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Report Name: Infrastructure Challenges in Brazil's Agricultural Sector

Country: Brazil

Post: Brasilia

Report Category: Agricultural Situation

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Report Highlights:

Brazil's agricultural expansion toward the North and Center-West has created new production frontiers requiring highways, railways, warehouses, ports, and logistics services beyond traditional routes. Inflation, fuel prices, and rising input costs pushed transportation expenses higher, steadily undermining the competitiveness of Brazilian producers. Combined with inadequate infrastructure, these pressures represent some of the most significant barriers to growth in Brazil's agricultural sector. Specialists warn that without sufficient investment, Brazil's logistics network could become a binding constraint on agricultural growth by 2034.

THIS REPORT CONTAINS ASSESSMENTS OF COMMODITY AND TRADE ISSUES MADE BY USDA STAFF AND NOT NECESSARILY STATEMENTS OF OFFICIAL U.S. GOVERNMENT POLICY

Overview

Over the past decades, Brazil has continuously expanded agricultural production by improved productivity yields and increased cultivated areas, resulting in higher production and exports. Historically, agricultural transportation in Brazil has relied on road transportation to connect long distances between major production regions, domestic consumers and export ports.

The increase in agricultural production led to congestion of traditional transportation routes, in addition to higher transportation costs. As result, new agricultural transportation routes emerged to move agricultural production more efficiently and transportation modes are combined to transport cargo rapidly and less costly.

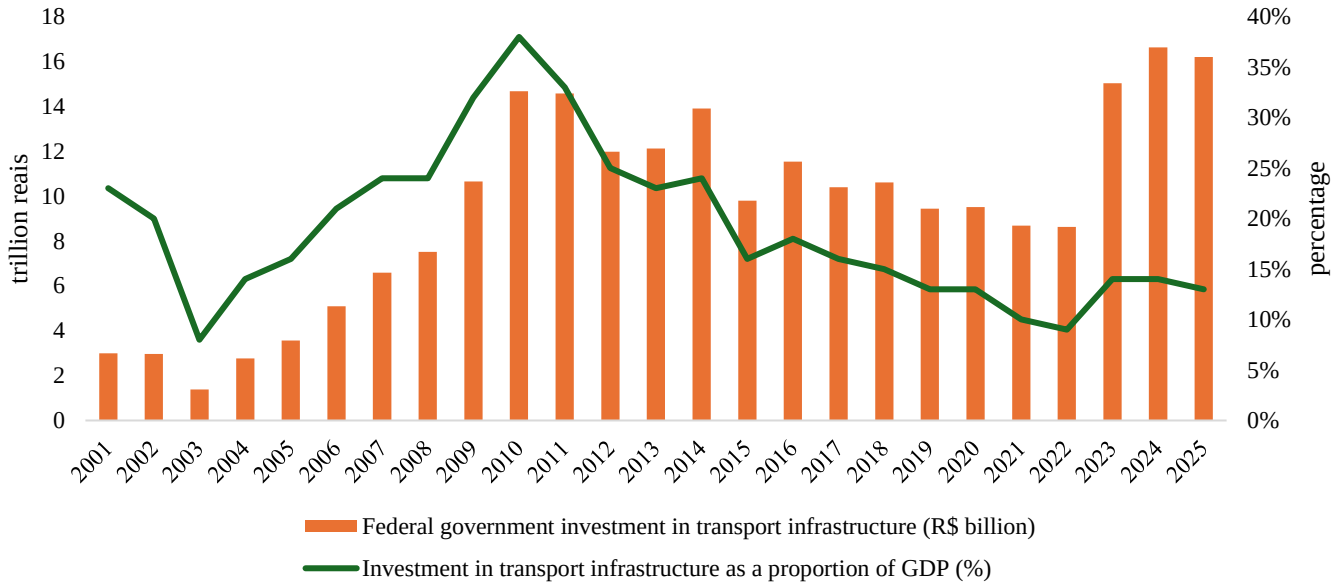
However, Brazil faces significant challenges in developing and maintaining its infrastructure. According to the World Economic Forum, Brazil's overall infrastructure score is 29.8, far behind leading countries such as Switzerland (94.8), Denmark (88.3), and Sweden (86). The International Institute of Management Development (IMD) ranks Brazil 58th out of 69 countries, evaluating infrastructure across basic, technological, scientific, health, and education sectors to assess how well countries support business activity. The United States has an overall infrastructure score of 78.6, ranking in the 11th position.

Investment in Brazil's transport infrastructure remains significantly below demand. In 2025, the country allocated 0.13 percent of its Gross Domestic Product (GDP) to the sector, far short of the minimum 4 percent considered necessary to meet national needs, according to the Brazilian Association of Infrastructure and Basic Industries (ABDIB). While federal investments have more than doubled since 2021, Brazil faces challenges in establishing a sustained investment cycle to address persistent logistical bottlenecks. For 2026, the federal budget for transport infrastructure is set at BRL18.1 billion, a modest increase from previous years.

ABDIB estimates that Brazil must invest approximately BRL242 billion annually to develop adequate transport and logistics infrastructure across road, rail, waterway, and air sectors.

Figure 1

Federal Investments of Transport Infrastructure and GDP Proportion, 2001 to 2025



Source: National Transports Confederation (CNT)

In 2026, the allocation of federal resources for transport infrastructure in Brazil is heavily weighted toward the road sector, which will receive 65 percent of the total budget (BRL11.8 billion). The air sector follows with 21 percent (BRL3.8 billion), while the waterway and rail sectors will receive 11 percent (BRL2 billion) and 2 percent (BRL399 million), respectively.

Inflation, fuel prices, and rising input costs such as tires and tolls have pushed transportation expenses higher, steadily undermining the competitiveness of Brazilian producers. Combined with inadequate infrastructure, these pressures represent some of the most significant barriers to growth in Brazil's agricultural sector.

To address the challenges and support the country's expanding agribusiness exports, experts recommend accelerating investments in rail and waterway logistics, which currently lags the pace of agricultural production. The specialists warn that without sufficient investment the capacity of Brazil's logistics network could constrain the agricultural sector's growth by 2034.

According to the Brazilian Institute of Geography and Statistics (IBGE), Brazil's main harvests reached 290 million tons in 2024, rose to a record 343 million tons in 2025, and is projected to reach approximately 339 million tons in 2026.

Chart 1
Brazilian Production of Selected Agricultural Commodities, 2024 and 2025

Product	Production in 2024 (tons)	Production in 2025 (tons)
Cotton	8,866,378	9,880,470
Rice	10,591,604	12,651,251
Corn	114,703,192	141,734,445
Soybeans	144,946,662	166,054,076
Sorghum	3,985,503	5,399,877
Wheat	7,530,249	7,806,842
Total	**290,623,588**	**343,526,961**

Source: Brazilian Institute of Geography and Statistics (IBGE)

The logistics of agricultural transport in Brazil involve the movement, storage, redistribution, and export of products. Each stage requires planning, operational efficiency, and integration across the supply chain to ensure timely delivery and maintain product quality.

Brazil has over 1.7 million kilometers of roads, but only 216,000 kilometers are paved. The country has 30,000 kilometers of railways, with just one-third in commercial operation, and approximately 20,000 kilometers of navigable waterways. This disparity limits the efficiency and competitiveness of Brazil's agricultural logistics.

On average, approximately 65 percent of grains are moved via highways. Railways account for about 22 percent of the grains volume transported, while waterways represent 9 percent.

In 2024, Brazil's total storage capacity reached 202 million tons, with the largest concentrations in Rio Grande do Sul, Mato Grosso, and Paraná. However, this capacity remains inadequate to keep pace with the rapid expansion of national agricultural production, especially in new agricultural frontiers. On-farm storage advanced significantly and is increasingly adopted by producers, providing greater autonomy in crop marketing and helping to reduce post-harvest losses.

Brazilian Agricultural Production

Brazil is a major agricultural producer and a global leader in both the production and export of several key crops. The country's main crops, based on gross production value[1], include soybeans, corn, sugar, coffee, cotton, and oranges. In addition to crop production, Brazil maintains large herds of cattle, poultry and swine.

[1] Gross Production Value (VBP) measures the gross revenue generated by rural establishments, reflecting the income from agricultural and livestock production based on the average prices received by producers. The VBP is used to evaluate the annual performance of the sector and covers the 26 largest crops and products. It is updated monthly by the Ministry of Agriculture.

Chart 2

Brazil's Position in the Global Market 2024/25

Main Products	Brazil - Global Ranking	
	Production	Trade
Sugar	1st	1st
Coffee	1st	1st
Orange Juice	1st	1st
Soybeans	1st	1st
Beef	2nd	1st
Poultry	3rd	1st
Corn	3rd	2nd
Soybean Meal	3rd	2nd
Soybean Oil	3rd	2nd
Cotton	3rd	1st
Pork	4th	3rd

Source: USDA

The agricultural sector's share of the country's gross domestic product was 6.1% (BRL775.3 billion) in 2025, behind the services sector, with 69.5% (BRL7.6 trillion) and industry, with 23.4% (BRL2.5 trillion).

Chart 3

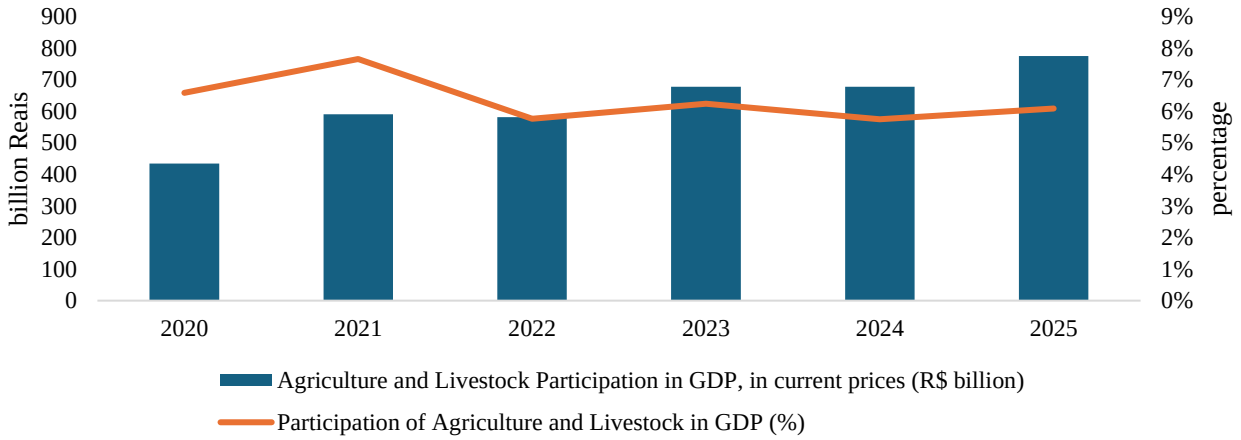
Brazilian Gross Domestic Production Composition, 2020 to 2025

	GDP at current prices* (BRL trillion)	Agriculture and Livestock Participation in GDP, in current prices (BRL billion)	Industry Participation in GDP, in current prices (BRL trillion)	Services Participation in GDP, in current prices (BRL trillion)	Agriculture and Livestock Participation in GDP (%)	Industry Participation in GDP (%)	Services Participation in GDP (%)
2020	6,594,937	434,621	1,484,337	4,675,979	6.59%	22.51%	70.90%
2021	7,714,000	591,085	1,993,799	5,129,114	7.66%	25.85%	66.49%
2022	8,736,476	581,343	2,300,127	5,855,005	5.77%	26.33%	67.02%
2023	9,486,587	677,571	2,416,916	6,392,098	6.24%	25.48%	67.38%
2024	10,114,102	677,575	2,466,656	6,969,871	5.75%	24.39%	68.91%
2025	10,951,981	775,297	2,566,814	7,609,870	6,09%	23,44%	69,48%

*Source: Ministry of Agriculture; Chart Post Brasilia *Current prices refer to GDP excluding taxes*

Figure 2

Brazilian Agriculture and Livestock Participation in the GDP, in current prices and percentage



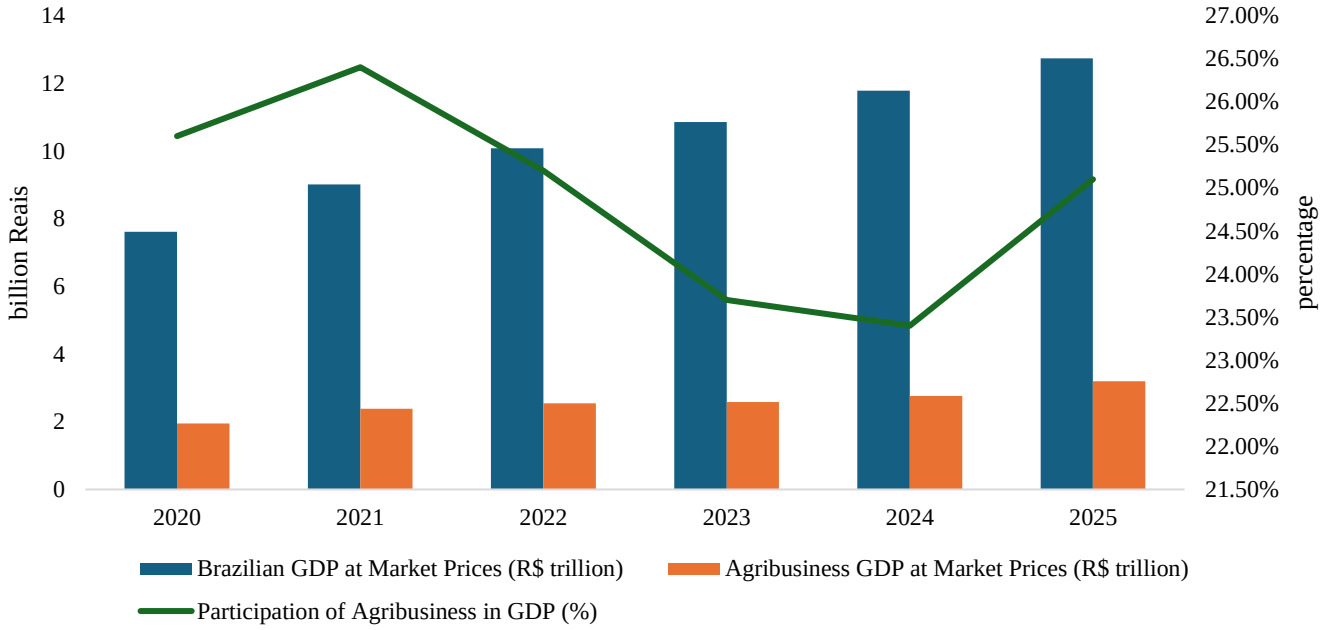
Source: Ministry of Agriculture; Chart Post Brasilia

There is a distinction between agriculture and agribusiness in terms of production measurement. Agriculture refers specifically to the cultivation of crops and the raising of animals, focusing solely on primary production. In contrast, agribusiness is a broader concept that encompasses all activities related to the production, processing, and marketing of agricultural and livestock products. Agribusiness includes four main sectors:

- **Inputs**: Companies supplying fertilizers, seeds, pesticides, machinery, and technologies.
- **Agricultural and livestock production**: Cultivation of crops and animal husbandry.
- **Agroindustry and processing**: Transformation of agricultural products into food, biofuels, and feed.
- **Agroservices, marketing, and logistics**: Transportation, storage, trade, distribution, and related services.

In 2025, Brazil's agribusiness GDP totaled BRL3.2 trillion, accounting for 25 percent of the country's total GDP. Of this amount, BRL2.1 trillion was generated by the agricultural sector and BRL1.1 trillion by the livestock sector.

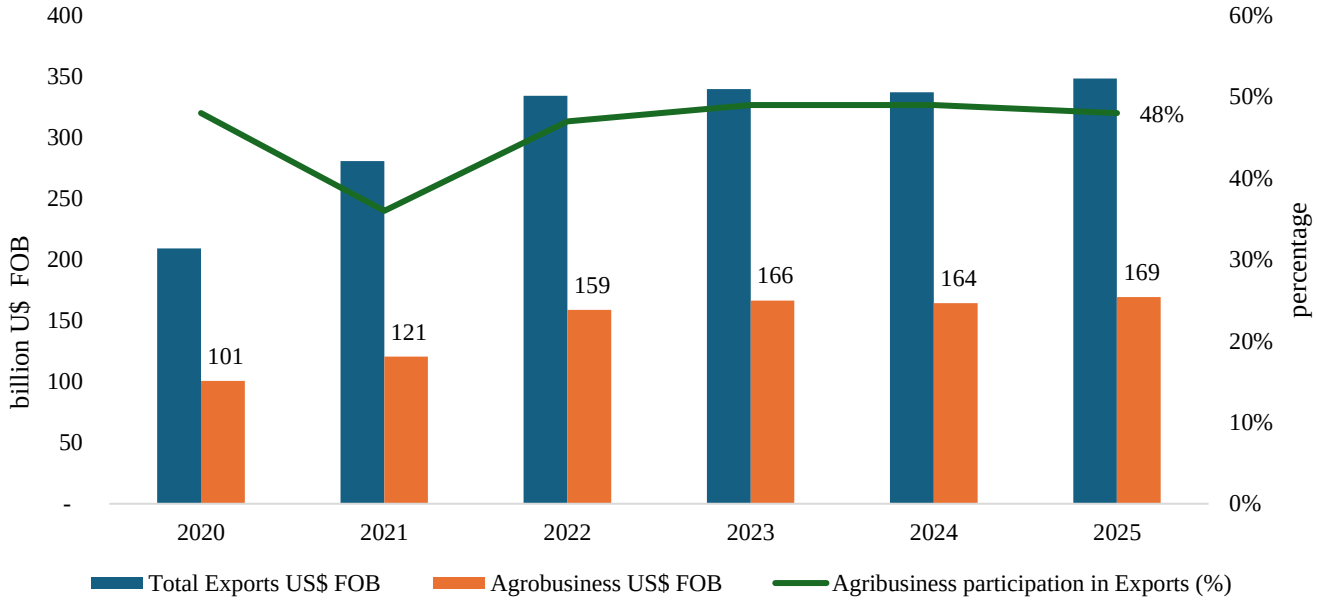
Figure 3
Brazilian GDP and Agribusiness Participation – 2020 to 2025



Source: Ministry of Agriculture, National Confederation of Agriculture and CEPEA; Chart Post Brasilia

In 2025, agribusiness accounted for 48 percent of Brazil's total exports. The leading export products were soybeans, which made up 31.3 percent of agribusiness exports ($52.8 billion), followed by meats at 18.8 percent ($ 31.8 billion), and forestry products at 9.7 percent ($ 16.4 billion).
The primary destinations for Brazilian total agricultural exports were China, which purchased $ 55.2 billion (33 percent), the European Union with $25.2 billion (15 percent), and the United States with $ 11.4 billion (6 percent).

Figure 4
Brazilian Total Exports and the Agribusiness Share – 2020 to 2025



Source: Siscomex and Agrostat; Chart Post Brasilia

Production

Several factors have driven the growth of agricultural production in Brazil, especially increased productivity through the adoption of new technologies. The Brazilian Agricultural Research Corporation (EMBRAPA) played an important role adapting global technologies to Brazil's tropical soils and developing solutions for challenges such as soil acidity, irregular climate patterns, and the need for new production systems.

Since the 1970s, EMBRAPA's technical and scientific advancements[2] enabled regions once considered unproductive, such as the Cerrado, to undergo significant structural changes. By correcting soil acidity, developing crop varieties suited to local conditions, and improving pest and disease management, these areas have experienced substantial agricultural expansion, particularly in soybean cultivation.

In 2000, Brazil produced 32 million tons of soybeans[3] in 16 states. By 2025, production had expanded to 166 million tons across all 27 states. The gross production value (VBP) of soybeans also increased considerably, rising from BRL59 billion in 2000 to BRL329 billion in 2025, a 743 percent increase.

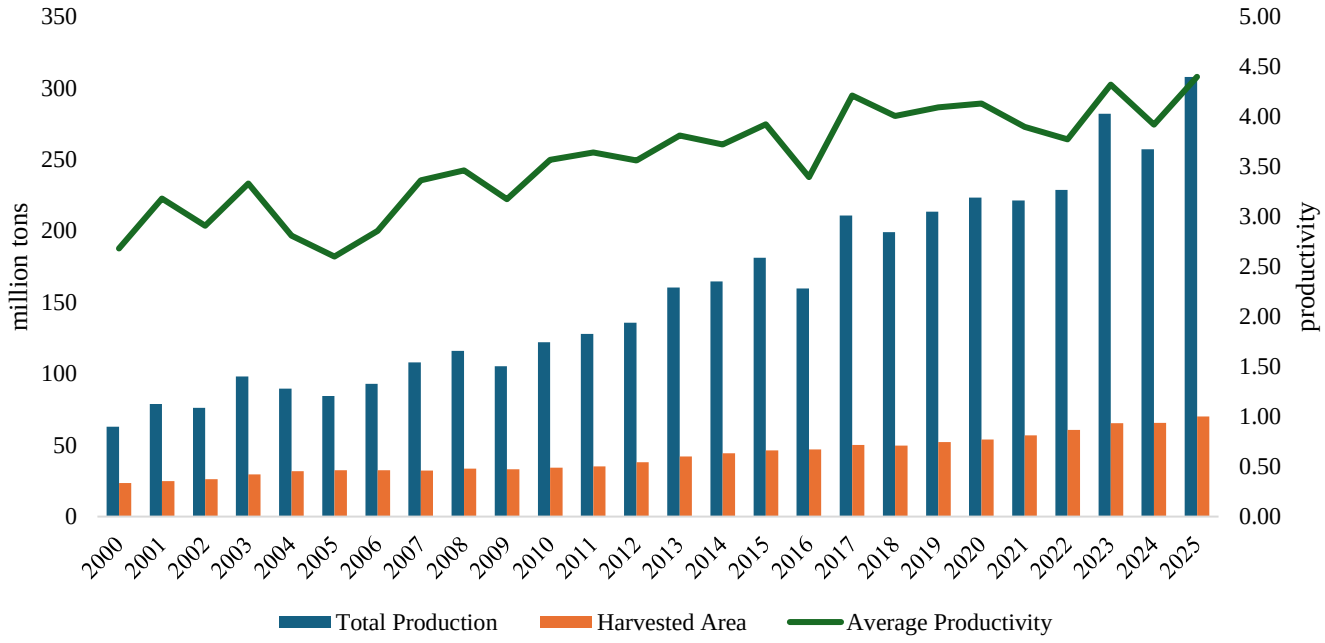
Corn[4] production expanded from 30 million tons in 2000 to 141 million tons in 2025, with production in all 27 Brazilian states. The gross production value rose from BRL41 billion to BRL166 billion. This

[2] For additional information please refer to United States and Brazil – Partners in Combatting Climate Change and Food Insecurity, available here.
[3] Please refer to Brazil: Oilseeds and Product Annual for additional details.
[4] Please refer to Brazil: Grain and Feed Annual for additional details.

substantial growth was primarily driven by the adoption of two annual harvests, the second one known as "*safrinha*," which significantly increased land use efficiency and contributed to the expansion of corn production nationwide. Planted after the soybean harvest, this second crop allowed Brazil to maximize agricultural output from existing farmland, reshaping the country's corn production system.

Figure 5

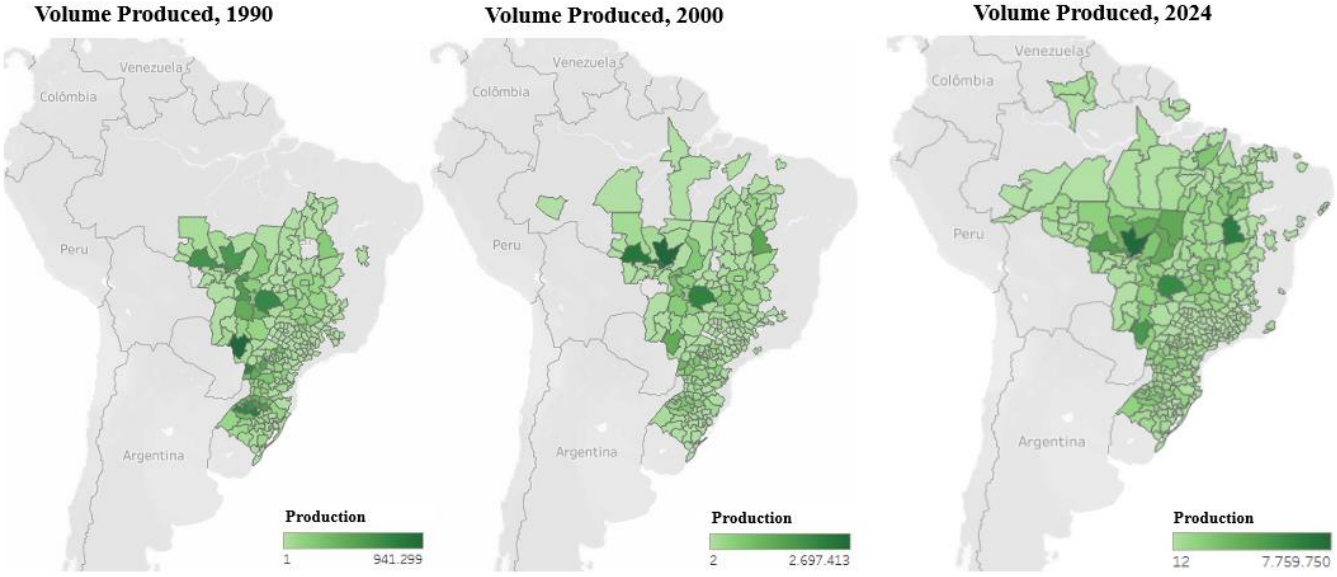
Evolution of Brazilian Grains (Soybeans and Corn) Production, Harvested Area and Average Productivity, 2000 to 2025



Source: Brazilian Institute of Geography and Statistics (IBGE) and Embrapa; Chart FAS Post Brasilia

Figure 6

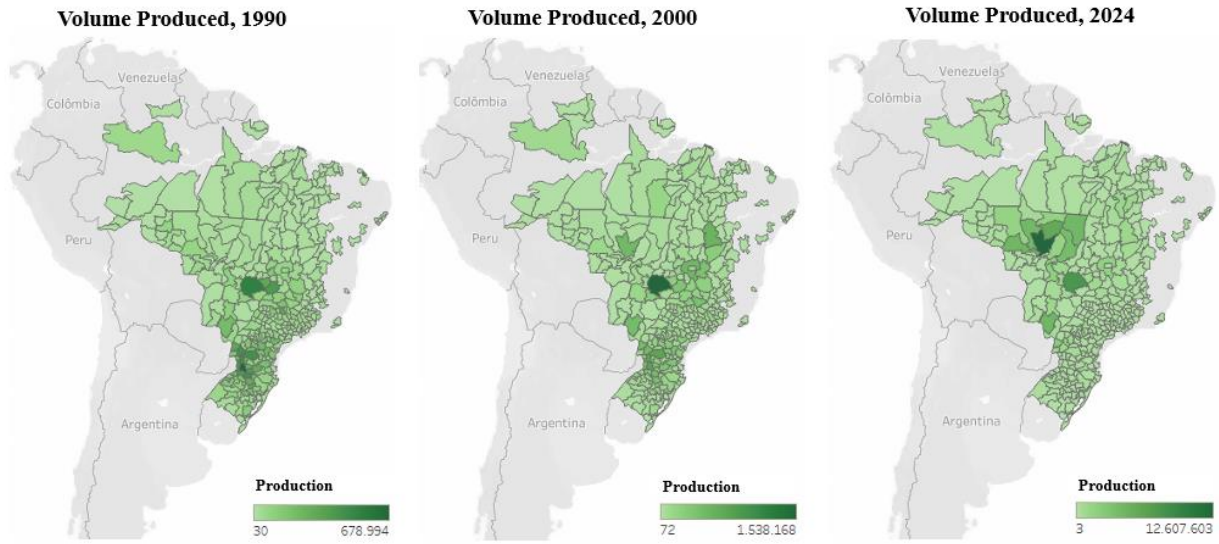
Territorial Overview of Soybeans Volume Production Evolution, in tons



Source: *Brazilian Institute of Geography and Statistics (IBGE), through Embrapa; Chart FAS Brasilia*

Figure 7

Territorial Overview of Corn Volume Production, in tons



Source: *Brazilian Institute of Geography and Statistics (IBGE), through Embrapa; Chart FAS Post Brasilia*

Agricultural Transportation Profile – Roads Lead the Way

Since the mid-1950s, Brazil's transport network has relied heavily on road transport, often at the expense of developing rail and waterway systems. According to the National Transport Confederation (CNT), by 2025 Brazil had 1.7 million kilometers of highways, but only 216,000 kilometers (12 percent) were paved.

As of December 2025, Brazil's vehicle fleet totaled 129 million vehicles. Of this total, 80 million were light-duty vehicles (62 percent), 36 million were motorcycles (28 percent), 8 million were trucks (6 percent), and the remaining 4 million (4 percent) comprised other types of vehicles.

Chart 4
Brazilian Vehicle Fleet, 2023 to 2025

Fleet composition, in million units	2025 (Jan-Dec)	2024 (Jan-Dec)	2023 (Jan-Dec)
Light duty vehicles	79,996,111	77,918,511	75,667,596
Motorcycles	36,563,868	34,503,740	32,668,301
Heavy duty vehicles	8,246,982	7,907,305	7,547,517
Others	4,295,253	3,644,964	3,344,243
Total	**129,102,214**	**123,974,520**	**119,227,657**

Source: National Transports Confederation; Chart Post Brasilia

Brazil's rail network totaled 31,389 kilometers in 2025, with the rail system transporting 540.5 million tons of cargo that year.

Brazil has 41,795 kilometers of waterways, with 20,125 kilometers classified as economically navigable. The country's waterway infrastructure includes 318 leased terminals, 44 cargo transshipment stations, 228 private-use terminals, 35 organized ports, 41 small port facilities, and 5 tourism port facilities. According to 2022 data, the cabotage and long-distance maritime navigation fleet comprised 181 vessels, while the inland navigation fleet included 2,737 vessels.

Brazilian ports handled 1.4 billion tons of cargo in 2025. Of the total cargo transported by waterways, 60 percent was solid bulk, 24 percent was liquid and gaseous bulk, 12 percent was containerized cargo, and 4 percent was general cargo.

Chart 5
Transportation Matrix Length, 2025

Mode of Transportation	Length
Highways	1.7 million kilometers
Paved roads	216,976 kilometers
Railroads	31,389 kilometers
Effectively operating	10,000~12,000 kilometers
Waterways	41,795 kilometers
Economically operating	20,125 kilometers

Source: National Confederation of Transports; Chart FAS Brasilia

The country's aviation infrastructure consisted of 505 public aerodromes, 59 concession aerodromes, and 3,624 private aerodromes. In 2025, the total volume of paid cargo and mail transported by air reached 1.4 million tons, with 465,800 tons on domestic flights and 1 million tons on international flights.

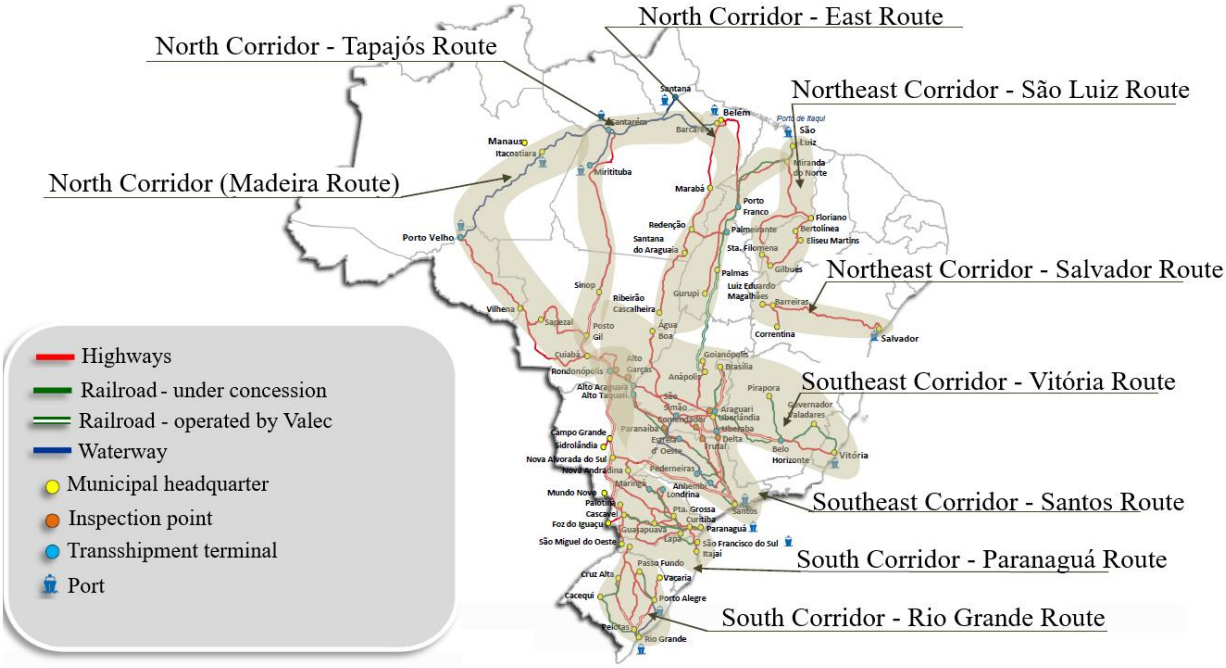
According to the National Supply Company (CONAB), there are key logistical corridors that facilitate the flow of agricultural production. The main ones are:

Northern Arc Corridor: This corridor is crucial for transporting grain from the northern region, utilizing the federal highway BR-163 and the Madeira waterway. In 2010, it accounted for 12 percent of grain exports. By 2024, it rose to 35 percent.

Southern/Southeastern Arc Corridor: Covering regions such as Goiás and Minas Gerais, this corridor enables the movement of agricultural goods to ports like Santos and Paranaguá.

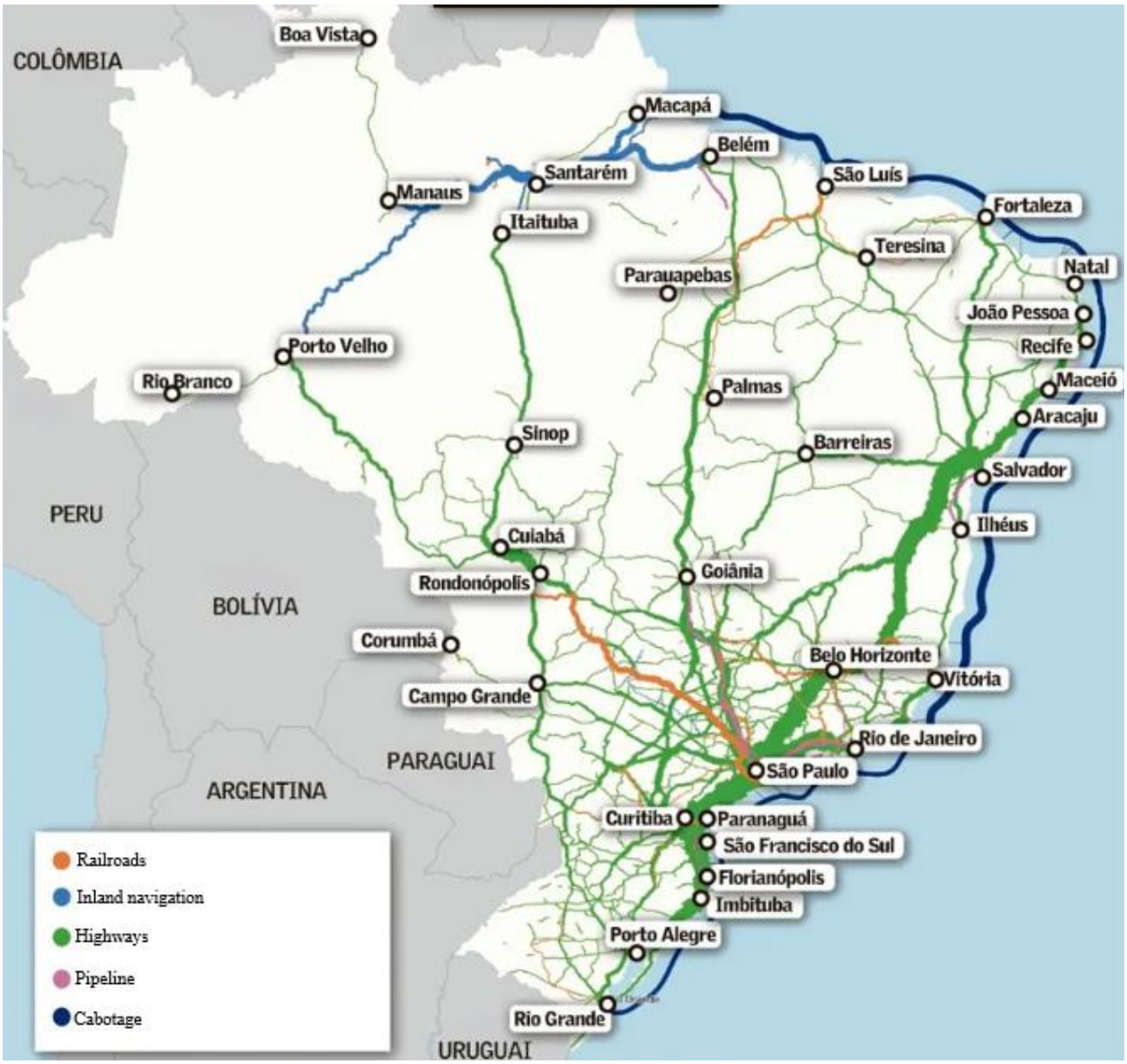
Matopiba: This region, comprising the states of Maranhão, Tocantins, Piauí, and Bahia, has emerged as a new hub for agricultural production, particularly for soybeans and corn.

Figure 8
Logistical Corridors, 2017



Source: Adapted from [Ministry of Transportation]

Figure 9
Brazilian Cargo Transportation Matrix, 2025



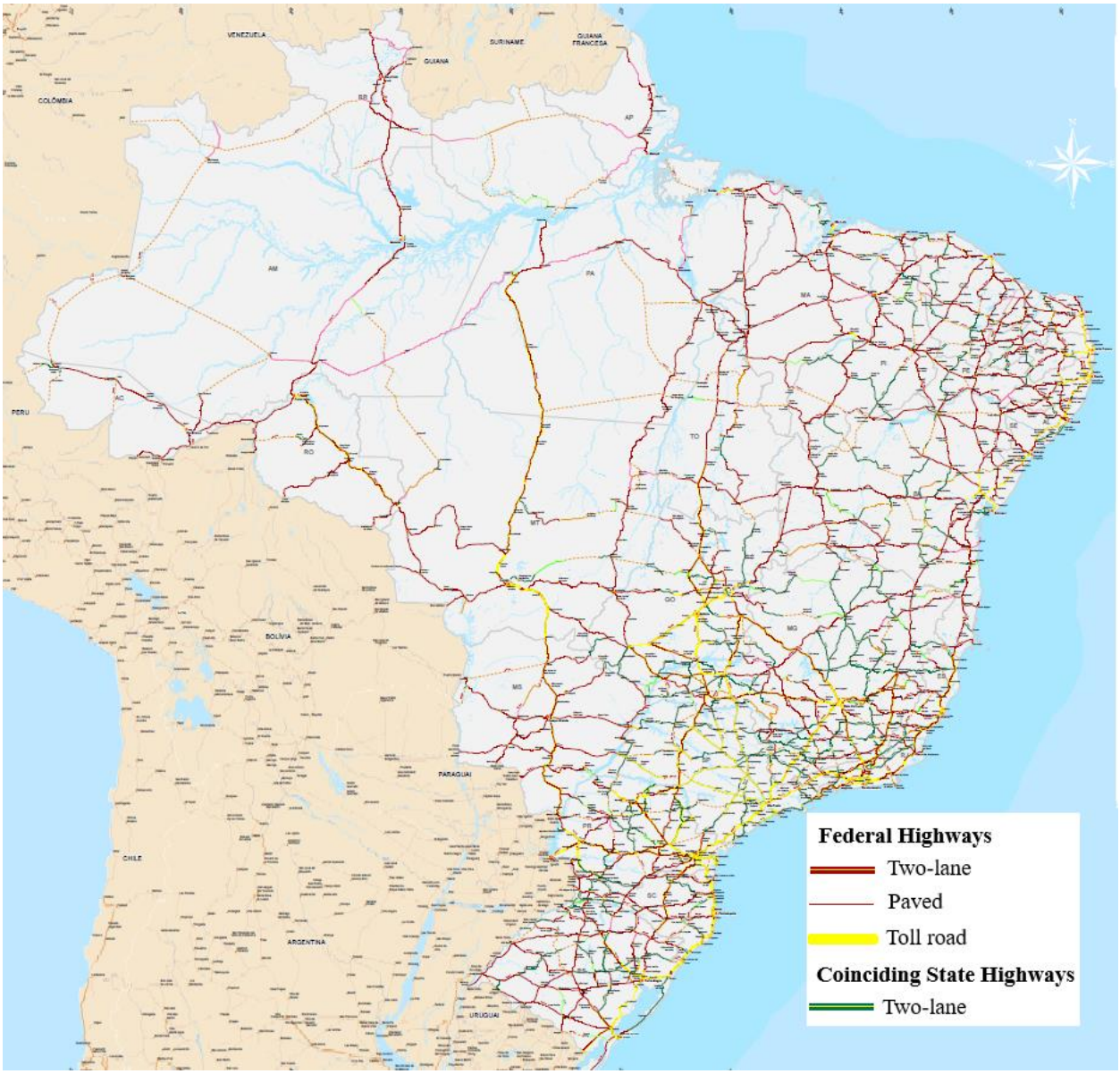
Source: *Valor Econômico*

Highways

Historically, Brazil relied on a road-based transportation system for moving agricultural products, largely due to the geographic expansion of agriculture into regions lacking logistical infrastructure.

Road transport costs are significantly higher over long distances, especially when compared to other modes. Additionally, the low density of paved roads and the current state of road maintenance further complicate the transportation of agricultural harvests.

Figure 10
Map of Brazilian Highways, 2025



Source: Adapted from Ministry of Transports

Beyond poor road conditions, there is also a lack of paved highways connecting production areas to the port system. Freight costs can account for as much as 60 percent of the price per ton of corn and 25 percent of the price of soybeans, as products often need to be transported 1,500 to 2,000 kilometers to reach ports in the South and Southeast for export.

For comparison, data from 2024 indicate that the United States has approximately 6.8 million kilometers of roads, with 63 percent (4.3 million kilometers) paved.

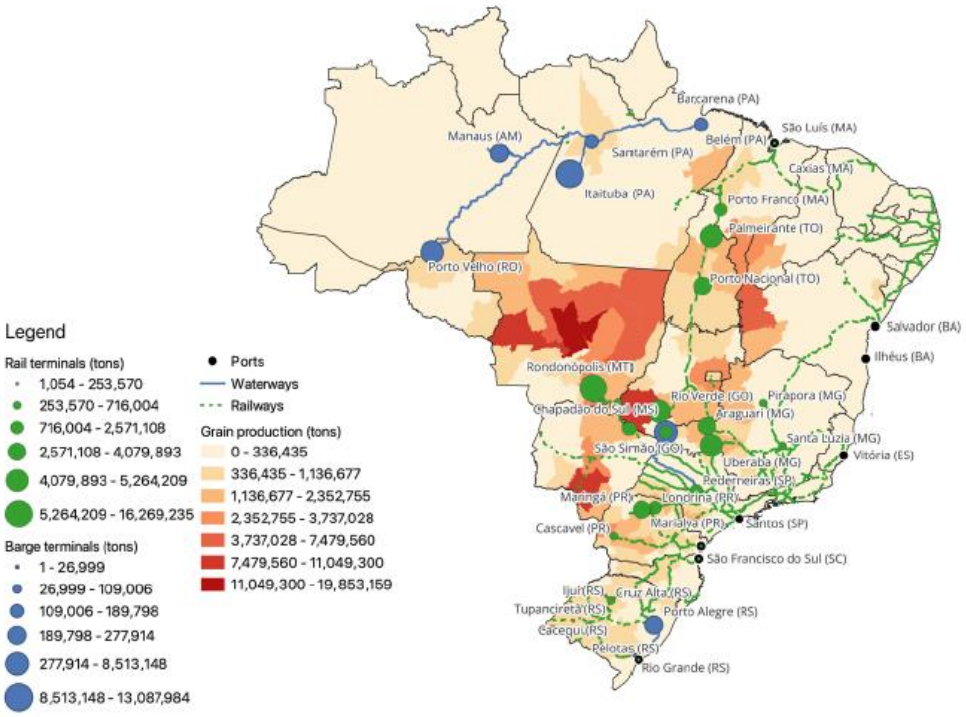
The predominance of road transport in Brazil leads to high costs and operational inefficiencies, as well as bottlenecks such as terminal queues and infrastructure limitations. According to a study published by nstech, approximately 70,000 additional trucks are used more than necessary to move Brazil's agricultural harvest.

A study by the Luiz de Queiroz College of Agriculture (ESALQ-Log) and USDA estimated that in 2023 road transport moved 69 percent of Brazil's grain shipments, rail moved 22 percent, and waterways just 9 percent. Of the cargo that arrived at ports in 2023, 54 percent were transported by truck, 33 percent by rail, and 13 percent by waterway. In comparison, in 2010, trucks accounted for 45 percent, railways for 47 percent, and waterways for 8 percent.

Between 2010 and 2023, the share of trucks supplying ports increased from 45 percent to 54 percent, while the share of rail fell from 47 percent to 33 percent, demonstrating that Brazil continues to increase its reliance on road transport for long distances. This growing reliance on road transport for long distances has increased costs and logistical inefficiencies, as trucking is the least efficient mode for long-haul transportation.

According to the National Land Transport Agency (ANTAQ) and the Systematic Survey of Agricultural Production (LPSA/IBGE), Brazil's road transport sector transported 98 million tons of soybeans, representing 60 percent of the total production of 166 million tons, 82 million tons of corn, or 58 percent of the total production of 141 million tons, and 24 million tons of sugar, also 58 percent of the total production of 41 million tons, in 2025.

Figure 11
Grain Transportation Map, 2024



Source: Luiz de Queiroz College of Agriculture (ESALQ/USP) and USDA

For years, the federal government has implemented highway concession programs to attract investment aimed at improving the flow of cargo in general, with benefits for the transportation of agricultural products. Through these concessions, the management, maintenance, and improvement of public roads are transferred to the private sector via auction, in exchange for the right to collect tolls.

In 2026, the federal government plans to tender 14 new highway contracts, with an expected investment of BRL158 billion. ANTAQ is responsible for overseeing these concessions and currently manages 34 federal concessions, covering a total of 16,900 kilometers of federal highways.

Waterways

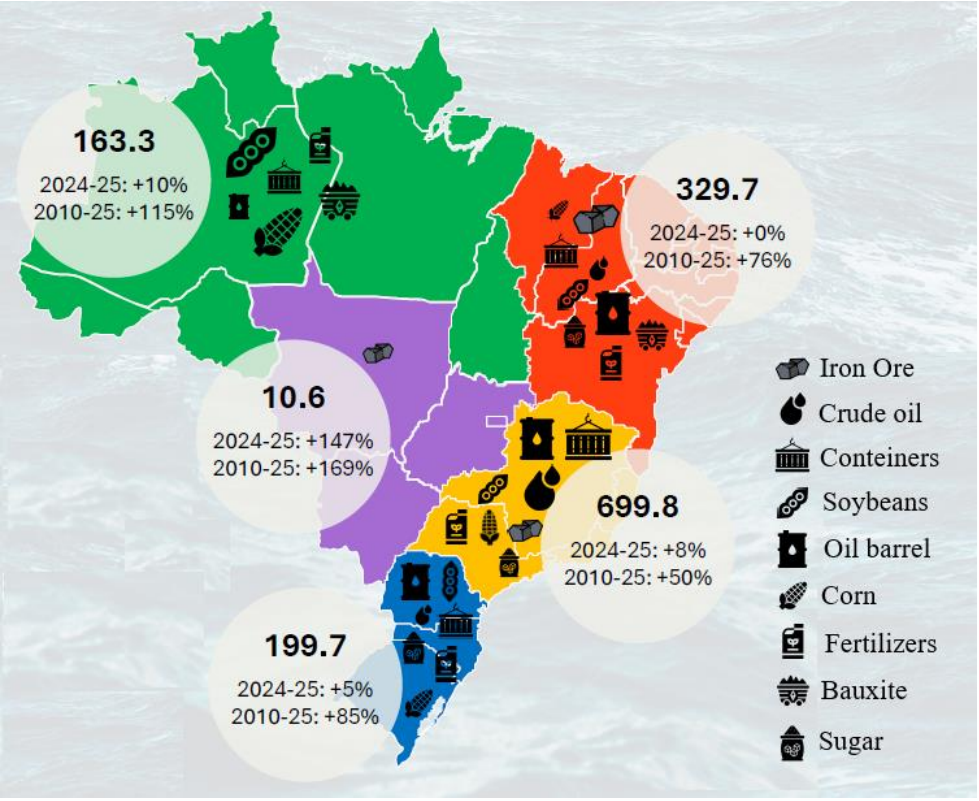
Waterways in Brazil are defined as water routes suitable for commercial navigation and include major navigable rivers, waterway corridors (*hidrovias*, in Portuguese), coastal routes, and ports facilities. Waterways fall under federal jurisdiction and are managed by ANTAQ. Ports facilities include both public ports (named organized ports), which are under federal jurisdiction and are managed by the national port system; and private use terminals (TUP, in Portuguese), which are operated by private entities.

In 2025, Brazil's waterway terminals handled 1.4 billion tons of cargo, a 6 percent increase compared to 2024. Solid bulk accounted for 60 percent (839 million tons), followed by liquid bulk at 24 percent (333 million tons), container transport at 12 percent (164 million tons), and general cargo at 4 percent (65 million tons).

The Southeast region accounts for 49.8 percent (699.8 million tons) of Brazil's waterway transport, with the main products being containers, oil barrels, crude oil, soybeans, fertilizers, sugar, and iron ore. The Northeast's navigable waterways represent 23.5 percent (329.7 million tons) of the total, with key cargoes including iron ore, corn, containers, crude oil, soybeans, oil barrels, bauxite, sugar, and fertilizers.

The South ranks third, with 14 percent (199.7 million tons), primarily transporting oil barrels, soybeans, crude oil, containers, sugar, fertilizers, and corn. The North follows with 11.6 percent (163.3 million tons), with main cargoes including soybeans, fertilizers, containers, bauxite, corn, and oil barrels. Finally, the Center-West region accounts for 0.75 percent of total cargo (10.6 million tons), mainly iron ore.

Figure 12
Waterway Transport Overview per Geographical Region in 2025, in million tons



Source: National Agency for Waterway Transport (ANTAQ)

Waterways are becoming increasingly important for the transport of agricultural products. In 2025, waterways moved 91 million tons, compared to 76 million tons in 2024. The main agricultural goods transported were soybeans (31.8 million tons), followed by corn (20.2 million tons), fertilizers (4.9 million tons), pulp (3.8 million tons), and oilseeds (1.6 million tons).

Agricultural commodities are primarily shipped through organized ports. In 2025, 90 percent of wheat, 84 percent of sugar, 73 percent of soybean meal, 59 percent of corn, and 56 percent of soybeans were handled at organized ports. As of December 2024, Brazil had 277 port facilities, with 229 registered as Private Use Terminals (TUPs).

Figure 13
Location of Brazilian Public Ports (Organized Ports), 2025

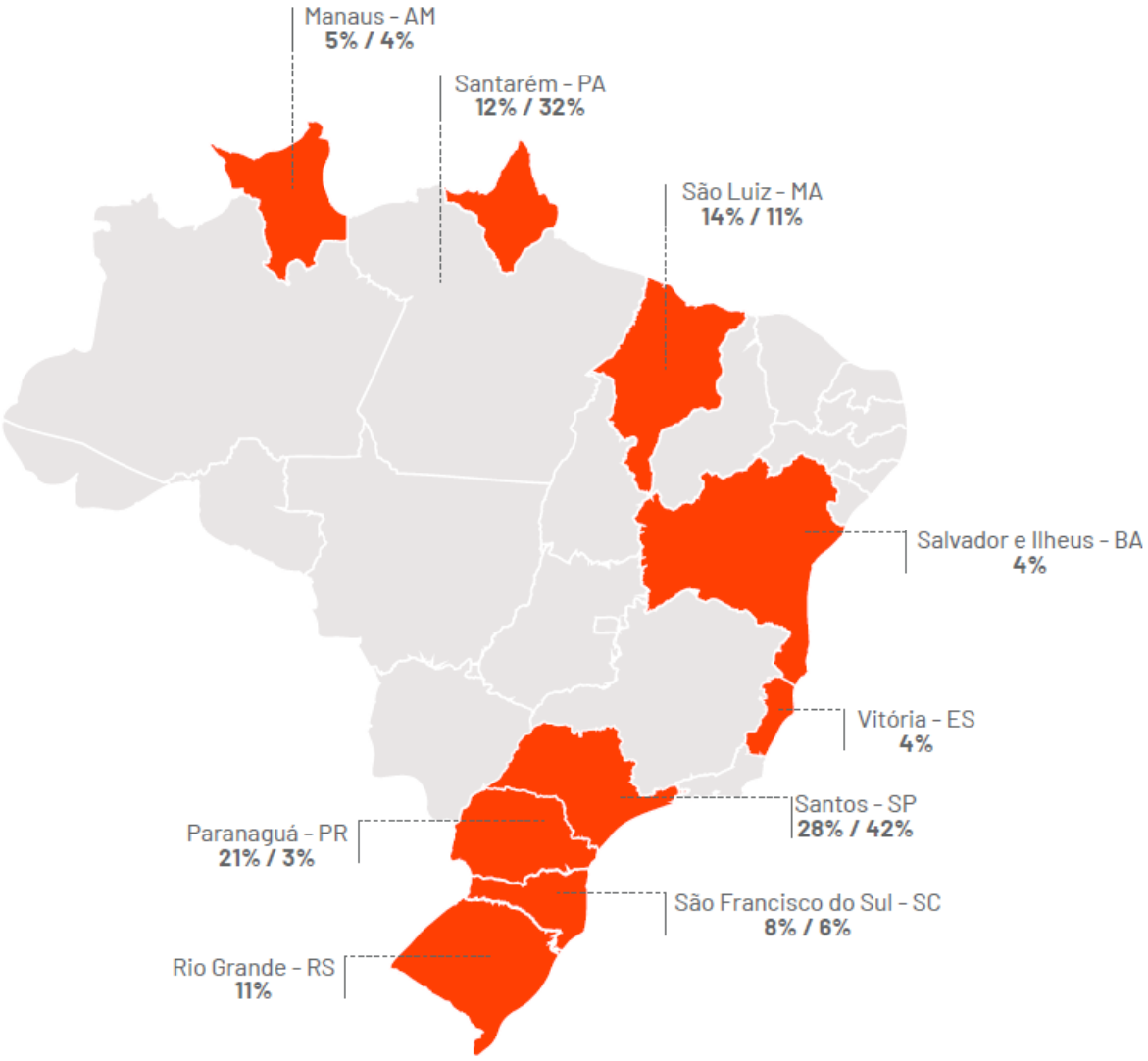
Source: National Agency for Waterway Transport (ANTAQ)

Coastal shipping (cabotage) handled 141 million tons (mi/t) in 2025, with about 76 percent (107 mi/t) consisting of liquid and gaseous bulk, followed by containerized cargo (24 mi/t or 11 percent), solid bulk (23 mi/t or 10 percent), and general cargo (5 mi/t or 2 percent). Few agricultural products are transported via cabotage.

The study by ESALQ-Log/USP and the USDA concluded that, between 2010 and 2023, waterway transport increased its share of agricultural product transportation from 8 percent to 13 percent, mainly due to public and private investments in the Northern region, which is home to key waterway corridors.

The growing significance of waterway transportation reflects public and private commitment to enhancing logistics, improved regulatory frameworks, and coordinated investment in the sector.

Figure 14
Port Exports Shares of Soybean and Corn, respectively, 2024



Source: nstech

In 2013, the federal government enacted legislation (Law 12.815/2013 and Decree 8.033/2013) regulating the construction of Private Use Terminals (TUP) for port services, thereby encouraging infrastructure investment. Until then, terminals were for exclusive private use, but after the law, they were permitted to handle third-party cargo. Following the approval of this legislation, there were approximately 50 requests for the installation of TUPs, as well as orders for barges and tugboats.

As a result, between 2022 and 2025, the federal government conducted 26 port auctions, securing over BRL15 billion in contracted investments. The largest projects include ITG02 at the Port of Itaguaí (Rio de Janeiro), the Santos-Guarujá Tunnel, the access channel of Paranaguá, and three terminals at the Port of Paranaguá, which together account for more than BRL12 billion. The primary goal of these auctions

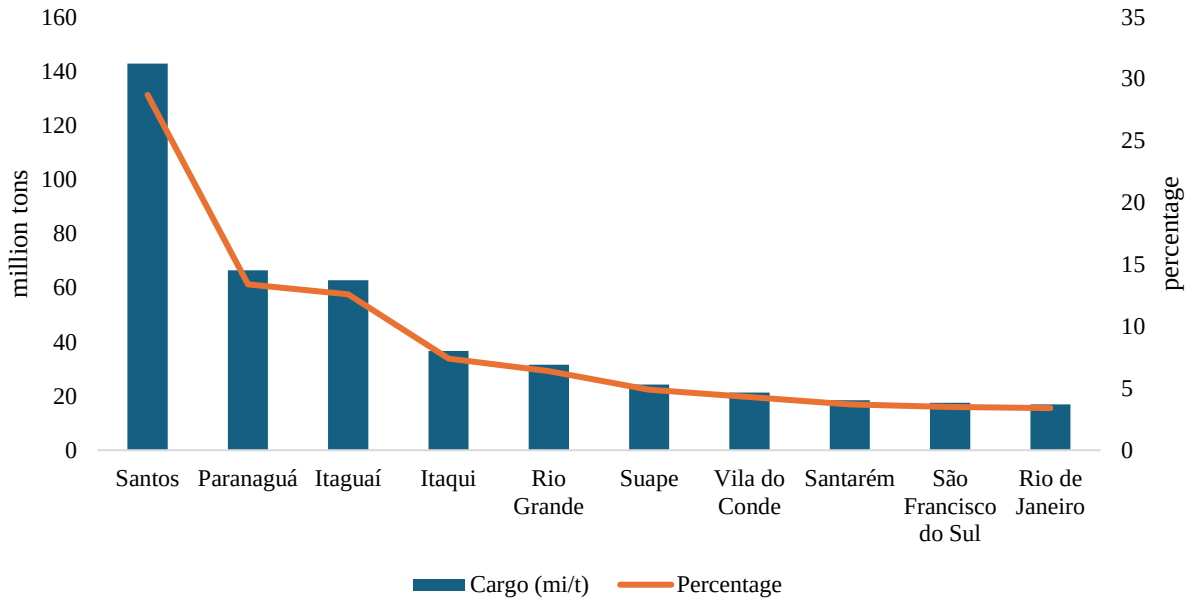
is to address logistical bottlenecks, integrate different modes of transportation, and expand cargo transport capacity.

For agricultural exports, the auctions of terminals at the Port of Paranaguá are particularly noteworthy. These projects aim to increase the handling capacity of solid vegetable bulk and expand exports of agricultural products. Cargill Brasil won the auction for terminal PAR15, which covers 43,300 square meters and has the capacity to handle approximately 4 million tons per year. The terminal will receive investments totaling BRL604 million.

The Port of Santos is Brazil's largest port in terms of cargo throughput and historically accounted for approximately 25 percent of the country's foreign trade. According to ANTAQ, in 2025 the port handled 142.8 million tons of cargo (28 percent of the national total), followed by the Port of Paranaguá with 66.4 million tons (13 percent), and Itaguaí with 62.8 million tons (12percent).

Figure 15

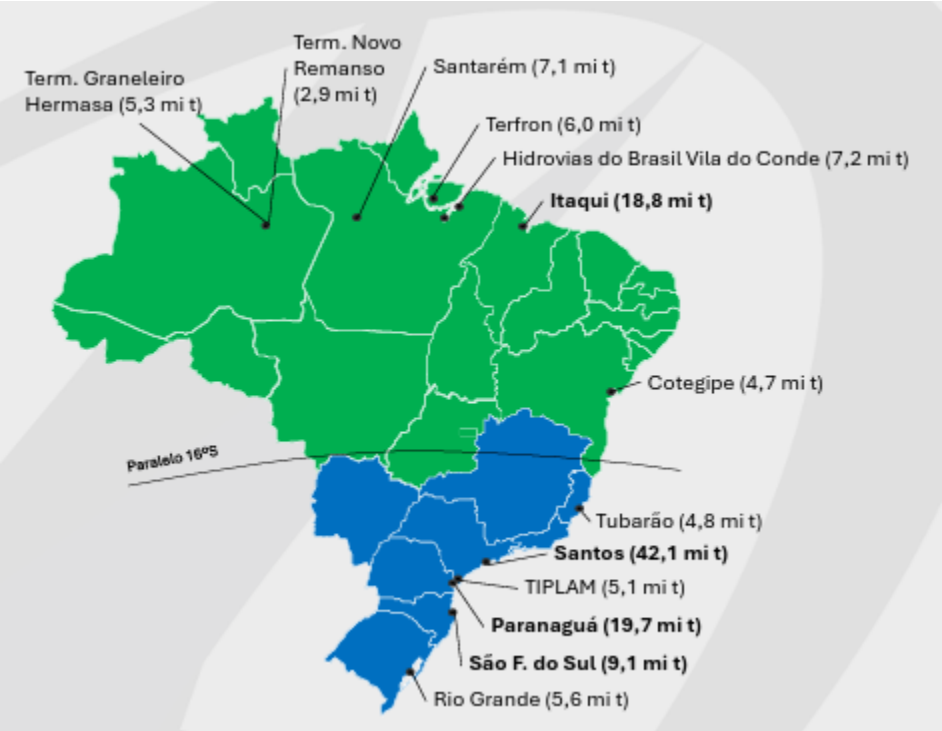
Cargo Transported in the Main Ports in Brazil, 2025



Source: *National Agency for Waterway Transport; Chart FAS Brasilia*

The Santos Port complex consists of terminals dedicated to the storage and movement of cargo and passengers. It is the largest port in Brazil and Latin America, spanning three municipalities in the state of São Paulo. Within the organized port area, terminals operate under the jurisdiction of the Santos Port Authority (APS), which sets the rules and regulations for port operations. These terminals are granted to private companies through public leases, formalized in contracts that specify occupancy periods and mandatory investment requirements.

Figure 16
Soybean and Corn Movement at Brazilian Ports, 2025

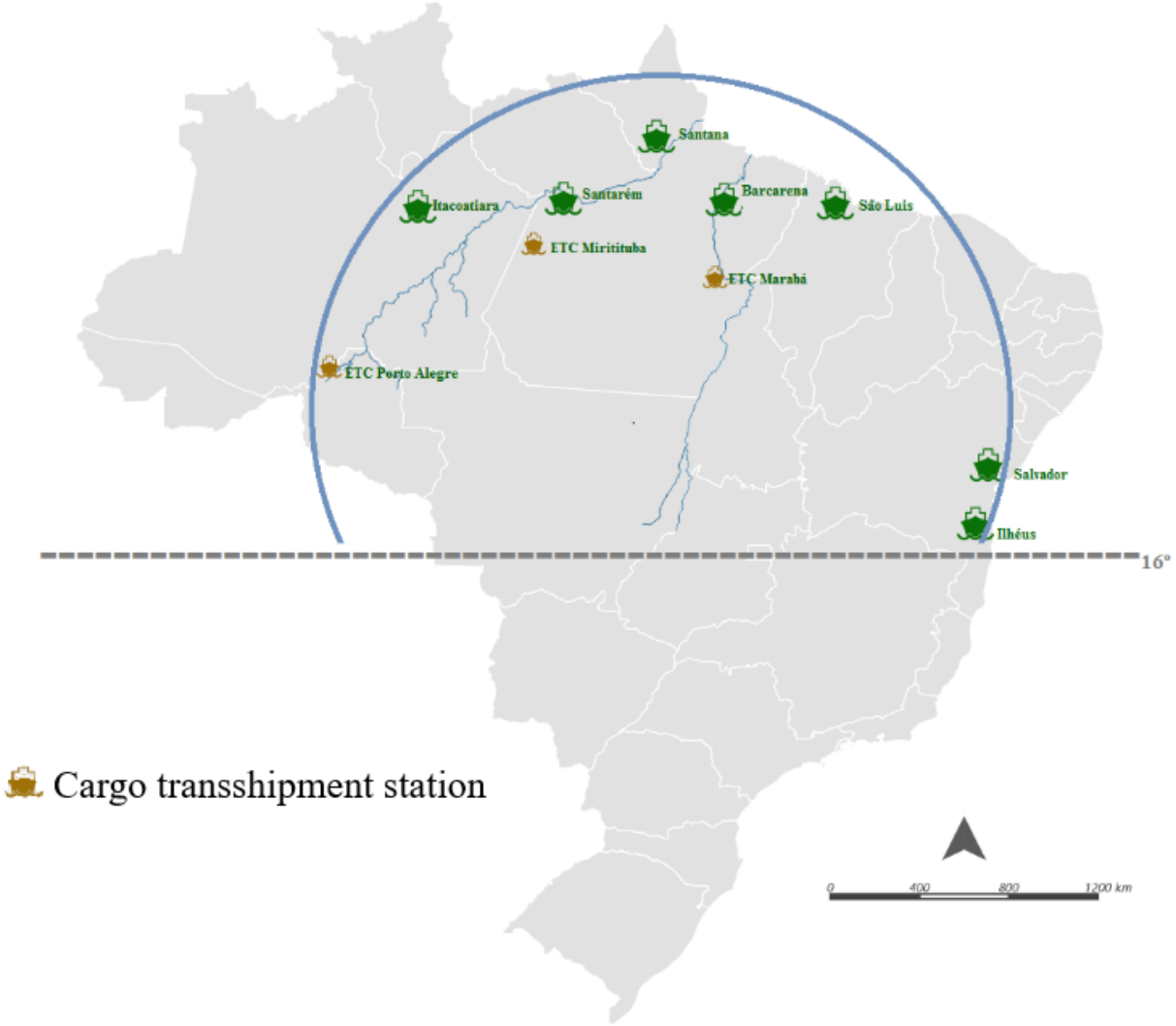


Source: National Agency for Waterway Transport (ANTAQ)

Northern Arc Ports

The North Arc is defined by an imaginary line crossing Brazilian territory at the 16th South Parallel, passing near the cities of Ilhéus (Bahia), Brasília (Federal District), and Cuiabá (Mato Grosso). The ports of greatest interest to agribusiness within this logistics corridor include Itacoatiara (Amazonas), Santarém and Barcarena (Pará), Santana (Amapá), São Luís (Maranhão), and Salvador and Ilhéus (Bahia).

Figure 17
Northern Arc Main Ports



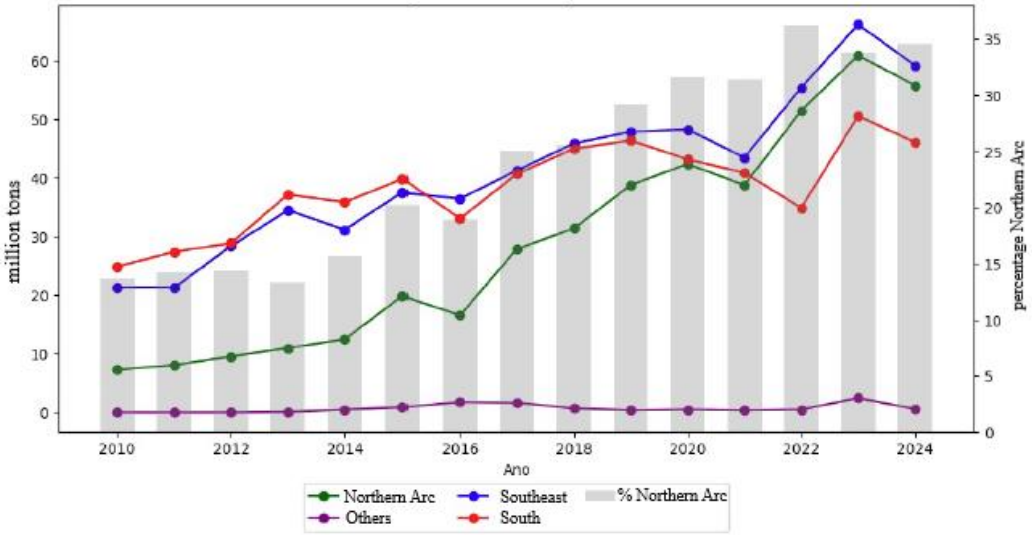
Source: *Ministry of Agriculture*

The North Arc is increasingly becoming a strategic export corridor for grains, integrating highways, railways, waterways, and port infrastructure across the northern and northeastern states of Brazil. Its proximity to key production areas, particularly in Mato Grosso, and the potential for intermodal transport enhance export competitiveness and reduce logistics costs. In 2010, exports of soybeans, corn, and soybean meal through this region accounted for 12 percent of Brazil's total exports; by 2024, this share had risen to 35 percent.

Between 2015 and 2025, cargo movement increased from 337 million to 493 million tons, driven primarily by soybean and corn exports.

Figure 18

Exports of Soybean, Corn and Soybean Meal Through Logistics Corridors, 2010 to 2024



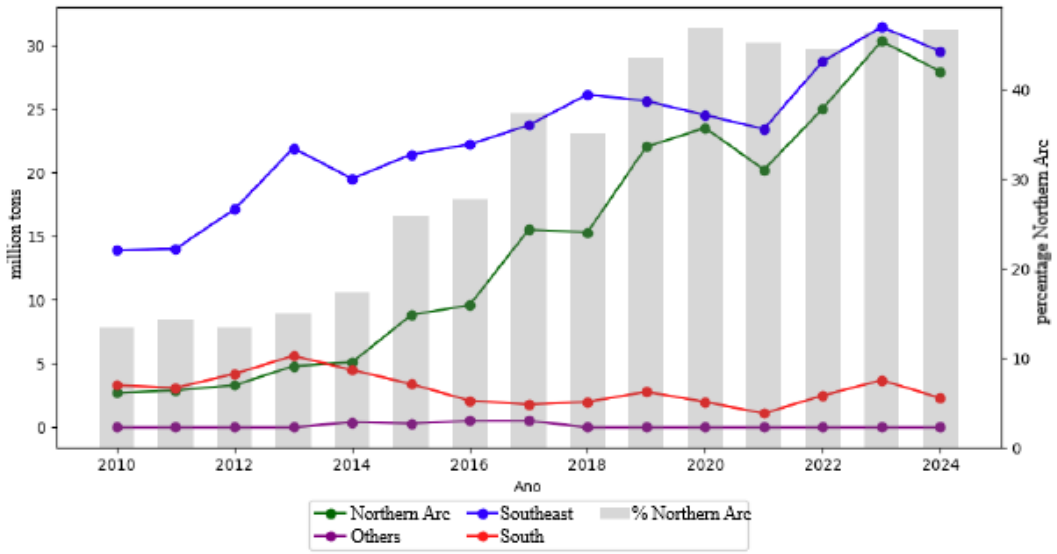
Source: ESALQ-Log/USP and USDA

According to ESALQ-Log/USP and USDA, the North Arc has been expanding grains transportation from Mato Grosso, offering greater competitiveness for soybean exports to China compared to the Port of Santos. The study found that, for shipments from Mato Grosso to China, the North Arc provided a cost advantage of $7.82 per ton over Santos. For shipments to Europe, the advantage was $14 per ton.

The internal transport distance between Mato Grosso and the North Arc ports ranges from approximately 1,500 to 2,000 kilometers. About 70 percent of the total logistics costs for shipments to China are attributed to domestic transportation within Brazil, with the remaining costs related to maritime freight.

Figure 19

Exports of Soybean, Corn, and Soybean Meal Through Logistic Corridors – Mato Grosso, 2010-2024



Source: ESALQ-Log/USP and USDA

In 2024, Brazil's logistics costs were approximately $12 per ton lower than in 2023, primarily due to reduced transport demand following a poor harvest and the depreciation of the Real against the U.S. dollar.

Between 2010 and 2023 the share of agricultural goods moved by waterways rose from 8 percent to 13 percent, driven largely by investments in the North where key waterway corridors are located.

ANTAQ data shows that in 2025, ports and terminals in the North region recorded the highest percent growth in the country, with cargo movement increasing by 10 percent compared to 2024, reaching 163 million tons. The national average growth was 6 percent.

The TUPs of the North Arc are specialized in handling solid bulk and minerals, but they also manage general cargo. Many of these terminals operate as Cargo Transshipment Stations, transferring goods from smaller regional barges to larger vessels for export. Containerized cargo movement grew by 15 percent, totaling 12.1 million tons. Containers are used to transport higher value-added products, such as consumer goods, processed foods, and inputs. The increase in containerized cargo indicates a rise in industrial production.

One of the main challenges for waterway navigation is the lack of predictability, especially during periods of drought. One solution would be a permanent river dredging program. The sector is also calling for greater investment in the Tietê-Paraná and Paraná-Paraguay waterways, which have transport capacities of 8 million and 50 million tons per year, respectively.

Private Use Terminals (TUP)

Outside areas of organized ports, the federal government grants port activity concessions to private operators through authorizations, which are defined as Private Use Terminals (TUP).

According to the Association of Private Port Terminals (ATP), Private Use Terminals handled 906.1 million tons in 2025, representing 64.6 percent of all port operations in Brazil and a 7 percent increase compared to 2024. Approximately two-thirds of TUPs operate via maritime routes.

TUPs handled 72 million tons (79 percent) on inland waterways, while organized ports registered 19.3 million tons in 2025. Between 2010 and 2025, cargo movement at private terminals on inland waterways grew by 210 percent.

In 2025, Brazil had 235 private use terminals, of which 179 were operational. There were also 45 cargo transshipment stations and 6 tourist port facilities. The Center-West region had 11 TUPs, the Northeast 36, the North 75, the Southeast 73, and the South 40 private installations.

Figure 20
Location of Brazilian Private Use Terminals (TUP), 2025

Source: National Agency for Waterway Transport (ANTAQ)

According to Post contacts, there was significant progress in the expansion of Private Use Terminals (TUP), with increased operational capacity and local development. However, major challenges remain, including delays in environmental licensing processes, administrative inefficiencies, and regulatory bottlenecks.

On February 25, 2026, the Ministry of Ports and Airports announced investments totaling BRL9.2 billion for TUPs to strengthen terminals across all regions of Brazil. Of this amount, BRL3.7 billion will be allocated to TUPs in the Northeast, BRL3.4 billion to the Southeast, BRL1.4 billion to the South, BRL469 million to the North, and BRL181 million to the Center-West region.

Railroads

Brazil's railways continue to become an increasingly more common method of transportation. Experts estimate that long-distance rail transport reduces freight costs by 15 to 25 percent compared to road transport.

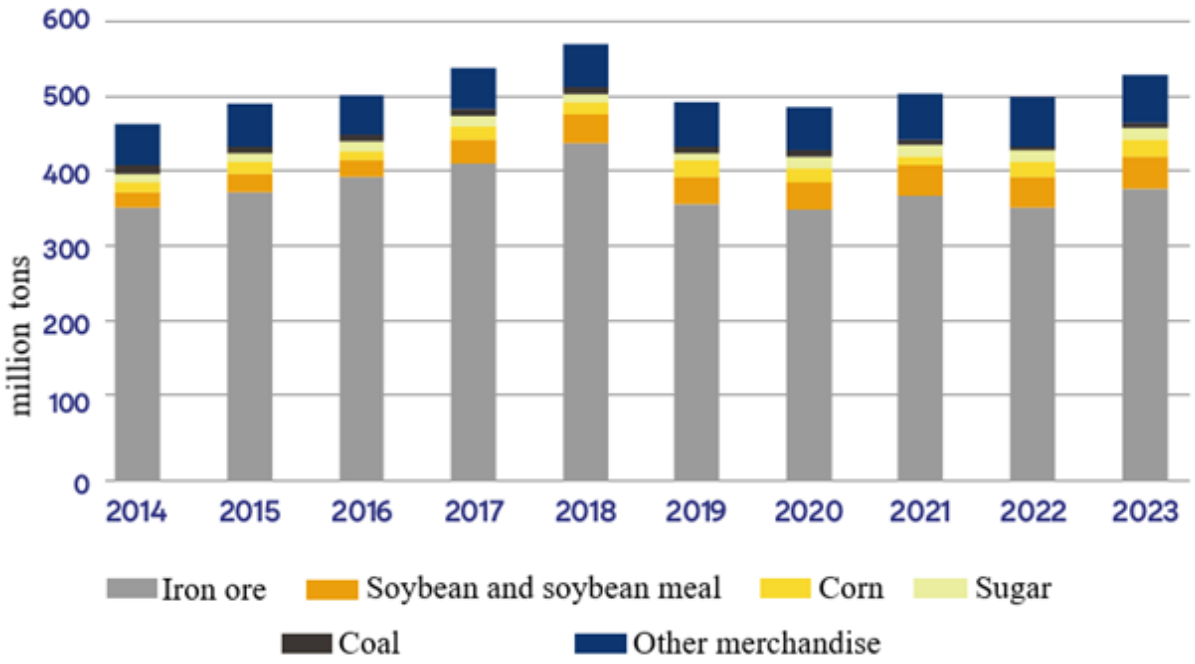
Brazil approved Law 14,273/2021 (the Railways Law) to diversify its cargo transport modes. The law was developed under the Pro-Trilhos program and aims to encourage railway development through an authorization regime, a new investment model in addition to traditional concessions and direct public investment.

A key innovation of the new regulatory framework is the cross-investment in railway infrastructure, designed to expand the rail network through private financing. The first railway concession contracts were signed in the 1990s, with 30-year terms. As these contracts near expiration, the government and private operators are renewing the concessions.

Additionally, the new framework allows private companies to build shorter railways (shortlines) to connect directly to the existing network. This model supports the development of rail segments with specific commercial interests. Contracts for these new railways are granted through authorizations issued by ANTT and may be used for both freight and passenger services.

As of 2023, Brazil's concessioned railway network spans 30,808 kilometers, divided into 211 lines and branches. The rolling stock includes 5,624 locomotives and 156,877 railcars. The main commodities transported by rail are iron ore (72 percent), soybeans and soybean meal (8 percent), corn (6 percent), sugar (3 percent), pulp (2 percent), and coal (1 percent).

Figure 21
Railroad Cargo Transportation, 2023



Source: National Confederation of Transports

The Ministry of Transport currently oversees 14 railway concessions and launched the National Railway Grant Policy to facilitate the auctioning of new rail segments. It is estimated these concessions will

attract BRL140 billion in investments. Between 2023 and 2025, BRL40 billion was invested in railways, an increase of 60 percent compared to the previous cycle from 2019 to 2022 (BRL25 billion).

The Santos Port Authority, which operates the Port of Santos, announced an investment of BRL3.8 billion in the Southeast Rail Network. This initiative aims to increase the volume of cargo transported by rail by 45 million tons over the next 20 years. The Southeast Rail Network connects the states of Minas Gerais, Rio de Janeiro, and São Paulo to the ports of Santos and Itaguaí (Rio de Janeiro). The concession contract for this network was recently renegotiated with the operator MRS.

Currently, the main railway expansion projects in Brazil include the Mato Grosso Railway (FMT), Nova Ferroeste, and the North-South Railway (FNS):

Mato Grosso Railway (FMT): The largest railway project underway in 2026, the FMT will span 743 kilometers, featuring 22 bridges, 21 viaducts, and 2 kilometers of tunnels. It will connect major agricultural hubs in northern Mato Grosso, such as Lucas do Rio Verde and Cuiabá, to the Rondonópolis terminal. As of November 2025, approximately 70 percent of the project had been completed.

Nova Ferroeste: This project will link the agribusiness areas of the Central-West and South regions (Paraná, Mato Grosso do Sul, and Santa Catarina) to the Port of Paranaguá. The plan is to expand the current network from 248 kilometers to 1,567 kilometers, creating a new logistics corridor.

North-South Railway (FNS): Designed to connect the Port of Itaqui (Maranhão) to the Port of Santos (São Paulo), the FNS will span 2,000 kilometers, integrating various production regions. By December 2025, about 73 percent of the construction was completed, with the goal of linking existing and planned railways.

The federal government participates in the development of new railway projects through the state-owned company Infra S.A., while the management and operation of freight railways are handled by private companies under concession agreements. The main networks under concession include:

- Carajás Railway (EFC)
- Paraná Oeste Railway (EFPO)
- Vitória to Minas Railway (EFVM)
- Centro-Atlântica Railway (FCA)
- North-South Railway, Northern Section (FNSTN)
- Tereza Cristina Railway (FTC)
- Transnordestina Logistics Railway (FTL)
- Southeast Regional Network (MRS Logística)
- Central Network (RMC)
- Northern Network (RMN)
- Western Network (RMO)
- Paulista Network (RMP)
- Southern Network (RMS)

Technical studies are currently underway for the construction of a 933-kilometer rail segment between Sinop (Mato Grosso) and Miritituba (Pará), known as Ferrogrão. This is a strategic project, as it would provide an alternative export route for agribusiness in central Brazil, connecting the region to the Northern Arc ports without relying on the BR-163 highway.

Storage

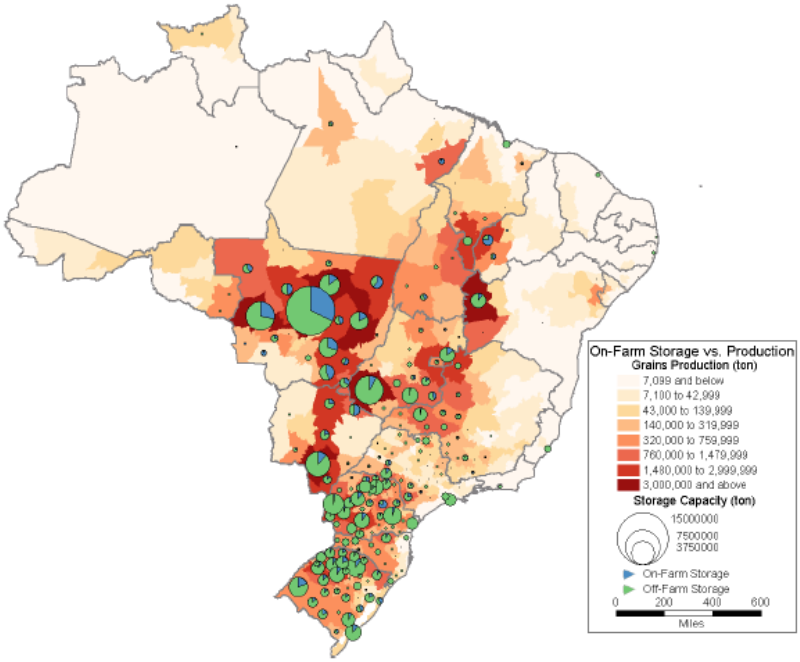
Brazil's grain storage capacity covers only 60 to 70 percent of total production, highlighting that output is growing faster than infrastructure can keep pace. In contrast, U.S. grain producers have storage capacity equivalent to 150 percent of their production, with about 55 percent of that capacity located on farms.

Limited storage capacity in Brazil places significant pressure on transportation during peak harvest periods, drives up freight costs, and weakens farmers' bargaining power. Less than 20 percent of Brazil's storage capacity is located on farms and owned by producers.

Having on-farm storage capacity close to producers in major agricultural regions helps prevent spikes in transportation demand during harvest. In areas with low storage capacity, producers often rely on "stock on wheels," using trucks as mobile warehouses. This practice leads to widespread vehicle shortages and high freight prices during harvest seasons of February to April for soybeans and corn, and July for the second corn crop.

According to ESALQ-Log, a fleet of approximately 130,000 trucks is sufficient to transport the country's grain harvest for most of the year, considering soybean and corn exports. However, limitations in storage capacity and congestion at port, rail, and waterway terminals can push demand to critical levels, requiring more than 200,000 trucks due to long queues during peak periods.

Figure 22
Distribution of Static Storage Capacity On-Farm and Off-Farm by Microregion, 2019



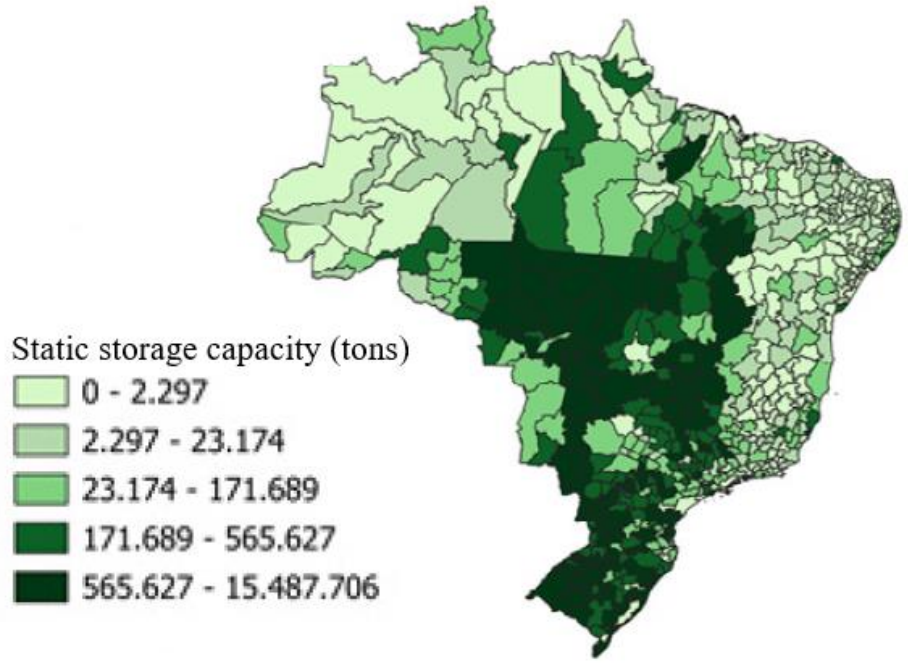
Source: ESALQ-Log

According to a 2024 study by ESALQ-LOG and the National Confederation of Agriculture (CNA), 61 percent of more than one thousand producers surveyed do not have on-farm storage facilities. Among those with their own storage, 41 percent can store more than 75 percent of their production, keeping their grain stored for four to six months. Nearly a quarter of these producers reported economic gains of 6 to 10 percent as a result.

For producers without on-farm storage, cooperatives and specialized companies are the main providers of storage services, with an average distance of 35 kilometers between farms and contracted warehouses.

The main challenges to investing in on-farm storage include high construction costs, limited access to credit, and lack of working capital. According to ESALQ-LOG and CNA, more than 25 percent of producers are unaware of specific credit lines for storage infrastructure. Additionally, the sector requires improvements in cargo scheduling systems, process digitalization, and better unloading infrastructure at terminals to reduce inefficiencies.

Figure 23
Static Storage Capacity in Brazil in tons, 2024

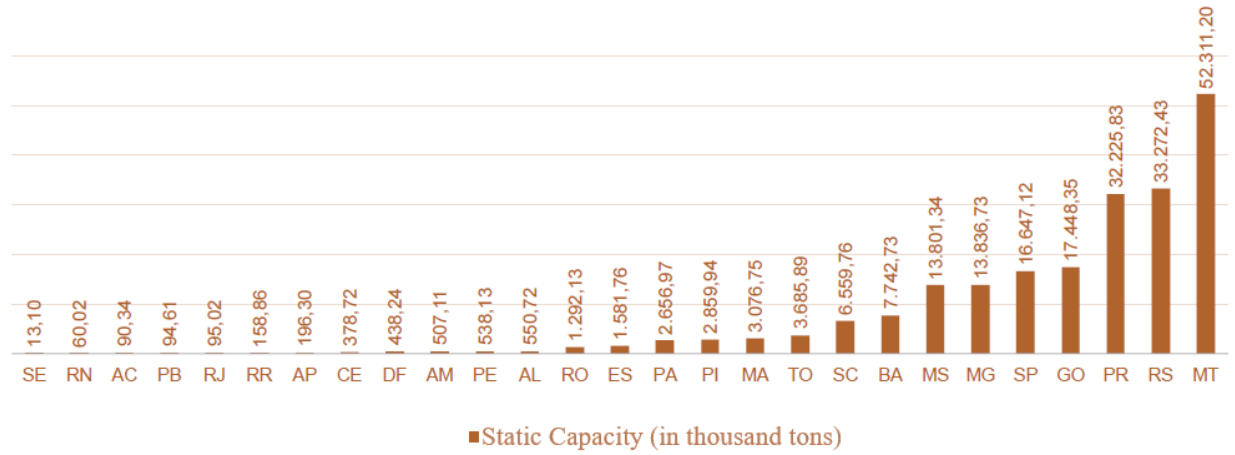


Source: National Supply Company (CONAB)

Brazil has 202 million tons of static grain storage capacity, concentrated primarily in the Center-West (40 percent) and South (34 percent) regions, followed by the Southeast (15 percent), Northeast (7 percent), and North (4 percent).

Mato Grosso, the nation's largest grain producer, holds 33 percent of Brazil's total storage capacity. Rio Grande do Sul and Paraná follow, with 19 percent and 18 percent of the capacity, respectively.

Figure 24
Static Storage Capacity by State, in thousands of tons, 2024

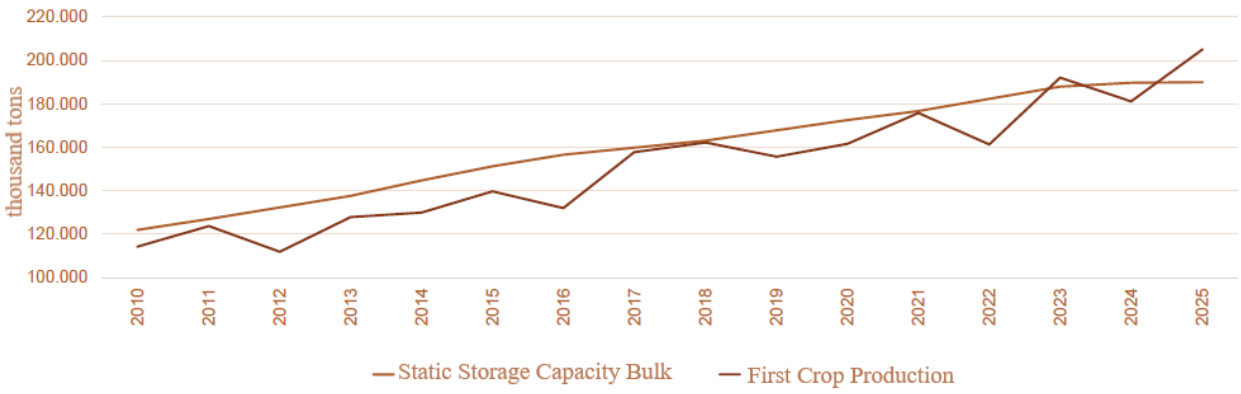


Source: National Supply Company (CONAB)

Over 95 percent of Brazilian storage facilities rely on road transport as the primary means for receiving and dispatching products. However, between 2017 and 2025, there was a 24 percent increase in the number of warehouses with access to waterways, indicating a trend toward diversification of logistics modes.

The gap between crop productivity and storage capacity has intensified since the 2009/2010 cycle, driven by increased production and soil management. According to CONAB, the storage deficit experiences seasonal changes which allow silos to be utilized during different windows. However, when soybeans remain stored for longer periods, it creates difficulties for storing second-crop corn.

Figure 25
Static Storage Capacity Bulk Compared to First Crop Grains Production, in thousands of tons



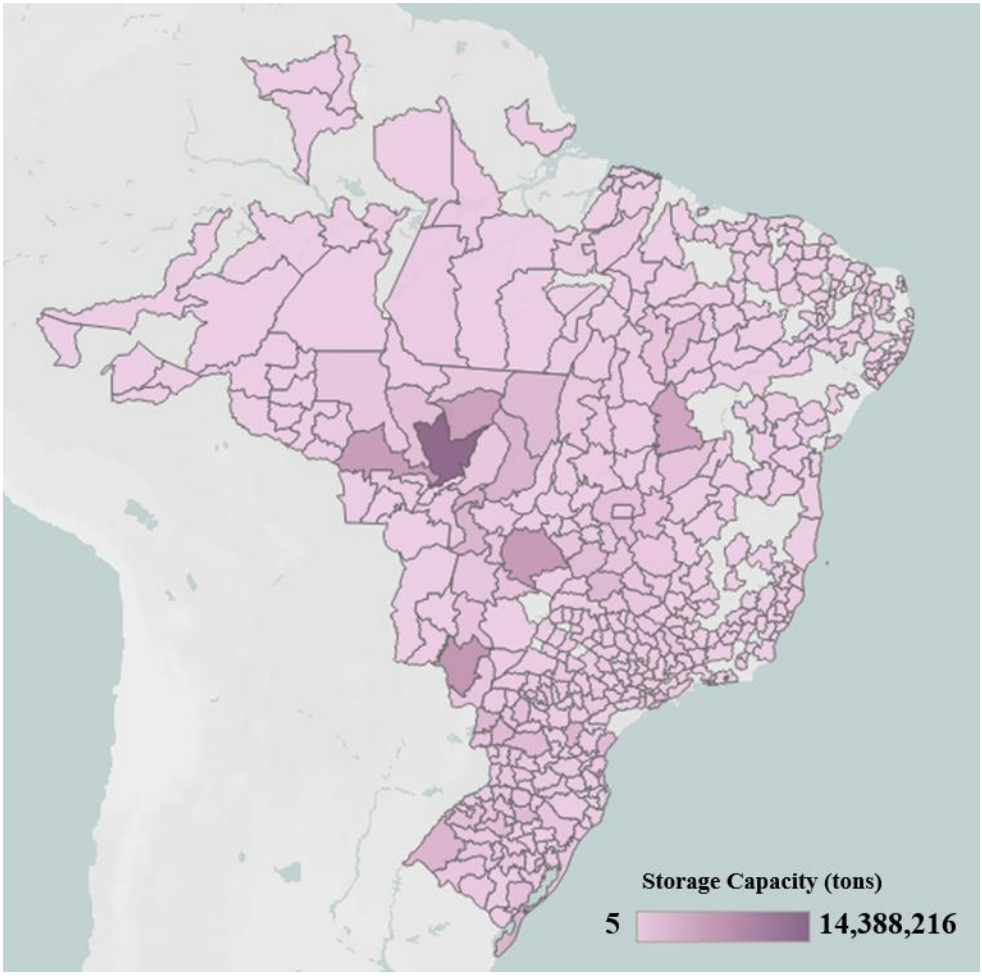
Source: National Supply Company (CONAB)

Considering the main first-crop grains (rice, corn, and soybeans) which compete for storage space during similar periods of the year, there is a trend toward narrowing the gap between production and storage capacity. However, in 2023, first-crop grain production exceeded installed storage capacity by

nearly 12 million tons. To address this shortfall, producers have turned to alternatives such as silo bags and continuous inflow and outflow of grain over time, highlighting a significant logistical bottleneck.

According to the National Storage Units Registry System (SIRCAM), in 2024 Brazil had 18,637 storage units, with a total storage capacity of 202 million tons. The state of Rio Grande do Sul has the largest number of storage units, with 4,848 (26%), followed by Mato Grosso, with 2,808 units (15%) and Paraná, with 2,530 units (13.5%).

Figure 26
Map of Static Storage Capacity in Brazil, 2024



Source: SIRCAM and Embrapa

The concentration of storage capacity shows greater density precisely in the regions with the highest agricultural production.

Trade

According to Brazil's Ministry of Agriculture and Livestock (MAPA), Brazil exported $169 billion in agricultural products in 2025. China remained the leading destination, accounting for 33 percent of exports ($55.2 billion), followed by the European Union (EU-27) at 15 percent ($25.2 billion), and the United States at 7 percent ($11.4 billion).

Exports through Brazilian ports are primarily destined for China, which accounts for 53 percent of the total. North America and the European Union followed, each receiving 9 percent of total exports.

Figure 27
Cargo Imports and Exports through Ports, 2025

Source: National Agency for Waterway Transport (ANTAQ)

In 2025, long-haul maritime) shipping handled 1 billion tons of cargo. Of this total, 81 percent (816 million tons) were exports, and 19 percent (189 million tons) were imports. Private terminals handled 604 million tons, while organized ports handled 401 million tons. Solid bulk cargo totaled 724 million tons, followed by liquid and gaseous bulk (125 million tons), containerized cargo (113 million tons), and general cargo (43 million tons).

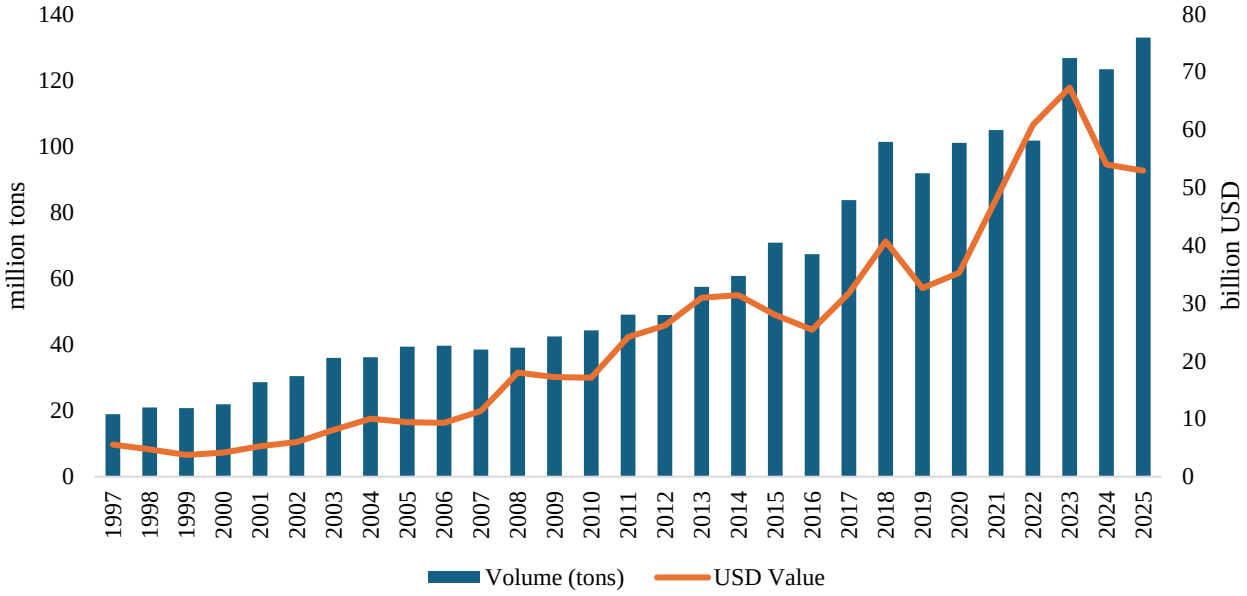
The main agricultural commodities transported via long-haul shipping were oilseeds and grains, with 108 million tons (10.8 percent of the total), cereals with 51 million tons (5.2 percent), fertilizers with 43 million tons (4.4 percent), and sugar with 31 million tons (3.1 percent).

According to the Ministry of Agriculture and Livestock (MAPA) and the Foreign Trade Secretariat (SECEX), Brazil's soybean and coproducts exports increased from 19 million tons in 1997 to 133 million tons in 2025. The number of Brazilian soybean importing countries grew from 70 in 1997 to 117 in 2025.

In 2025, whole soybeans represented 81 percent of total soybean complex exports (108 million tons valued at $43 billion), followed by soybean meal at 17 percent (23 million tons valued at $7 billion), and soybean oil at 2 percent (1.3 million tons valued at $1.5 billion).

Figure 28

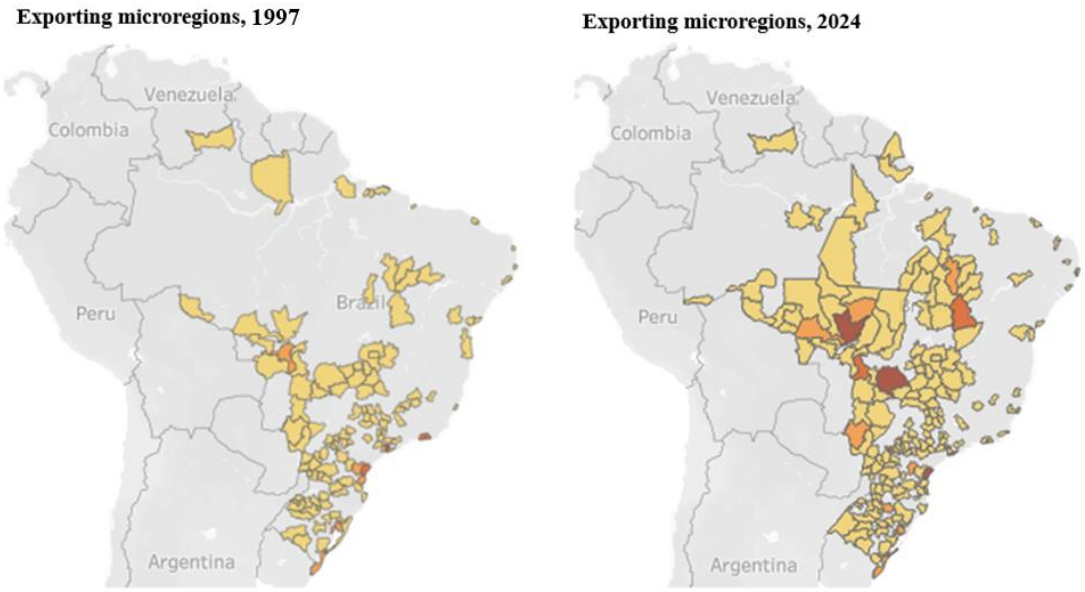
Volume and Value of Soybean Complex Exports, 1997 to 2025



Source: Agrostat; Chart Post Brasilia

For comparison, in 1997, the Netherlands was the largest buyer of Brazilian soybeans complex products, with 9 percent of the total, with 7 million tons ($2 billion), followed by China with 1.8 million tons (9 percent), valued at $650 million, and Spain in third place with 1.4 million tons ($397 million), or 7 percent of the total.

Figure 29
Soybean Exporting Microregions, 1997 and 2024

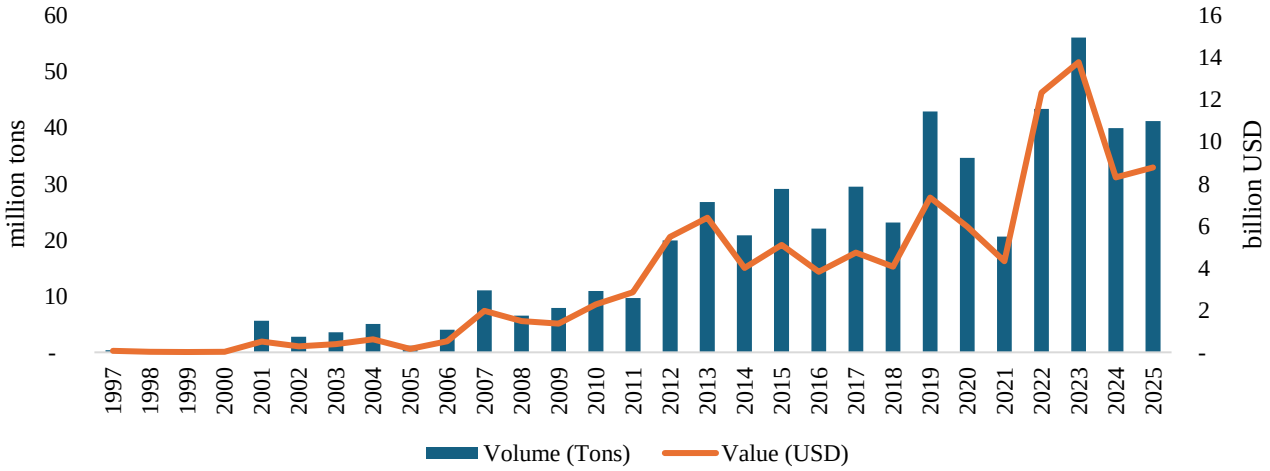


Source: Embrapa

In 1997, Brazil exported 379,000 tons of corn and its coproducts valued at $67 million to 44 countries from 49 export-oriented microregions. Whole corn represented approximately 94 percent of these exports (358,000 tons valued at $52 million), while corn by-products accounted for the remaining 6 percent (21,000 tons valued at $15 million).

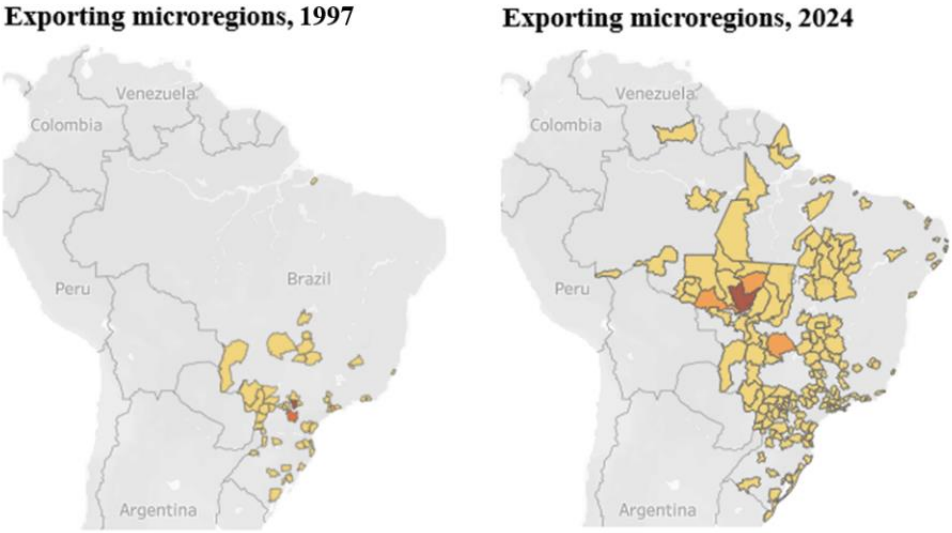
By 2025, Brazil's corn and coproducts exports had grown significantly to 41 million tons, reaching 139 countries from 162 microregions. Whole corn accounted for 99.4 percent of total exports. Iran emerged as the largest importer, purchasing 9 million tons ($2 billion), followed by Egypt with 7 million tons ($1.5 billion), and Vietnam in third place with 4.2 million tons ($876 million).

Figure 30
Volume and Value of Corn and Coproducts Exports, 1997 to 2025



Source: Embrapa

Figure 31
Corn Exporting Microregions, 1997 and 2024



Source: Embrapa

In 1997, of the total $23.3 billion in agricultural products exported, approximately $17 billion were transported via maritime routes. That year, the largest agricultural partner was the Netherlands, which imported $3 billion (17 percent), followed by the United States with $2.6 billion (15 percent). China imported $694 million, representing only 4 percent of total maritime exports.

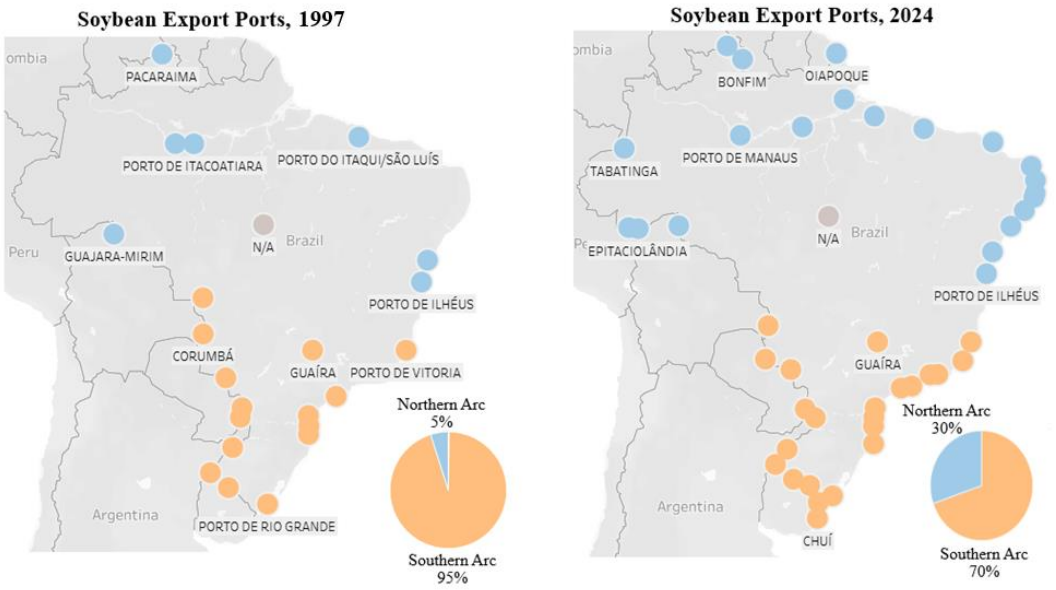
By 2025, of the total $169 billion in agricultural products exported by Brazil, $114 billion were shipped via maritime routes. China became the country's largest agricultural partner, with imports of $45 billion (39 percent of total maritime exports). The United States imported $7.4 billion (6 percent), and the Netherlands imported $3.5 billion (3 percent).

In terms of export points, Brazilian ports shipped 132 million tons ($53 billion) of soybeans, soybean meal, and soybean oil in 2025. Maritime soybean exports to China reached 85 million tons (65 percent), valued at $34 billion.

Corn and coproducts maritime exports amounted to 41 million tons ($8 billion) in 2025. Exports to China through ports reached 2 million tons ($359 million), approximately 4 percent of total maritime corn and coproducts exports.

According to ANTAQ, total grain exports (whole corn and soybeans) amounted to $52 billion (148 million tons). Ports in the Southern Arc accounted for 63 percent of these exports, totaling approximately 93 million tons. Ports in the Northern Arc handled 56 million tons. The Port of Santos exported 34.5 million tons of soybeans in 2025, 24 percent more than the previous year. The Port of São Luís (Maranhão) was the second-largest soybean exporter, with 15.8 million tons exported. For corn exports, the Port of Santos exported 14.7 million tons, followed by the Port of Belém with 6.7 million tons, and Paranaguá in third place with 5 million tons of corn exported in 2025.

Figure 32
Soybean Export Ports: Northern and Southern Arcs, 1997 and 2024



Source: EMBRAPA

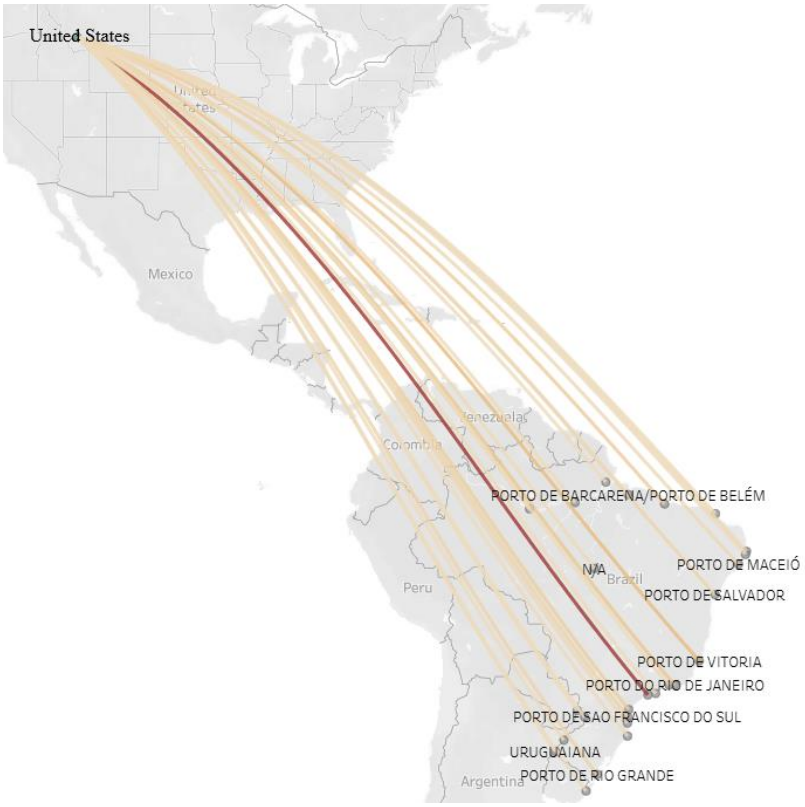
In 2025, Brazil exported approximately $11 billion in agricultural products to the United States. The leading exports were coffee, valued at $1.9 billion (293,400 tons), followed by fruit beverages at $1.6 billion (1.4 million tons), and beef at $1.6 billion (271,800 tons).

Santos Port was the largest exporter to the United States, with $6 billion in total exports. The port's main products shipped to the U.S. were coffee ($1.6 billion and 241 thousand tons), fruit beverages ($1.4 billion and 1.3 million tons), and beef ($1.4 billion and 271,800 tons). The Port of São Francisco do Sul

ranked second with $900 million in exports to the U.S. (691 thousand tons), followed by Paranaguá Port with $704 million (425 thousand tons).

Northern Arc ports exported $1.3 billion to the United States, while Southern Arc ports exported $9.8 billion, representing 85 percent of total maritime agricultural exports from Brazil to the United States.

Figure 33
Origin of U.S. Agricultural Imports from Brazil, 2024



Source: EMBRAPA

In 2025, China imported 85 million tons of soybeans ($34 billion) from Brazil, representing approximately 65 percent of Brazil's total soybean exports. Santos Port was the largest soybean exporter to China, shipping 19 million tons ($11 billion), followed by Paranaguá with 13 million tons ($5 billion), and São Luís with 13 million tons ($5 billion). Santos Port was also the largest corn exporter to China, shipping 1.4 million tons ($279 million), followed by São Francisco do Sul with 166 thousand tons ($32 million), and Paranaguá with 107 thousand tons ($21 million).

The Northern Arc ports accounted for 30 percent of soybean shipments to China, totaling 25 million tons ($10 billion). In 2024, soybean exports via Northern Arc ports represented 21 percent of the total (19 million tons). Exports through Southern Arc ports in 2025 reached 73 million tons ($24 billion). In the previous year, exports through these ports totaled 79 percent of the total (71 million tons).

Figure 34
Origin of Chinese Agricultural Imports from Brazil, 2024

Source: Embrapa

Logistical Challenges

Brazil's agricultural expansion toward the North and Center-West has created new production frontiers that require highways, railways, warehouses, ports, and logistics services beyond traditional routes. Logistical inefficiencies consume approximately 30 percent of production costs, with over 60 percent of the road network showing deficiencies. The economic impact of infrastructure deficits totaled approximately $14 billion in 2025, reflected in port price premiums that capture logistical costs, storage constraints, and port congestion.

Brazil faces a national storage deficit of approximately 134 million tons against total grain production of 357 million tons, requiring investments of around BRL140 billion. Storage capacity grows at 2 percent annually while harvests advance at 4 percent, widening the gap over time.

The Center-West estimates a storage deficit of 87 million tons for 2026, MATOPIBA faces deficits near 60 percent, Rondônia could reach 70 percent, and the South projects a deficit of 19 million tons, while

the Southeast projects a modest surplus of 2.2 million tons. Inadequate storage compels producers to offload harvests without delay, concentrating supply in short windows, pushing prices down, and overwhelming ports and freight networks.

Federal investment through the Warehouse Construction and Expansion Program (PCA) reached BRL8 billion for the 2025/26 harvest, yet disbursements between July 2025 and February 2026 fell 35 percent below the previous cycle, driven by high interest rates that discourage long-term financing. The sector advocates BRL15 billion annually to keep pace with harvest growth. The lack of three-phase electrical power in rural areas further limits storage and modern operations.

Brazil's competitiveness increasingly depends on the Northern Arc, which handles more than half of national grain production. ANTAQ projects approximately BRL46 billion in private investments for Northern Arc ports and terminals. However, port authorization requires extensive documentation, followed by a long chain of approvals within federal, state, and municipal agencies, including environmental licensing, land assignment, naval approvals, and municipal permits. Of 70 authorizations issued between 2013 and 2019, 21 terminals never entered operation within the five-year legal deadline, with environmental (27 percent), financial (14 percent), and legal (14 percent) issues as the primary obstacles. This institutional complexity creates high transaction costs that prevents more investments.

Road dependence amplifies vulnerability during peak harvest. In late February 2026, trucks faced queues of up to 40 kilometers at river port terminals in Mirituba (Pará), partly due to unpaved access roads. Land expropriation difficulties around ports have slowed construction progress. Optimization measures, including mutual traffic agreements, rail transshipment expansion, and intermodal integration, are the main producer demands. The transshipment terminal in Rondonópolis (Mato Grosso) exemplifies best practice, with 150,000 tons of fixed storage and capacity for 2,000 trucks per day with simultaneous train loading.

The Madeira, Amazonas, and Tapajós rivers serve as logistics corridors, but face challenges from weather events and navigable depth constraints. During drought periods, shipping companies impose "drought fees" that ANTAQ deems legitimate, though the agency monitors for potential abuse. The Barra Norte waterway is responsible for most cargo leaving Barcarena (Pará) and is facing structural restrictions that increase vessel waiting times and raise costs throughout the Amazon. The Brazilian Navy plans to install a tide gauge station in Pará to improve navigation predictability, while the process of gathering private sector input on Barra Norte feasibility studies is expected to begin in 2026.

According to Post contacts, solutions to overcome logistical bottlenecks in Brazil include increasing investments in transportation infrastructure and prioritizing railways and waterways, which are more efficient modes for long distances. Effective policies to promote storage, especially on farms, are also necessary. Expanding access to credit and disseminating knowledge about existing financing lines is essential. The engagement of investment funds with the agribusiness logistics sector can help close the infrastructure gap. Scheduling systems, process digitization, and improved unloading infrastructure at terminals are essential to reduce these inefficiencies.

Attachments:

No Attachments.