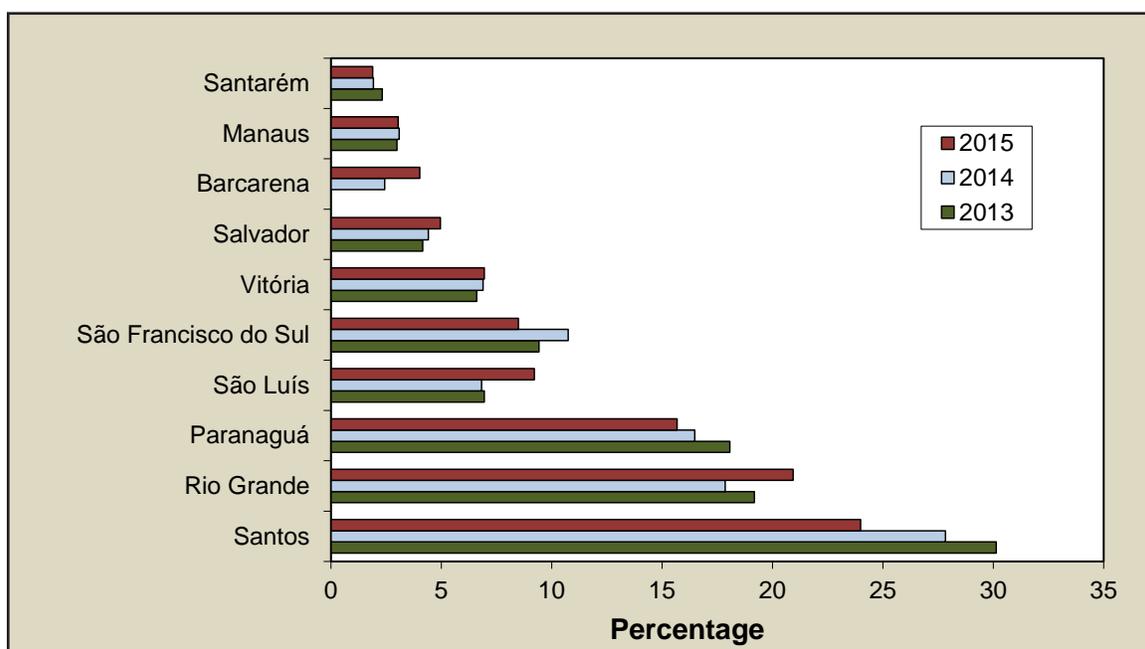
Brazilian soybean export truck cost index



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

Brazil is the largest soybean exporting country, followed by the United States, Argentina, Paraguay, and Canada. In 2015, Santos was the largest Brazil soybean export port, followed by Rio Grande, Paranaguá, São Luís, and São Francisco do Sul. These 5 ports accounted for nearly 87 percent of total exports. The soybean trade is still dominated by the southern ports of Santos, Rio Grande, Paranaguá, and São Francisco do Sul, accounting for 71 percent of Brazil's soybean exports. The northeastern ports of São Luís, Vitória, Salvador, and Barcarena accounted for nearly 21 percent. The Amazon River ports of Manaus and Santarém exported 6 percent.

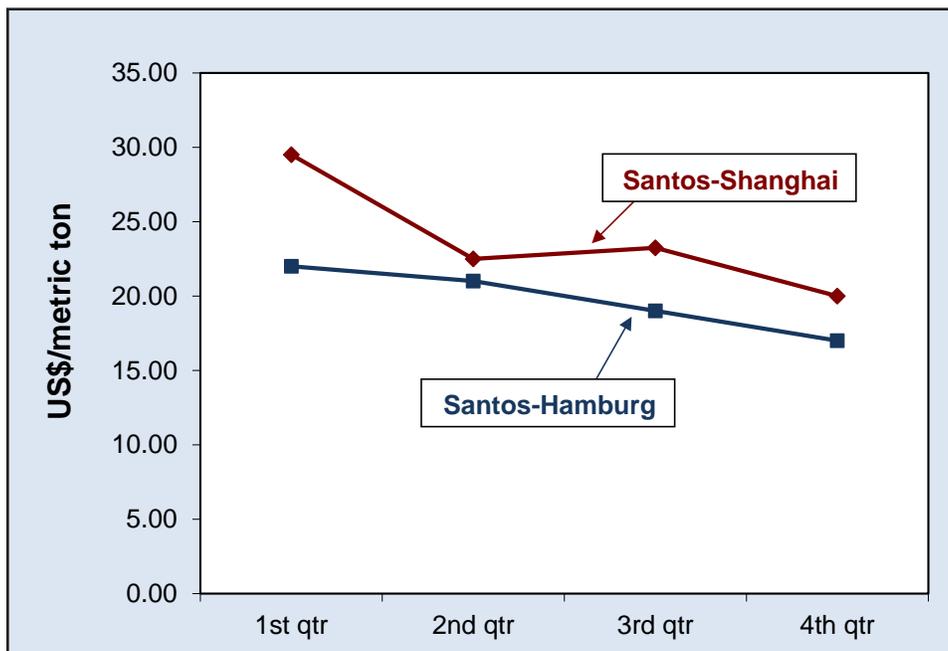
Brazil soybean exports by port



Sources: Secretariat of Foreign Trade (SECEX), MDIC, and Companhia Nacional de Abastecimento (CONAB)

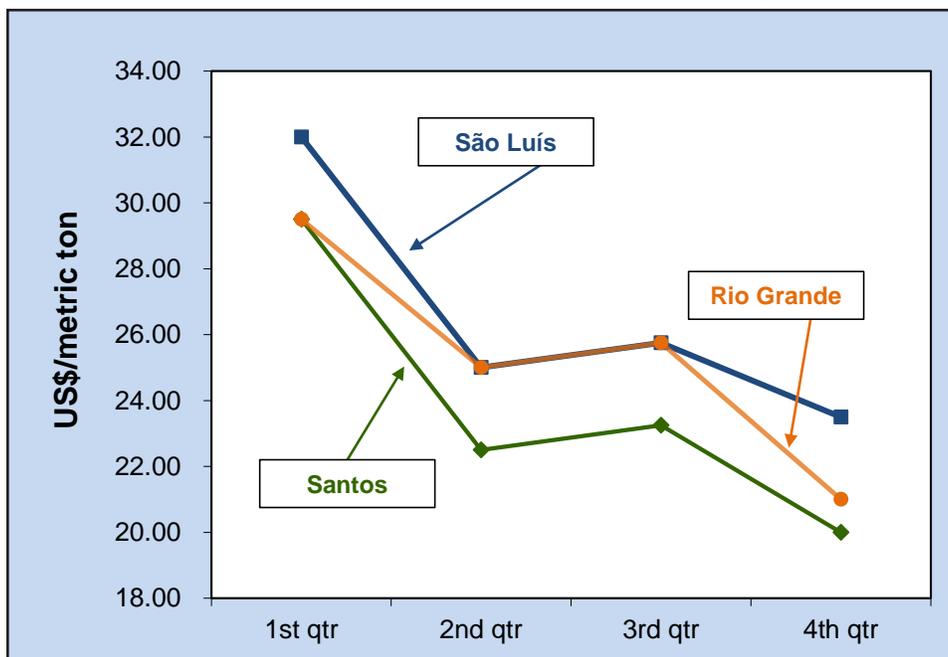
In 2015, ocean rates from the Port of Santos to Shanghai, China, dropped 35 percent compared with 2014 rates, averaging \$23.81/mt. Ocean rates to Hamburg decreased nearly 29 percent from 2014 rates, averaging \$19.75/mt. Ocean rates from the southern Brazilian ports plunged 27-31 percent to Hamburg and 30-36 percent to China because of a Dry-bulk's excess vessel capacity. The Panamax vessel's excess market capacity for grains is estimated to be greater than 15 percent.

Brazilian soybean ocean freight from Santos to Shanghai and Hamburg, 2015



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

Brazilian soybean ocean freight from selected ports to Shanghai, China, 2015

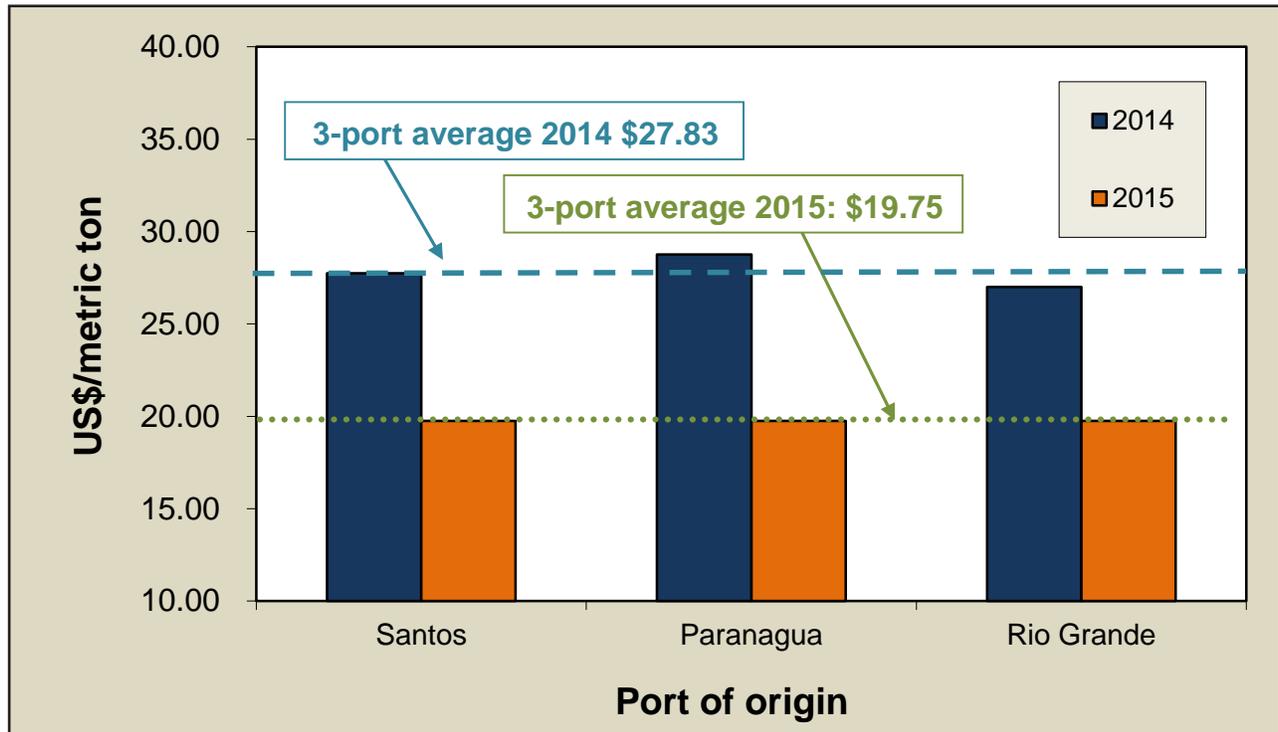


Source: ESALQ/ USP (University of São Paulo, Brazil) and USDA/AMS

2015 Summary

The cost to ship 1 mt of soybeans from Brazil to Hamburg by ocean-going vessel fell on average 29 percent from \$27.83/mt to \$19.75/mt.

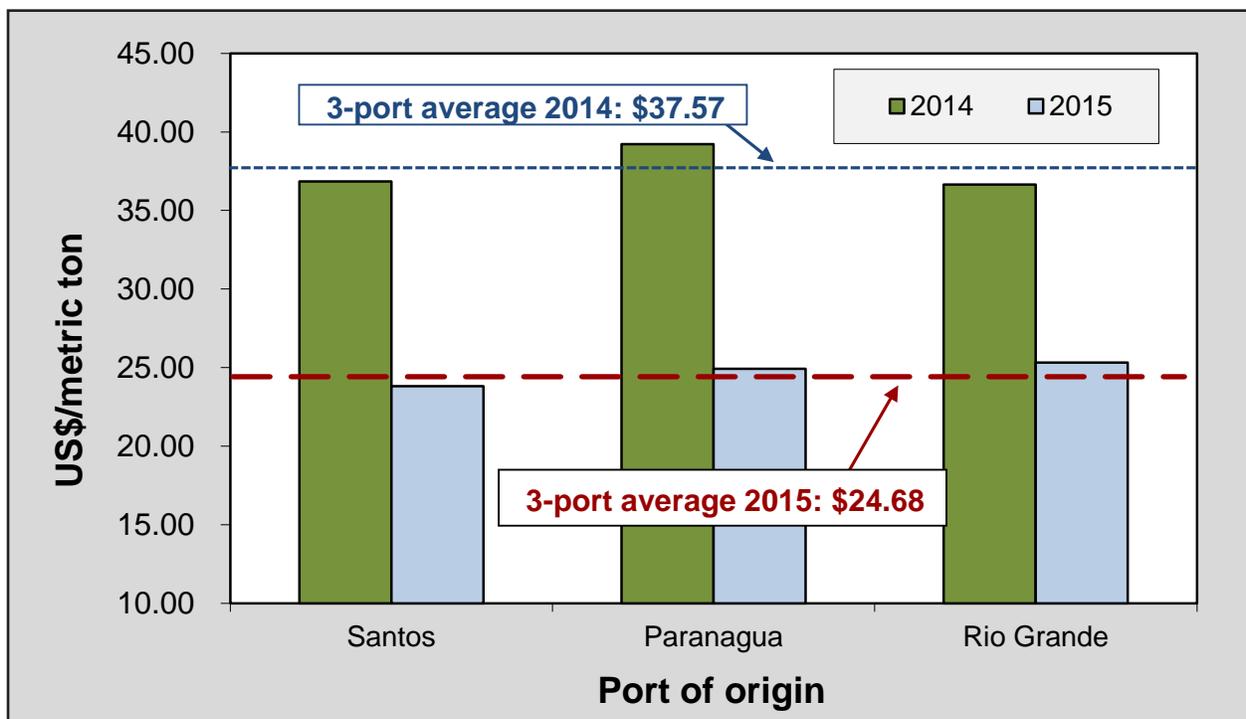
Ocean rates from Brazil to Hamburg, Germany, decreased in 2015



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

In 2015, the cost to ship 1 mt of soybeans from Brazil to Shanghai by ocean vessel dropped 34 percent on average from \$37.57/mt to \$24.68/mt.

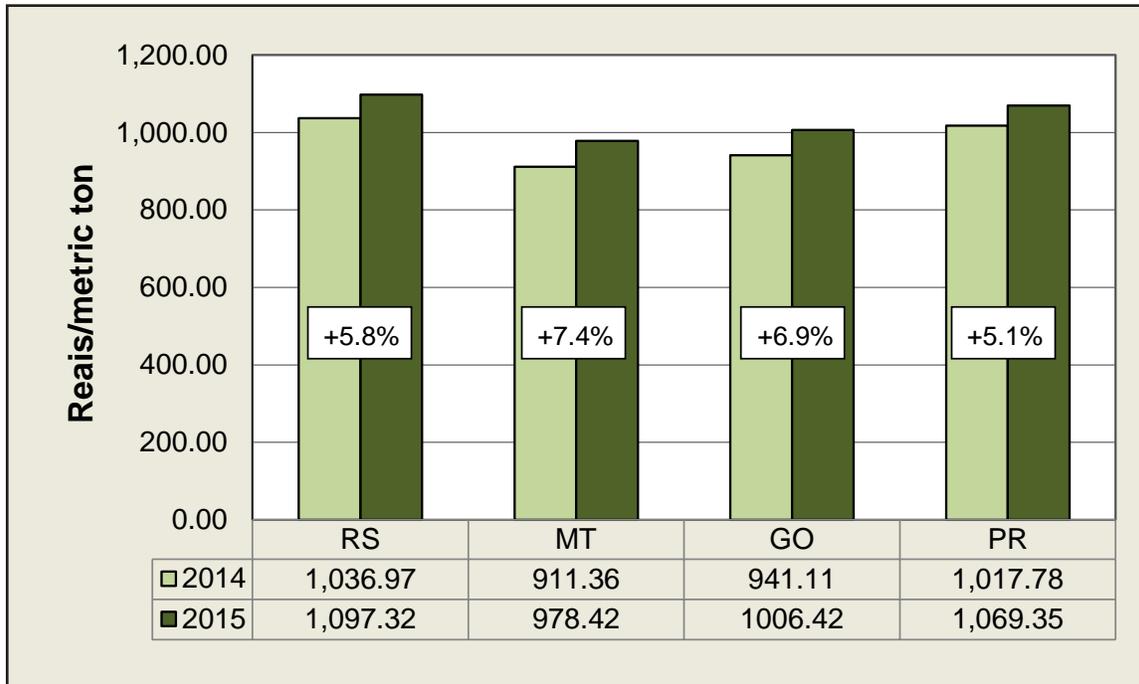
Ocean rates from Brazil to Shanghai, China, declined in 2015



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

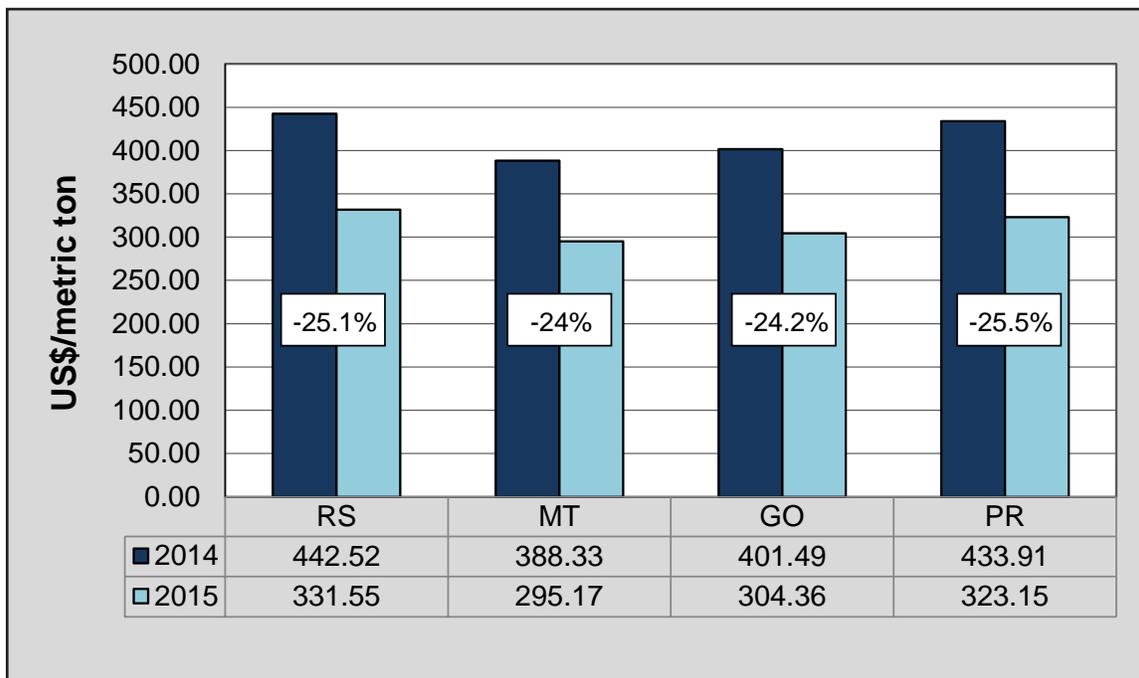
In 2015, farm prices in the Brazilian real (R\$) increased on average 6 percent. Mato Grosso (MT) and Rio Grande do Sul (RS) farm prices increased nearly 6 and 7 percent, respectively, in 2015. However, when farm prices are measured in U.S. dollars, they decreased proportionally more, about 25 percent, from a year earlier, due to a 43 percent loss in value of the Brazilian real against the U.S. dollar.

Selected Brazilian farm prices



RS = Rio Grande do Sul, MT = Mato Grosso, GO = Goiás, PR = Paraná
 Source: Companhia Nacional de Abastecimento (CONAB)

Selected Brazilian farm prices

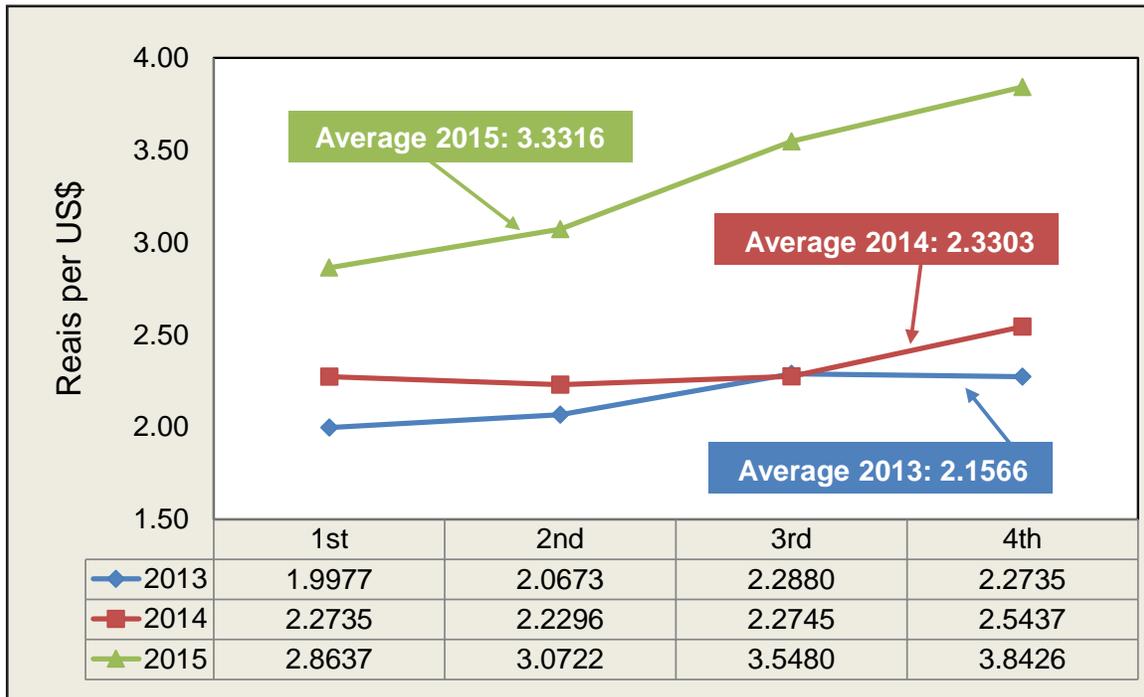


RS = Rio Grande do Sul, MT = Mato Grosso, GO = Goiás, PR = Paraná
 Source: Companhia Nacional de Abastecimento (CONAB)

2015 Summary

In 2015, the Brazilian Real (R\$) depreciated 43 percent against the U.S. dollar compared with 2014, from R\$2.3303 per U.S. dollar to R\$3.3316.

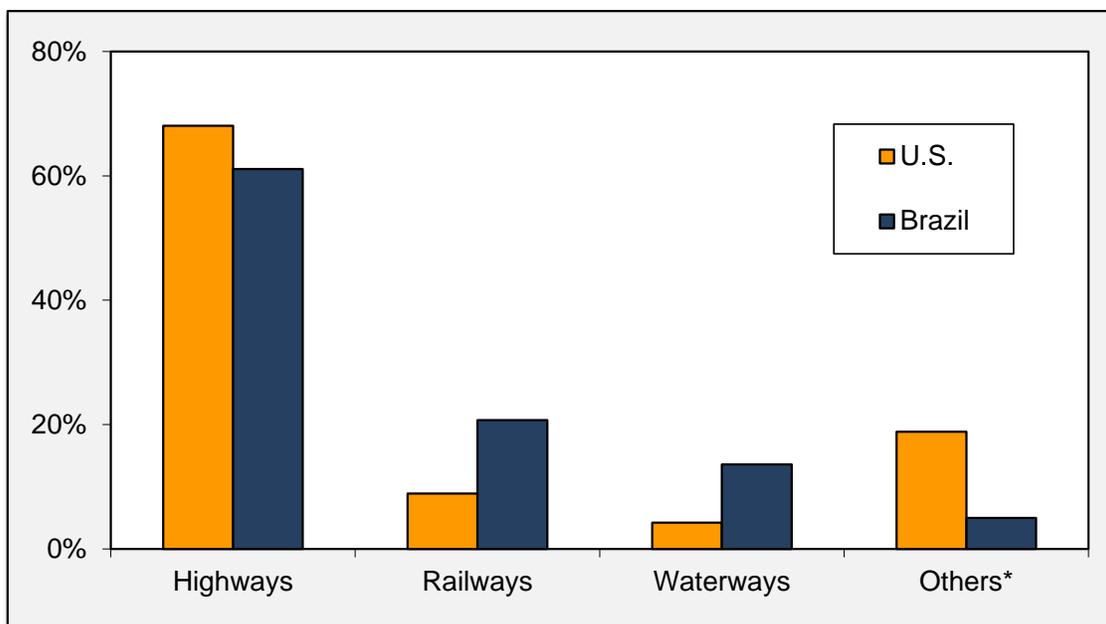
Average quarterly exchange rate, real per U.S. dollar



Source: Banco Central do Brasil

More than 60 percent of U.S. and Brazilian cargo is moved by truck.

U.S.-Brazil modal share for general cargo



*Ocean, air, pipeline, multiplemodes, etc.

Source: U.S. Department of Transportation (DOT), 2009 latest data available; Confederação Nacional do Transporte (CNT) and Agência Nacional de Transportes Terrestres (ANTT), 2007 latest data available.

Brazil New Hours-of-Service Rule. On July 17, 2012, the Brazilian government implemented the first hours-of-service rules, called the “Driver’s Law,” to address safety issues. The new law reduced the number of hours a truck driver can work in a 24-hour period, likely raising transportation costs. The law is enforced by the Ministry of Labor and Transportation. Noncompliance with the law would result in a fine to the driver and the vehicle may be withheld until full rest is reached or the driver is replaced.

U.S.-Brazil Hours of Service Rules. The Brazilian rules are based on a 24-hour duty limit; the United States rules are based on a daily window of 14 hours with a maximum of 11 hours of driving and a 60/70-hour weekly on-duty limit (table 1). Brazilian drivers have a daily duty window of 13 hours with a maximum of 10 hours driving limit for every 24 hours of travel and a mandatory 35 hour weekly rest period. The U.S. duty limits are based on 60 hours over 7 consecutive days or 70 hours over 8 consecutive days with a voluntary 34 consecutive hour restart provision to begin a new weekly on-duty limit period. Brazilian rules require a 30-minute break every 4 hours of uninterrupted driving. Effective July 1, 2013, U.S. drivers are required to take a 30-minute break if 8 hours have passed since their last off-duty period.

The United States first hours-of-service rules were issued in 1938. Since then, the law has been revised several times. In 1995, an agricultural exception for the planting and harvesting season was added. The current agricultural exemption states that drivers transporting agricultural commodities or farm supplies for agricultural purposes are exempt from hours-of-service rules within a 150-air-mile radius of the source of the agricultural commodity or the wholesale/retail distribution point of the farm supplies, within or across State lines, during the planting and harvesting seasons as determined by each state.

Regulation	United States	Brazil
Daily duty limit*	14 consecutive hours	13 consecutive hours
Driving limit	Maximum of 11 hours (after 10 consecutive hours off duty) within the 14 hour daily duty limit	10 hours (8 hrs. regular time + 2 hours of compensatory time) within the 13 hours limit
Daily rest requirement	10 hours, not based on a 24-hour period	11 hours every 24 hours
Weekly rest	Voluntary 34 consecutive hour or more restart provision to begin a new 7 or 8 day on-duty** period (see weekly limits)	35 hours
Breaks	30 minute off-duty break before 8 hours have passed since their last of off-duty period. Effective July 1, 2013	30 minute break every 4 hours of driving and 1 hour for meals
Weekly limits	60/70-Duty limit: drivers are not allowed to be on-duty more than 60 hours over 7 consecutive days or 70 hours over 8 consecutive days	
Restart provision	Drivers are allowed to use the voluntary 34-hour restart provision to begin a new 7 or 8 day on-duty**	
Adverse driving conditions exception ¹	2 extra hours more than allowed under normal conditions	1 extra hour

*Include work, meals, and mandatory rest

**On-duty time includes all time drivers are working for a motor carrier, whether paid or not, and all time the driver is doing paid work for anyone else such as time at plant terminal, loading, unloading, handling paper work, drug and alcohol testing, inspecting or servicing the truck (fueling and washing the truck); The restart provision can only be used once per week and must include two periods from 1:00 AM to 5:00 AM, based on home terminal time. It is intended to provide sufficient time for a driver to recuperate from cumulative fatigue if they work beyond the weekly maximum on-duty limits.

¹ Means the driver did not know about the conditions when it started the run such as snow, fog or shut down traffic due to a crash. It does not include situations that the driver should know about, like congested traffic during typical rush hour.

Transportation Infrastructural Developments

The Brazilian government plans to change the current cargo transportation matrix by developing an integrated intermodal system. The intention is that within 15 to 20 years, railways' participation will increase from 25 to 35 percent; waterways from 13 to 29 percent; and truck shipments will be reduced by 28 percent, from 58 to 30 percent. To modify the transportation matrix, in January 2007, the Brazilian government created the Growth Acceleration Plan 1 (PAC 1) to promote sustainable social and economic development by generating employment, income, and reducing regional inequalities. During the same year, the PAC was integrated into the National Plan of Logistic and Transportation (PNLT). The PNLT is executed through the Ministry of Transportation and Defense allocating funds in 3 phases from 2008 to 2023. By March 2010, the Government announced the second Growth Acceleration Plan (PAC 2) 2011-2014.

During 2015, the Brazilian government created the Integrated Logistic National Plan (PNLI). The major objective is to identify, analyze, and determine the critical points of the cargo and passenger transportation infrastructure, and propose solutions to the country demands of transport. The government implemented a strategic planning technique to leverage existing programs and projects and the important guidelines set by the plans of the Federal Government such as the Growth Acceleration Program (PAC), the Logistics Investment Program (LIP), and the Integrated Logistic National Plan (PNLI) to increase transportation efficiencies. It adjusted the transport matrix by focusing on increasing the capacity of transport routes, aimed at achieving greater competitiveness in the national and international levels.

The 2015 Transportation assessment report and the ninth evaluation results of Growth Acceleration Program 2 (PAC 2), 2011-2015, showed that Brazil did not finish the projects as planned. However, the Midwest agricultural exporters in Brazil gained from selected strategic port improvements, extended railways miles and a new intermodal grain terminal. Some of the port improvements include: dredging in the ports of: Santos (SP), São Francisco do Sul (SC), and Rio Grande (RG); Port of port of Itaquí (MA) expansion and building pier 100; São Francisco do Sul (SC) Pier 102 restoration; and Port of Vila do Conde (PA) main pier expansion.

Three railroad projects are underway and the status at the end of 2015 was the following:

1. Ferronorte railroad (Rondonópolis-Alto Araguaia), finished 153 railway miles, including an intermodal yard in Rondonópolis facilitating the flow of grains from Mato Grosso (MT) to the southern port of Santos.
2. The North-South railroad (Palmas, Tocantins (TO)-Estrela D'Oeste, São Paulo (SP)). This railroad integrates 4 states: TO, Goiás (GO), Minas Gerais (MG), and SP with access to the northeastern port of Itaquí-São Luis (MA). Work in progress with 96.1 percent of the infrastructure finished.
3. The East-West railroad (Ilheusim-Caetité-Port of Ilhéus Bahia (BA)) will facilitate the movement of grain from the midwest, north and northeast to Ilhéus. Work in progress with 15 percent of the infrastructure finished.

By December 30, 2015, highway BR-163 (began in PAC 1), the 619 miles are not completed, connecting Brazil's Midwest to the Amazon River. BR-163 will significantly reduce transportation costs to the Amazon River ports, on the Brazil—Europe route. It will shift soybeans exports to Europe from the southern ports to the north. However, it is less likely that the Brazil—China route would be significantly affected because it requires a major cost reduction of inland transportation to offset the increase in ocean rates—due to 7 or 8 additional days at sea—through South Africa's Cape of Good Hope to China.

Transportation Infrastructural Developments

Growth Acceleration Program 2 (PAC 2), 9th evaluation results, 2011-2013

Transportation Mode	2011-2013	
	km	miles
Highways		
Completed	3,080	1,910
Initiated	274	170
Work in progress	6,915	4,287
Total	10,269	6,367
Railways		
Completed	639	396
Work in progress	2,471	1,532
Total	3,110	1,928
Ports — Modernization and increase capacity and inland waterways		
Ports	21 projects	
Inland Waterways		
Tietê waterway improvements	6.4	

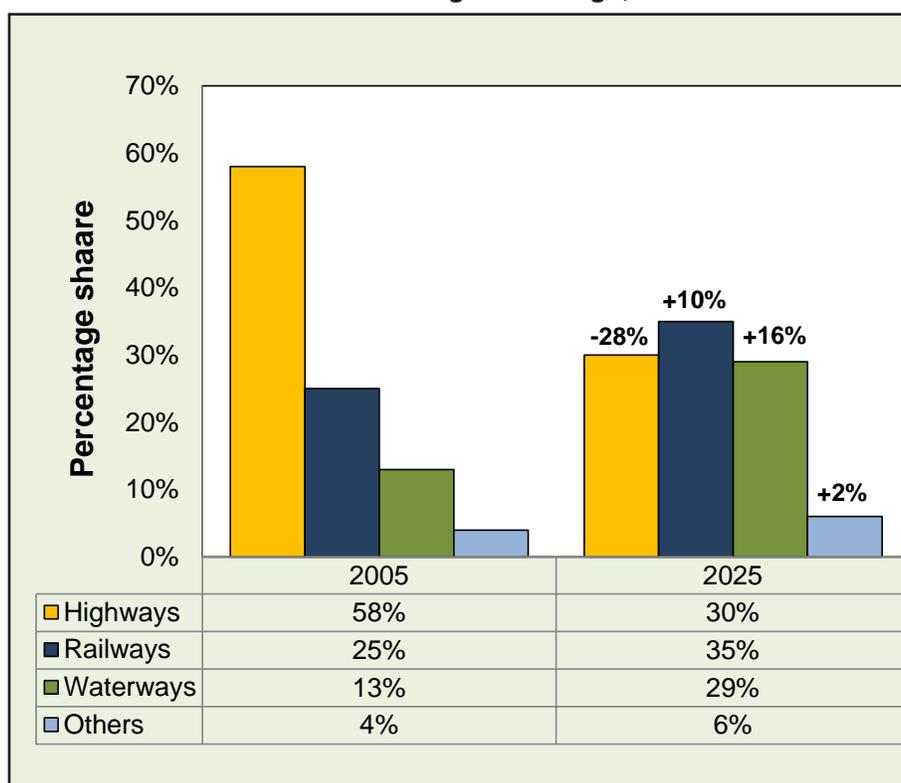
Source: Brazilian Ministry of Transportation, PAC 2; <http://www.transportes.gov.br/>; Accessed 3-10-14

Select infrastructural improvements status, Growth Acceleration Program 2 (PAC 2), 2015 Transportation Evaluation, 2011-2015

Transportation Mode	2011-2015		Current status/notes
	Highways		
	km	miles	
Highways			
BR-163: Guarantã do Norte, Mato Grosso (MT)-Santarém, Pará (PA), including access to Miríituba-BR-230 (PA)	999	619	Work in progress. It connects North MT-PA to the Amazon port of Santarém.
Completed	277	172	
Work in progress status by segment	722	448	
Segment I: Santarém- Rurópolis (PA)	125	78	Work in progress
Segment II: Rurópolis-Divisa (MT) with access to Miríituba (BR-230 (PA)-33 km (20 miles) Divisa MT, total: 822 km (510 miles)	822	510	Work in progress
Segment III: Divisa (MT)-Guarantã do Norte (MT) and Travesia Urbana de Guarantã	52	32	Work in progress
Railways			
Ferronorte extension: Rondonópolis-Alto Araguaia (MT), including Intermodal Yard Rondonópolis (MT), 52 miles (84 km). In addition, to the previous 101.1 miles (163 km) built in the PAC 1, totaling 153 miles.	247.0	153	Note: this new terminal facilitates the flow of grains exports from MT to the southern port of Santos (SP). Completed.
North-South: Palmas,Tocantinas (TO)-Estela D'Oeste, São Paulo (SP).	1,536	952	It integrates 4 states: TO, Goiás (GO), Minas Gerais (MG),and SP with access to the northeastern port of Itaqui-São Luis (MA)
Completed	283	175	
Work in progress:	1254	777	
Segment I: Palmas (TO)-Anápolis (GO): total 855 km	855	530	Completed and authorized for comercial traffic
-Palmas (TO)--Uruguaçu (GO)	575	357	Completed
-Uruguaçu (GO)-Anápolis (GO)	280	174	Completed
Segment II: Ouro Verde/GO-Estela D'Oeste/SP	681	422	Work in progress
East West: Ilheusin-Caetité-Port of Ilhéus Bahia (BA)	1,022	634	Work in progress. It connects Barreiras (BA) with the northeastern port of Ilhéus (BA)
Completed	200	124	
Work in progress segment status:	822	509	
Segment I: Caetité (BA)-Port of Ilhéus (BA)	537	333	Work in progress
Segment II: Ilheusin (BA)-Caetité Bahia (BA)	485	301	Work in progress
Ports — Modernization and increase capacity			
Dredging in 7 ports of: Santos (SP), São Francisco do Sul (SC), Natal (RN), Fortaleza (CE), Itajaí (SC), Rio de Janeiro (RJ), and Suape (PE)	Completed		
Rio Grande do Sul (RS): Pier expansions			
Itaqui (MA): build pier 100, south pier enlargement and port expansion	The Port of Itaqui is a natural port with an average access channel of 98 feet (30 meters) an a minimum depth of 88.6 feet (27 meters), and a length of 5,904 feet (1,800 meters). The dock depth is 29.5 – 62.3 feet (9–19 meters). The terminal of Ponta Madeiras access channel ranges between 75.4 to 114.8 feet (23 to 35 meters).		
Vitoria (ES): recovery, enlargement and extension of commercial wharf Victoria Harbor			
São Francisco do Sul (SC): Pier 102 restoration			
Port of Vila do Conde (PA): expansion of main pier			

Source: Source: Brazilian Ministry of Transportation, Transportes 2015 and PAC 2; <http://www.transportes.gov.br/>; http://www.transportes.gov.br/images/2016/05/Transportes2015Versao_Web.pdf; Accessed 3-10-14 and 5-17-16.

Brazil modal share for general cargo, 2005-2025



Source: Brazil Ministry of Transportation, National Plan of Logistic & Transportation (PNLT)

National Logistics and Transportation Program (PNLT), timeframe 2008 – after 2015, billions

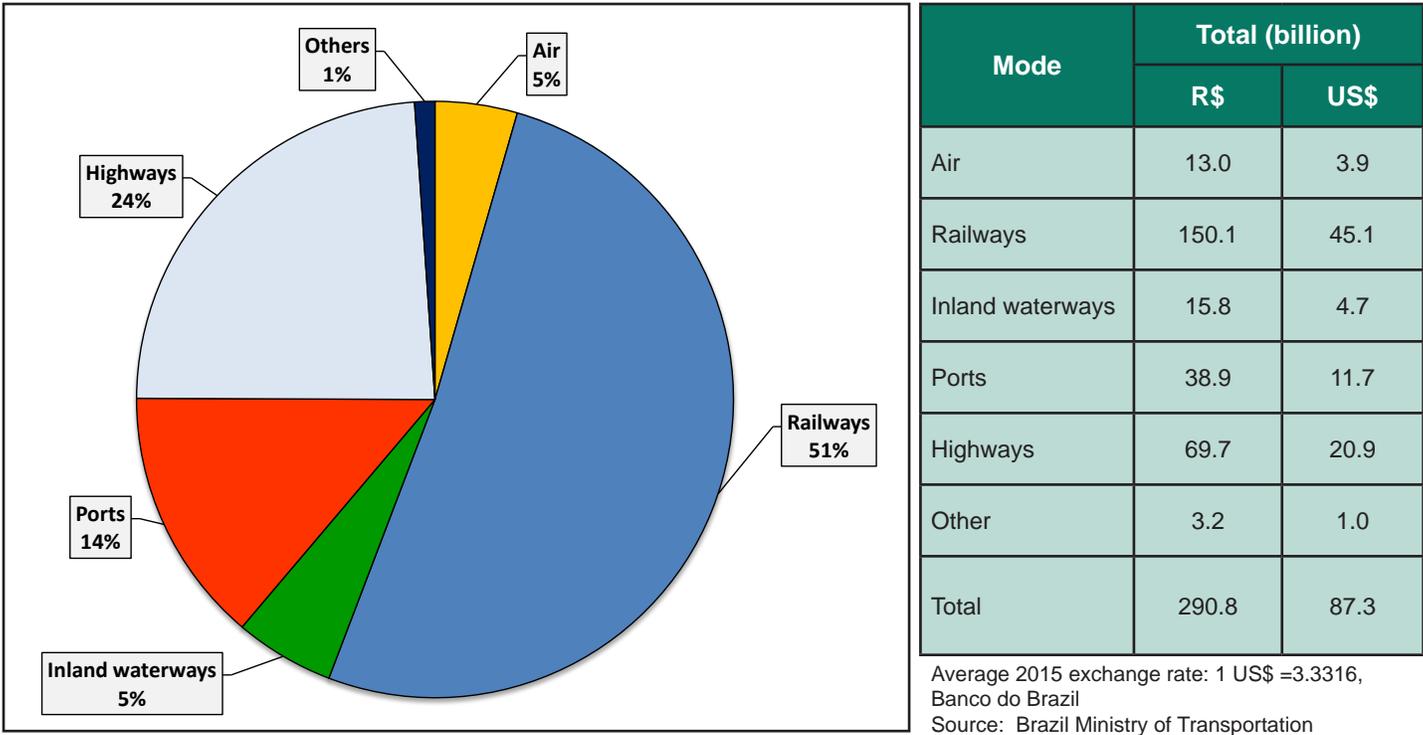
Phases	Total (billions)		% share
	R\$	US\$	
I: 2008-2011	109.2	32.8	37.6
II: 2013-2015	84.3	25.3	29.0
III: 2015-2023	97.3	29.2	33.4
Total	290.8	87.3	100

*Average 2015 exchange rate: 1 US\$ =3.3316, Banco do Brazil
Source: Brazilian Ministry of Transportation

Transportation Infrastructural Developments

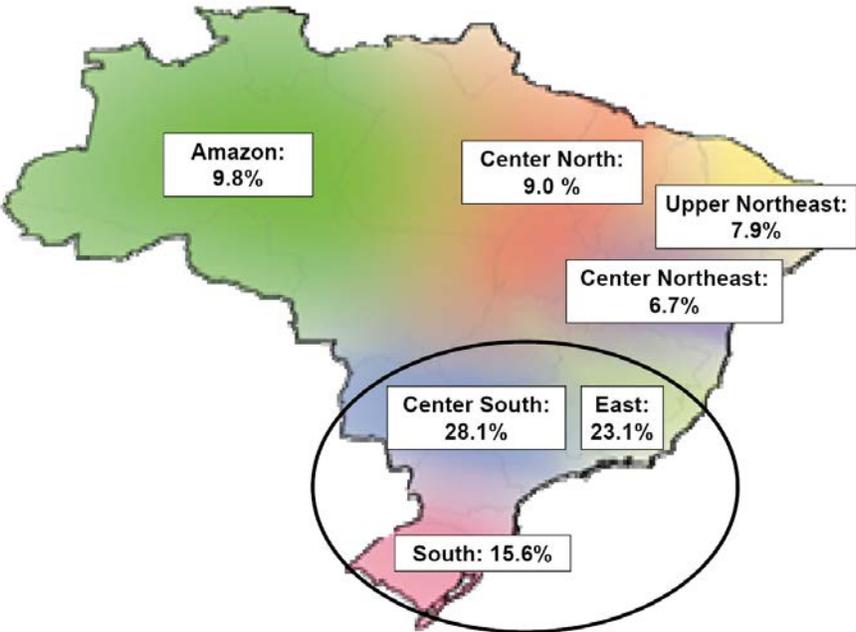
Of the funds to be allocated to the logistic sector (US\$87.3 billion), about 51 percent of the funds will be allocated to the railway system, totaling about US\$45.1 billion.

National Logistics and Transportation Program (PNLT), allocations by mode, 2008- 2023



Two-thirds of the funds will be allocated in the Center-South, East, and South regions.

PNLT allocation by logistic vectors



Source: Brazil Ministry of Transportation

Transportation Infrastructural Developments

A total of US\$4.7 billion are assigned to improve the inland waterways: 61 percent of the funds will be allocated to improve the inland waterways in the Amazon (31.3 percent) and Center North regions (29.7 percent), see yellow highlight below; 62 percent of the port funds, US\$11.7 billion, will be allocated to improve the ports in the East (41.5 percent) and Center South (20.8 percent); and 34 percent of the total highway funds, US\$20.9 billion, will be allocated to improve the highway system of the Amazon (16.5 percent) and South regions (18 percent).

PNLT — Transportation mode investments by logistic vectors, and % of total								
Mode	Amazon	Center-North	Center-South	East	Center Northeast	Upper Northeast	South	Total
Air	5.3	6.6	28.2	20.8	2.8	25.0	11.4	100
Railways	6.8	6.2	37.4	24.2	5.9	4.5	14.9	100
Inland waterways	31.3	29.7	13.0	9.6	1.7	1.0	13.7	100
Ports	2.6	8.7	20.8	41.5	4.0	5.3	17.0	100
Highways	16.5	9.1	15.5	14.6	12.0	14.4	18.0	100
Other	0.0	49.3	24.3	7.2	0.5	16.5	2.5	100
% of Brazil	9.9	9.2	11.3	9.6	20.4	22.7	16.9	100

Source: Brazilian Ministry of Transportation

Transportation Indicators

Quarterly costs of transporting Brazilian soybeans from the southern ports to Shanghai, China										
	2015									
	1st qtr	2nd qtr	3rd qtr	4th qtr	Avg	1st qtr	2nd qtr	3rd qtr	4th qtr	Avg
	North MT¹ - Santos² --US\$/mt--					North MT¹ - Paranaguá² --US\$/mt--				
Truck	89.60	96.18	81.46	76.94	86.04	89.68	95.31	80.89	76.84	85.68
Ocean	29.50	22.50	23.25	20.00	23.81	31.50	23.50	24.18	20.50	24.92
Total transportation	119.10	118.68	104.71	96.94	109.86	121.18	118.81	105.07	97.34	110.60
Farm price ³	312.34	295.94	285.95	286.43	295.17	312.34	295.94	285.95	286.43	295.17
Landed cost	431.44	414.61	390.66	383.37	405.02	433.52	414.74	391.02	383.77	405.76
Transport % of landed cost	27.6	28.6	26.8	25.3	27.1	28.0	28.6	26.9	25.4	27.2
	Southeast MT¹ - Santos² --US\$/mt--					North Central PR¹ - Paranaguá² --US\$/mt--				
Truck	62.60	64.82	55.50	52.37	58.82	25.33	26.77	22.62	21.54	24.07
Ocean	29.50	22.50	23.25	20.00	23.81	31.50	23.50	24.18	20.50	24.92
Total transportation	92.10	87.32	78.75	72.37	82.63	56.83	50.27	46.80	42.04	48.99
Farm price ³	312.34	295.94	285.95	286.43	295.17	340.69	333.27	313.28	305.35	323.15
Landed cost	404.43	383.26	364.70	358.80	377.80	397.53	383.54	360.08	347.40	372.14
Transport % of landed cost	22.8	22.8	21.6	20.2	21.8	14.3	13.1	13.0	12.1	13.1
	South GO¹ - Santos² --US\$/mt--					Northwest RS¹ - Rio Grande² --US\$/mt--				
Truck	43.71	43.72	36.73	35.14	39.82	26.70	29.93	24.18	24.67	26.37
Ocean	29.50	22.50	23.25	20.00	23.81	29.50	25.00	25.75	21.00	25.31
Total transportation	73.21	66.22	59.98	55.14	63.63	56.20	54.93	49.93	45.67	51.68
Farm price ³	329.95	310.64	287.19	289.68	304.36	336.85	360.56	314.06	314.70	331.55
Landed cost	403.16	376.86	347.17	344.82	368.00	393.05	415.49	364.00	360.38	383.23
Transport % of landed cost	18.2	17.6	17.3	16.0	17.2	14.3	13.2	13.7	12.7	13.5

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

²Export ports

³Source: Companhia Nacional de Abastecimento (CONAB) www.conab.gov.br

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

Quarterly costs of transporting Brazilian soybeans from the southern ports to Hamburg, Germany										
	2015									
	1st qtr	2nd qtr	3rd qtr	4th qtr	Avg	1st qtr	2nd qtr	3rd qtr	4th qtr	Avg
	North MT¹ - Santos² --US\$/mt--					North MT¹ - Paranaguá² --US\$/mt--				
Truck	89.60	96.18	81.46	76.94	86.04	89.68	95.31	80.89	76.84	85.68
Ocean	22.00	21.00	19.00	17.00	19.75	22.00	21.00	19.00	19.00	20.25
Total transportation	111.60	117.18	100.46	93.94	105.79	111.68	116.31	99.89	95.84	105.93
Farm price ³	312.34	295.94	285.95	286.43	295.17	312.34	295.94	285.95	286.43	295.17
Landed cost	423.94	413.11	386.41	380.37	400.96	424.02	412.24	385.84	382.27	401.09
Transport % of landed cost	26.3	28.4	26.0	24.7	26.3	26.3	28.2	25.9	25.1	26.4
	Southeast MT¹ - Santos² --US\$/mt--					North Central PR¹ - Paranaguá² --US\$/mt--				
Truck	62.60	64.82	55.50	52.37	58.82	25.33	26.77	22.62	21.54	24.07
Ocean	22.00	21.00	19.00	17.00	19.75	22.00	21.00	19.00	17.00	19.75
Total transportation	84.60	85.82	74.50	69.37	78.57	47.33	47.77	41.62	38.54	43.82
Farm price ³	312.34	295.94	285.95	286.43	295.17	340.69	333.27	313.28	305.35	323.15
Landed cost	396.93	381.76	360.45	355.80	373.74	388.03	381.04	354.90	343.90	366.97
Transport % of landed cost	21.3	22.5	20.7	19.5	21.0	12.2	12.5	11.7	11.2	11.9
	South GO¹ - Santos² --US\$/mt--					Northwest RS¹ - Rio Grande² --US\$/mt--				
Truck	43.71	43.72	36.73	35.14	39.82	26.70	29.93	24.18	24.67	26.37
Ocean	22.00	21.00	19.00	17.00	19.75	22.00	21.00	19.00	19.00	20.25
Total transportation	65.71	64.72	55.73	52.14	59.57	48.70	50.93	43.18	43.67	46.62
Farm price ³	329.95	310.64	287.19	289.68	304.36	336.85	360.56	314.06	314.70	331.55
Landed cost	395.66	375.36	342.92	341.82	363.94	385.55	411.49	357.25	358.38	378.17
Transport % of landed cost	16.6	17.2	16.3	15.3	16.3	12.6	12.4	12.1	12.2	12.3

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

²Export ports

³Source: Companhia Nacional de Abastecimento (CONAB) www.conab.gov.br

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

Transportation Indicators

Quarterly costs of transporting Brazilian soybeans from the northern and northeastern ports to Shanghai, China										
	2015									
	1st qtr	2nd qtr	3rd qtr	4th qtr	Avg	1st qtr	2nd qtr	3rd qtr	4th qtr	Avg
	North MT ¹ - Santarém ² --US\$/mt--					South MA ¹ - São Luís ² --US\$/mt--				
Truck	72.44	56.39	52.90	50.74	58.12	35.94	41.95	36.88	29.85	36.15
Ocean	32.00	25.00	25.75	23.50	26.56	32.00	25.00	25.75	23.50	26.56
Total transportation	104.44	81.39	78.65	74.24	84.68	67.94	66.95	62.63	53.35	62.72
Farm price ³	312.34	295.94	285.95	286.43	295.17	326.75	310.26	293.97	326.72	314.43
Landed cost	416.78	377.33	364.60	360.67	379.84	394.69	377.21	356.60	380.08	377.14
Transport % of landed cost	25.1	21.6	21.6	20.6	23.3	17.2	17.7	17.6	14.0	16.6
	Southwest PI ¹ - São Luís ² --US\$/mt--									
Truck	49.07	44.89	42.60	35.62	43.04					
Ocean	32.00	25.00	25.75	23.50	26.56					
Total transportation	81.07	69.89	68.35	59.12	69.61					
Farm price ³	330.99	300.93	314.26	313.41	314.90					
Landed cost	412.06	370.82	382.61	372.53	384.50					
Transport % of landed cost	19.7	18.8	17.9	15.9	18.1					

¹Producing regions: MT= Mato Grosso, PI = Piauí, MA = Maranhão

²Export ports

³Source: Companhia Nacional de Abastecimento (CONAB) www.conab.gov.br

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

Quarterly costs of transporting Brazilian soybeans from the northern and northeastern ports to Hamburg, Germany

	2015									
	1st qtr	2nd qtr	3rd qtr	4th qtr	Avg	1st qtr	2nd qtr	3rd qtr	4th qtr	Avg
	North MT¹ - Santarém² --US\$/mt--					South MA¹ - São Luís² --US\$/mt--				
Truck	72.44	56.39	52.90	50.74	58.12	35.94	41.95	36.88	29.85	36.15
Ocean	20.00	14.50	13.50	20.00	17.00	20.00	18.25	16.38	20.50	18.78
Total transportation	92.44	70.89	66.40	70.74	75.12	55.94	60.20	53.26	50.35	54.94
Farm price ³	312.34	295.94	285.95	285.95	295.05	326.75	310.26	293.97	326.72	314.43
Landed cost	404.78	366.83	352.35	356.69	370.16	382.69	370.46	347.23	377.08	369.36
Transport % of landed cost	22.8	19.3	18.8	19.8	20.2	14.6	16.2	15.3	13.4	14.9
	Southwest PI¹ - São Luís² --US\$/mt--									
Truck	49.07	44.89	42.60	35.62	43.04					
Ocean	20.00	18.25	16.38	20.50	18.78					
Total transportation	69.07	63.14	58.98	56.12	61.83					
Farm price ³	330.99	300.93	314.26	313.41	314.90					
Landed cost	400.06	364.07	373.24	369.53	376.72					
Transport % of landed cost	17.3	17.3	15.8	15.2	16.4					

¹Producing regions: MT= Mato Grosso, PI = Piauí, MA = Maranhão

²Export ports

³Source: Companhia Nacional de Abastecimento (CONAB) www.conab.gov.br

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

Transportation Indicators

Truck rates for selected Brazilian soybean export transportation routes, 2015

Route #	Origin ¹ (reference city)	Destination	Distance (miles) ²	Share (%) ³	Freight Price (US\$)				Avg
					1st ----- (per 100 miles) ⁴ -----	2nd	3rd	4th	
1	Northwest RS ⁵ (Cruz Alta)	Rio Grande	288	10.7	9.27	10.39	8.40	8.57	9.16
2	North MT (Sorriso)	Santos	1,190	3.4	7.53	8.08	6.85	6.47	7.23
3	North MT (Sorriso)	Paranaguá	1,262	3.2	7.11	7.55	6.41	6.09	6.79
4	South GO (Rio Verde)	Santos	587	5.0	7.45	7.45	6.26	5.99	6.78
5	South GO (Rio Verde)	Paranaguá	726	4.0	7.08	7.61	6.46	6.21	6.84
6	North Central PR (Londrina)	Paranaguá	268	3.1	9.45	9.99	8.44	8.04	8.98
7	Western Central PR (Mamborê)	Paranaguá	311	2.9	9.15	9.66	8.15	7.78	8.68
8	Triangle MG (Uberaba)	Santos	339	2.5	10.72	10.18	8.50	8.14	9.39
9	West PR (Assis Chateaubriand)	Paranaguá	377	2.9	8.68	8.78	7.41	7.03	7.97
10	West Extreme BA (São Desidério)	Salvador	535	4.5	7.89	8.57	7.48	6.48	7.60
11	Southeast MT (Primavera do Leste)	Santos	901	3.0	6.95	7.19	6.16	5.81	6.53
12	Southeast MT (Primavera do Leste)	Paranaguá	975	2.8	6.63	6.87	5.99	5.78	6.32
13	Southwest MS (Maracaju)	Paranaguá	612	2.9	7.48	7.81	6.91	6.09	7.07
14	Southwest MS (Maracaju)	Santos	652	2.7	7.72	7.84	6.53	6.35	7.11
15	West PR (Assis Chateaubriand)	Santos	550	2.0	7.41	7.97	6.68	6.45	7.13
16	East GO (Cristalina)	Santos	585	2.1	8.03	8.85	7.34	7.02	7.81
17	North PR (Cornélio Procópio)	Paranaguá	306	1.3	7.62	8.23	6.97	6.72	7.39
18	Eastern Central PR (Castro)	Paranaguá	130	2.1	12.47	12.70	11.10	10.23	11.63
19	South Central PR (Guarapuava)	Paranaguá	204	2.3	11.18	12.32	10.20	9.87	10.89
20	North Central MS (São Gabriel do Oeste)	Santos	720	2.1	6.78	6.88	5.73	5.57	6.24
21	Ribeirão Preto SP (Guairá)	Santos	314	0.0	7.95	8.29	6.82	6.65	7.43
22	Northeast MT (Canarana)	Santos	950	3.4	7.04	7.57	6.28	5.92	6.70
23	East MS (Chapadão do Sul)	Santos	607	0.0	7.18	6.81	5.70	5.53	6.30
24	Northeast MT (Canarana)	Paranaguá	1,075	3.0	6.91	7.14	6.17	5.94	6.54
25	Western Central RS (Tupanciretã)	Rio Grande	273	2.6	8.82	8.68	6.75	7.52	7.94
26	Southwest PR(Chopinzinho)	Paranaguá	291	1.7	10.31	11.51	10.19	9.67	10.42
27	North MT (Sorriso)	Itaituba	672	6.0	6.52	6.92	5.78	5.61	6.21
28	North MT (Sorriso)	Porto Velho	632	6.4	6.60	7.16	6.22	5.53	6.38
29	North MT (Sorriso)	Santarém	876	4.6	8.27	6.44	6.04	5.79	6.63
30	South MA (Balsas)	São Luís	482	2.2	7.46	8.71	7.66	6.20	7.51
31	Southwest PI (Bom Jesus)	São Luís	606	2.0	8.10	7.41	7.03	5.88	7.10
32	Southeast PA (Paragominas)	Barcarena	249	0.8	7.85	8.53	7.98	7.53	7.97
33	East TO (Campos Lindos)	São Luís	842	1.6	8.58	6.98	5.83	5.59	6.74
Average			587	100.0	8.12	8.47	7.18	6.85	7.65

¹Although each origin region comprises several cities, the main city is considered as a reference to establish the freight price; na = not available

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, PI = Piauí, MA = Maranhão, PA = Pará, TO = Tocantins

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

Transportation Indicators

Truck rates for selected Brazilian soybean export transportation routes, 2010-2015

Route #	Origin ¹ (reference city)	Destination	Distance (miles) ²	Share (%) ³	2010	2011	2012	2013	2014	2015	Percent change 2014-15
					Freight price						
					----- (US\$ per metric ton) ⁴ -----						
1	Northwest RS ⁵ (Cruz Alta)	Rio Grande	288	10.7	28.18	37.54	25.83	23.26	24.56	26.4	7.4
2	North MT (Sorriso)	Santos	1190	3.4	116.78	123.31	111.78	116.40	103.90	86.0	-17.2
3	North MT (Sorriso)	Paranaguá	1262	3.2	110.94	117.90	108.93	111.93	100.89	85.7	-15.1
4	South GO (Rio Verde)	Santos	587	5.0	64.71	63.92	55.02	58.90	62.57	39.8	-36.4
5	South GO (Rio Verde)	Paranaguá	726	4.0	64.64	62.90	52.94	68.08	60.73	49.7	-18.2
6	North Central PR (Londrina)	Paranaguá	268	3.1	34.51	39.54	34.76	32.26	30.98	24.1	-22.3
7	Western Central PR (Mamborê)	Paranaguá	311	2.9	32.21	38.14	31.02	33.23	33.68	27.0	-19.8
8	Triangle MG (Uberaba)	Santos	339	2.5	54.49	57.43	45.04	40.42	57.45	31.8	-44.6
9	West PR (Assis Chateaubriand)	Paranaguá	377	2.9	41.46	46.12	38.39	39.53	43.83	30.1	-31.4
10	West Extreme BA (São Desidério)	Ilhéus	544	4.5	55.89	57.85	58.00	56.96	54.80	40.7	-25.8
11	Southeast MT (Primavera do Leste)	Santos	901	3.0	93.41	95.82	84.42	88.66	79.00	58.8	-25.5
12	Southeast MT(Primavera do Leste)	Paranaguá	975	2.8	87.66	93.55	76.93	75.43	67.65	61.6	-8.9
13	Southwest MS (Maracaju)	Paranaguá	612	2.9	65.92	64.59	58.87	57.46	55.70	43.3	-22.3
14	Southwest MS (Maracaju)	Santos	652	2.7	71.27	71.73	67.83	66.82	66.79	46.4	-30.6
15	West PR (Assis Chateaubriand)	Santos	550	2.0	68.84	73.04	55.31	46.89	43.84	39.2	-10.6
16	Western Central RS (Tupaciretã)	Rio Grande	273	2.1	30.62	31.40	62.73	67.47	69.48	45.7	-34.3
17	Southwest PR (Chopinzinho)	Paranaguá	291	1.3	30.68	34.02	29.85	38.48	37.73	22.6	-40.1
18	Eastern Central PR (Castro)	Paranaguá	130	2.1	25.88	26.55	23.87	25.08	24.65	15.1	-38.7
19	South Central PR (Guarapuava)	Paranaguá	204	2.3	33.26	36.23	32.37	30.46	29.08	22.2	-23.6
20	North Central MS (São Gabriel do Oeste)	Santos	720	2.1	69.62	70.45	63.40	64.58	64.67	44.9	-30.5
21	Ribeirão Preto SP (Guairá)	Santos	314	0.0	42.19	42.16	37.18	35.15	34.91	23.3	-33.2
22	Northeast MT (Canarana)	Santos	950	3.4	107.72	114.22	97.31	99.10	87.11	63.7	-26.9
23	Assis SP (Palmital)	Santos	285	0.0	30.36	30.23	62.88	69.28	71.05	38.3	-46.1
24	Northeast MT (Canarana)	Paranaguá	1075	3.0	112.65	115.15	86.74	53.29	56.47	70.3	24.5
25	Western Central RS (Tupaciretã)	Rio Grande	273	2.6	24.73	40.92	30.84	28.20	26.44	21.7	-18.0
26	Southwest PR (Chopinzinho)	Paranaguá	291	1.7	38.91	44.03	37.04	36.59	37.05	30.3	-18.1
27	North MT (Sorriso)	Itaituba	672	6.0	--na--	--na--	--na--	--na--	--na--	41.7	-
28	North MT (Sorriso)	Porto Velho	632	6.4	--na--	--na--	--na--	--na--	--na--	40.3	-
29	North MT (Sorriso)	Santarém	876	4.6	--na--	--na--	--na--	--na--	--na--	58.1	-
30	South MA (Balsas)	São Luís	482	2.2	--na--	--na--	--na--	--na--	--na--	36.2	-
31	Southwest PI (Bom Jesus)	São Luís	606	2.0	--na--	--na--	--na--	--na--	--na--	43.0	-
32	Southeast PA (Paragominas)	Barcarena	249	0.8	--na--	--na--	--na--	--na--	--na--	19.8	-
33	East TO (Campos Lindos)	São Luís	842	1.6	--na--	--na--	--na--	--na--	--na--	56.8	-
Average			587	100.0	67.23	73.32	58.23	58.24	57.03	45.0	-21.2

¹Although each origin region comprises several cities, the main city is considered as a reference to establish the freight price; na = not available

²Distance from the main city of the considered region to the mentioned ports

³Share is measured as a percentage of total production

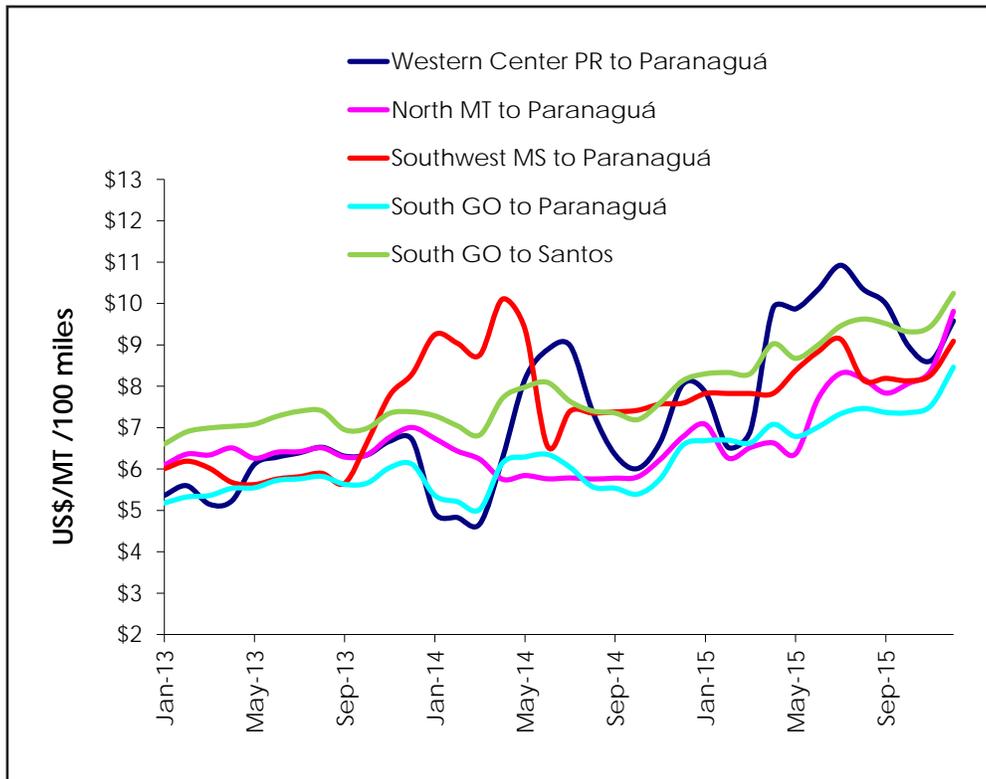
⁴US\$ per metric ton (average monthly exchange rate from "Banco Central do Brasil" was used to convert Brazilian reais to the U.S. dollar)

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, PI = Piauí, MA = Maranhão, PA = Pará, TO = Tocantins

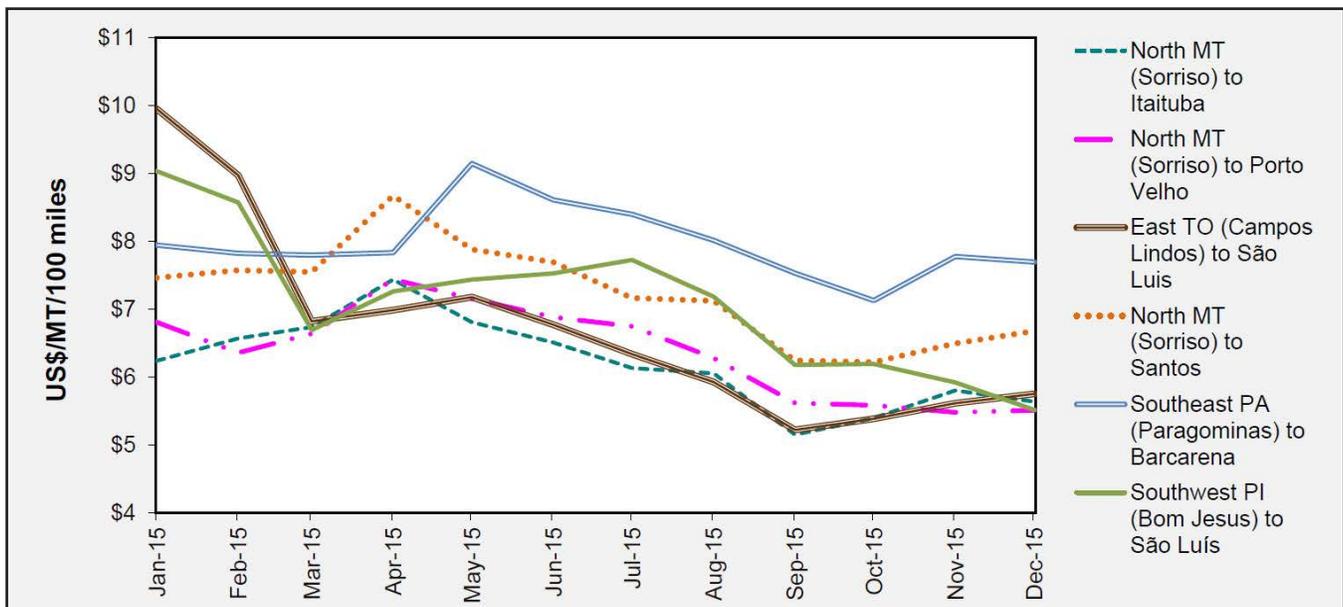
Source: ESALQ/USP (University of São Paulo, Brazil) and USDA/AMS

Truck rates for selected Brazilian soybean export transportation routes



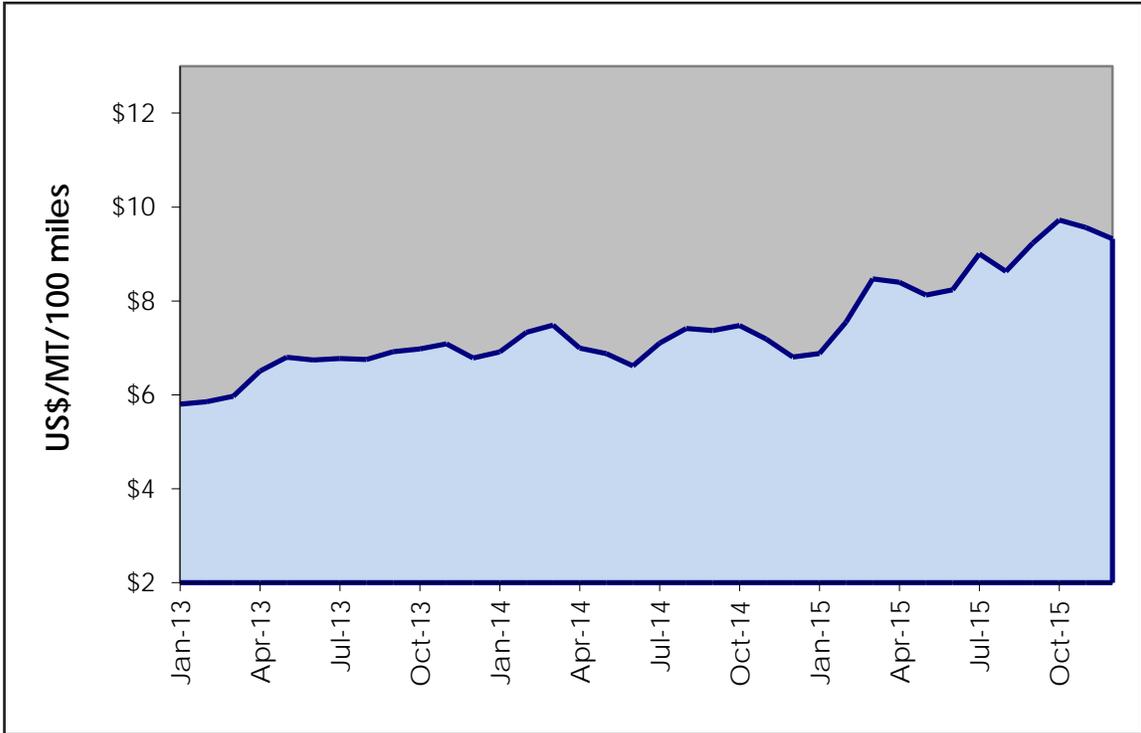
Source: ESALQ/USP (University of São Paulo, Brazil) and USDA/AMS

Truck rates for selected north, south, and northeastern Brazilian soybean export transportation route



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

Brazilian soybean export truck transportation weighted average prices, 2013/15



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

Transportation Indicators

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)	Month	Freight price* (per 100 miles)	Index variation (%) (Base: prior month)	Index value (Base: Jan. 05 = 100)
Jan-08	9.40	0.9	162.12	Jan-12	10.20	1.7	175.90
Feb-08	9.63	2.4	166.02	Feb-12	10.76	5.4	185.45
Mar-08	10.59	9.9	182.46	Mar-12	10.55	-2.0	181.82
Apr-08	10.81	2.1	186.35	Apr-12	10.45	-1.0	180.06
May-08	10.69	-1.1	184.32	May-12	9.64	-7.7	166.20
Jun-08	11.00	2.9	189.67	Jun-12	9.37	-2.9	161.44
Jul-08	12.05	9.5	207.73	Jul-12	9.76	4.2	168.16
Aug-08	11.14	-7.6	192.00	Aug-12	10.17	4.3	175.33
Sep-08	10.27	-7.8	177.00	Sep-12	10.30	1.3	177.54
Oct-08	7.44	-27.5	128.24	Oct-12	10.13	-1.6	174.66
Nov-08	7.20	-3.2	124.13	Nov-12	9.84	-2.8	169.69
Dec-08	6.79	-5.7	117.11	Dec-12	9.73	-1.1	167.74
Jan-09	6.91	1.7	119.11	Jan-13	10.11	3.9	174.31
Feb-09	7.28	5.4	125.52	Feb-13	10.79	6.7	185.96
Mar-09	7.65	5.1	131.89	Mar-13	11.14	3.3	192.04
Apr-09	8.44	10.3	145.42	Apr-13	10.95	-1.7	188.71
May-09	9.56	13.3	164.72	May-13	10.40	-5.0	179.31
Jun-09	9.74	2.0	167.97	Jun-13	9.49	-8.8	163.61
Jul-09	9.28	21.3	159.94	Jul-13	9.65	1.7	166.41
Aug-09	9.29	0.1	160.16	Aug-13	9.80	1.5	168.95
Sep-09	9.14	-1.6	157.62	Sep-13	10.21	4.2	176.02
Oct-09	9.32	1.9	160.66	Oct-13	10.17	-0.4	175.28
Nov-09	9.22	-1.1	158.93	Nov-13	9.29	-8.6	160.18
Dec-09	9.02	-2.2	155.48	Dec-13	8.91	-4.1	153.63
Jan-10	9.17	1.7	158.10	Jan-14	8.86	-0.6	152.73
Feb-10	9.99	8.9	172.16	Feb-14	10.34	16.7	178.24
Mar-10	10.77	7.8	185.67	Mar-14	11.61	12.3	200.13
Apr-10	10.91	1.3	188.10	Apr-14	11.35	-2.2	195.65
May-10	10.80	-1.1	186.10	May-14	10.90	-4.0	187.89
Jun-10	10.61	-1.7	182.95	Jun-14	10.34	-5.1	178.24
Jul-10	10.86	2.3	187.14	Jul-14	10.16	-1.7	175.21
Aug-10	11.21	3.3	193.23	Aug-14	10.10	-0.6	174.08
Sep-10	11.46	2.2	197.57	Sep-14	9.66	-4.3	166.54
Oct-10	11.51	0.4	198.41	Oct-14	8.77	-9.3	151.13
Nov-10	10.86	-5.6	187.20	Nov-14	8.36	-4.6	144.16
Dec-10	10.72	-1.3	184.79	Dec-14	7.96	-4.9	137.15
Jan-11	10.84	1.1	186.89	Jan-15	8.01	0.7	138.15
Feb-11	11.21	3.4	193.30	Feb-15	8.02	0.1	138.29
Mar-11	12.07	7.6	208.04	Mar-15	8.32	3.7	143.44
Apr-11	13.30	10.2	229.22	Apr-15	9.00	8.2	155.13
May-11	12.01	-9.7	207.04	May-15	8.39	-6.8	144.58
Jun-11	12.25	2.0	211.20	Jun-15	8.01	-4.5	138.12
Jul-11	12.72	3.9	219.34	Jul-15	7.56	-5.7	130.25
Aug-11	12.64	-0.7	217.84	Aug-15	7.38	-2.4	127.15
Sep-11	11.43	-9.6	196.95	Sep-15	6.60	-10.5	113.78
Oct-11	11.09	-3.0	191.10	Oct-15	6.70	1.5	115.43
Nov-11	10.70	-3.4	184.52	Nov-15	7.08	5.8	122.08
Dec-11	10.04	-6.2	173.00	Dec-15	6.76	-4.5	116.56

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

Quarterly ocean freight rates for shipping soybeans from selected Brazilian ports to Shanghai, China (US\$/metric ton)*

	Ports					
	Santos	Paranaguá	Rio Grande	Santarém	São Luís	Barcarena
2009						
1st qtr	64.50	65.70	66.87			
2nd qtr	66.00	67.30	67.80			
3rd qtr	49.00	48.78	49.50			
4th qtr	55.63	54.23	53.50			
2009 Average	58.78	59.00	59.42	--na--	--na--	--na--
2010						
1st qtr	52.33	52.50	53.00			
2nd qtr	55.08	58.58	58.75			
3rd qtr	58.17	63.10	63.27			
4th qtr	57.79	61.50	57.83			
2010 Average	55.84	58.92	58.21	--na--	--na--	--na--
2011						
1st qtr	50.00	56.25	50.50			
2nd qtr	50.05	57.62	50.60			
3rd qtr	52.31	59.61	53.02			
4th qtr	49.65	55.80	50.26			
2011 Average	50.50	57.32	51.10	--na--	--na--	--na--
2012						
1st qtr	46.62	52.32	47.92			
2nd qtr	51.35	57.63	52.78			
3rd qtr	50.42	55.42	49.02			
4th qtr	50.42	55.42	49.02			
2012 Average	49.70	55.20	49.69	--na--	--na--	--na--
2013						
1st qtr	52.34	56.03	51.34			
2nd qtr	34.50	36.75	35.25			
3rd qtr	34.50	36.75	35.25			
4th qtr	42.50	46.00	44.25			
2013 Average	40.96	43.88	41.52	--na--	--na--	--na--
2014						
1st qtr	44.83	47.22	44.83			
2nd qtr	38.07	41.13	38.75			
3rd qtr	34.00	36.00	32.50			
4th qtr	30.50	32.50	30.50			
2014 Average	36.85	39.21	36.65	--na--	--na--	--na--
2015						
1st qtr	29.50	31.50	29.50	32.00	32.00	32.00
2nd qtr	22.50	23.50	25.00	25.00	25.00	25.00
3rd qtr	23.25	24.18	25.75	25.75	25.75	25.75
4th qtr	20.00	20.50	21.00	23.50	23.50	23.50
2015 Average	23.81	24.92	25.31	26.56	26.56	26.56

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

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

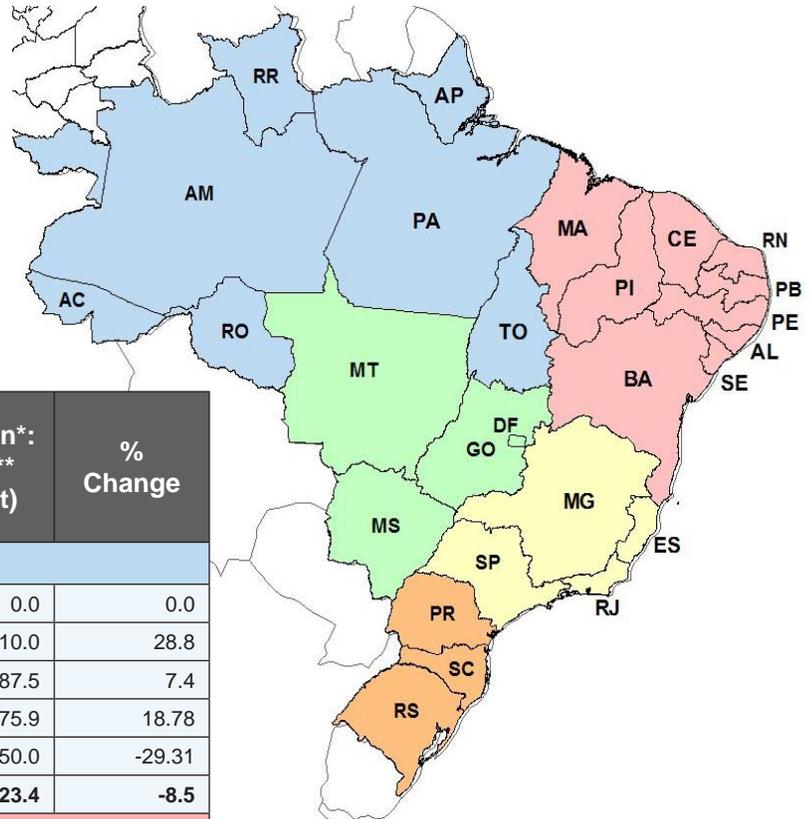
Transportation Indicators

Quarterly ocean freight rates for shipping soybeans from selected Brazilian ports to Hamburg, Germany (US\$/metric ton)*						
	Ports					
	Santos	Paranaguá	Rio Grande	Santarém	São Luís	Barcarena
2009						
1st qtr	34.10	35.50	35.80			
2nd qtr	34.75	35.79	36.20			
3rd qtr	30.00	31.55	32.00			
4th qtr	31.08	30.53	31.17			
2009 Average	32.48	33.34	33.79	--na--	--na--	--na--
2010						
1st qtr	32.25	31.83	33.50			
2nd qtr	36.17	38.08	39.00			
3rd qtr	34.42	36.92	37.08			
4th qtr	31.67	33.50	34.54			
2010 Average	33.63	35.08	36.03	--na--	--na--	--na--
2011						
1st qtr	34.96	33.86	35.43			
2nd qtr	35.00	36.00	36.00			
3rd qtr	36.65	37.29	37.81			
4th qtr	32.00	32.63	35.22			
2011 Average	34.65	34.95	36.12	--na--	--na--	--na--
2012						
1st qtr	32.00	31.58	32.08			
2nd qtr	35.00	35.00	36.50			
3rd qtr	32.00	34.30	32.00			
4th qtr	28.00	34.30	32.00			
2012 Average	31.75	33.80	33.15	--na--	--na--	--na--
2013						
1st qtr	30.00	30.00	30.00			
2nd qtr	29.00	29.00	29.00			
3rd qtr	29.00	29.00	29.00			
4th qtr	30.00	30.00	30.00			
2013 Average	29.50	29.50	29.50	--na--	--na--	--na--
2014						
1st qtr	31.00	31.00	31.00			
2nd qtr	30.00	30.00	30.00			
3rd qtr	26.00	28.00	24.50			
4th qtr	24.00	26.00	22.50			
2014 Average	27.75	28.75	27.00	--na--	--na--	--na--
2015						
1st qtr	22.00	22.00	22.00	20.00	20.00	20.00
2nd qtr	21.00	21.00	21.00	14.50	18.25	16.00
3rd qtr	19.00	19.00	19.00	13.50	16.38	15.20
4th qtr	17.00	17.00	17.00	20.00	20.50	21.00
2015 Average	19.75	19.75	19.75	17.00	18.78	18.05

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

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

Soybean production by State



Region/State	Production*: 2014-15 (1,000 mt)	Production*: 2015-16** (1,000 mt)	% Change
North			
Amazonas (AM)	0.0	0.0	0.0
Pará (PA)	1,017.0	1,310.0	28.8
Rondônia (RO)	732.9	787.5	7.4
Roraima (RR)	63.9	75.9	18.78
Tocantins (TO)	2,475.7	1,750.0	-29.31
Total	4,289.5	3,923.4	-8.5
Northeast			
Bahia (BA)	4,180.7	3,347.0	-19.9
Maranhão (MA)	2,069.6	1,280.5	-38.1
Piauí (PI)	1,833.8	1,184.0	-35.4
Total	8,084.1	5,811.5	-28.1
Midwest			
Distrito Federal (DF)	147.3	217.0	47.3
Goiás (GO)	8,625.1	10,249.5	18.8
Mato Grosso (MT)	28,018.60	27,017.80	-3.6
Mato Grosso do Sul (MS)	7,177.6	7,265.7	1.2
Total	43,968.6	44,750.0	1.8
Southeast			
Minas Gerais (MG)	3,507.0	4,701.8	34.1
São Paulo (SP)	2,366.5	2,834.4	19.8
Total	5,873.5	7,536.2	28.3
South			
Paraná (PR)	17,210.5	17,109.8	-0.6
Rio Grande do Sul (RS)	14,881.5	15,601.3	4.8
Santa Catarina (SC)	1,920.3	2,172.9	13.2
Total	34,012.3	34,884.0	2.6
Total Production:	96,228.0	96,905.1	0.7

*Data based on calendar year, January-December

**Forecast, May 2016

Source: Companhia Nacional de Abastecimento (CONAB)

Soybean Production

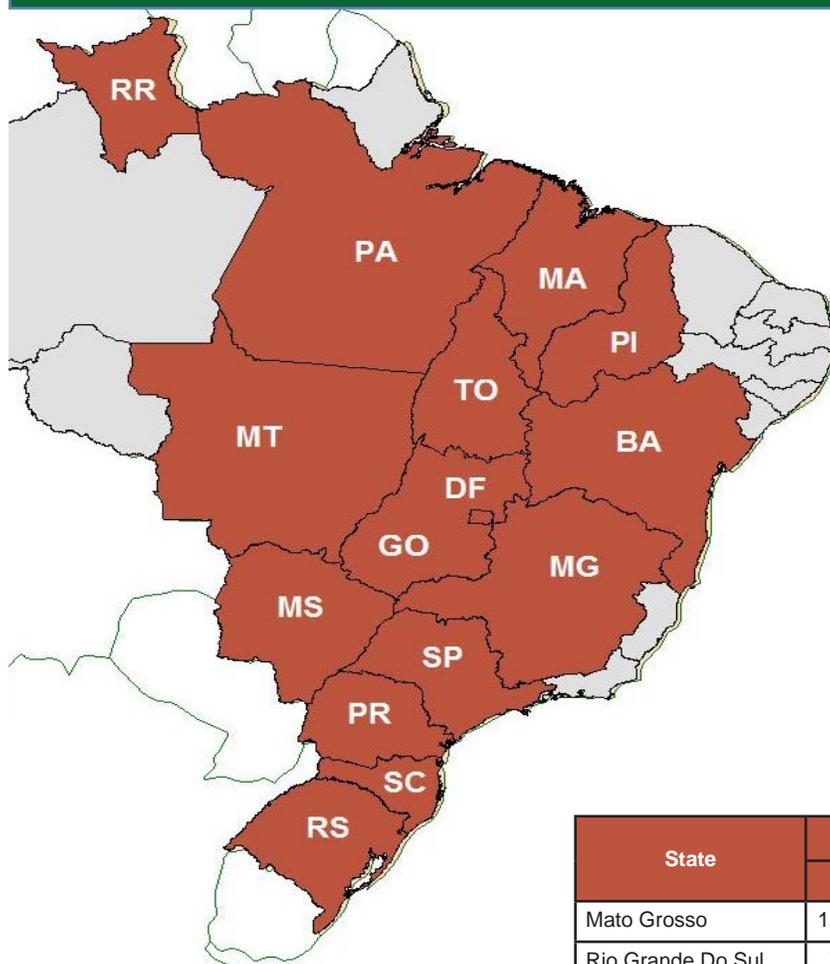
Brazil soybean supply and distribution									
Year*	Area Harvested	Beginning Stocks	Production	Imports	Total Supply	Exports	Crush	Domestic Consumption	Ending Stocks
	1,000 hectares	----- 1,000 metric tons -----							
2002/03	21,520	3,898	51,000	364	55,262	19,257	28,914	31,457	4,548
2003/04	22,917	4,548	53,000	352	57,900	22,799	29,728	32,413	2,688
2004/05	22,229	2,688	57,000	40	59,728	24,770	28,756	31,506	3,452
2005/06	20,700	3,452	59,000	108	62,560	23,805	31,511	34,261	4,494
2006/07	21,300	4,494	61,000	83	65,577	24,515	31,895	34,695	6,367
2007/08	21,700	6,367	57,800	124	64,291	28,041	30,779	33,579	2,671
2008/09	23,500	2,671	69,000	150	71,821	29,188	35,700	38,550	4,083
2009/10	24,200	4,083	75,300	40	79,423	33,789	37,264	40,164	5,470
2010/11	25,000	5,470	66,500	298	72,268	31,905	36,230	39,130	1,233
2011/12	27,700	1,233	82,000	240	83,473	42,826	36,432	39,378	1,269
2012/13	30,100	1,269	86,700	579	88,548	45,747	38,274	41,224	1,577
2013/14	32,100	1,577	97,200	325	99,102	54,635	40,309	43,267	1,200
2014/15	33,300	1,200	99,000	300	100,500	56,500	40,000	43,000	1,000
2015/16**	34,200	1,000	103,000	300	104,300	59,800	40,000	43,100	1,400

*Data based on Brazil's local February/January Marketing Year (MY)

Where February 2012 - January 2013 is the 2011/12 MY.

**Forecast: May 10, 2016

Source: USDA/Foreign Agricultural Service/Oilseeds: World Markets and Trade

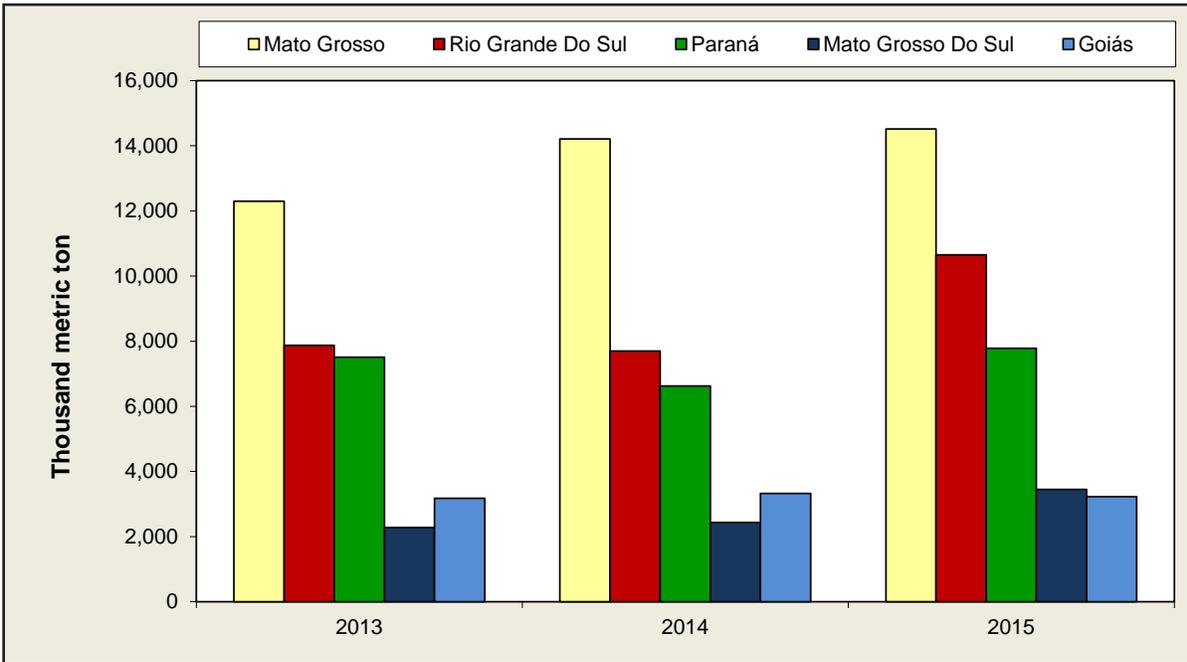


Top 15 Brazilian
soybean exporting states

State	2013	2014	2015	Rank
	-----metric ton-----			
Mato Grosso	12,295,500	14,211,027	14,514,829	1
Rio Grande Do Sul	7,872,789	7,698,506	10,653,865	2
Paraná	7,511,618	6,621,838	7,779,670	3
Mato Grosso Do Sul	2,279,961	2,430,893	3,447,470	4
Goiás	3,173,837	3,323,395	3,225,232	5
São Paulo	2,096,337	2,064,171	2,655,176	6
Bahia	1,577,862	1,725,152	2,609,868	7
Minas Gerais	1,609,655	1,418,299	1,957,116	8
Maranhão	1,319,377	1,476,770	1,781,110	9
Tocantins	875,553	1,243,223	1,570,491	10
Santa Catarina	913,282	1,629,386	1,509,219	11
Pará	450,618	642,934	830,509	13
Rondônia	548,427	608,660	762,629	12
Piauí	165,954	350,464	736,989	14
Distrito Federal	91,808	178,708	227,077	15
Others	5,882	65,424	61,352	
Total	42,788,462	45,688,848	54,322,601	

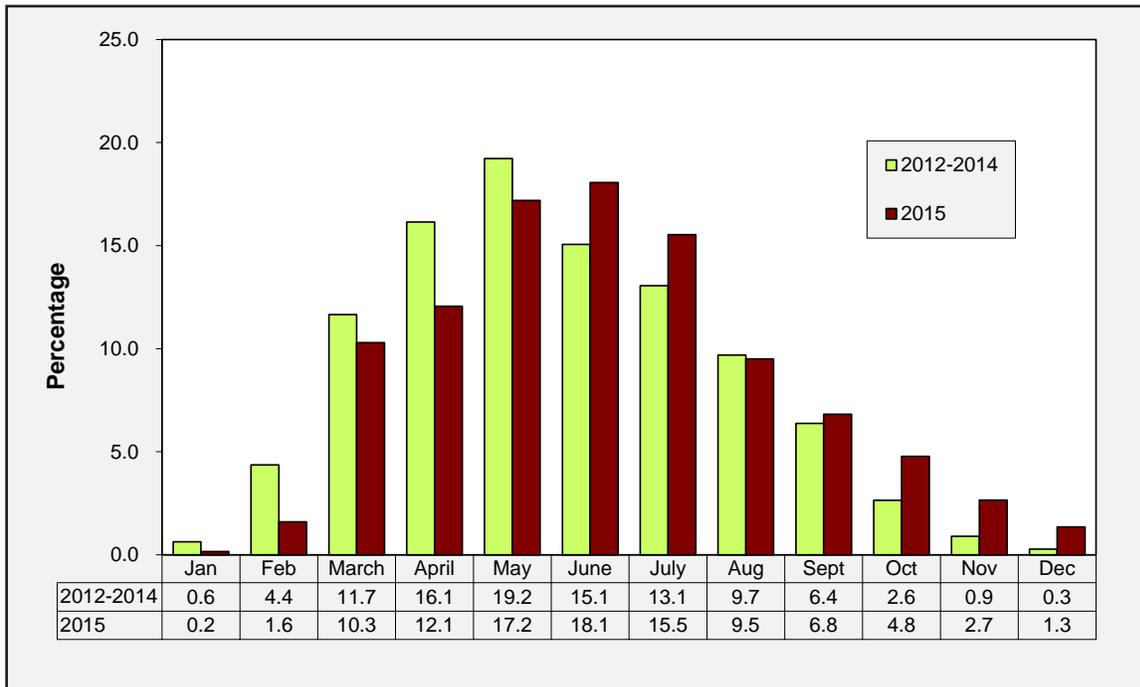
Sources: Bureau of Foreign Trade (SECEX), MDIC

Top 5 Brazilian soybean exporting states



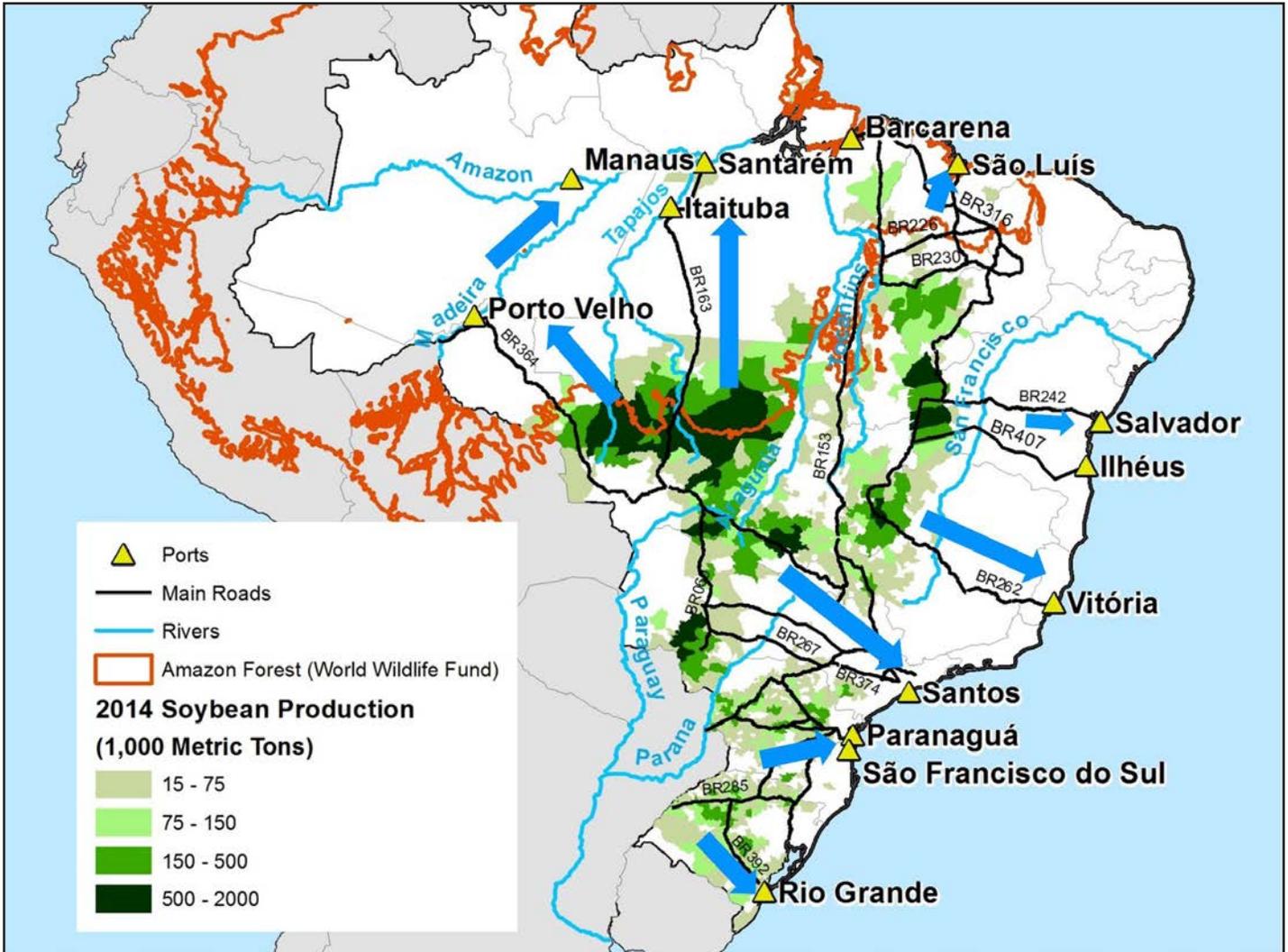
Sources: Bureau of Foreign Trade (SECEX), MDIC

Brazil average monthly soybean exports



Sources: Bureau of Foreign Trade (SECEX), MDIC

Main export routes for soybeans

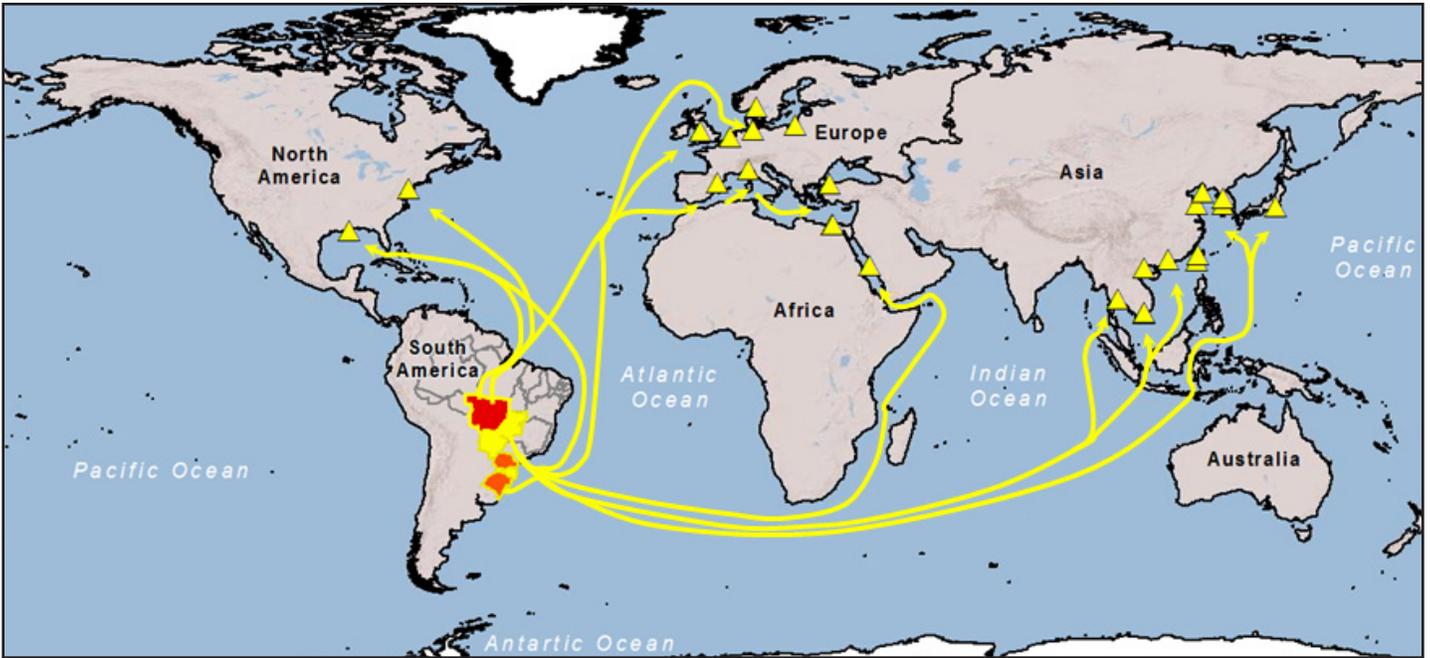


*Companhia Nacional de Abastecimento (CONAB)

**World Wildlife Fund (WWF)

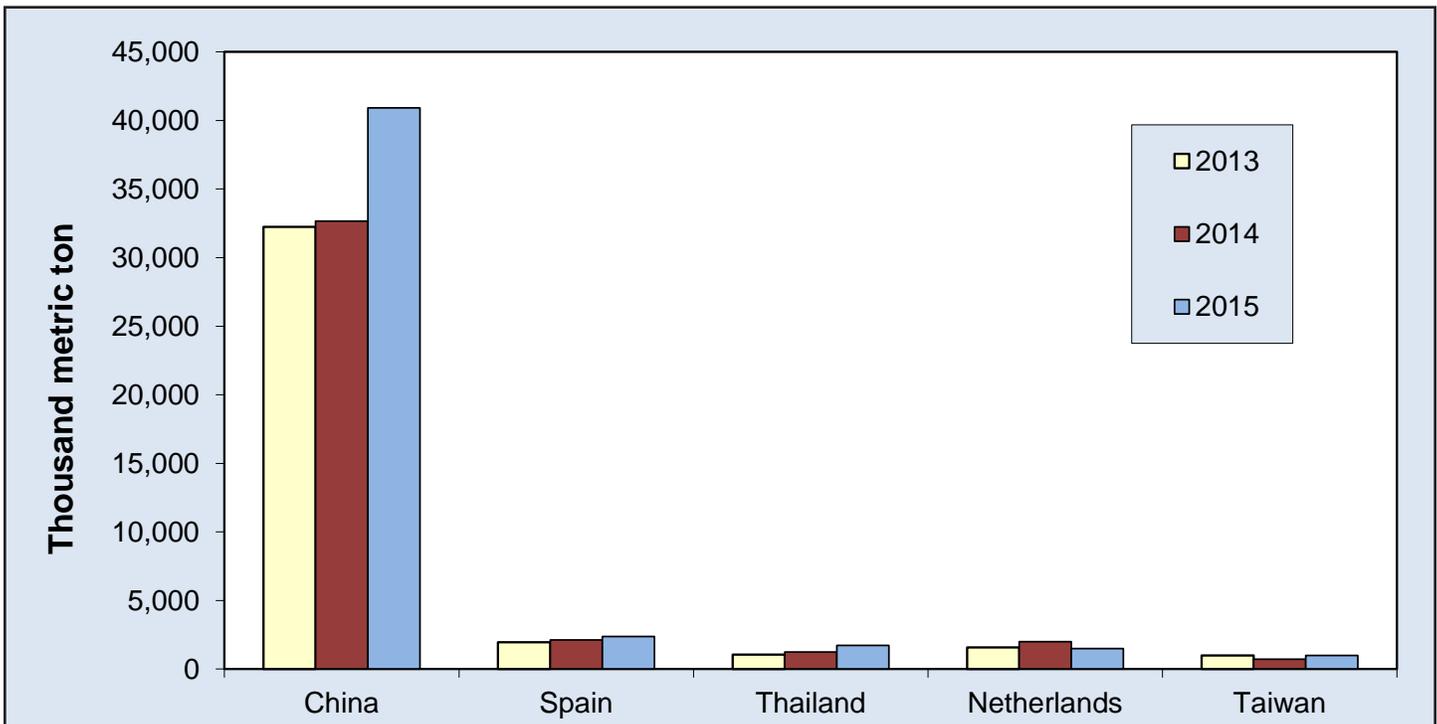
Source: USDA/Agricultural Marketing Service & Foreign Agricultural Service

World export routes for Brazilian soybeans



Source: USDA/Agricultural Marketing Service & Foreign Agricultural Service

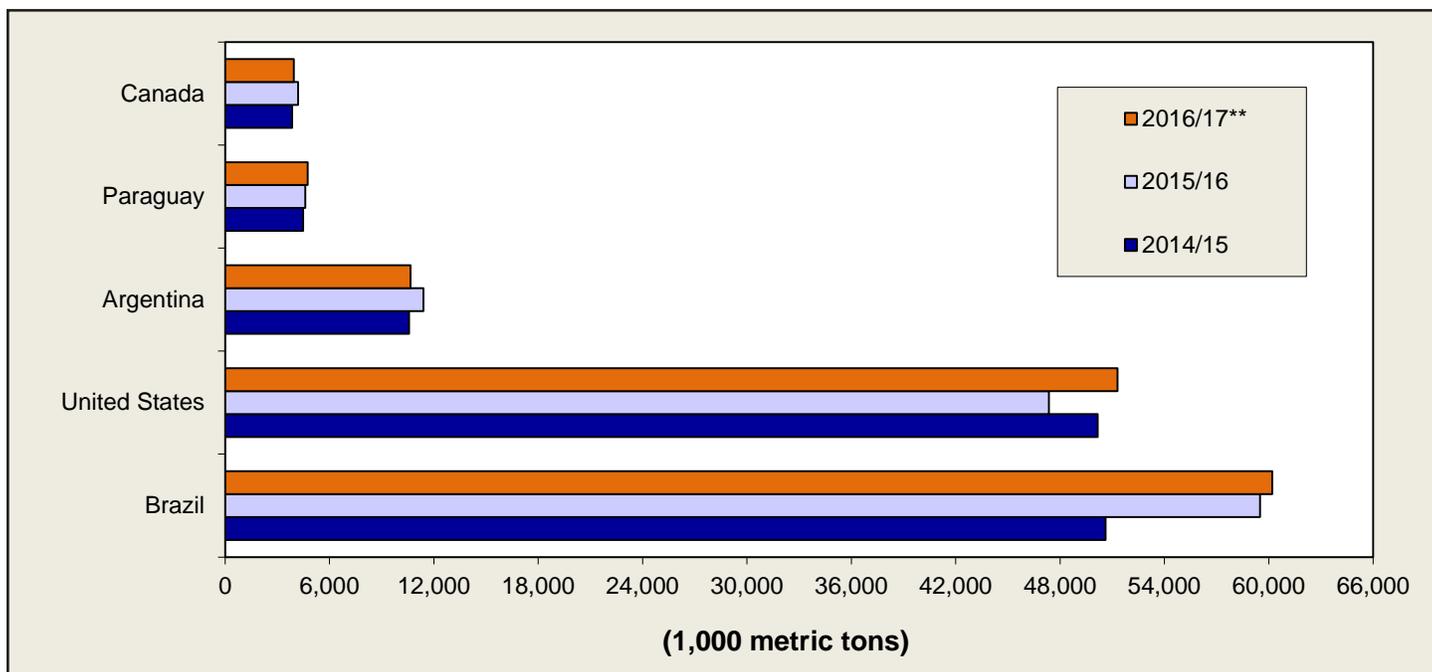
Top 5 Brazilian soybean export destinations



Source: Bureau of Foreign Trade (SECEX), MDIC

In 2015, Brazil was the top soybean exporter followed by the United States, Argentina, Paraguay, and Canada. USDA forecast that Brazil will sustain its leadership position in 2016 (WASDE).

Top 5 world soybean exporting countries



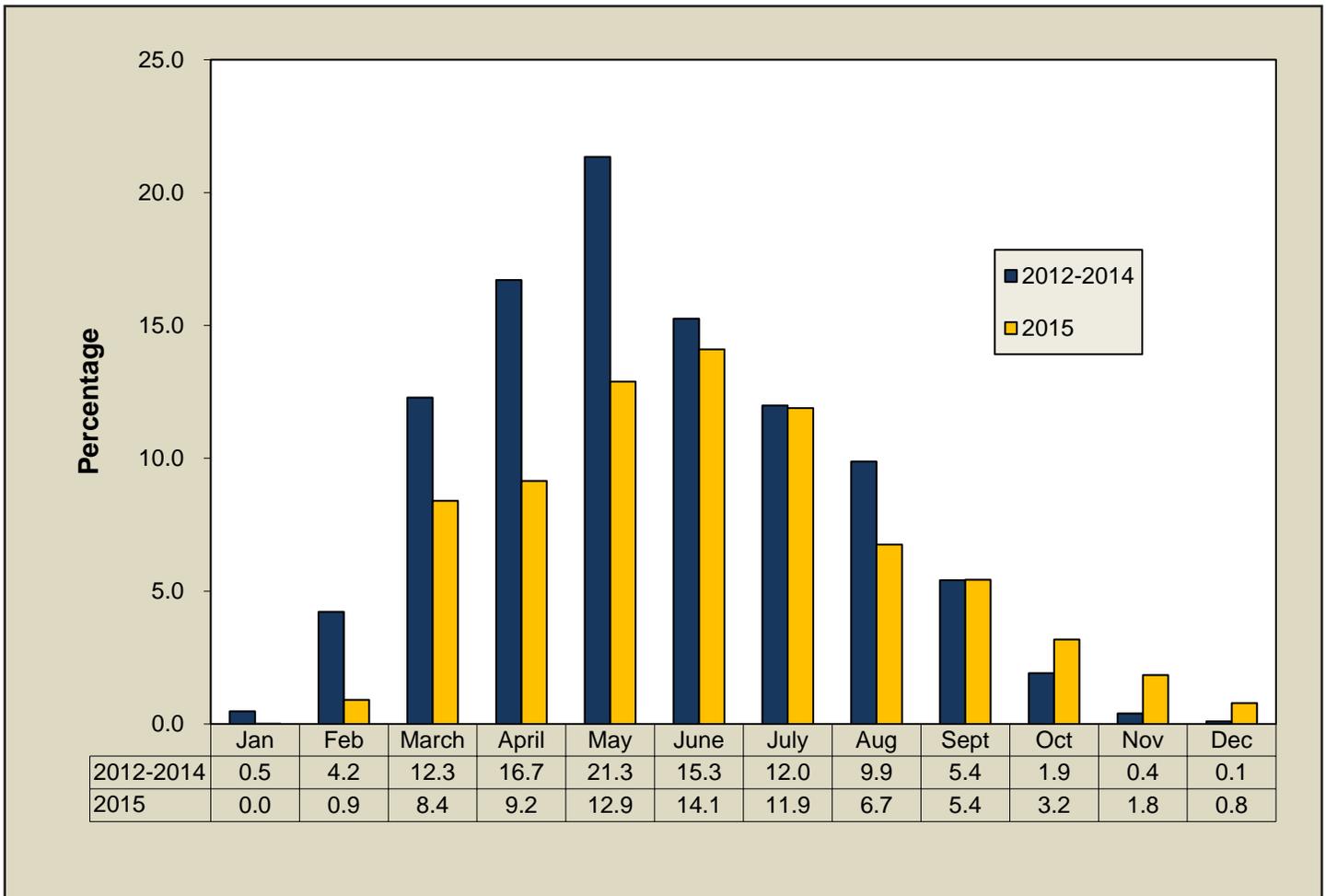
*Forecast: May 10, 2016

Source: USDA/FAS/Oilseeds: World Markets and Trade

Exports to China

China is Brazil's largest soybean buyer, accounting for 75 percent of total soybean exports in 2015. Brazil soybean exports to China usually peak in May and finish by the end of October. Over 90 percent of Brazil soybeans exports to China originated from Rio Grande do Sul, Mato Grosso, Paraná, Mato Grosso do Sul, Goiás, São Paulo, Bahia, Minas Gerais, and Santa Catarina in 2015.

Brazil average monthly soybean exports to China



Source: Bureau of Foreign Trade (SECEX), MDIC

Top 15 Brazilian soybean exporting states to China

State	2013	2014	2015	% share
	--- metric ton ---			
Rio Grande do Sul	6,730,955	6,948,488	9,418,568.63	23.0
Mato Grosso	8,943,033	9,138,489	9,226,006.73	22.5
Paraná	6,252,477	5,413,726	7,012,820.40	17.1
Mato Grosso do Sul	1,933,002	1,885,504	2,988,704.30	7.3
Goiás	2,702,579	2,653,386	2,669,455.86	6.5
São Paulo	1,723,874	1,557,665	2,135,689.80	5.2
Bahia	949,714	1,050,794	1,747,933.10	4.3
Minas Gerais	1,150,535	1,116,901	1,499,641.73	3.7
Santa Catarina	825,098	1,378,106	1,292,269.17	3.2
Maranhão	423,300	503,217	1,045,910.34	2.6
Tocantins	371,187	558,060	890,952.69	2.2
Piauí	69,133	186,321	518,259.92	1.3
Pará	64,191	99,955	241,590.48	0.6
Distrito Federal	87,189	134,800	168,523.82	0.4
Rondônia	20,488	12,619	65,231.67	0.2
Others	525	26,270	3,948.38	0.0
Brazil exports to China	32,247,279	32,664,302	40,925,507	100.0
Brazil total exports	42,788,462	45,688,848	54,322,601	75.4

Source: Bureau of Foreign Trade (SECEX), MDIC

Exports to China

China's share of Brazilian soybean exports increased by 6 percent, from 69 percent in 2012 to 75 percent in 2015. Rio Grande Do Sul was the top Brazilian soybean-exporting state to China, surpassing Mato Grosso by a slight margin.

Top 15 Mato Grosso (MT) soybean export destinations					
State	2013	2014	2015	% share	Rank
	China	8,943,033	9,138,489		
Spain	535,852	912,663	986,513	6.8	2
Thailand	220,990	390,421	635,042	4.4	3
Netherlands	501,884	826,466	445,503	3.1	4
Russia	0	413,189	369,443	2.5	5
Norway	290,244	281,897	322,499	2.2	6
Portugal	80,549	84,104	354,687	2.4	7
South Korea	56,179	113,875	340,727	2.3	8
Taiwan	159,584	144,082	314,198	2.2	9
Saudi Arabia	71,520	115,329	240,347	1.7	10
Egypt	0	130,967	188,849	1.3	11
United Kingdom	217,152	153,628	187,362	1.3	12
Iran	15,205	4,663	179,450	1.2	13
Germany	54,268	102,592	147,910	1.0	14
France	34,154	24,952	112,007	0.8	15
Others	1,114,888	1,373,712	464,284	3.2	
Mato Grosso total	12,295,500	14,211,027	14,514,829	100.0	
MT % share of Brazil exports to China	27.7	28.0	22.5		
Brazil exports to China	32,247,279	32,664,302	40,925,507		
Brazil total exports	42,788,462	45,688,848	54,322,601		
China % share of Brazil total exports	75.4	75.2	75.3		

Source: Bureau of Foreign Trade (SECEX), MDIC

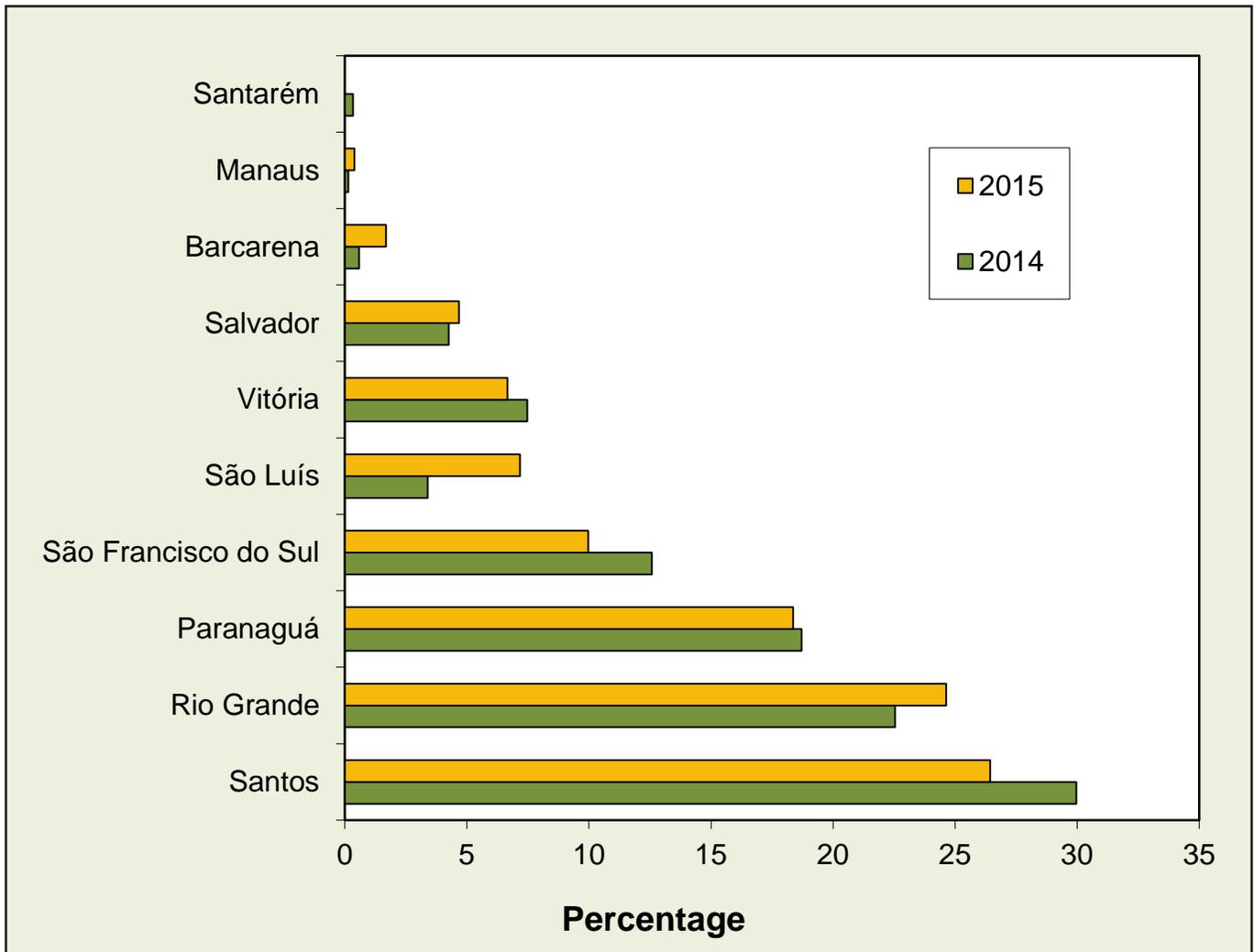
Soybean trade to China is dominated by the southern ports of Santos, Rio Grande, Paranaguá, and São Francisco do Sul, accounting for 79 percent of Brazil's soybean exports to China. In the past, China preferred to buy soybeans from the southern ports of Santos, Paranaguá, Rio Grande, São Francisco do Sul, and Vitória via Cape of Good Hope in South Africa to Shanghai because it was cheaper than the remote ports of the Amazon River and the Northeast. For example, by buying soybeans from Santos, China saves 7-8 days in shipping costs compared to Manaus; and 2-3 days compared to Itaquí/São Luís. However, infrastructure improvements and low ocean rates increased competitiveness of the Amazon River and Northeast ports, especially the port of São Luís. The northeastern ports of São Luís, Vitória, Salvador, and Barcarena accounted for 20 percent of exports to China. The Amazon River port of Manaus exported less than 1 percent and Santarém did not export soybeans to China in 2015.

Total Brazilian soybean exports by port to China, 2013-15

Ports	2013	2014	2015	% share of exports to China			% share of Brazil total exports		
	-- metric ton --			2013	2014	2015	2013	2014	2015
Santos	10,764,738	9,788,795	10,819,783	33.4	30.0	26.4	25.2	21.4	24.0
Rio Grande	6,979,122	7,361,485	10,080,780	21.6	22.5	24.6	16.3	16.1	20.9
Paranaguá	6,131,941	6,112,621	7,518,588	19.0	18.7	18.4	14.3	13.4	15.7
São Francisco do Sul	3,676,475	4,107,963	4,080,459	11.4	12.6	10.0	8.6	9.0	8.5
São Luís	922,582	1,110,048	2,938,010	2.9	3.4	7.2	2.2	2.4	9.2
Subtotal	28,474,860	28,480,914	35,437,619	88.3	87.2	86.6	66.5	62.3	78.3
Others	3,772,420	4,183,388	5,487,888	11.7	12.8	13.4	8.8	9.2	21.7
Total exports to China	32,247,279	32,664,302	40,925,507	100	100	100	75.4	71.5	75.3
Brazil total exports	42,788,462	45,688,848	54,322,601						

Source: Bureau of Foreign Trade (SECEX), MDIC

Brazil soybean exports to China by port



Source: Bureau of Foreign Trade (SECEX), MDIC

Distance from selected Brazilian ports to Shanghai, China, and Hamburg, Germany

Brazilian port	Region	Route through	Destination	Nautical miles	Days at sea*
Santos, SP	South	Good Hope	Shanghai, China Hamburg, Germany	11,056 5,683	35.4 18.2
Rio Grande, RS	South	Good Hope Panama Canal Cape Horn	Shanghai, China Shanghai, China Shanghai, China Hamburg, Germany	11,129 13,564 11,397 6,204	35.7 43.5 36.5 19.9
Paranaguá, PR	South	Good Hope Panama Canal	Shanghai, China Shanghai, China Hamburg, Germany	11,111 13,165 5,805	35.6 42.2 18.6
São Francisco do Sul, SC	South	Good Hope	Shanghai, China Hamburg, Germany	11,111 5,805	35.8 18.6
Itajaí, SC	South	Good Hope	Shanghai, China Hamburg, Germany	13,160 7,189	42.2 23
Vitória, ES	Southeast	Good Hope Panama Canal	Shanghai, China Shanghai, China Hamburg, Germany	10,857 12,587 5,227	34.8 40.3 16.8
Salvador, BA	Northeast	Good Hope Panama Canal	Shanghai, China Shanghai, China Hamburg, Germany	10,997 12,170 4,811	35.2 39 15.4
Aratu, BA	Northeast	Good Hope Panama Canal	Shanghai, China Shanghai, China Hamburg, Germany	10,997 12,170 4,811	35.6 39 15.1
Itaquí/São Luís - Ponta de Madeira (MA)	Northeast	Good Hope Panama Canal	Shanghai, China Shanghai, China Hamburg, Germany	11,708 11,087 4,361	37.5 35.5 14
Santarém, (PA)** Reference point for Itaituba	North	Good Hope Panama Canal	Shanghai, China Shanghai, China Hamburg, Germany	12,305 11,200 4,750	40 36.4 15.4
Manaus, (AM)	North	Good Hope Panama Canal	Shanghai, China Shanghai, China Hamburg, Germany	12,880 10,926 5,283	40.7 35 16.9
Barcarena, (PA)**	North	Good Hope Panama Canal	Shanghai, China Shanghai, China Hamburg, Germany	11,905 10,950 4,510	38.9 34.5 13.7

*Vessel speed: 13 knots

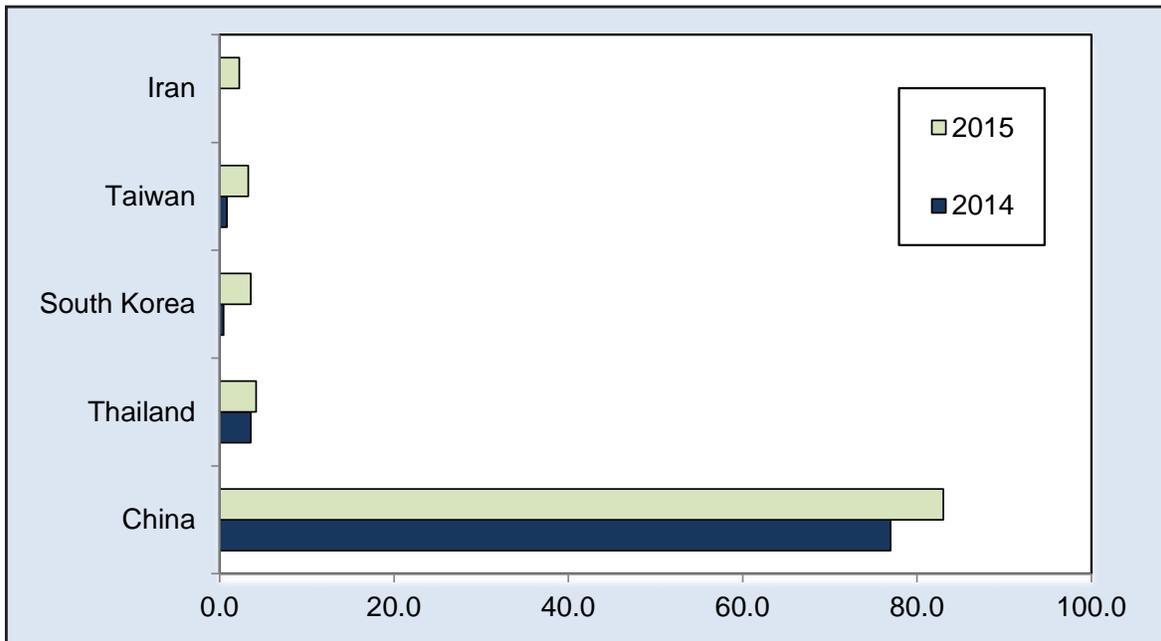
**Barcarena is located 49 nm from Belém; Itaituba is located 140 nm from Santarém.

Source: <http://sea-distances.com> and Ports.com

Exports to China

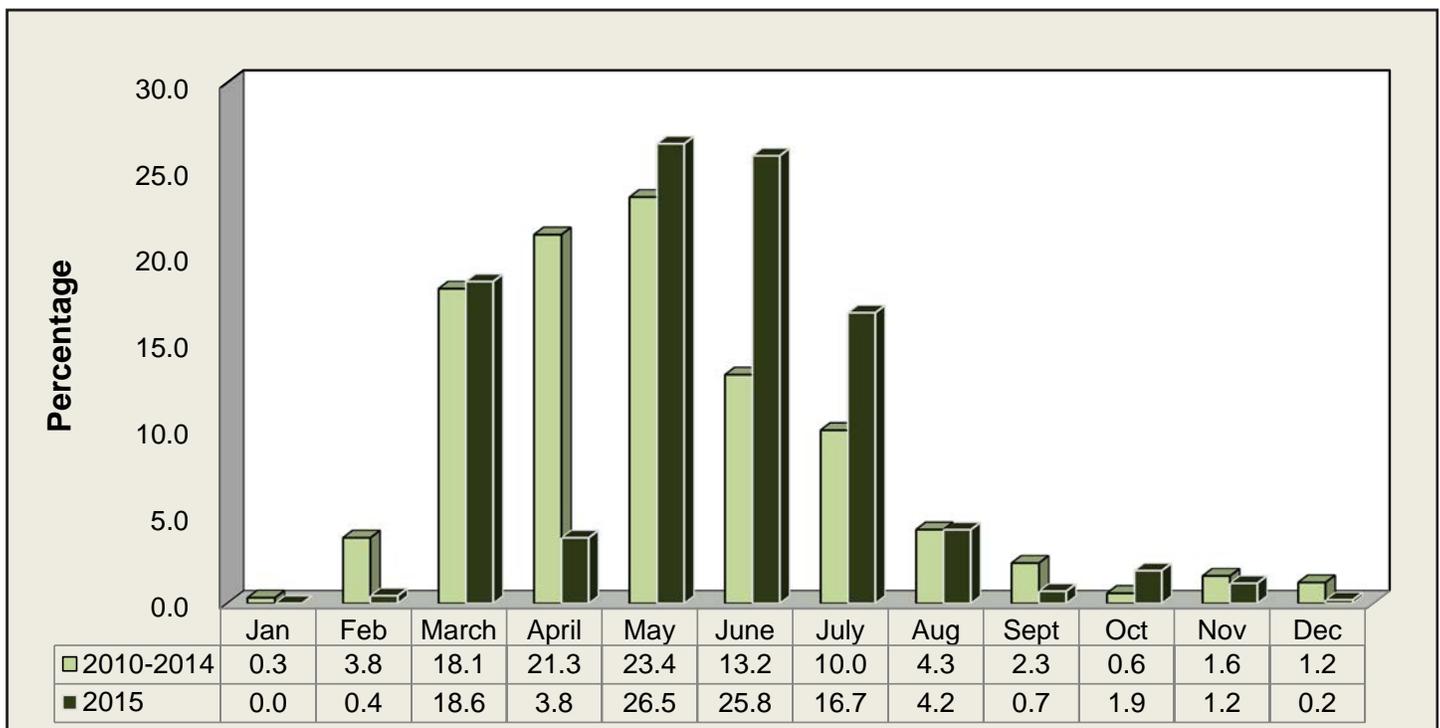
In 2015, China was the major destination of Brazilian soybeans through the port of Santos, Brazil's largest soybean exporting port, followed by Spain, Saudi Arabia, United Kingdom, and Thailand. The peak of soybean shipments to China from Santos usually occurs during March—May. The majority of soybean exports through Santos were originated from Mato Grosso (50%), São Paulo (18%), Goiás (14%), Mato Grosso do Sul (8%), Minas Gerais (7%), and Distrito Federal (1%).

Port of Santos soybean exports by country



Source: Bureau of Foreign Trade (SECEX), MDIC

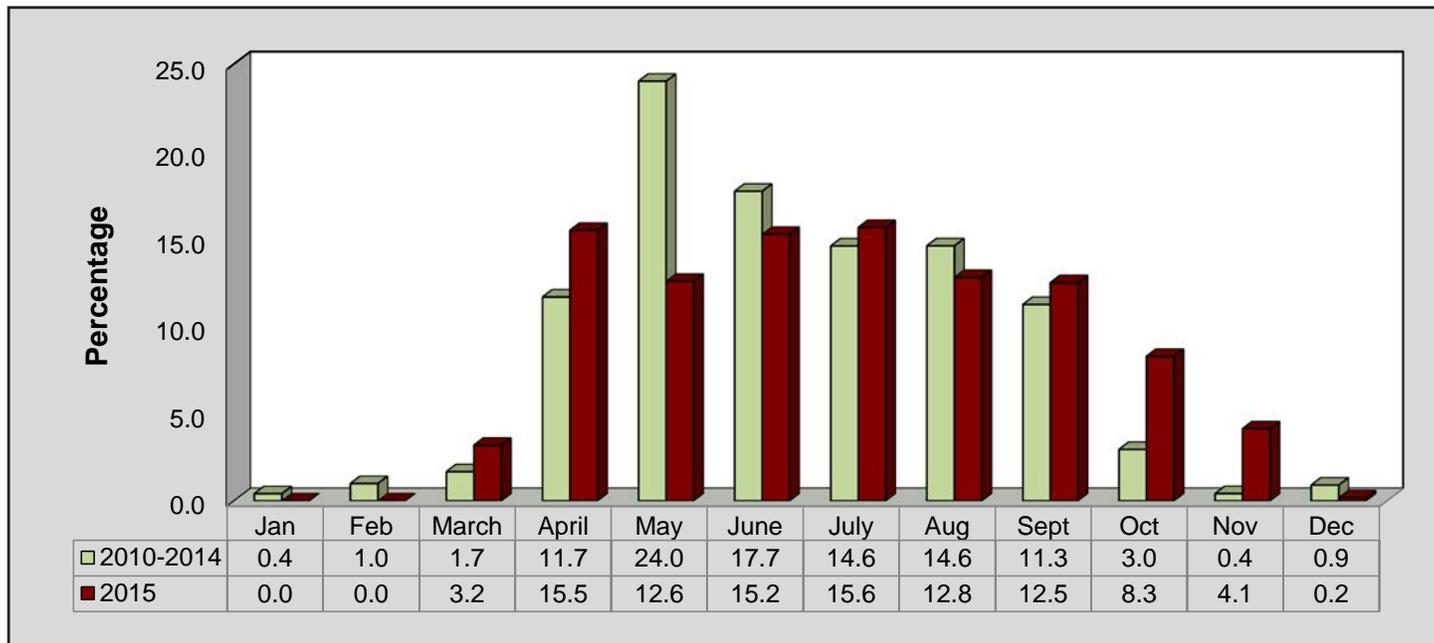
Port of Santos soybean average monthly exports to China



Source: Bureau of Foreign Trade (SECEX)

China was the major destination of Brazilian soybeans via the port of Rio Grande followed by Vietnam, Spain, Iran, and Taiwan. The peak of soybean shipments to China through the port of Rio Grande is from April—August. The majority of soybean exports through the Port of Rio Grande originated from Rio Grande do Sul (93%) followed by Paraná (3%), and Mato Grosso (2%), Santa Catarina (1%) and Mato Grosso do Sul (1%).

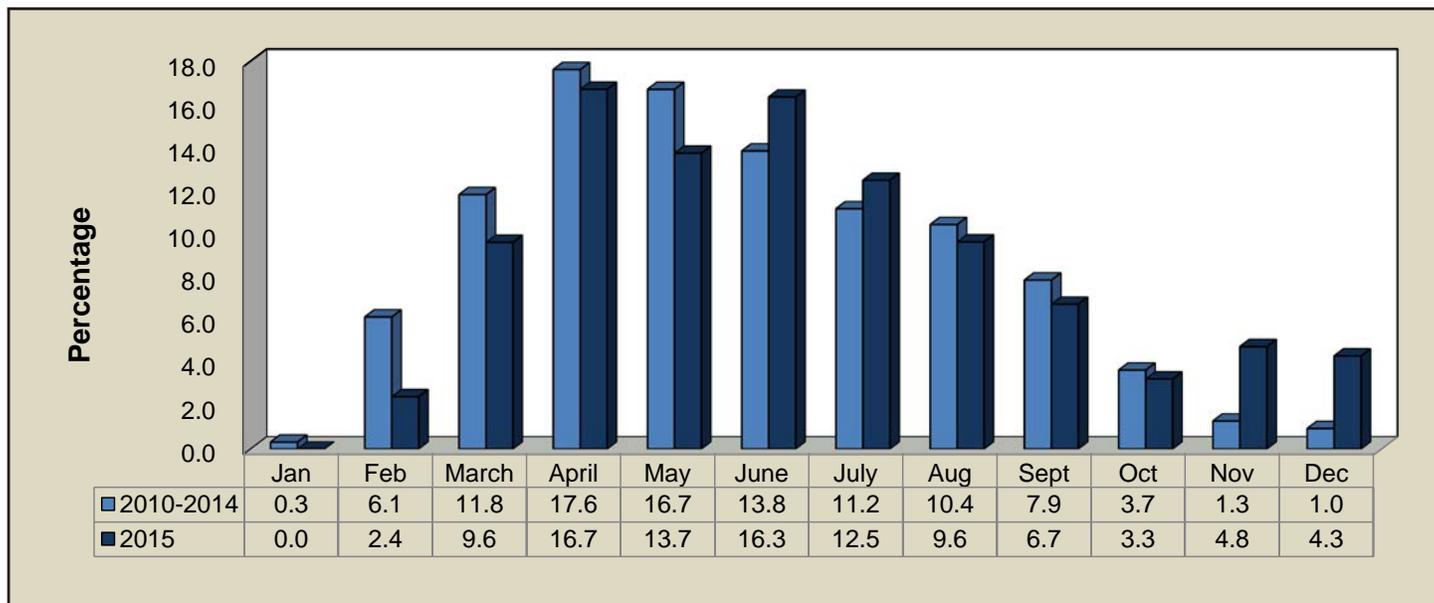
Port of Rio Grande soybean average monthly exports to China



Source: Bureau of Foreign Trade (SECEX), MDIC

China was top Brazilian soybean export destination through the Port of Paranaguá, followed by Thailand, South Korea, Taiwan, and South Africa. The peak of soybean shipments to China from Paranaguá is during March—June. More than two-thirds of Paranaguá exports were originated from Paraná (67%), followed by Mato Grosso do Sul (13%), Mato Grosso (10%), Santa Catarina (6%), Goiás (2%), and São Paulo (1%).

Port of Paranaguá soybean average monthly exports to China

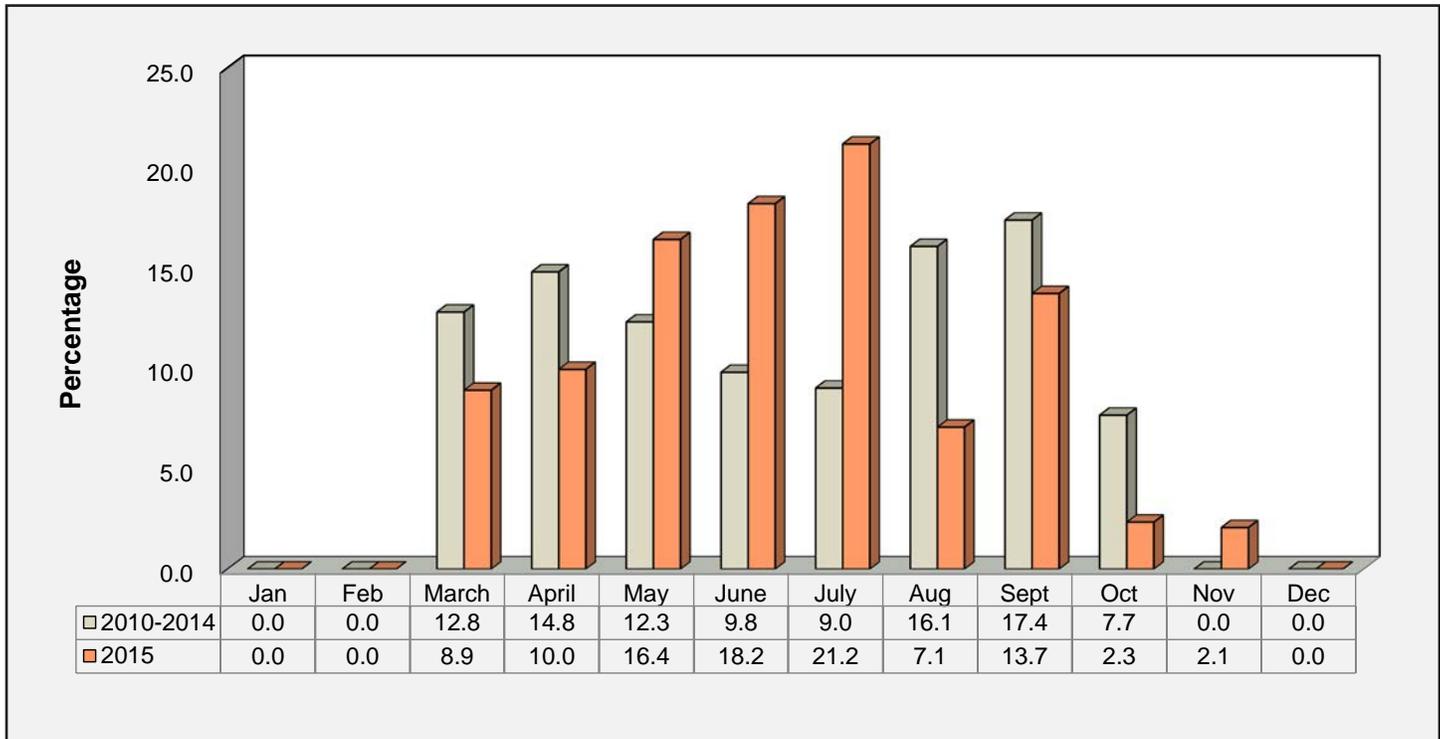


Source: Bureau of Foreign Trade (SECEX), MDIC

Exports to China

China was top Brazilian soybean export destination through the Port of São Luís, followed by Spain, Saudi Arabia, United Kingdom, and Thailand. São Luís is the top northeastern soybean exporting port, accounting for 9 percent of Brazilian total soybean exports and 7 percent of exports to China, followed by Vitória, Salvador, and Barcarena. These 4 ports accounted for 20 percent of exports to China. Soybean trade from Mato Grosso to the Southern ports of Santos, Rio Grande, and Paranaguá was mostly diverted to the Northeastern port of São Luís to expedite soybean exports. Infrastructure improvements and low transportation costs, especially ocean rates, facilitated exports through the port of São Luís. More than one-third of exports of the port of São Luís originated from Maranhão (35%), followed by Tocantins (25%), Mato Grosso (21%), and Piauí (14%).

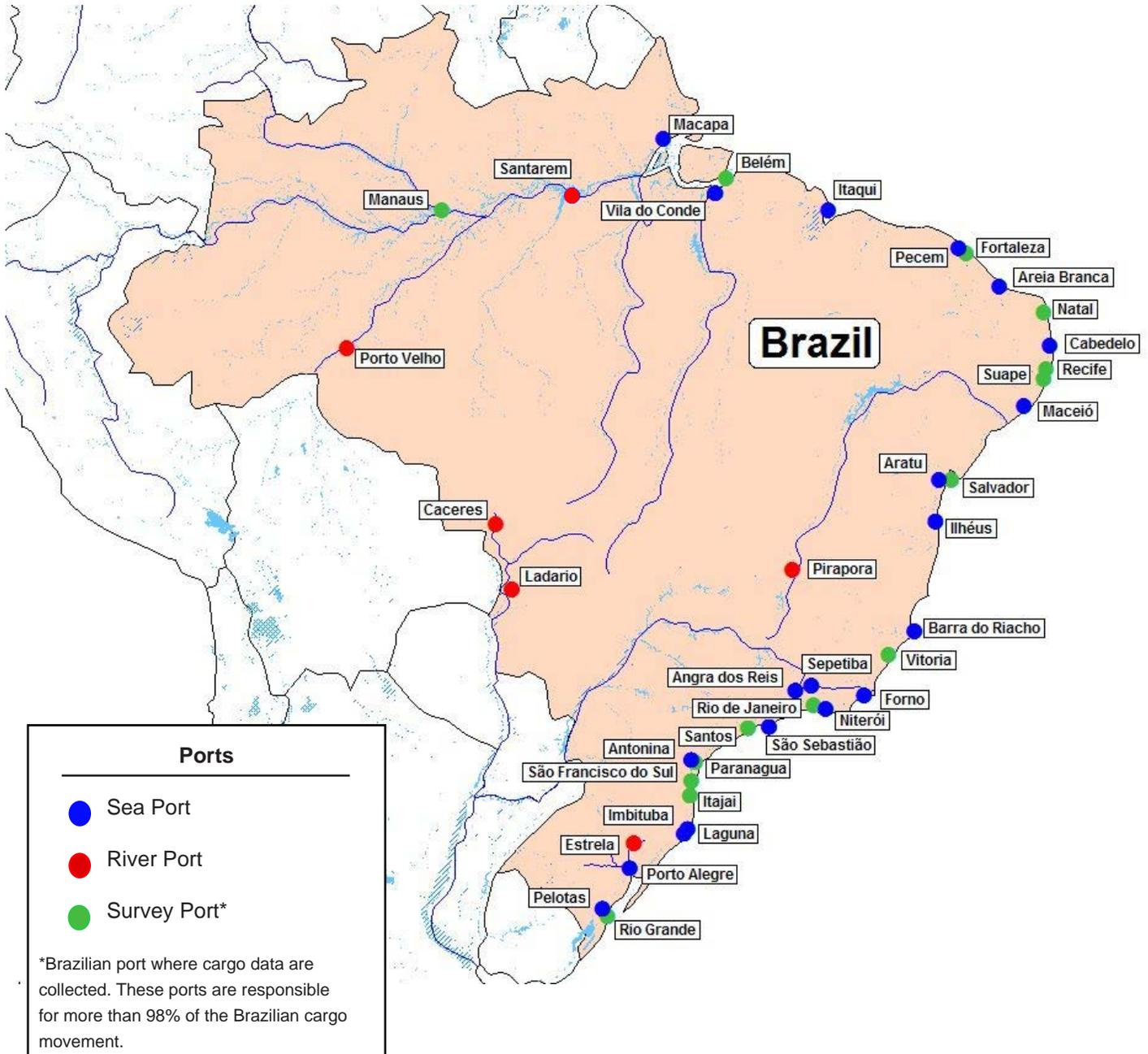
Port of São Luís average monthly soybean exports to China



Source: Bureau of Foreign Trade (SECEX)

Brazilian ports

In Brazil, there are 40 water and sea ports and 42 private terminals. The Port of Santos Channel is 426.4 ft wide and 42.64 ft deep. The Port of Paranaguá's entrance strip is 656 ft wide and 39.36 ft deep. It has 3 access channels. Galheta, the major access channel, extends 17.7 miles and has a width ranging from 492 to 656 ft, and a depth of 39.36 ft. The Port of Vitória's entry strip is 820 ft wide and 62.32 ft deep. Its access channel extends 4.34 miles, and is 393.6 ft wide and 36.08 ft deep. The port of Santarém access channel is 5,905 ft wide and 49.2 ft deep. The port of Manaus access channel is 1,640 ft wide and 114.8 ft deep. Santarém and Manaus, have the capacity to handle Panamax vessels that require a draft of up to 39.5 ft.



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

Transportation Modes

Major rivers of the Amazonian Basin



Source: National Agency for Waterway Transportation (ANTAQ)

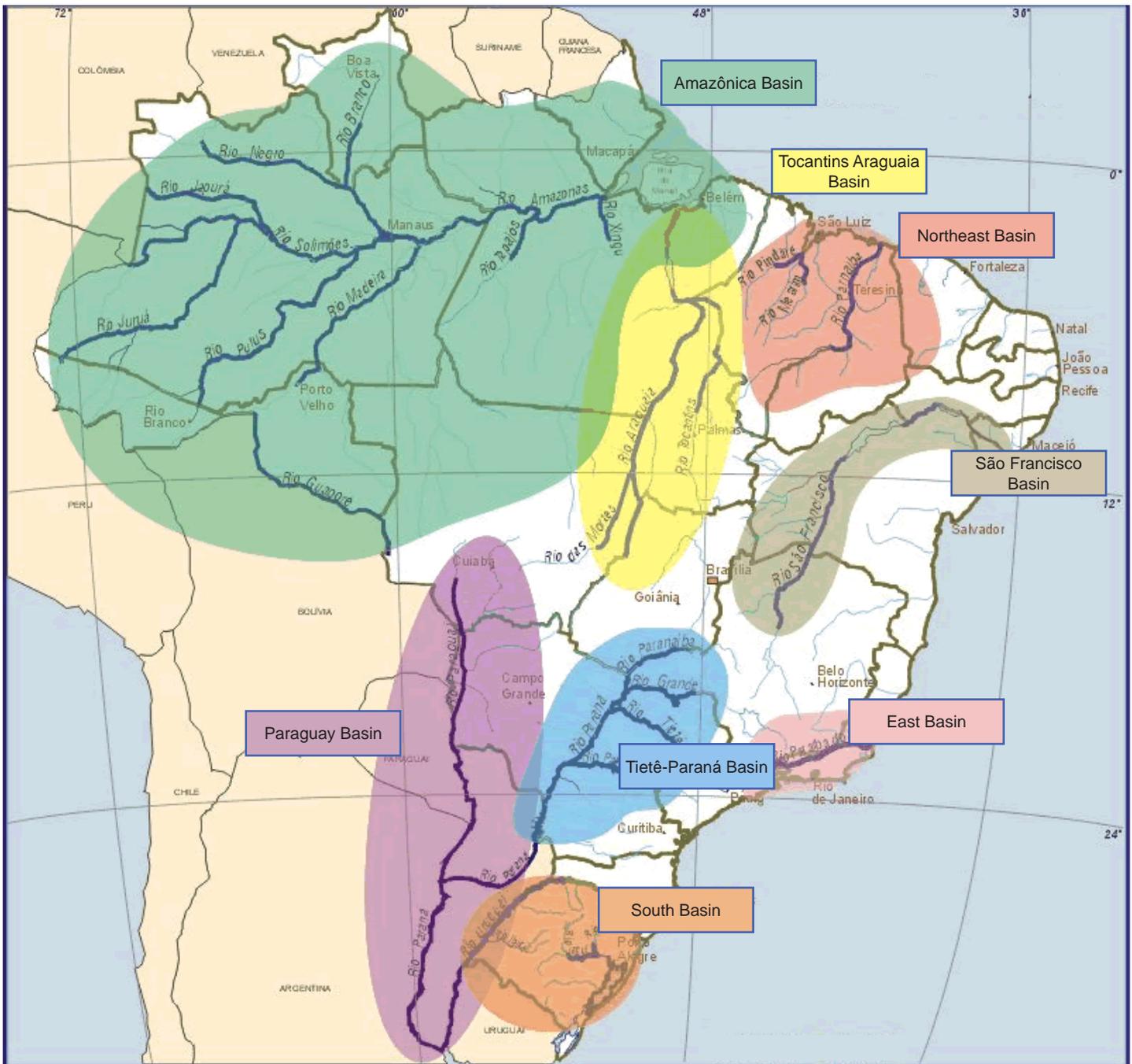
Brazil has 39,060 miles of river-lake surface water and 27,280 miles of navigable rivers, but only 8,060 miles are commercially navigated.

Brazil waterway system	
Extension	Miles
River-lake surface water	39,060
National river network	27,280
Naturally navigable waterways	17,980 (100%)
Commercial navigations	8,060 (45%)
Vessel owned	1,148

Source: Confederação Nacional do Transporte (CNT)
National Agency for Waterway Transportation (ANTAQ)

Brazilian river basins

Brazil's river system comprises eight basins: Amazônica, Northeast, Tocantins Araguaia, São Francisco, East, Tietê-Paraná, Paraguay, and South. The Amazônica and Paraguay Basin account for 72 percent of the total area of the Brazilian basins. The Paraguay Basin serves Argentina, Brazil, Bolivia, Paraguay, and Uruguay. Its navigable portion is comparable with the Mississippi River in the United States and the Rhine River in Europe.



Source: Ministério dos Transportes, Brazil

Transportation Modes

Brazilian multimodal transportation system



Source: Agência Nacional de Transportes Aquavários

Major Brazilian highways



Source: Confederação Nacional do Transporte

Transportation Modes

The Brazilian highway system extends 1,066,776 miles (1,720,607 kilometers), with only 14 percent paved. The United States public roads system consists of 4,115,462 miles (6,623,178 kilometers) with 65 percent paved.

Brazil highway system extension, in miles, 2015			
	Paved roads	Unpaved roads	Total
Federal	40,235	7,105	47,339
State	74,243	65,472	139,716
County	16,633	765,649	782,282
Work in progress	—	—	97,532
Total	131,110	838,226	1,066,869
% share	14	86	

Source: Confederação Nacional do Transporte (CNT)

U.S. highway system extension and condition, 2013			
Extension ¹ (miles)		Condition ²	
		Paved	Unpaved
Rural	2,937,476	54	46
Urban	1,177,986	94	6
Total	4,115,462	65	35

¹Table HM-20 Public road length in 2013. Includes the States and the District of Columbia. October 21, 2014.

²Includes the 50 States and the District of Columbia. Some differences from other tables may be noted because these are estimated from sample and summary data; some States may have missing/incomplete data. Table HM-12 Public road length -2013 by type of surface and ownership/functional system. October 21, 2014. Source: Highway Statistics 2013. U.S. Department of Transportation, Federal Highway Administration, Highway Statistics (Washington, DC: Annual Issues) <http://www.fhwa.dot.gov/policyinformation/statistics/2013/>

Brazilian highways condition classification



Source: Confederação Nacional do Transporte

Brazilian public highways



Source: Confederação Nacional do Transporte

Brazilian private highway conditions



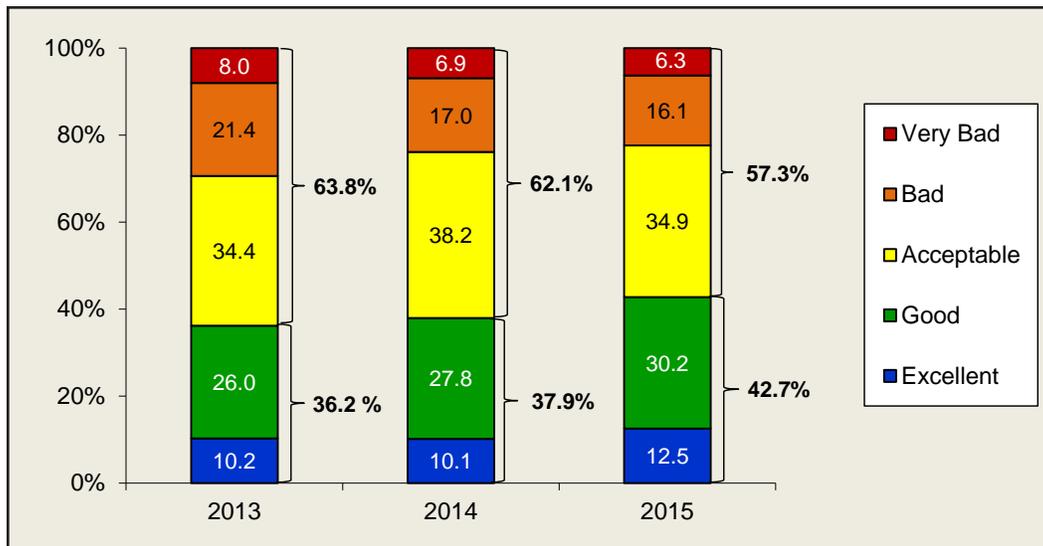
Source: Confederação Nacional do Transporte

Transportation Modes

Brazilian highways

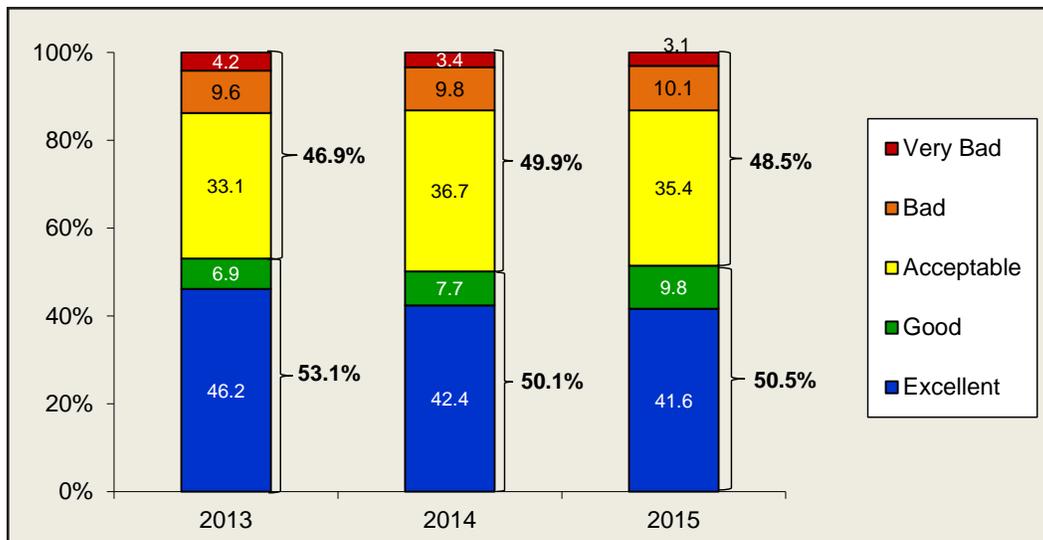
The 2015 Confederação Nacional do Transporte (CNT) survey of the overall highway condition in Brazil shows that 42.7 percent of the roads ranged between good to excellent in 2015 compared to 36.2 percent in 2013. Still, 57.3 percent ranged from acceptable to inadequate. The survey also shows that half of the paved roads were in good to excellent and about 48.5 percent ranged from acceptable to very bad condition; 51.4 percent of traffic road signs had problems; and 86.5 percent of the paved roads evaluated are two lane. The survey sample of paved roads increased about 2.3 percent from 61,055 miles in 2014 to 62,473 miles in 2015.

Brazilian highway conditions, 2013-2015



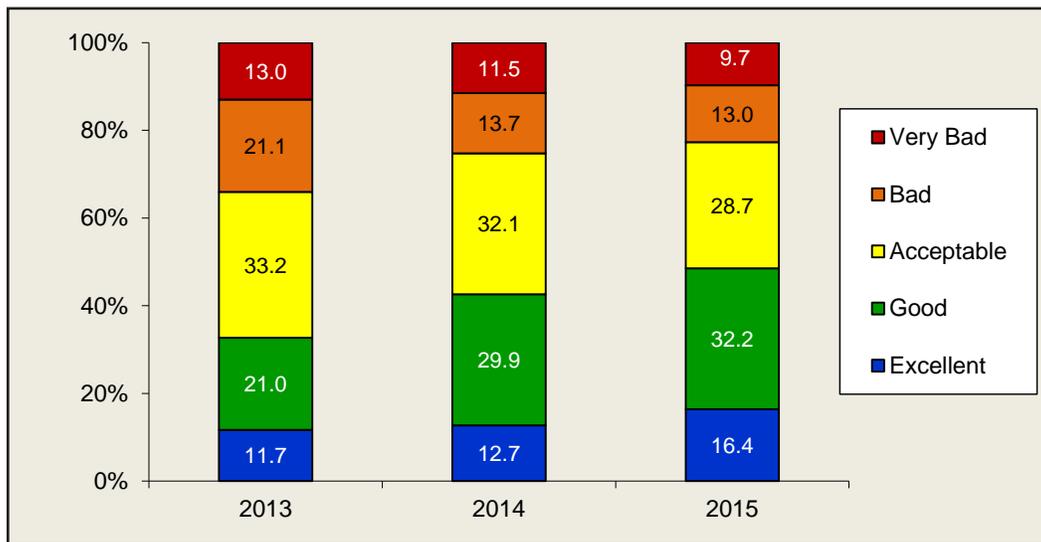
Source: Confederação Nacional do Transporte (CNT)

Brazilian paved highway conditions, 2013-2015



Source: Confederação Nacional do Transporte (CNT)

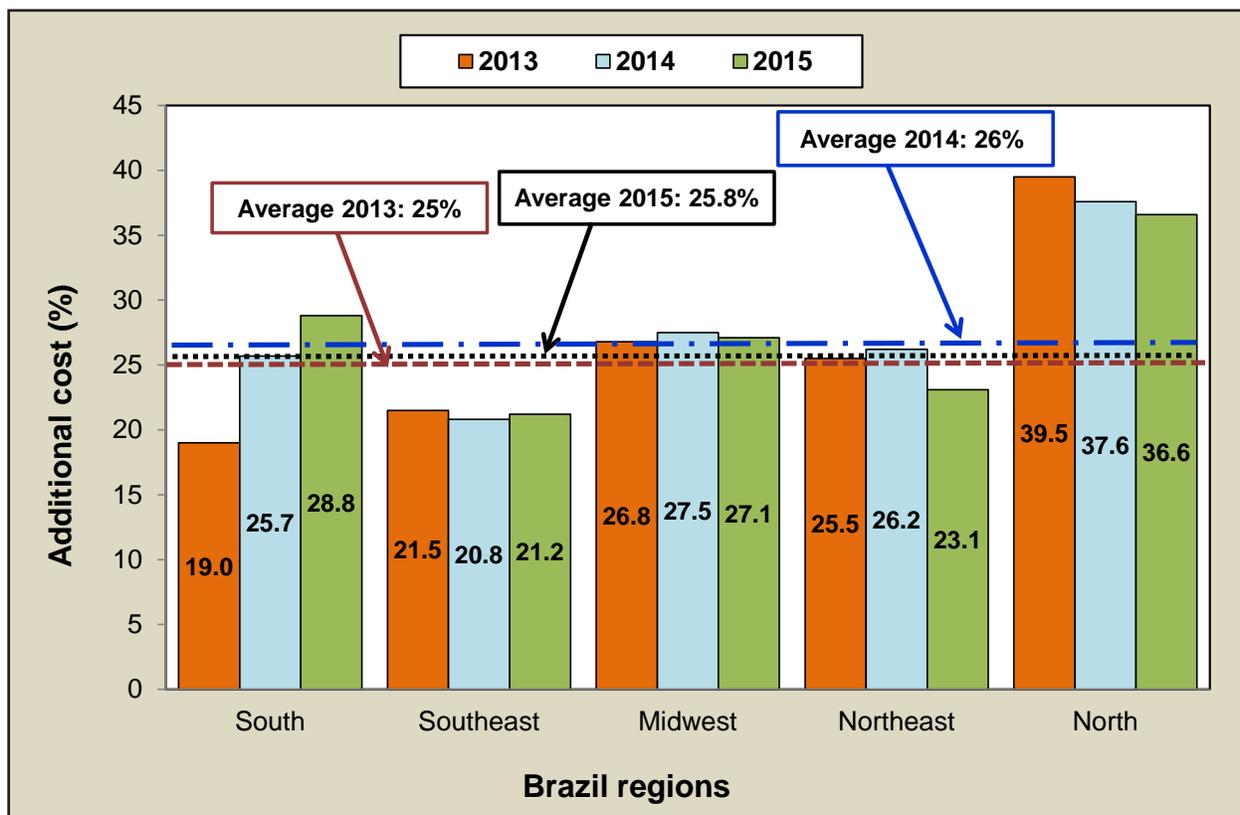
Brazilian road sign conditions, 2013-2015



Source: Confederação Nacional do Transporte (CNT)

The CNT estimates that due to the poor conditions of the paved roads, the 2015 marginal operational cost of cargo trucks is 25.8 percent higher than a paved road under optimal conditions. Overall, the 2015 additional operational cargo cost (25.8 percent) was about the same as 2014 (26 percent) and slightly higher than 2013 (25 percent). This cost increased in the South and declined in the Northeast, North and Midwest. For example, if the cost of shipping a metric ton of soybeans from Sorriso, North MT to Santos is \$100/mt. According to CNT, the 2015 optimal cost should be \$74.20/mt.

Cost increases due to road pavement conditions, 2013-2015



Source: Confederação Nacional do Transporte (CNT)

Transportation Modes

Brazilian railway expansion: ongoing projects

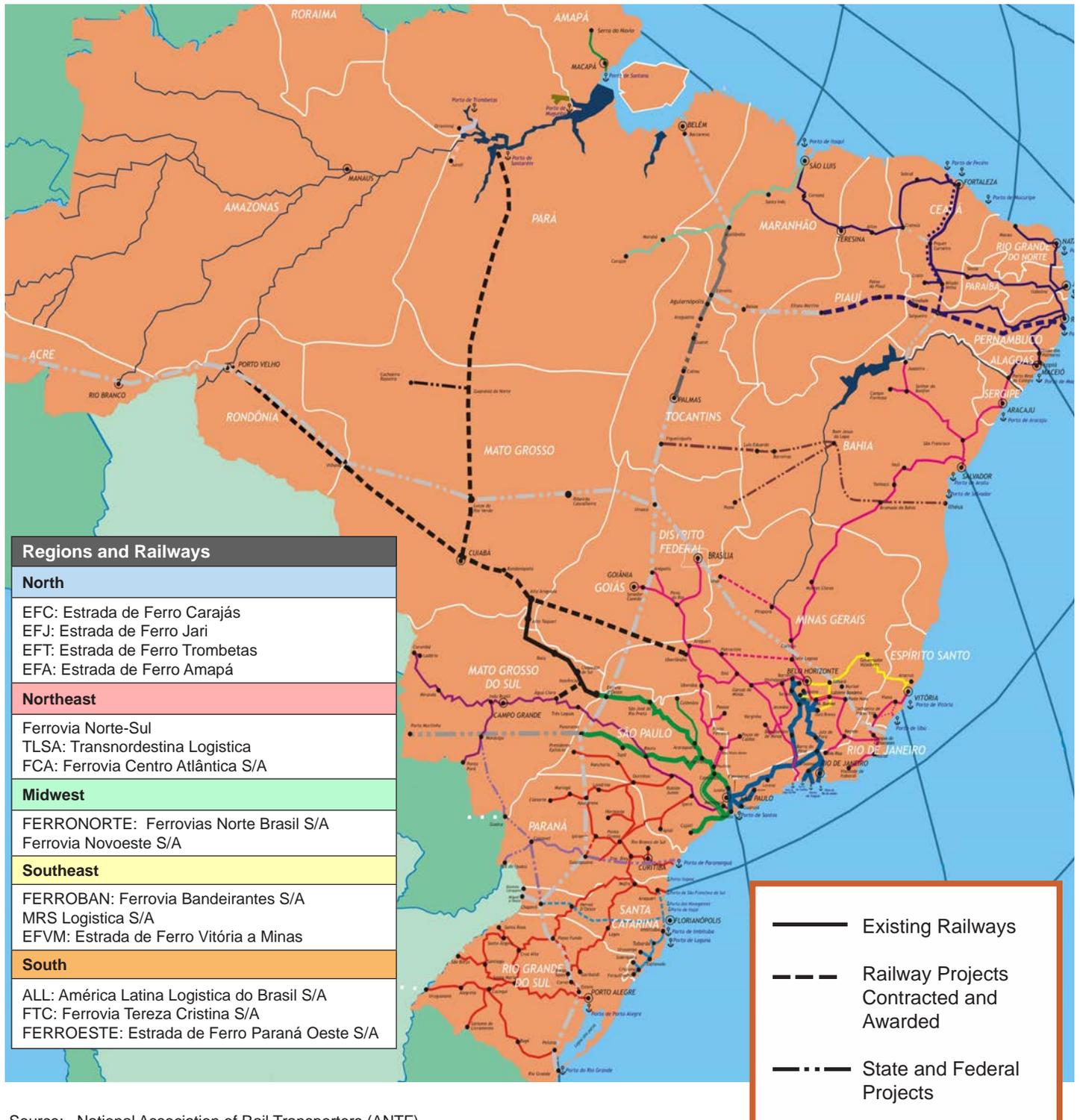
The Brazilian railroad system consists of 12 railroads with an extension of 18,957 miles, mostly concentrated in the South, Southeast, and Northeast.



Source: National Association of Rail Transporters (ANTF)

Brazilian rail system: gauge sizes

The gauge system (distance between two rails) varies by region, creating difficulties in integrating the system like the North American region which uses a standard gauge. There are three types of gauge: metric (39”), broad (63”) and mixed (39”-63”). The metric gauge accounts for 86 percent of the total Brazilian rail miles, and predominates in the Southern region. The broad gauge accounts for 12 percent of total railroads and prevails in the Southeast region, leaving about 2 percent mixed.



Source: National Association of Rail Transporters (ANTF)

Reference Material

United States: soybean supply and distribution (1,000 metric tons)

Year*	Area Harvested	Beginning Stocks	Production	Imports	Total Supply	Exports	Crush	Domestic Consumption	Ending Stocks
2002/03	29,339	5,663	75,010	127	80,800	28,423	43,948	47,524	4,853
2003/04	29,330	4,853	66,783	151	71,787	24,128	41,632	44,600	3,059
2004/05	29,930	3,059	85,019	152	88,230	29,860	46,160	51,410	6,960
2005/06	28,834	6,960	83,507	92	90,559	25,579	47,324	52,751	12,229
2006/07	30,190	12,229	87,001	246	99,476	30,386	49,198	53,473	15,617
2007/08	25,959	15,617	72,859	269	88,745	31,538	49,081	51,627	5,580
2008/09	30,222	5,580	80,749	361	86,690	34,817	45,230	48,112	3,761
2009/10	30,907	3,761	91,470	397	95,628	40,798	47,673	50,724	4,106
2010/11	31,003	4,106	90,663	393	95,162	40,959	44,851	48,351	5,852
2011/12	29,856	5,852	84,291	439	90,582	37,186	46,348	48,786	4,610
2012/13	30,814	4,610	82,791	1,103	88,504	36,129	45,967	48,550	3,825
2013/14	30,858	3,825	91,389	1,954	97,168	44,574	47,192	50,090	2,504
2014/15	33,423	2,504	106,878	904	110,286	50,169	50,975	54,929	5,188
2015/16	33,109	5,188	106,934	816	112,938	47,355	51,165	54,696	10,887
2016/17**	32,941	10,887	103,419	816	115,122	51,301	52,118	55,533	8,288

*Data based on Local Marketing Year (MY). Soybeans are on a September/August MY

**Forecast, May 10, 2016

Source: USDA/Foreign Agricultural Service/Oilseeds: World Markets and Trade

Soybean production (1,000 metric tons)

Country*	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17**
United States	84,291	82,791	91,389	106,878	106,934	103,419
Brazil	66,500	82,000	86,700	97,200	99,000	103,000
Argentina	40,100	49,300	53,400	61,400	56,500	57,000
China	14,485	13,050	11,950	12,150	11,800	12,200
India	11,940	12,186	9,477	8,711	7,380	11,700
Paraguay	4,043	8,202	8,190	8,100	8,800	9,000
Canada	4,467	5,086	5,359	6,049	6,235	6,050
Other	14,733	15,956	15,997	19,244	19,207	21,829
Total	240,559	268,571	282,462	319,732	315,856	324,198

*Most countries are on an October/September Marketing Year (MY). The United States, Mexico, and Thailand are on a September/August MY. Canada is on an August/July MY. Paraguay is on a March/February MY and Turkey is on an March/February MY.

**Forecast, May 10, 2016

Source: USDA/ Foreign Agricultural Service/Oilseeds: World Markets and Trade

Soybean imports (1,000 metric tons)						
Country*	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17**
China	59,231	59,865	70,364	78,350	83,000	87,000
European Union	12,070	12,538	13,293	13,388	13,200	12,600
Mexico	3,606	3,409	3,842	3,819	3,950	4,000
Japan	2,758	2,830	2,894	3,004	3,100	3,100
Taiwan	2,285	2,286	2,335	2,520	2,550	2,600
Thailand	1,907	1,867	1,798	2,411	2,350	2,450
Egypt	1,661	1,730	1,694	1,947	2,000	2,400
Indonesia	1,922	1,795	2,241	2,006	2,300	2,400
Turkey	1,057	1,249	1,608	2,197	2,300	2,250
Russia	741	717	2,048	1,986	2,200	2,200
Other	7,303	8,909	10,804	11,758	14,125	15,023
Total	94,541	97,195	112,921	123,386	131,075	136,023

*Most countries are on an October/September Marketing Year (MY). The United States, Mexico, and Thailand are on a September/August MY. Canada is on an August/July MY. Paraguay is on a March/February MY and Turkey is on an March/February MY.

**Forecast, May 10, 2016

Source: USDA/ Foreign Agricultural Service/Oilseeds: World Markets and Trade

Soybean exports (1,000 metric tons)						
Country*	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17**
Brazil	36,257	41,904	46,829	50,612	59,500	60,200
United States	37,186	36,129	44,574	50,169	47,355	51,301
Argentina	7,368	7,738	7,842	10,573	11,400	10,650
Paraguay	3,574	5,518	4,800	4,488	4,600	4,750
Canada	2,933	3,470	3,469	3,853	4,200	3,950
Other	4,868	6,043	5,188	6,460	5,527	7,454
Total	92,186	100,802	112,702	126,155	132,582	138,305

*Most countries are on an October/September Marketing Year (MY). The United States, Mexico, and Thailand are on a September/August MY. Canada is on an August/July MY. Paraguay is on a March/February MY and Turkey is on an March/February MY.

**Forecast, May 10, 2016

Source: USDA/ Foreign Agricultural Service/Oilseeds: World Markets and Trade

Reference Material

Soybean crush (1,000 metric tons)						
Country*	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17**
China	60,970	64,950	68,850	74,500	81,800	87,000
United States	46,348	45,967	47,192	50,975	51,165	52,118
Argentina	35,886	33,611	36,173	40,235	45,700	44,300
Brazil	38,083	35,235	36,861	40,435	40,000	40,000
European Union	12,300	12,500	13,400	13,600	13,800	13,300
India	9,650	10,000	8,200	6,800	6,200	9,100
Mexico	3,675	3,650	4,030	4,175	4,250	4,280
Paraguay	900	2,950	3,350	3,650	4,100	4,200
Russia	2,200	2,220	3,400	3,650	4,000	4,100
Bolivia	2,000	2,175	2,250	2,500	2,650	2,700
Egypt	1,620	1,710	1,680	1,950	1,950	2,400
Taiwan	2,020	1,920	1,925	2,100	2,150	2,250
Japan	1,960	1,915	1,969	2,150	2,200	2,200
Iran	370	300	450	1,450	1,950	2,100
Canada	1,408	1,541	1,525	1,787	2,150	2,000
Other	9,827	9,931	10,958	13,354	15,341	16,344
Total	229,217	230,575	242,213	263,311	279,406	288,392

*Most countries are on an October/September Marketing Year (MY). The United States, Mexico, and Thailand are on a September/August MY. Canada is on an August/July MY. Paraguay is on a March/February MY and Turkey is on an March/February MY.

**Forecast, May 10, 2016

Source: USDA/ Foreign Agricultural Service/Oilseeds: World Markets and Trade

Soybean ending stocks (1,000 metric tons)						
Country*	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17**
Argentina	14,719	19,472	25,271	31,698	26,798	24,448
Brazil	13,024	15,355	16,020	19,503	16,303	16,303
China	15,909	12,378	13,877	17,034	16,434	14,684
United States	4,610	3,825	2,504	5,188	10,887	8,288
India	1,040	1,311	789	797	157	777
Other	3,758	3,131	3,548	3,855	3,674	3,707
Total	53,060	55,472	62,009	78,075	74,253	68,207

*Most countries are on an October/September Marketing Year (MY). The United States, Mexico, and Thailand are on a September/August MY. Canada is on an August/July MY. Paraguay is on a March/February MY and Turkey is on an March/February MY.

**Forecast, May 10, 2016

Source: USDA/ Foreign Agricultural Service/Oilseeds: World Markets and Trade

Quarterly costs of transporting U.S. soybeans to Hamburg, Germany, and Shanghai, China

	2015					2015				
	1st qtr	2nd qtr	3rd qtr	4th qtr	Avg	1st qtr	2nd qtr	3rd qtr	4th qtr	Avg
	To Hamburg, Germany (via U.S. Gulf)									
	Minneapolis, Minnesota --US\$/mt--					Davenport, Iowa --US\$/mt--				
Truck	12.02	12.02	8.50	8.38	10.23	12.02	12.02	8.50	8.38	10.23
Rail ¹	42.09	-	-	-	42.09	31.20	-	-	-	31.20
Barge ²	14.07	30.50	31.32	34.05	27.49	14.07	24.22	24.81	25.51	22.15
Ocean ³	14.03	13.95	15.48	13.81	14.32	14.03	13.95	15.48	13.81	14.32
Total transportation ³	82.21	56.47	55.30	56.24	62.56	71.32	50.19	48.79	47.70	54.50
Farm price ⁴	361.31	350.66	344.90	314.77	342.91	365.97	350.90	346.86	315.02	344.69
Landed cost	443.52	407.13	400.20	371.01	405.47	437.29	401.09	395.65	362.72	399.19
Transport % of landed cost	18.5	13.9	13.8	15.2	15.3	16.3	12.5	12.3	13.2	13.6
	To Shanghai, China (via U.S. Gulf)									
	Minneapolis, Minnesota --US\$/mt--					Davenport, Iowa --US\$/mt--				
Truck	12.02	12.02	17.57	14.90	14.13	12.02	12.02	8.50	8.38	10.23
Rail ¹	42.09	-	-	-	42.09	31.20	-	-	-	31.20
Barge ²	14.07	30.50	31.32	34.05	27.49	14.07	24.22	24.81	25.51	22.15
Ocean ³	30.41	29.54	32.65	27.77	30.09	30.41	29.54	32.65	27.77	30.09
Total transportation ³	98.59	72.06	72.47	70.20	78.33	95.02	56.04	65.96	61.66	69.67
Farm price ⁴	361.31	350.66	344.90	314.77	342.91	365.97	350.90	346.86	315.02	344.69
Landed cost	459.90	422.72	417.37	384.97	421.24	453.67	416.68	412.82	376.68	414.96
Transport % of landed cost	21.4	17.0	17.4	18.2	18.5	19.3	15.8	16.0	16.4	16.9
	To Shanghai, China (via PNW)									
	Fargo, ND --US\$/mt--					Sioux Falls, SD --US\$/mt--				
Truck	12.02	12.02	8.50	8.38	10.23	12.02	12.02	8.50	8.38	10.23
Rail ¹	57.17	56.26	56.81	53.68	55.98	58.46	57.46	58.08	54.80	57.20
Ocean ³	16.70	16.17	17.57	14.90	16.34	16.70	16.17	17.57	14.90	16.34
Total transportation ³	85.89	84.45	82.88	76.96	82.55	87.18	85.65	84.15	78.08	83.77
Farm price ⁴	338.78	322.00	326.16	304.97	322.98	346.74	334.74	329.35	308.65	329.87
Landed cost	424.67	406.45	409.04	381.93	405.52	433.92	420.39	413.50	386.73	413.64
Transport % of landed cost	20.2	20.8	20.3	20.2	20.4	20.1	20.4	20.4	20.2	20.3

¹Rail service is required due to seasonal closure of the Minneapolis segment of the Mississippi River.

²The Mississippi River closes from Minneapolis to just north of St. Louis during mid-December to late March.

³Source: O'Neil Commodity Consulting; Excludes handling charges

⁴Source: USDA/NASS

Reference Material

Average quarterly exchange rate																
	1st qtr	2nd qtr	3rd qtr	4th qtr	2006	1st qtr	2nd qtr	3rd qtr	4th qtr	2007	1st qtr	2nd qtr	3rd qtr	4th qtr	2008	
Real per US\$	2.1974	2.1879	2.1711	2.1520	2.1771	2.1085	1.9818	1.9175	1.7861	1.9485	1.7379	1.6560	1.6674	2.2766	1.8345	
	1st qtr	2nd qtr	3rd qtr	4th qtr	2009	1st qtr	2nd qtr	3rd qtr	4th qtr	2010	1st qtr	2nd qtr	3rd qtr	4th qtr	2011	
Real per US\$	2.3113	2.0728	1.8680	1.7386	1.9977	1.8003	1.7927	1.7487	1.6963	1.7595	1.6673	1.5962	1.6357	1.8012	1.6751	
	1st qtr	2nd qtr	3rd qtr	4th qtr	2012	1st qtr	2nd qtr	3rd qtr	4th qtr	2013	1st qtr	2nd qtr	3rd qtr	4th qtr	2014	
Real per US\$	1.7701	1.9641	2.0288	2.0576	1.9551	1.9977	2.0673	2.2880	2.2735	2.1566	2.2735	2.2296	2.2745	2.5437	2.3303	
	1st qtr	2nd qtr	3rd qtr	4th qtr	2015											
Real per US\$	2.8637	3.0722	3.5480	3.8426	3.3316											

Selected quarterly Brazilian farm prices (US\$/metric ton)*							
Year	Rio Grande do Sul	Mato Grosso	Goiás	Paraná	Piauí	Pará	Maranhão
2009							
1st qtr	315.99	264.63	288.68	326.95			
2nd qtr	359.68	315.88	336.86	373.16			
3rd qtr	374.28	347.80	356.43	391.57			
4th qtr	388.08	369.07	371.29	398.17			
Average	359.51	324.34	338.31	372.46			
2010							
1st qtr	331.49	261.05	309.89	325.22			
2nd qtr	304.36	269.58	271.15	300.32			
3rd qtr	342.98	328.51	315.43	350.41			
4th qtr	400.78	413.46	400.62	425.79			
Average	344.90	318.15	324.27	350.44			
2011							
1st qtr	431.68	406.96	441.07	459.96			
2nd qtr	425.42	386.58	413.15	435.53			
3rd qtr	428.53	416.62	417.65	440.47			
4th qtr	377.84	358.24	379.70	390.69			
Average	415.87	392.10	412.89	431.66			
2012							
1st qtr	405.07	377.70	401.58	428.80			
2nd qtr	448.47	448.29	428.40	475.69			
3rd qtr	557.90	570.66	566.91	593.20			
4th qtr	521.43	536.60	522.33	557.54			
Average	483.22	483.31	479.80	513.81			
2013							
1st qtr	460.13	419.35	445.56	476.22			
2nd qtr	459.96	391.58	419.62	461.97			
3rd qtr	448.29	404.93	405.90	453.28			
4th qtr	458.54	426.00	442.20	481.71			
Average	456.73	410.46	428.32	468.29			
2014							
1st qtr	482.75	375.58	420.52	463.81			
2nd qtr	464.19	417.02	441.74	471.00			
3rd qtr	455.08	398.98	394.07	416.92			
4th qtr	368.05	361.74	349.62	383.90			
Average	442.52	388.33	401.49	433.91			
2015							
1st qtr	336.85	312.34	329.95	340.69	330.99	357.47	326.75
2nd qtr	360.56	295.94	310.64	333.27	300.93	312.03	310.26
3rd qtr	314.06	285.95	287.19	313.28	314.26	288.72	293.97
4th qtr	314.70	286.43	289.68	305.35	313.41	284.75	326.72
Average	331.55	295.17	304.36	323.15	314.90	310.74	314.43

Source: Companhia Nacional de Abastecimento (CONAB)



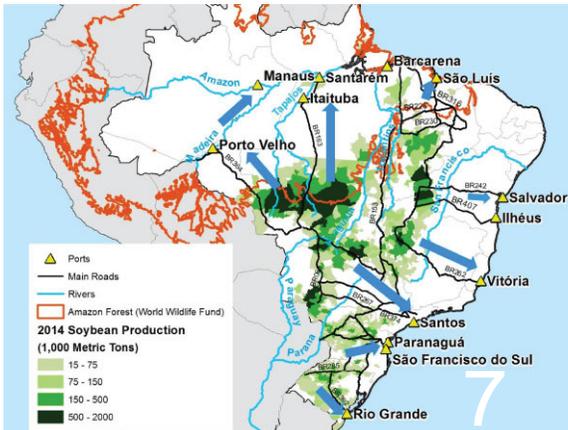
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April 2016

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