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Report Highlights:

With Brazil continuing to produce record corn crops, Post forecasts corn production for MY 2023/24 at 131 MMT, up 1.6 percent from the current season. However, falling profit margins and ongoing infrastructure and logistics hurdles may impact the next harvest's outcome. Post increases its forecast for wheat planted area for MY 2023/24 (October 2023 – September 2024) to 3.4 million hectares, with production expected to reach 11 MMT, as the Brazilian government sees this grain as the next big commodity for Brazil to target in its path to self-sufficiency. Meanwhile, rice production is forecast to continue its downward trend, with Post forecasting a decrease in area and production for MY 2023/24 (April 2024 – March 2025), following the MY 2022/23 (April 2023 – March 2024) estimate for milled rice production of 7 MMT of milled rice equivalent (MRE) (an equivalent of 10.29 MMT of paddy rice).

CORN

Production, Supply, and Distribution

Table 1

Production, Supply, and Distribution of Corn

Corn	2021/2022		2022/2023		2023/2024	
Market Year Begins	Mar 2022		Mar 2023		Mar 2024	
Brazil	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested (1000 HA)	21800	21700	22700	22500	22900	22800
Beginning Stocks (1000 MT)	4153	4153	3971	3,971	7971	7471
Production (1000 MT)	116000	116000	132000	129,000	129000	131000
MY Imports (1000 MT)	2596	2596	1000	1000	1200	1200
TY Imports (1000 MT)	3316	3316	1300	1300	1500	1500
TY Imp. from U.S. (1000 MT)	1	1	0	0	0	0
Total Supply (1000 MT)	122749	122749	136971	133971	138171	139671
MY Exports (1000 MT)	48278	48278	55000	53000	55000	55000
TY Exports (1000 MT)	31921	31921	54000	54000	57000	57000
Feed and Residual (1000 MT)	59500	59500	61500	61500	62500	62500
FSI Consumption (1000 MT)	11000	11000	12500	12000	14000	15000
Total Consumption (1000 MT)	70500	70500	74000	73500	76500	77500
Ending Stocks (1000 MT)	3971	3971	7971	7471	6671	7171
Total Distribution (1000 MT)	122749	122749	136971	133971	138171	139671
Yield (MT/HA)	5.3211	5.3456	5.815	5.7333	5.6332	5.7456
MY = Marketing Year, begins with the month listed at the top of each column TY = Trade Year, which for Corn begins in October. TY 2023/2024 = October 2023 - September 2024 Source: Post Brasilia						

Corn Production

As Post estimates Brazil will produce another record corn crop this 2022/23 cycle, farmers face falling profit margins and ongoing infrastructure hurdles. Some producers have been forced to sell corn at lower prices and opted to retain soy, which sells for higher profit, because they cannot hold both commodities due to lack of storage space. Lower financial gains may impact their decision to continue opting for this grain in the 2023/24 harvesting season.

After three years of La Niña, which caused a prolonged drought in southern Brazil the American Center for Climate Prediction (CPC-NOAA) forecasts that La Nina will be replaced by El Niño. Although the latter does not have much influence on the rains in the central region of Brazil, the projections indicate a

drier and warmer period, which can compromise the crop, leading to lower germination rates. This combination of lack of rain and higher temperatures is a limiting factor for the productive potential of crops, especially concerning water restriction.

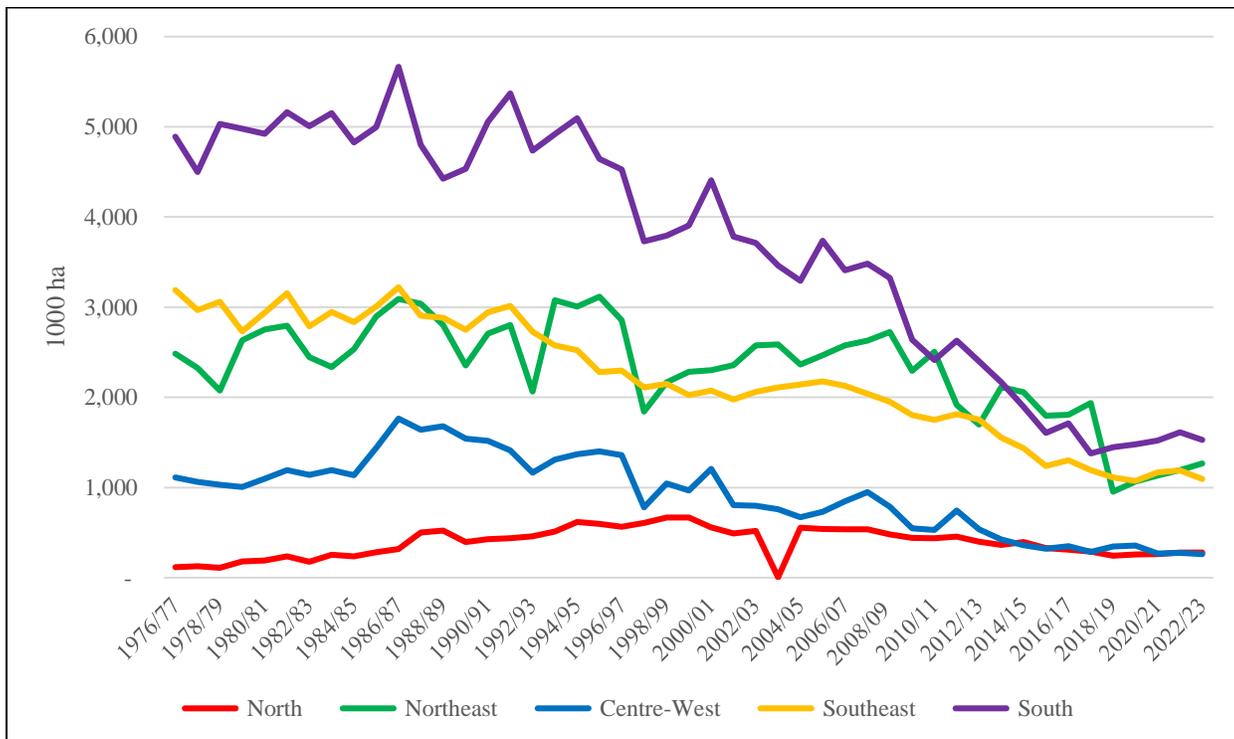
From June to August, El Niño typically results in higher temperatures, which can increase evapotranspiration and cause a reduction in soil moisture. For this reason, second-crop corn production areas that start sowing later, such as the states of Mato Grosso do Sul, Paraná, and São Paulo, can be impacted.

MY 2023/2024 Planted Area, Production, and Yield Expected to Rise, Though Slim Profit Margins Might Change This Scenario

Post maintains its forecast for corn planted area for MY 2023/2024 (March 2024 – February 2025) at 22.8 million hectares (ha) based on the optimal conditions for growing three seasons of corn throughout the year. While some farmers in the south have indicated that they might reduce planting area of corn in favor of other more profitable crops (such as soy, millet, etc.), an increase in planted areas in the center-west and north regions has offset this loss. As such, Post revises its forecast for corn production for MY 2023/24 at 131 MMT, up 1.6 percent from the current season, with corn yield set at 5.74 MT/ha.

Figure 1

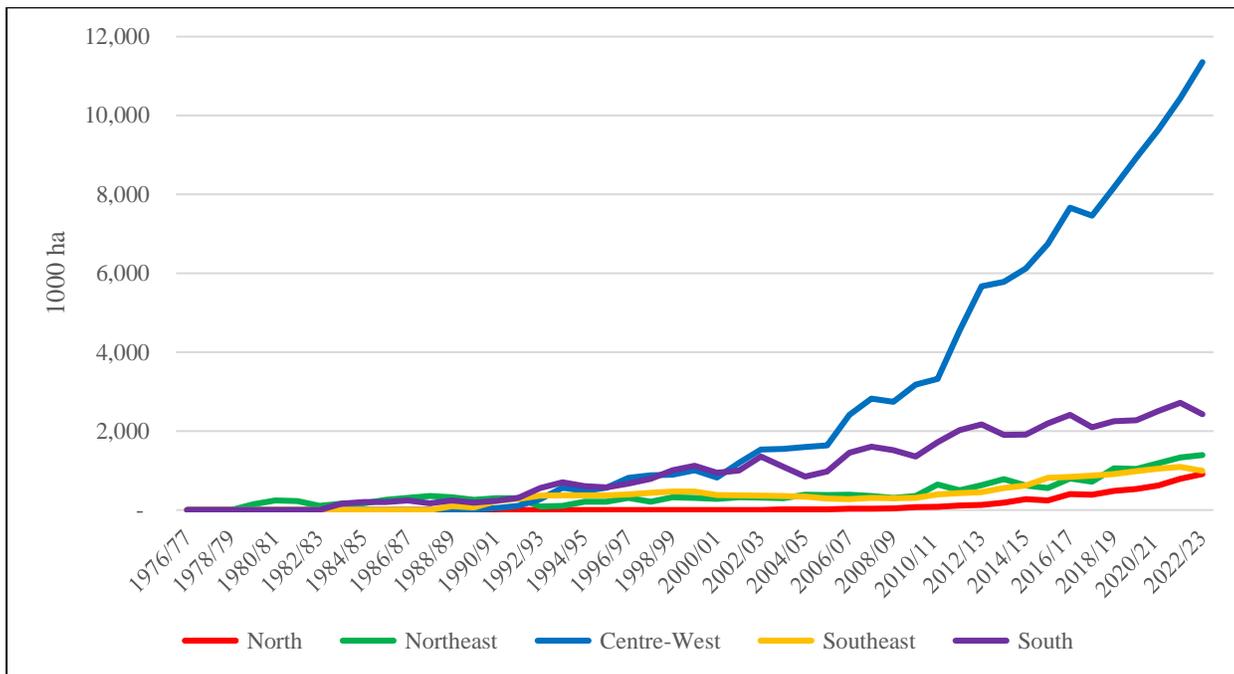
Evolution of Planted Area of First-season Corn by Regions of Brazil



Data source: National Supply Agency (CONAB); Graph Post Brasilia

Figure 2

Evolution of Planted Area of Second-season Corn by Regions of Brazil



Data source: National Supply Agency (CONAB); Graph Post Brasilia

MY 2022/2023 Planted Area, Production, and Yield Expected to Rise

Post maintains its planted area estimate for MY 2022/2023 (March 2023 – February 2024) at 22.5 million hectares, a 3.7 percent increase related to the previous season. This is based on the continued interest of farmers and the increase in consumption and demand for corn.

Post increases its estimated corn production for MY 2022/2023 (March 2023 – February 2024) to 129 MMT from its previous 125 MMT based on the expected rise in the second-corn crop, attributed to favorable weather conditions for the development of crops.

Harvest Outlook

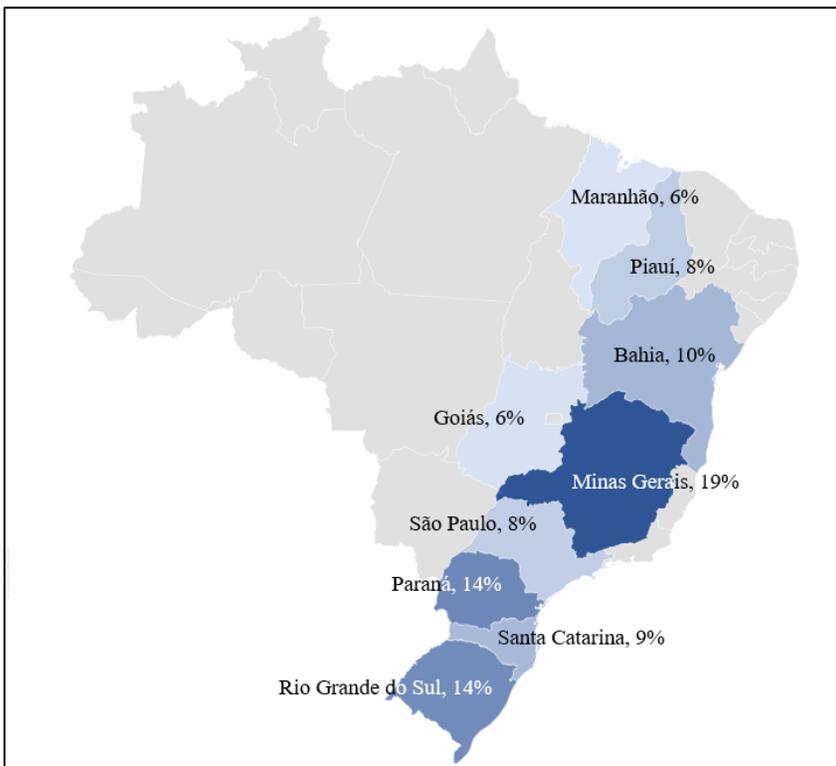
As of mid-June, first-season corn has been mostly harvested throughout Brazil, with good results. The La Nina weather phenomenon had some impact on yield, especially in Goiás and Rio Grande do Sul, but this should not impact the overall result of the Brazilian corn crop. Meanwhile, second-season corn (also known as “safrinha”) is in the early harvesting stages, with little over 2 percent of the crops being sown throughout the country.

FIRST-SEASON CORN

Corn is planted in Brazil year-round. First-season corn, also known as “summer corn,” was typically cultivated in southern Brazil but has now expanded to northeastern states. It is usually planted between August and December and harvested between January and June. It currently accounts for roughly 21.5 percent of all corn production in the country, according to data from the National Supply Agency (CONAB).

Figure 3

First-season Corn: Main Producing States, 2022/2023



Data source: National Supply Agency (CONAB); Graph Post Brasilia

By mid-June, the first-season corn harvesting was approaching the final stretch in most producing regions, reaching almost 85 percent of the sown area, with optimal weather contributing to the work of machines in the fields. The northern states of Piauí and Maranhão are typically the last ones to harvest – by the end of July - due to later sowing in these regions.

- **Minas Gerais**: with production reaching 5.1 MMT, the state presented high yield numbers, at 6.5 MT/ha, which compensated for a decrease in planted area of around 7 percent. Growers in the region favored soy this season as a more profitable crop, but this hasn't stopped the region from becoming the biggest producer of first-season corn, according to National Supply Agency (CONAB) estimates.

- **Paraná**: estimates by CONAB show that the 2022/23 first-corn harvest is expected to be 28 percent higher than the previous cycle due to a larger planted area and better yields, with production expected to reach 3.8 MMT. Paraná's yield in 2021/22 suffered from a lack of rains during the development phase and the presence of leafhoppers (*Dalbulus Maidis*), which have now been primarily controlled in the state.
- **Rio Grande do Sul**: with almost all the first-season corn sown, the state is expected to harvest around 831 thousand hectares, according to the Association of Technical and Rural Extension Enterprises of Rio Grande do Sul (EMATER/RS), but has seen a decrease in the estimated yield, now projected at 4.44 MT/ha, due to insufficient moisture in the summer months. In drought-hung regions, farms were affected during the vegetative phases, making production unfeasible.
- **Bahia**: the state recorded an increase of 13.5 percent in the total cultivated area, with an increase in yield of almost 12 percent compared to the previous harvest, even with the water deficit that affected the central-south and central-north regions. The state is estimated to produce 2.65 MMT this 2022/23 harvest, according to CONAB.
- **Santa Catarina**: the state is also expected to have an increase in the harvest of first-season corn this year, reaching 2.55 MMT, given favorable weather, which allowed for the good development of the plant, resulting in a high yield.
- **São Paulo**: the state reached high production figures and yield, estimated at 6.8 MT/ha, 16 percent higher than in the previous season.
- **Goiás**: The state saw a reduction in yield, which was attributed to late planting in less fertile areas, as farmers chose to reserve the best soil for soybean. As a result, production is expected to drop almost 15 percent in relation to last season and close 2022/23 at around 1.55 MMT.
- **Piauí and Maranhão**: With less than 50 percent of the harvest concluded in each of these states, the region is experiencing an increase in planted area for another consecutive year due to investments in this type of crop.

SECOND-SEASON CORN

Second-season corn, commonly referred to as 'safrinha' corn or "little harvest," is planted from December to March, usually following the soybean harvest, and comprises the most extensive area. It started as the smallest of Brazil's two corn crops, planted to support the cultivation of soybeans. However, with the expansion of soy fields, safrinha crops have increased significantly and now account for most of the production (roughly 77 percent in the 2022/2023 harvest estimate).

Figure 4

Second-season Corn: Main Producing States, 2022/2023



Data source: National Supply Agency (CONAB); Graph Post Brasília

- **Mato Grosso:** With almost half of the country's second-season corn production, the state is in the early stages of harvesting its second-corn crop. According to data from the Mato Grosso Institute of Agricultural Economics (IMEA), most plants have developed well, despite some periods of low precipitation during May. As such, CONAB expects the state to produce 47.5 MMT of second-crop corn this 2022/23 cycle, an increase of almost 16 percent concerning the previous harvest.
- **Paraná:** Accounting for almost 15 percent of the production of second-season corn, Paraná has seen a decline in its production due to low soil humidity, though at the moment, the Department of Rural Economy of Paraná (DERAL/PR) believes that this should not impact the overall yield of the state, and estimates production at 14.1 MMT, a 6 percent increase from last season's 13.3 MMT.
- **Mato Grosso do Sul:** The state, set to become the country's third-largest producer of second-crop corn, has suffered from adverse weather conditions this season. High instances of rain were seen during March and April, followed by a dry month in May. The result was a drop in yield and production, which should reach 11.9 MMT, down from last season's 12.2 MMT.
- **Goiás:** Unlike last season, when the state suffered from long periods of drought during the development phase of the second-corn crop, this 2022/23 cycle saw high incidences of rain during the beginning of the year, provided good soil moisture, optimizing the harvest, which should pick up the pace at the beginning of July.

THIRD-SEASON CORN

In 2019, Brazil also established a third-season corn crop, planted only in some states of the country's North and Northeast. Due to the region's climate, this crop cycle resembles that of the United States, with planting occurring around May and harvesting in October. This corn cycle accounts for approximately 2 percent of corn production and presents lower yield rates, averaging 3.6 MT/ha, while first-season corn is estimated to average 6.0 MT/ha. Many analysts credit the lower productivity of third-season corn to the lesser use of technology in the region as farmers traditionally destine their harvest for livestock feed.

Figure 5

Third-season Corn: Producing States, 2022/2023



Data source: National Supply Agency (CONAB); Graph Post Brasilia

- **Bahia:** with an expectation of producing a little over 1 MMT this 2022/23 cycle, according to data from CONAB, the state has seen a slight decrease in yield as a result of a delay in the rain and high temperatures during April and May, critical periods for the development of the crops. Yield may also be compromised due to infestations of fall armyworm (*Spodoptera frugiperda*) in the region.
- **Sergipe:** Second largest producing state of third-season corn, responsible for roughly 40 percent of production, Sergipe is expected to produce around 0.94 MMT this season, a 5 percent increase in relation to the previous season, although the planted area is expected to remain the same. This shows an improvement in yield figures, with farmers investing in better soil management and infrastructure.

- **Alagoas:** Responsible for 5 percent of the third-season corn produced in Brazil, the state is experiencing a considerable increase in investments in corn this season, with CONAB estimating more than 40 percent growth in planted area and a 123 percent increase in production concerning the 2022/23 cycle, if weather conditions remain favorable, as has been the case to date. This will bring Alagoas' production to 0.11 MMT.

Production Costs Affecting Profit Margins

The harvest of the second corn crop started in Mato Grosso with concerns about storage due to the high production of grains this season, and the low prices worry farmers in the state. With stocks still full of soybeans and buyers waiting for even greater devaluations in the price of corn, the expectation is that there will be an increasing lack of space in storage units, especially from July, when most regions will begin harvesting. If farmers continue with issues with storing the grains properly, they might be forced to sell at lower prices to avoid losses.

According to CONAB, grain storage capacity for the 2022/23 harvest is at 44.78 million tons, which represents an increase of 8.8 percent compared to the 2021/22 cycle. However, this season's soybean and corn production grew 7.15 percent compared to the previous crop, reaching 90.73 million tons despite this increase. The scenario reinforces the difficulty of storage for producers, which is already common in the corn harvest.

Data from the Mato Grosso Institute of Agricultural Economics (IMEA) indicates that farmers' corn crop profit margins have shown signs of concern. According to the institute, it will cost 10 percent more to plant a hectare of corn in 2023/24 in relation to the 2022/23 cycle. This increase occurs despite the drop of almost 2 percent in fertilizers and soil defensives. In the 2022/23 crop year, producers spent R\$ 5,610.78 to sow one hectare of high-tech corn, while the total cost is R\$ 6,183.51 per hectare in the 2023/24 crop year.

Table 2
Cost of Corn Production in Mato Grosso

COST OF CORN PRODUCTION IN MATO GROSSO (R\$/ha)					
Harvest	2020/21	2021/22	2022/23	2023/24	2023/24*
Year	2020	2021	2022	2023	2023
Month	Consolidated	Consolidated	Consolidated	March	April
Seeds	445.42	554.43	670.53	675.20	692.82
Fertilizers	735.63	1,168.51	1,816.57	1,749.93	1,719.96
DEFENSIVES (Fungicide, Herbicide, Insecticide, etc.)	398.17	469.15	585.83	774.43	764.83
MECHANIZED OPERATIONS (Planting, Fertilizing, Applications with Machines, Harvesting...)	84.05	109.63	161.99	164.76	161.95
Third Party Services	2.09	1.73	3.00	2.94	2.94
Labor	72.99	76.91	83.05	126.02	126.28
Maintenance	106.13	106.47	109.97	166.08	166.08
Taxes and Fees	90.59	108.19	118.33	118.73	118.80
Financing and Insurances	160.18	214.02	276.71	315.95	313.67
POST-PRODUCTION (Classification and Processing, Storage, Production Transport)	286.26	278.6	288.55	298.00	294.04
Other Costs (Technical Assistance, Utilities Fuel, General Expenses)	69.46	84.29	97.43	120.01	118.43
Lease	132.3	210.01	208.66	242.26	233.88
DEPRECIATION (of Equipment, Utilities, and Improvements)	196.96	198.41	202.72	330.52	330.52
Family Labor	59.83	60.97	61.64	70.06	70.06
OPPORTUNITY COST (Working Capital, Improvements, etc.)	538	754.53	925.79	1,090.41	1,069.25
TOTAL	3,378.06	4,395.84	5,610.78	6,245.29	6,183.51

Data Source: Mato Grosso Institute of Agricultural Economics (IMEA), costs in R\$/ha, with April 2023/2024 as estimates; Chart Post Brasilia

The Fertilizer Purchasing Power Index (IPCF) for May 2023 closed at 0.99, compared to 0.96 in April. The IPCF calculation by Mosaic Fertilizantes considers the main Brazilian crops: soy, corn, sugar, ethanol, and cotton. The methodology compares the 2017 baseline, indicating that the lower the ratio, the more favorable the index and the better the exchange ratio. A ratio of less than 1.0 indicates that fertilizers are more affordable than in the same period in 2017. A percentage greater than 1.0 means fertilizers are less affordable than in the same period. In May 2022, the IPCF hit the mark of 1.75.

If profit margins do not improve later in the year, farmers may change their plans for the 2023/24 safrinha corn production, which will be planted from next January. Instead of corn as a second crop, they may consider other grains, such as sorghum and sesame, or other specialty crops which are cheaper to produce.

Farmers consulted by Post have indicated that many have started investing in building their own silos and storage space. Faced with the impossibility of acquiring new land to grow crops due to high costs or lack of availability, many farmers focus on improving their properties to reduce the bottlenecks and expenses resulting from logistical issues.

The Brazilian Association of the Machinery and Equipment Industry (ABIMAQ) estimates that the grain storage deficit in Brazil in 2023 will be 115 million tons. They estimate this will continue to rise on average by five million tons per year due to the increase in Brazilian production. For the association, Brazil may run out of storage units already in the harvest of first-season crops for the first time in history. Traditionally, growers tend to store second-season crops out in the open when they overlap with first-season harvests and storage facilities are already full.

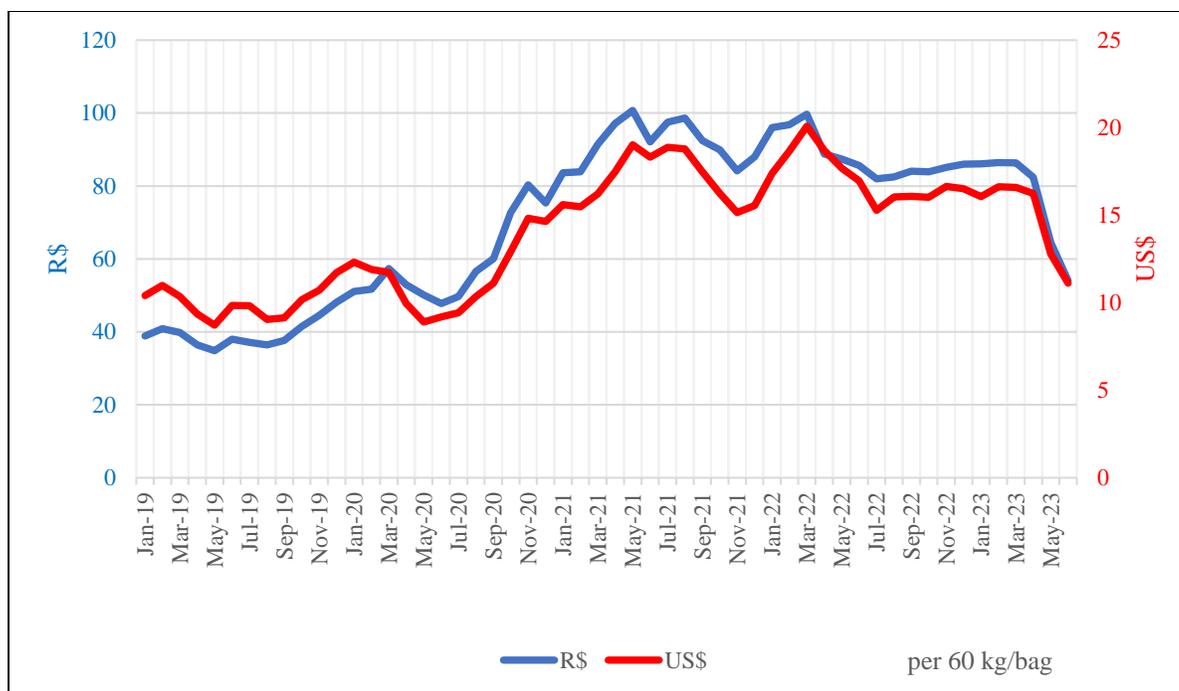
With lack of storage affecting severely impacting prices, the federal government has announced plans to create regulatory public stocks once again to combat food inflation. For this, it will be necessary to restructure the storage network, including the company's warehouses and those of accredited third parties. To stimulate the accreditation process for private warehouses, the company approved a 34 percent increase in the values of storage fees. The recreation of public stocks is one of the tools to guarantee the minimum production price and the farmer's income, in addition to regulating the internal supply to mitigate price variations. Stocks can be used in CONAB actions, such as humanitarian aid, food donations, and the Over-the-Counter Sales Program (ProVB).

[Corn Prices Stumble Amid High Domestic Offer](#)

Adding to the burdens of corn growers, who are facing high production costs, corn prices have been showing continuous declines and crossed the month of May at the lowest nominal levels since September 2020, according to data from the University of Sao Paulo Center for Advanced Studies in Applied Economics (CEPEA). The expectation of strong production, especially with the entrance of the second-corn crop in July and negotiations being done mainly on the spot to avoid bottlenecks in the already complicated Brazilian logistical matrix, have contributed to a sharp decline in corn prices.

On June 13, corn was traded in the ESALQ/BM&FBovespa Index at R\$ 54.07 (US\$ 11.12) per 60-kilo bag, a sharp decline from the price trade on March 15, date of the previous analysis, when corn reached R\$85.49 (US\$ 16.15) per 60-kilo bag (see GAIN report [Grain and Feed Annual Brasilia Brazil BR2023-0008](#)). Meanwhile, on May 2, 2023, corn was priced at R\$ 64.5 (US\$ 12.78) per 60-kilo bag.

Figure 6
Corn Prices in Brazil's ESALQ/BM&FBOVESPA



Data Source: University of Sao Paulo Center for Advanced Studies in Applied Economics (CEPEA); Graph Post Brasilia

Corn production costs are still strongly influenced by volatile internal and external uncertainties. In Brazil, many inputs, such as machinery and seeds, are imported, so their prices will vary with the volatility of the domestic currency (the 'real' - R\$) and the government's economic measures.

The Brazilian agricultural Gross Domestic Product (GDP) recorded an increase of 21.6 percent in the first quarter of 2023 compared to the last quarter of 2022, pointed out the Brazilian Institute of Geography and Statistics (IBGE). This high performance of the agricultural GDP contributed approximately 1.7 percentage points to the 1.9 percent increase in the overall Brazilian GDP in the first quarter of 2023 compared to the fourth quarter of 2022. Agricultural GDP, which accounts for around 8 percent of total GDP, was boosted by a record harvest of grains, especially soybeans, and corn. The GDP in the first quarter of 2023 totaled R\$ 2.6 trillion.

The Organization for Economic Cooperation and Development (OECD) has raised its projections for growth in Brazil's Gross Domestic Product (GDP) in 2023 and 2024, following a substantial boost in agricultural production in the first quarter of this year. The organization raised the projection for growth

of the Brazilian GDP from 1.0 percent to 1.7 percent in 2023 and from 1.1 percent to 1.2 percent in 2024. However, the tendency is for moderation in the pace of GDP expansion, as restrictive interest rates and weak credit growth constrain domestic demand.

Corn Trade

With Record Production and High International Demand, 2023/2024 Corn Exports Expected to Increase, While Imports Remain Stable

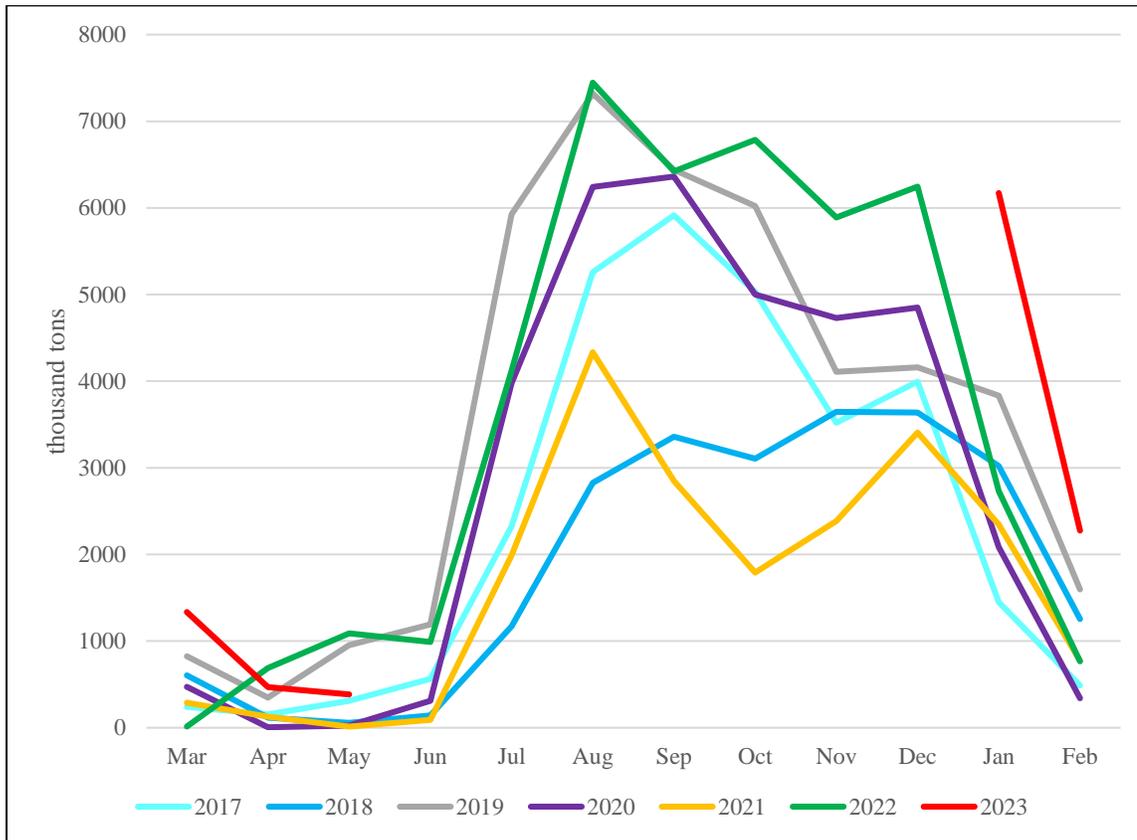
Brazil has seen a sharp decrease in exports of corn until May, something that hasn't happened since 2012, according to data from the Brazilian Ministry of Development, Industry, Foreign Trade and Services (MDIC). While it is common for exports to drop between March and May, Brazil had experienced a period of exceptionally high volume of exports in 2022. Data from MDIC show that the volume of Brazilian corn exports in January 2023 reached the surprising mark of 6.17 million tons, against 2.73 million in the same period last year, an increase of 126 percent. By May, corn exports had dropped to almost 385 thousand tons.

This is partly a result of higher domestic production, which has brought down the price of Brazilian corn. This happens given the greater availability of first-season corn, which is moving towards the end of the harvest, along with the perception of a good supply from the second-season (safrinha) corn. Demand for purchases of corn in the internal market is currently slow, as buyers buy only what they need, hoping prices will drop even further with the arrival of the safrinha corn.

However, the outlook is positive for the second half of the year, when the second-season corn enters the market and when Brazil traditionally exports most of its corn. Lower production of traditional corn-producing exporters, such as Argentina, which is expected to produce at lower yields, and Ukraine may contribute to great demand for Brazilian corn. In this scenario and given the continued increase in corn production in Brazil, Post increases its forecast for corn export for MY 2023/2024 (March 2024 – February 2025) to 55 MMT, from its initial 54 MMT.

Figure 7

Monthly Exports of Corn (MY: March – February)



Data Source: Ministry of Development, Industry, Foreign Trade and Services (MDIC); Graph Post Brasilia

Contacts consulted by Post have indicated that China will likely continue playing an essential role as an importer of Brazilian corn in the 2023/24 cycle. In addition, market and exporters are keeping their eyes open for the next step in the commercial relations between Brazil and China. Following the announcement by Brazilian President Luiz Inácio Lula da Silva that both countries will create a banking institution that will allow financial bilateral transactions without the use of US dollars, the first Chinese institution accredited to operate in Brazil without the American currency has projected its first operations in July. The government expects to reduce costs by excluding the American dollar from the operations, in addition to promoting bilateral trade and facilitating investments.

Post maintains its corn import forecast MY 2023/2024 (March 2024 – February 2025) at 1.2 MMT, based on the bulging domestic production, which will help supply the livestock and feed industry. However, if production is lower, Brazil might need to increase its imports to meet internal demand. On the other hand, if Brazil is hit by a bout of pathogenic avian influenza virus (HPAI) - H5N1 (see Corn Consumption, below), this would compromise the poultry sector, which demands a high amount of corn for feed. In this case, there would likely be a surplus of corn in the domestic market, reducing the need for imports.

2022/2023 Corn Exports Expected to Increase, While Imports Drop

Post increases its estimate for corn exports for MY 2022/2023 (March 2023 – February 2024) to 55 MMT from the previous 50 MMT, based on the high availability of Brazilian corn at competitive export prices and the continued interest for corn in international markets. From January to April 2023, Brazil exported 140 percent more than in the same period last year, according to data from MDIC.

Asian countries have emerged as top buyers of Brazilian corn this year, with Japan, South Korea, and China as top importers. The Chinese have been particularly interested in the lower prices of Brazilian corn. Around 560,000 MT of corn shipments from the United States destined for China were canceled in April, as buyers seemingly opted to purchase cheaper corn from Brazil following the sharp decline in prices of the Brazilian grain. Some 630,000 MT of corn shipments from the U.S. to China have been canceled in MY 2022/23.

Table 3

Main Destinations of Brazilian Corn

Jan-April 2023 (in Tons)	
Japan	1,797,294,512
South Korea	1,159,679,455
China	1,052,527,761
Vietnam	962,980,283
Iran	795,754,466
Colombia	743,499,615
Taiwan	580,556,443
Algeria	437,003,885
Mexico	353,957,816
Egypt	289,113,766
Saudi Arabia	289,452,158

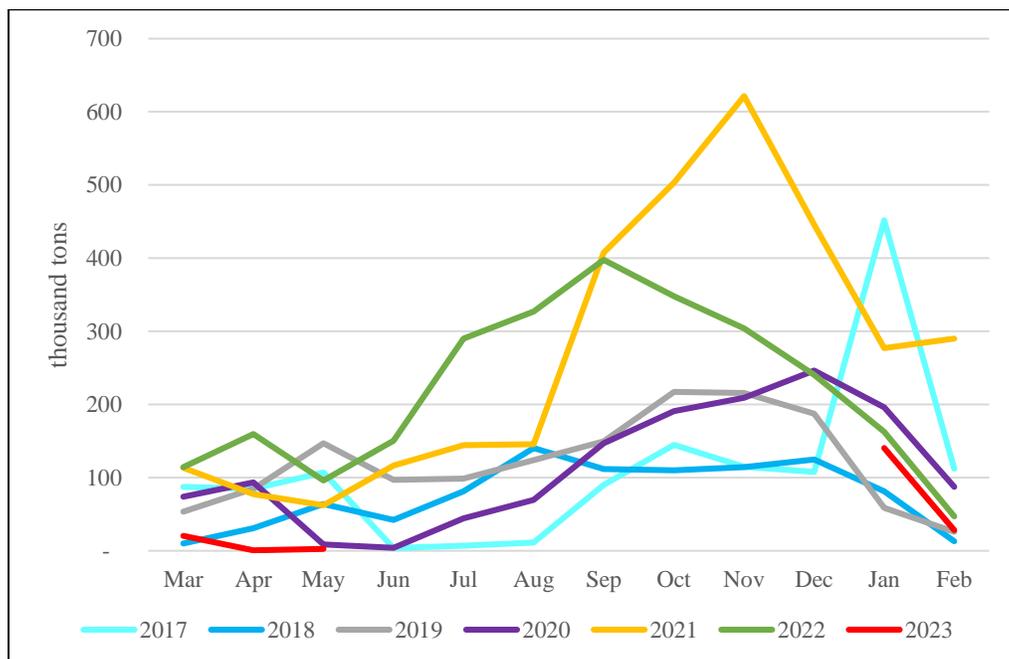
Data Source: Ministry of Development, Industry, Foreign Trade and Services (MDIC); Chart Post Brasilia

Indeed, China has been a critical part of Brazilian exports since the new agreement between both countries entered into force in November 2022, with approximately 1.48 million tons of corn exported to China last year alone. Data from the Brazilian government show that China has already imported almost 1.17 million tons of corn from Brazil in 2023. While the volume of exports tends to slow down in the first months of the market year, corn exports should begin to pick up by June, when the new crop hits the market.

Post decreases its estimate for corn imports for MY 2022/2023 to 1 MMT, down from its previous estimate of 1.3 MMT, based on the high availability of domestic corn. Brazil will continue to import most of its corn from neighboring countries, mainly Paraguay, which exports most of the grain to the southern region, where most of the feed industry is located.

Figure 8

Monthly Imports of Corn (MY: March - February)



Data Source: Ministry of Development, Industry, Foreign Trade and Services (MDIC); Graph Post Brasilia

Corn Consumption

Post maintains its forecast for total corn consumption for MY 2023/2024 (March 2024 – February 2025) to 77.5 MMT, almost 5.5 percent higher than the estimate for MY 2022/2023 (March 2023 – February 2024), which Post maintains at 73.5 MMT. This increase is expected mainly due to a higher demand for corn ethanol.

According to the National Corn Ethanol Union (UNEM), Brazil is expected to produce 6 billion liters of corn ethanol during the 2023/24 season, which runs from April to March in Brazil. This represents an increase of almost 37 percent in relation to the previous season and will lead to a rise in total consumption during MY 2023/2024. There are currently 18 plants in operation for corn ethanol in the country, located in the states of Mato Grosso, Mato Grosso do Sul, Goiás, Paraná, and São Paulo, but UNEM has indicated that nine others have received construction authorization, which would bring Brazil's production capacity to 9.6 billion liters of corn ethanol by the 2030/2031 harvest. Three new plants are expected to start operations in 2023 or early 2024. The corn-ethanol plants are important not only to the corn production chain but have the potential to affect consumption patterns in the feeding industry, as they produce by-products used for animal feed, such as Dried Distillers Grains (DDG), Dried Distillers Grains with Solubles (DDGS), and Wet distillers grains (WDG). As such, Post forecasts an increase of 25 percent in the Food, Seed, and Industrial (FSI) Consumption pattern for MY 2023/2024, following an expected improvement of economic indexes, which would expand the purchasing power of the population and the foreseen investments in corn ethanol.

According to data from IMEA, corn consumption in the state of Mato Grosso had a staggering increase of 361 percent in the past ten years due to the expansion of ethanol plants in the region, which now comprises 11 units. In this period, the consumption of corn in the state jumped from 3.1 million tons to approximately 14.3 million. In the same period, production grew 117 percent, from around 22.5 million tons to 48.9 million tons, for the 2022/23 harvest.

In addition to the ethanol plants, which should consume more than 9.5 million tons of corn in the 2023/24 crop year to produce more than 4.1 billion liters of biofuel, corn is also consumed internally by the cattle, poultry, and pig farming sectors, which in recent years have also been gradually increasing grain consumption.

One issue to be on the lookout for is that the Brazilian Ministry of Agriculture and Livestock declared on May 22 an animal health state emergency for 180 days on all its national territory after five cases of highly pathogenic avian influenza virus (HPAI) - H5N1 - infection in wild birds in Brazil. Authorities are concerned that the disease may harm the population and reach commercial farms and industries, leading to an outbreak, resulting in Brazil losing its World Organization for Animal Health (WOAH) status as a country free of the disease. Brazil is the world's biggest chicken exporter and a significant consumer of grains for animal feed, which would severely impact corn consumption in the country. So far, it has not caused alarms or significant consequences that would directly affect corn prices. Still, the scenario can change with an increase in the number of contaminated birds or if the virus reaches commercial plants.

The sharp increase in food prices has been a challenge for consumption patterns. Between October 2019 and October 2022, food prices rose 51 percent for inflation of 22.45 percent in the accumulated period. Last year, while inflation rose 5.78 percent, food prices increased by 13 percent. Still, according to data from the Brazilian Supermarket Association (ABRAS), consumption in Brazilian homes ended in 2022 with an increase of almost 4 percent compared to the previous year. This figure comprises items from the Brazilian basic food basket, including food, beverages, hygiene and beauty items, and cleaning products.

Data from the Brazilian Institute of Geography and Statistics (IBGE) indicate that around 46 million tons of food are wasted annually in Brazil, which represents 30 percent of all Brazilian production. This means that the financial loss is estimated at R\$ 61.3 billion annually, and waste occurs from food production to final consumption. According to the United Nations (UN), this puts Brazil in 10th place among the countries that most waste food globally. Some of the reasons are inadequate infrastructure, disposal due to the appearance of food, insufficient storage, and irregular transportation of food items.

RICE

Production, Supply, and Distribution

Table 4
Production, Supply, and Distribution of Rice

Rice, Milled Market Year Begins	2021/2022		2022/23		2023/24	
	Apr 2022		Apr 2023		Apr 2024	
Brazil	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested (1000 HA)	1618	1620	1470	1470	1400	1400
Beginning Stocks (1000 MT)	1170	1170	899	862	599	582
Milled Production (1000 MT)	7337	7300	6800	7000	6800	6800
Rough Production (1000 MT)	10790	10735	10000	10294	10000	10000
Milling Rate (.9999) (1000 MT)	6800	6800	6800	6800	6800	6800
MY Imports (1000 MT)	934	934	900	900	950	980
TY Imports (1000 MT)	826	826	1000	900	950	980
TY Imp. from U.S. (1000 MT)	0	0	0	0	0	0
Total Supply (1000 MT)	9441	9404	8599	8762	8349	8362
MY Exports (1000 MT)	1392	1392	1100	1100	900	900
TY Exports (1000 MT)	1445	1445	1100	1100	900	900
Consumption and Residual (1000 MT)	7150	7150	6900	7080	6800	6900
Ending Stocks (1000 MT)	899	862	599	582	649	562
Total Distribution (1000 MT)	9441	9404	8599	8762	8349	8362
Yield (Rough) (MT/HA)	6.6687	6.6265	6.8027	7.0027	7.1429	7.1429
MY = Marketing Year, begins with the month listed at the top of each column TY = Trade Year, which for Rice begins in January. TY 2023/24 = January 2024 - December 2024 Source: Post Brasilia						

Rice Production

Post estimates Brazil will decrease rice production again in the 2022/23 crop harvest compared to the previous cycle. In the country's south region, the leading rice producer, and in most states in the center-west, the harvest has already been completed, while in the Northeastern state of Maranhão, the upland rice harvest is in its initial phase. In Mato Grosso, the main producer of upland rice, the harvest was finishing by mid-June.

Looking ahead, after three years of La Niña, which caused a prolonged drought in southern Brazil, the scenario now changed with the arrival of the El Niño weather phenomenon. The south region,

responsible for a little over 80 percent of the national rice production, may face challenges in planting and in the development of the crops, mainly in relation to the excessive rainfall caused by El Niño. For both irrigated and upland rice, excessive and frequent rain can harm plant growth as it tends to reduce the availability of sunlight during the crop cycle. While it is still too soon to make projections of any impact, farmers are also aware that rain in excess may harm crop management practices.

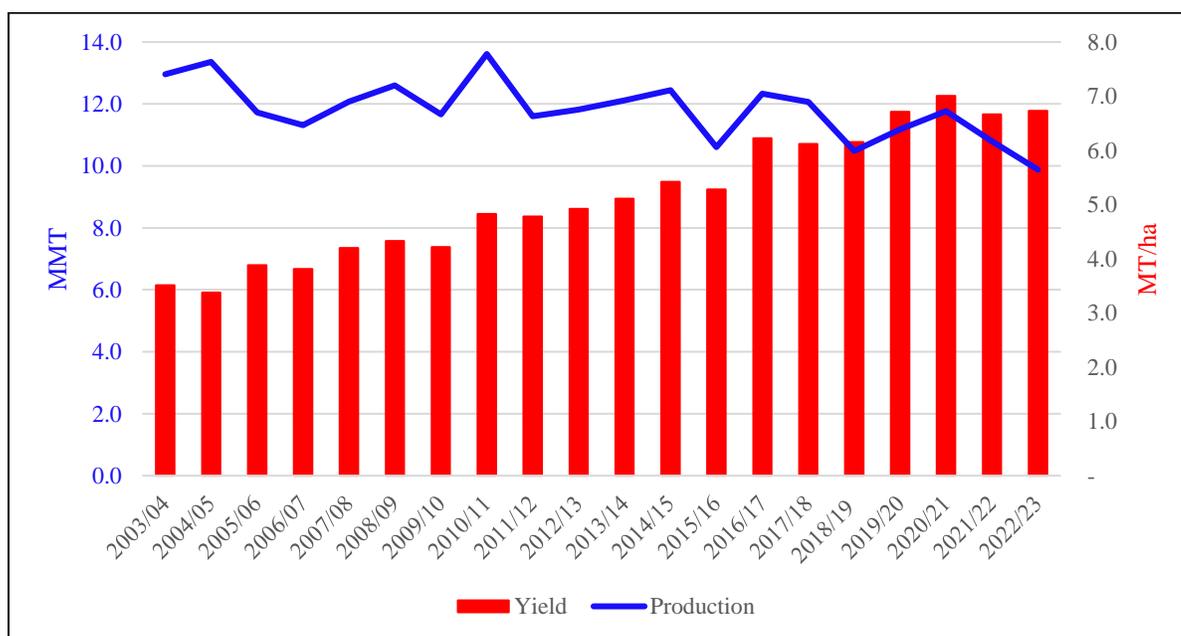
MY 2023/24 Rice Production, Area and Yield Forecasts Continue Decreasing

Post adjusts its rice planted area for MY 2023/24 (April 2024 – March 2025) to 1.4 million hectares (ha) from the previous 1.38-million-hectare estimate. This represents a 4.8 percent decrease from the last season (MY 2022/23) and is based on a continued downward trend, pushed by the sustained loss of profitability of rice crops in Brazil, which has been driving farmers to turn to more profitable crops, such as soybeans and corn. More than 90 percent of Brazil's rice is irrigated, elevating production costs considerably. Nevertheless, rice sowing remains a tradition in the country, especially in the southern states, such as Rio Grande do Sul and Santa Catarina, responsible for roughly 88 percent of the country's production. In many locations of these states, soils present poor drainage, making them suitable for planting irrigated rice.

Post maintains its forecasts for milled rice production for MY 2023/24 (April 2024 – March 2025) at 6.8 million metric tons (MMT) of milled rice equivalent (MRE), an equivalent of 10 MMT of paddy rice. Yield is revised for MY 2023/24 (April 2024 – March 2025) to 7.14 MT/ha, down from the previous estimate of 7.32 MT/ha. Despite investments, advancements in production have been costly, leading rice growers to struggle to improve inputs and investments in attempts to achieve better productivity.

Figure 9

Rice: Evolution of Production and Yield (2003 - 2023)



Data Source: National Supply Company (CONAB); Graph Post Brasilia

MY 2022/23: Rice Losing Area to Other Crops

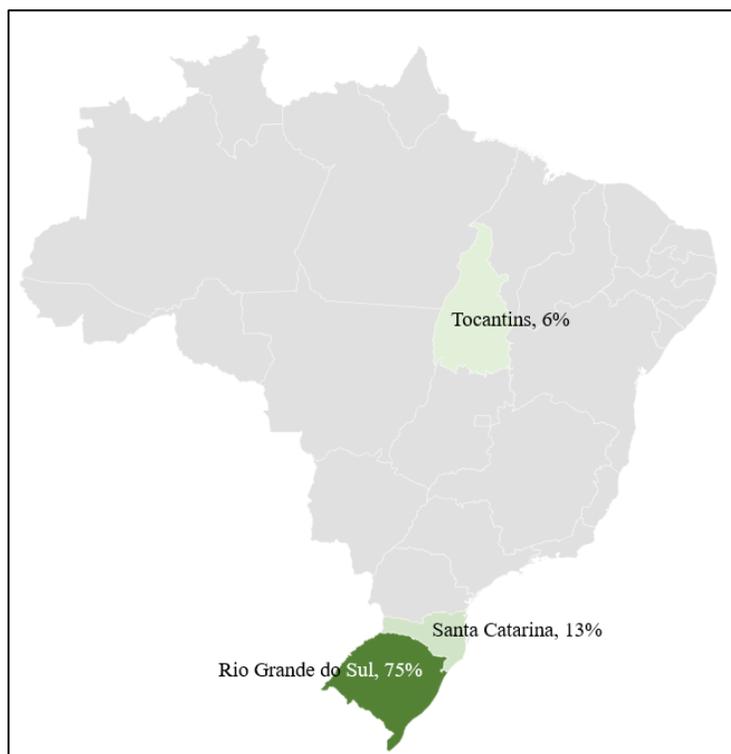
Post maintains its estimate of rice planted area for MY 2022/23 (April 2023 – March 2024) at 1.47 million hectares, based on trendline. Post also maintains its estimate for milled rice production for the period to 7 million metric tons (MMT) of milled rice equivalent (MRE) (an equivalent of 10.29 MMT of paddy rice), setting yield estimates for MY 2022/23 at 7.0 MT/ha. These estimates represent a decrease compared to the previous season and are consistent with falling production and harvesting areas throughout the years. However, rice sowing is considered a family tradition, especially for historical rice-planting families in Rio Grande do Sul, where it is mainly grown. Hence, farmers tend to persist in this culture. As such, traditional growers continue to invest in technological improvements, increasing yield returns.

Harvest Outlook

Aside from being embedded in the culture as a tradition that goes back to multiple generations, rice sowing is also part of the critical soybean-rice rotation cycle of the crop pattern, which benefits the soil in the region. The Federation of Rice Producers of Rio Grande do Sul (FEDERARROZ) states that such a cycle of rotation can reduce production costs by as much as 15 percent and increase rice yields by 10 to 20 percent, depending on the condition of the land. The Rio Grande do Sul Rice Institute (IRGA) estimates that an irrigated rice producer using this rotation system, referred to as “ping-pong,” that is, one year of rice and one year of soy within a production system, can improve soil quality and rice yield. In addition, some areas of the state are known for having poor drainage, making them suitable for planting irrigated rice, making the farmers unlikely to change crops.

Figure 10

Main Irrigated Rice Producing States (2022/23)

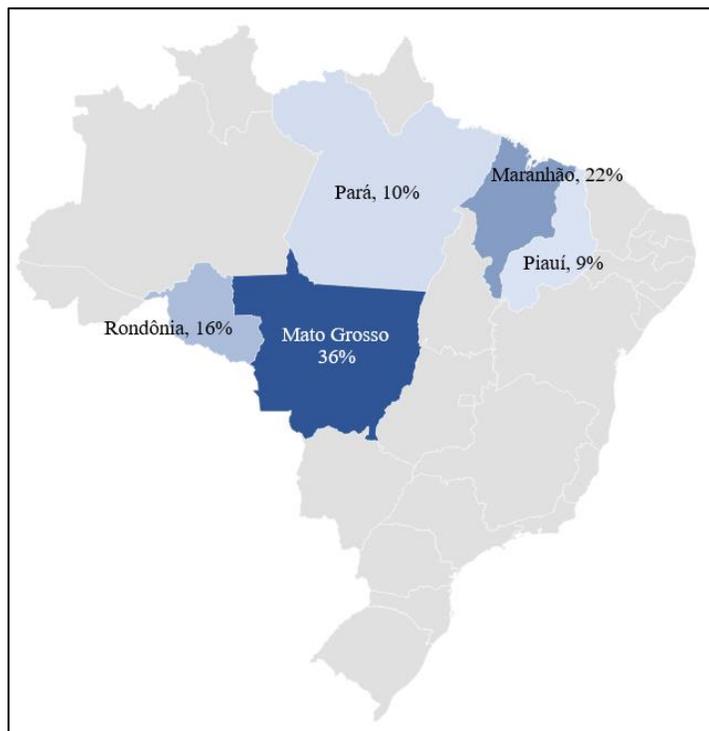


Data Source: National Supply Company (CONAB); Graph Post Brasilia

- **Rio Grande do Sul**: the harvest of irrigated rice was concluded, with the Rio Grande do Sul Rice Institute (IRGA) calculating a total harvested area of 839,972 hectares in the 2022/2023 harvest. The levels of reservoirs in some regions improved since the beginning of the year, but the lack of water availability was still sufficient to compromise the irrigation of crops. However, the quality of the harvested grains was good, and yields improved in relation to last season. Some of the regions are already preparing the soil for the next sowing. The National Supply Company (CONAB) estimates that Rio Grande do Sul, which alone accounts for almost 75 percent of the total production of irrigated rice, should produce 6.93 MMT in this 2022/23 cycle, a 9.4 percent drop from the previous season.
- **Santa Catarina**: According to the Agricultural Research and Rural Extension Company of Santa Catarina (EPAGRI/SC), the state should produce 1.2 MMT of rice in the 2022/23 harvest in an area of approximately 147 thousand hectares. Yield is 2 percent higher than in the previous cycle, reaching 8.65 MT/ha.
- **Tocantins**: The National Supply Agency (CONAB) estimates that Tocantins will produce 13.6 thousand tons of upland rice in the 2022/23 harvest, which accounts for less than 2 percent of the national production. The state should also produce 518 thousand tons of irrigated rice, corresponding to almost 5.6 percent of the total production of this type of cultivation, making Tocantins the third largest producer of irrigated rice in the 2022/23 season.

Figure 11

Main Upland Rice Producing States (2022/23)



Data Source: National Supply Company (CONAB); Graph Post Brasilia

- **Mato Grosso**: The top-producing state of upland rice has seen a sharp decrease in planted area and, consequently, production due to the replacement of rice in favor of other crops, such as corn. CONAB estimates a 12 percent reduction in the area this 2022/23 cycle in relation to last season and a 10 percent drop in production. As such, the state, which should account for roughly 36 percent of the total upland rice harvest, should produce around 274 thousand tons, with a yield of 3.68 MT/ha, according to CONAB.
- **Maranhão**: In the 2022/23 harvest, the state is responsible for around 22 percent of the production of upland rice, making it the second largest producer, at 170 thousand tons. Planted area is expected to drop almost 7 percent in relation to the previous cycle, reaching 91.5 thousand hectares. The yield for upland rice, at 1.86 MT/ha, should differ significantly from the estimate for irrigated rice in the state, calculated by CONAB at 6.0 MT/ha, mainly due to unfavorable weather conditions and high investment needs by farmers.
- **Rondônia**: responsible for 16 percent of upland rice production; according to CONAB, the state is estimated to have planted almost 33 thousand hectares in the 2022/23 cycle. Production is expected to reach nearly 123 thousand tons, a 16 percent increase over the previous harvest, mainly credited to optimal rains that benefited the reproductive cycle of the plants.
- **Pará**: With approximately 80 percent of upland rice harvested in the state by mid-June, Pará accounts for approximately 10 percent of this crop and is expected to produce around 76 thousand tons.

- **Piauí**: As of mid-June, upland rice was in the grain-filling phase in most of the state and developing well, and CONAB estimates that production for the 2022/23 harvest should reach over 76 thousand tons. This sets the state as the fifth producer of upland rice, responsible for almost 9 percent of the national production.

Production Costs Decreased, But Profit Margins Are Still Slim

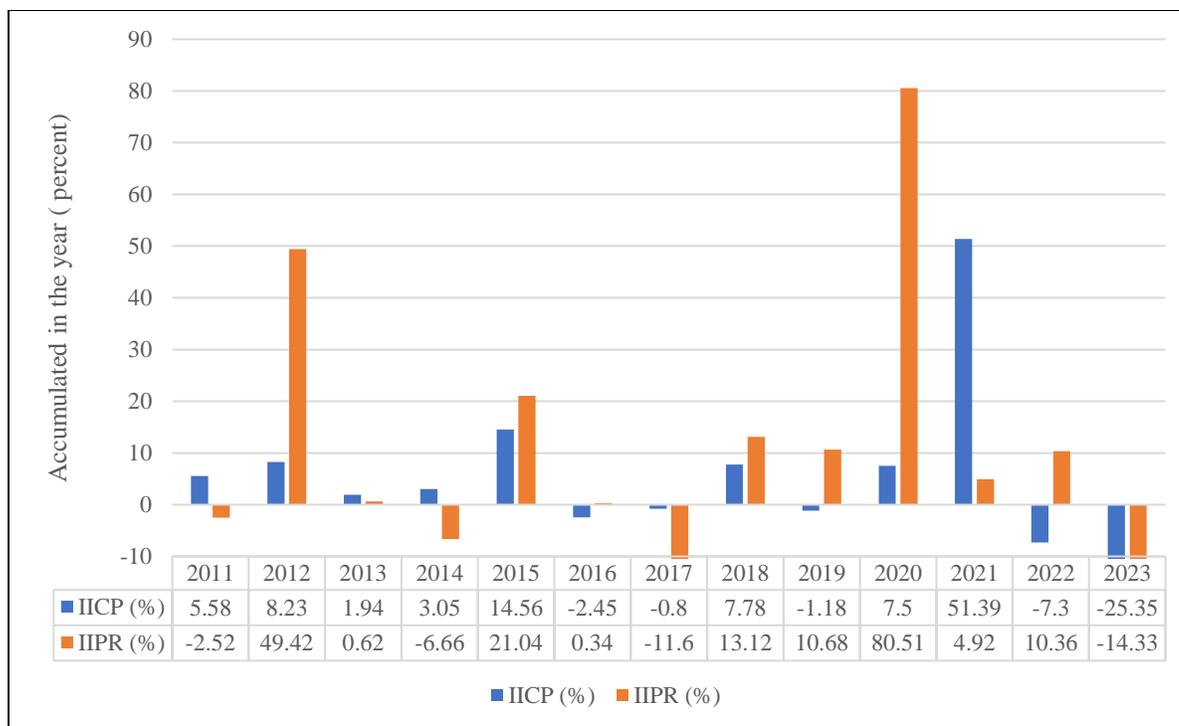
The Federation of Agriculture of the State of Rio Grande do Sul (FARSUL) released new figures on the production cost and the prices received by rural producers in the state, measured for the major commodities through the so-called Production Costs Inflation Index (IICP) and the Index on Inflation of Prices Received by Rural Producers (IIPR). The first determines the variation in the cost of production, and the latter defines the variations in prices received by producers.

The year began with a drop in agribusiness production costs, as recorded by the IICP. January 2023 saw a decline of 3.3 percent, continuing the sequence of decreases that began in June 2022, mainly due to the 12 percent drop in the cost of fertilizers. However, it should be noted that agricultural production costs in the state are still higher than before 2021 when Rio Grande do Sul saw a sharp upsurge in production costs. The IICP dropped 4.2 percent in April 2023 in relation to the previous month, mainly pulled by the drop in freight and fertilizer prices. As such, the IICP accumulated in 12 months has registered a total decrease of 25.4 percent in April.

The Index on Inflation of Prices Received by Rural Producers (IIPR), which had displayed shy increases in the first months of this year compared to December 2022, dropped 7.1 percent in April 2023 in comparison to March, with rice suffering the pressures of the entrance of large harvests of corn, wheat, and soy in the market, which pulled prices of these commodities down.

Figure 12

Rio Grande do Sul: Inflation Indexes on Production Costs (IICP) and Prices Received by Rural Producers (IIPR)



Data Source: Federation of Agriculture of the State of Rio Grande do Sul (FARSUL); Graph Post Brasilia

The Agricultural Research and Rural Extension Company of Santa Catarina (EPAGRI/SC) estimates a 3.5 percent reduction in rice production costs for the state during April 2023 in relation to October 2022. Taking into account the total operating cost of April's input prices, the leveling price, which is necessary to cover all the costs of the crop would be R\$ 79.03 per 50kg-sack, while the producer price was R\$ 82.09 per 50kg-sack that month. While this results in an operating profit of R\$ 3.06 per 50kg-sack, it does allow the producer to remain in activity.

Brazilian farmers suffer the added burden of the high cost of transportation and lack of grain storage capacity. Farmers consulted by Post have indicated that many have started investing in building their own silos and storage space. Faced with the impossibility of acquiring new land to grow crops due to high costs or lack of availability, many farmers focus on improving their properties to reduce the bottlenecks and expenses resulting from logistical issues.

The Brazilian Association of the Machinery and Equipment Industry (ABIMAQ) estimates that the grain storage deficit in Brazil in 2023 will be 115 million tons. They estimate this will continue to rise on average by five million tons per year due to the increase in Brazilian production. For the association, Brazil may run out of storage units already in the harvest of first-season crops for the first time in history. Traditionally, growers tend to store second-season crops out in the open when they overlap with first-season harvests and storage facilities are already full. They also favor storage of more profitable crops, such as soy and then corn.

With lack of storage affecting severely impacting prices, the federal government has announced plans to create regulatory public stocks once again to combat food inflation. For this, it will be necessary to restructure the storage network, including the company's warehouses and those of accredited third parties. To stimulate the accreditation process for private warehouses, the company approved a 34 percent increase in the values of storage fees. The recreation of public stocks is one of the tools to guarantee the minimum production price and the farmer's income, in addition to regulating the internal supply to mitigate price variations. Stocks can be used in CONAB actions, such as humanitarian aid, food donations, and the Over-the-Counter Sales Program (ProVB).

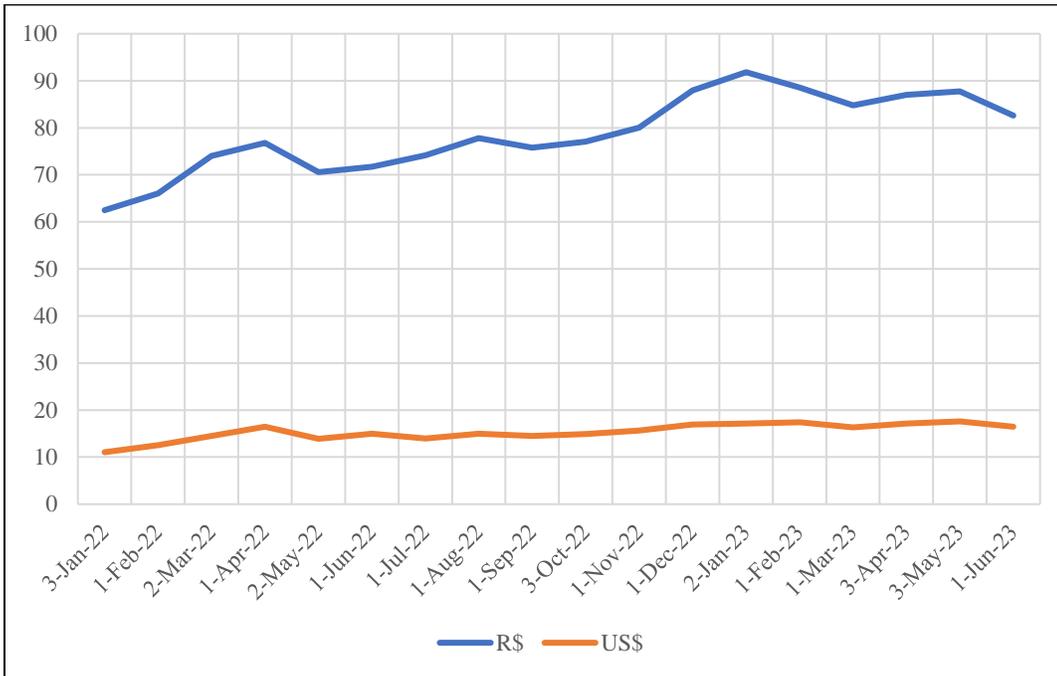
Rice Prices Dropping Over More Competitive Crops

The prices of paddy rice in mid-June hit a down spiral in Rio Grande do Sul, one of the main markets, as a reflection of the low liquidity experienced by the commodity. This can be credited to the disparity between the prices of purchase and sale of the raw material, the devaluation of the U.S. dollar against the Brazilian real, which affects export potential, and the pressure of other commodities, such as soy and corn, which dominated the market. According to the University of Sao Paulo's Center for Advanced Studies in Applied Economics (CEPEA), producers are negotiating only occasional lots, for short-term bill payments, as they await better market conditions. At the same time, industries are focused instead on selling milled rice. This downward trend was also experienced throughout May.

Data from CEPEA shows that rice was traded in Rio Grande do Sul, which serves as the national reference for 50-kilo sack, on June 16 at R\$ 81.47 (US\$ 16.91), 12.7 percent than the price quoted in the first day of 2023, when it reached R\$ 91.83 (US\$ 17.13). This result mainly reflects the estimate of lower financial attractiveness of the rice sector in relation to competing crops, such as soybeans and corn and the on-the-spot trade, since most producers need to make cash immediately after the harvest to pay for the next sowing. Historically, the first five months of the year are marked by consecutive reductions in prices, as the harvest advances and the domestic supply consolidates. However, until the first half of May of this year, the price drop was lower than usual, possibly led by lower internal supply of the grain due to the problems faced by the harvest in Rio Grande do Sul and an initial increase in exports.

Figure 13

Prices of Rice in Rio Grande do Sul



Data Source: University of Sao Paulo Center for Advanced Studies in Applied Economics (CEPEA); Graph Post Brasilia

Analysts are projecting a more optimistic economic outlook for Brazil, which can help with commodity and product input prices. The Brazilian agricultural Gross Domestic Product (GDP) recorded an increase of 21.6 percent in the first quarter of 2023 compared to the last quarter of 2022, pointed out the Brazilian Institute of Geography and Statistics (IBGE). This high performance of the agricultural GDP contributed approximately 1.7 percentage points to the 1.9 percent increase in the overall Brazilian GDP in the first quarter of 2023 compared to the fourth quarter of 2022. Agricultural GDP, which accounts for around 8 percent of total GDP, was boosted by a record harvest of grains, especially soybeans and corn. The GDP in the first quarter of 2023 totaled R\$ 2.6 trillion.

The Organization for Economic Cooperation and Development (OECD) has raised its projections for growth in Brazil's Gross Domestic Product (GDP) in 2023 and 2024, following a strong boost in agricultural production in the first quarter of this year. The organization raised the projection for growth of the Brazilian GDP from 1.0 percent to 1.7 percent in 2023, and from 1.1 percent to 1.2 percent in 2024. However, the tendency is for moderation in the pace of GDP expansion, as restrictive interest rates and weak credit growth constrain domestic demand.

Rice Trade

Mexico Takes the Lead on Brazilian Rice Exports, While Mercosur Countries Continue to Dominate Imports

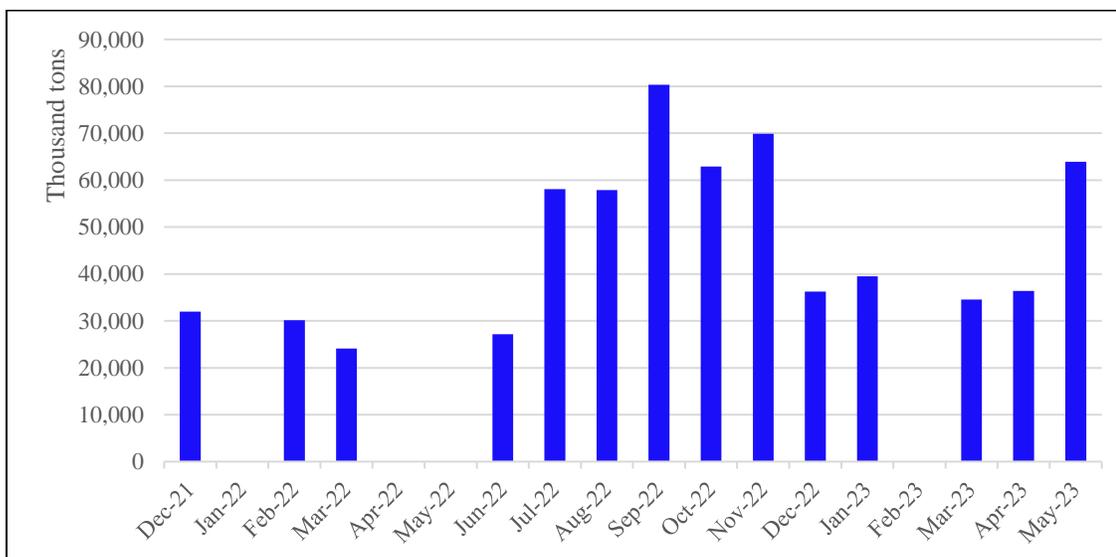
Post revises its forecast down for rice exports for MY 2023/24 (April 2024 – March 2025) from 1.1 MT to 900,000 MT, based on the continued projection of lower availability of rice in the internal market, which will likely lead to a decrease in traded volumes. For this reason, Post slightly raises in 1 percent its forecast for rice imports, to 990,000 MT for MY 2023/24, to supply the demand. Imports will continue to be dominated by Mercosur countries, favored by geographic proximity and duty-free access to the Brazilian market.

Post revises its estimate for rice exports for MY 2022/23 (April 2023 – March 2024) to 1.1 MT, from its previous forecast of 1 MT, based on the advantageous exchange rate, which made Brazilian rice more competitive in the foreign market and the exports to Mexico, which are likely to continue rising, as Post contacts have indicated that trade should remain favorable until December 2023. According to the Ministry of Development, Industry, Commerce, and Services (MDIC), Mexico has been the leading destination of Brazilian rice in the accumulated of 2023.

Brazilian rice exporters benefited from the favorable exchange rate and the tax exemption adopted by Mexico, which opened a market of almost 500 thousand tons of Brazilian rice to that country throughout 2022, taking away a large percentage traditionally exported from the United States to its neighbor. In May 2023, Mexico was the biggest destination for Brazilian rice, with 63.8 thousand tons being exported from Brazil to Mexico, more than double the amount of the second destination, Costa Rica, which imported 29.3 thousand tons of Brazilian rice in the same month.

Figure 14

Exports of Brazilian Rice to Mexico



Data Source: Ministry of Development, Industry, Commerce and Services (MDIC); Graph Post Brasilia

According to the MDIC, exports of paddy rice totaled 140.2 thousand tons in April 2023, 21 percent above March and 107 percent greater than April last year. According to the Brazilian Rice Industry Association (ABIARROZ), the volume exported in April this year totaled US\$ 47 million.

The result of exports of milled rice, with higher added value, totaled 22.4 thousand tons, with revenues of US\$ 10 million. The main buyers of Brazilian milled rice in April were Peru, Saudi Arabia, the United States, Cape Verde, Panama, Canada, Bolivia, Angola, Trinidad and Tobago, and the United Arab Emirates.

Post maintains its estimate for rice imports for MY 2022/23 at 900,000 MT, based on the need to fulfil the Brazilian demand. The devaluation of the U.S. dollar against the Brazilian real, aligned with high interstate tax burdens, has led many industries to purchase rice from tax-free imports from countries such as Paraguay rather than from acquiring it within Brazil. Brazilian rice imports continue to depend mostly on Mercosur countries, which enjoy tax-free export/import with Paraguay traditionally accounting for the majority of exports. Brazil imported 112.7 thousand tons of paddy rice in April 2023, a volume 17.5 percent lower than the previous month and 35 percent less than in April last year.

Another noteworthy point is the ongoing discussion about the Mercosur-European Union (EU) agreement. According to the Brazilian Rice Industry Association (ABIARROZ), the European bloc represented 14 percent (1.2 million tons) of total sales of processed rice in Brazil in 2022, with sales being led by Portugal and Spain. In the last decade, the bloc's participation has been growing in the sector's exports, going from 5th place in 2013 to 3rd in 2022. According to ABIARROZ, the agreement will benefit 60 thousand tons of rice to be exported without import tariffs. All imports of Brazilian rice carried out by the European bloc are burdened by specific import tariffs that vary between 42.5 euros/ton for broken rice, 175 euros/ton for white rice, and 65 euros/ton for brown rice.

Rice Consumption

Post slightly revises its forecast for rice consumption for MY 2023/24 (April 2024 – March 2025) to 6.9 MMT, down 1.1 percent from its original estimate, and maintains its estimate of 7.08 MMT for MY 2022/23 (April 2023 – March 2024), signaling a downward trend in consumption pattern of rice in Brazil. This is based on the ongoing perspective of economic recovery and the fact that rice consumption has a negative income elasticity of demand, which means that with more income, consumers tend to opt for other 'superior' goods.

While rice remains a crucial food ingredient in the Brazilian diet, present in almost 95 percent of households, the grain is considered a primary product in the food basket and one that is replaced by other luxury items when consumers can afford to pay more for food products.

Another reason rice consumption decreases in Brazilians' daily diet is that it is commonly eaten with beans, which requires a long cooking period. As a result, bean consumption in Brazil has been decreasing considerably, pulling rice numbers as well. In addition, younger generations have also been opting for a diet with fewer carbohydrates.

Data from the Brazilian Institute of Geography and Statistics (IBGE) indicate that around 46 million tons of food are wasted annually in Brazil, which represents 30 percent of all Brazilian production. Putting it in terms, the financial loss is estimated at R\$ 61.3 billion annually and waste occurs from food production to final consumption. According to the United Nations (UN) this puts Brazil in 10th place among those that most waste food in the world. Some of the reasons are inadequate infrastructure, disposal due to the appearance of food, inadequate storage and irregular transportation of food items.

WHEAT

Production, Supply, and Distribution

Table 5
Production, Supply, and Distribution of Wheat

Wheat	2021/2022		2022/2023		2023/2024	
Market Year Begins	Oct 2021		Oct 2022		Oct 2023	
Brazil	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested (1000 HA)	2740	2740	3090	3200	3300	3400
Beginning Stocks (1000 MT)	1911	1911	1183	1183	2133	1983
Production (1000 MT)	7700	7700	10600	10600	10000	11000
MY Imports (1000 MT)	6392	6392	5100	5100	5600	5600
TY Imports (1000 MT)	6582	6582	5100	5100	5600	5600
TY Imp. From U.S. (1000 MT)	115	115	0	0	0	0
Total Supply (1000 MT)	16003	16003	16883	16883	17733	18583
MY Exports (1000 MT)	3070	3070	2800	2800	3500	3400
TY Exports (1000 MT)	3105	3105	2800	2800	3500	3400
Feed and Residual (1000 MT)	450	450	550	600	550	650
FSI Consumption (1000 MT)	11300	11300	11400	11500	11500	12100
Total Consumption (1000 MT)	11750	11750	11950	12100	12050	12750
Ending Stocks (1000 MT)	1183	1183	2133	1983	2183	2433
Total Distribution (1000 MT)	16003	16003	16883	16883	17733	18583
Yield (MT/HA)	2.8102	2.8102	3.4304	3.3125	3.0303	3.2353

MY = Marketing Year, begins with the month listed at the top of each column
 TY = Trade Year, which for Wheat begins in July. TY 2023/2024 = July 2023 – June 2024
 Source: Post Brasilia

Wheat Production

Brazilian farmers are currently focused on planting the new wheat harvest in the country. Post forecasts an increase of harvested area, as farmers opted to plant wheat in locations where they lost the ideal window to plant corn, following a delay in harvesting soy fields. By mid-June, almost 50 percent of the grain had been sown.

The start of El Niño weather phenomenon brings to the south region, responsible for a little over 88 percent of the national wheat production, challenges in planting and the development of the crops,

mainly in relation to the excessive rainfall, as this condition may harm plant growth because of a reduction in the availability of sunlight during the crop cycle.

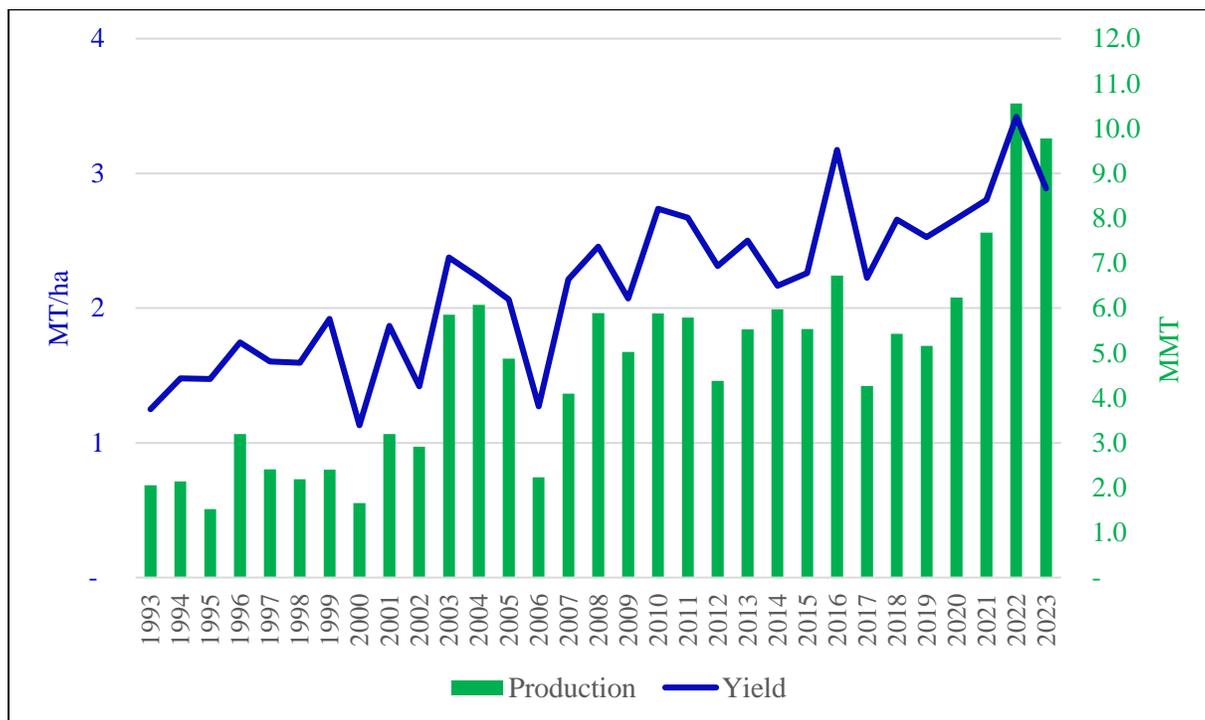
While it is still too soon to make projections of any impact, farmers are also alert that excess rain may harm crop management practices. In addition, high volumes of rain are forecast for the period around August, like what occurred during the 2015 and 2016 harvests, which caused damage and losses due to floods. This can result in damage to wheat crops, especially at the end of the cycle and during the harvest and may even delay planting summer crops.

[2023/2024 Forecasts for Planted Area, Production, and Yield Continue Optimistic](#)

Post increases its forecast for wheat planted area for MY 2023/24 (October 2023 – September 2024) to 3.4 million hectares, from its initial 3.2 million hectares estimate, as wheat remains the preferred crop for planting during Brazil's winter season (June to September). Almost 90 percent of the Brazilian wheat crops are planted in three southern states: Rio Grande do Sul, Paraná, and Santa Catarina, with the country sowing most of its wheat between April and September, depending on the region. Still, the planting timeline falls outside USDA's market year, which runs from October to September of the following year. However, Brazil considers its entire wheat season to run from August to July, so the wheat crop harvest and export occur within the market year parameters.

As farmers continue to invest in technology, including in new wheat cultivars that allow weather resistance and higher grain productivity, Post forecasts wheat production for MY 2023/24 at 11 MMT, up 3.8 percent on the current season estimate, with a yield forecast of 3.2 metric tons per hectare (MT/ha). The new estimate represents a 2.4 percent decrease in the productivity estimated for the 2022/23 harvest only because the past season experience above-average yield results. Wheat continues to bring in solid investments, as the Brazilian government sees this grain as the next big commodity for Brazil to target in its path to self-sufficiency, following the boom in the production of soy and corn.

Figure 15
Evolution of Wheat Production and Yield in Brazil



Data Source: National Supply Company (CONAB); Graph Post Brasilia

2022/2023 Season Concluded with Strong Planted Area, Production, and Yield

Post increased its estimated planted area for MY 2022/23 (October 2022 – September 2023) to 3.2 million hectares, up 4.2 percent in relation to the previous forecast. This adjustment was primarily due to an increase in harvested area in the state of Paraná, one of the biggest wheat producers in Brazil.

Post maintained the estimated production to 10.6 MM for MY 2022/23, with yield set at 3.3 metric tons per hectare (MT/ha), an 18 percent increase over the previous season. The high productivity was driven for the most part by the rise in yield numbers in Rio Grande do Sul, the largest wheat-producing state.

Harvest Outlook

Figure 16

Main Wheat Producing States, 2023



Data Source: National Supply Company (CONAB); Graph Post Brasilia

- **Rio Grande do Sul**: Responsible for almost 48 percent of all the wheat planted in the country, by mid-June, the state is almost halfway into sowing its 2023 wheat crop, with production estimated at 4.55 MMT by the Technical Assistance and Extension Services Enterprise (EMATER/RS). This represents a 14 percent drop in relation to the 2022 harvest, which saw above-average yield numbers. EMATER forecasts that the state will plant 1.5 million hectares in 2023, a 1.5 percent drop concerning the 2022 harvest.
- **Paraná**: The Paraná Department of Rural Economy (Deral/PR) estimates wheat production in 2023 at 4.55 MMT, making the state an equal producer to Rio Grande do Sul. However, the Brazilian National Supply Company (CONAB) estimates that Paraná's production will reach 3.6 MMT, making the state account for almost 37 percent of the wheat grown in the country, behind Rio Grande do Sul. Both agencies project planted area of 1.3 million hectares.
- **Minas Gerais**: Higher technological investments, such as using better cultivars adapted to soil and weather conditions, have led producers to increase the planted area in the state, which is expected to harvest 164 thousand hectares in 2023, according to estimates by CONAB. This is around 50 percent higher than in the previous season and can also be credited to farmers opting to plant wheat after

missing out on the ideal period to plant corn. These investments should lead to an increase of 32 percent in production, leading the state’s harvest to around 0.4 MT.

- **São Paulo:** The state is experiencing a similar increase in area, but production was affected by excess rain, with the state’s Wheat Sectorial Chamber cutting down initial production forecasts from 0.5 MT to 0.4 MT for 2023.
- **Santa Catarina:** The Agricultural Research and Rural Extension Company of Santa Catarina (EPAGRI/SC) estimate wheat production for 2023 at 0.47 MT in the state, close to the 2022 estimate of 0.48 MT. However, CONAB predicts a drop in production this 2023/24 harvest, with the uncertain weather patterns brought by El Niño influencing the decision of farmers to opt for wheat. For CONAB, the state should produce 0.39 MT in 2023, an 18.6 percent drop in the current season.

Table 6
Wheat Sowing Progress: Main Producing States

	2022		2023	
	May 28	June 4	May 28	June 3
Rio Grande do Sul	0.2%	5.0%	1.0%	7.0%
Paraná	53%	61%	58%	66%
Minas Gerais	100%	100%	100%	100%
São Paulo	68%	95%	85%	100%
Santa Catarina	0.3%	1.0%	0.5%	1.0%

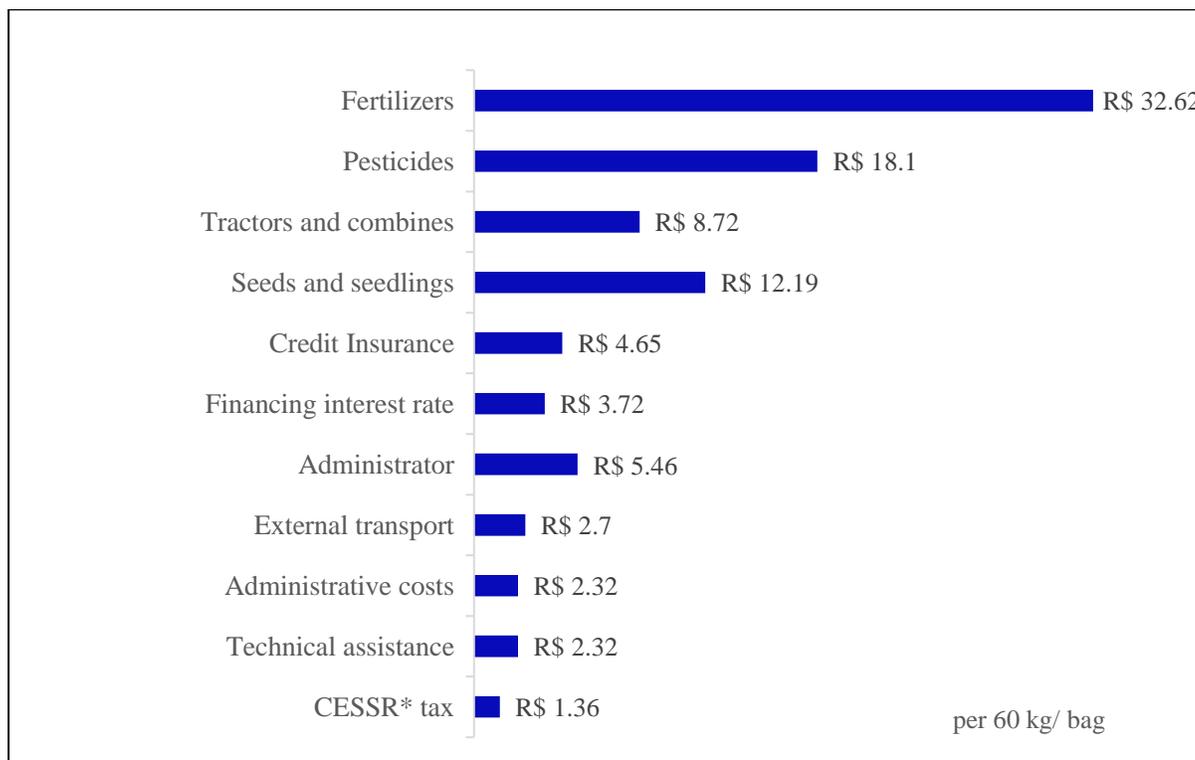
Data Source: National Supply Company (CONAB); Graph Post Brasilia

Production Costs Improve, but Fertilizers are Still the Weighing Factor

In wheat, production costs are usually associated with inputs (fertilizers, pesticides, and seeds) and operations in the field (fuel and tractors). The prices of fertilizers and pesticides remain the most significant contributor to the cost of wheat production. According to the National Supply Company (CONAB), in January 2023, these two inputs were responsible for half of the variable costs of wheat production in Londrina, a city in Paraná. Corn production costs are still strongly influenced by volatile internal and external uncertainties. In Brazil, many inputs, such as machinery and seeds, are imported, so their prices will vary with the volatility of the domestic currency (the 'real' - R\$) and the government's economic measures.

Figure 17

Variable Production Costs of Wheat in Londrina, Paraná (January, 2023)



*CESSR = Special Contribution to Rural Social Security

Data Source: National Supply Company (CONAB); Graph Post Brasilia

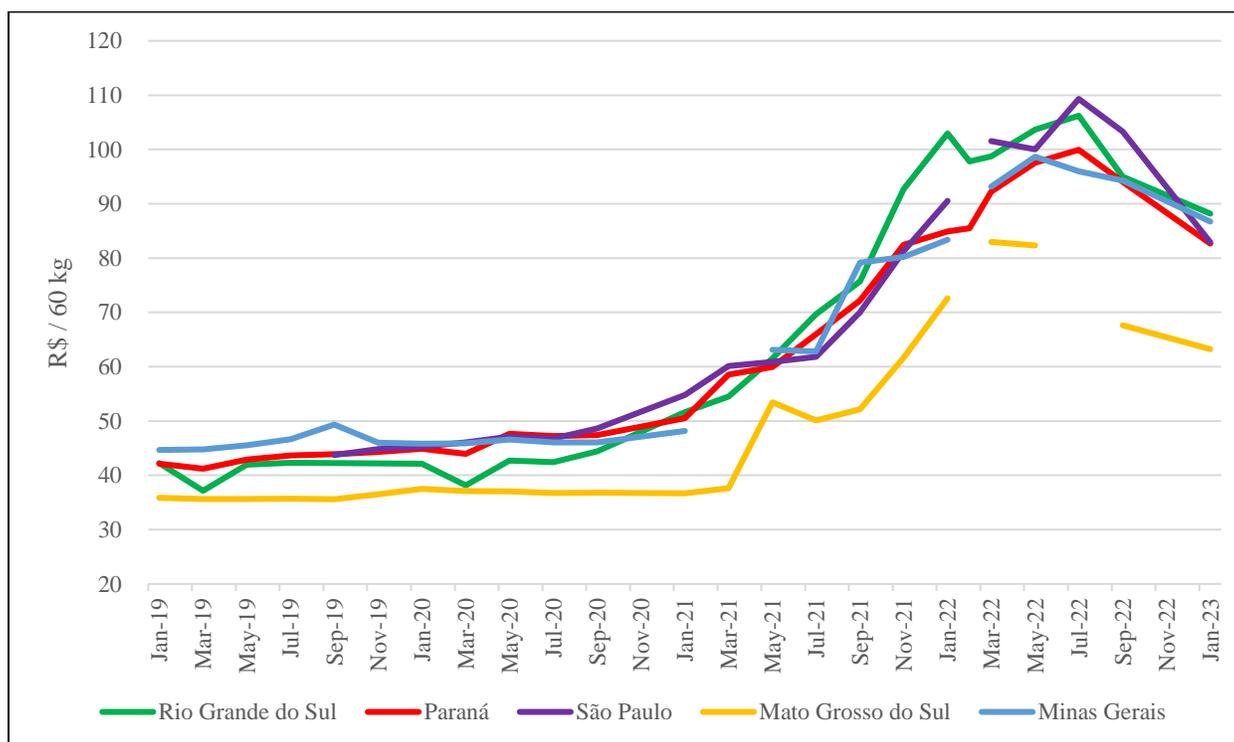
The Fertilizer Purchasing Power Index (IPCF) for May 2023 closed at 0.99, compared to 0.96 in April. The IPCF calculation by Mosaic Fertilizantes considers the main Brazilian crops: soy, corn, sugar, ethanol, and cotton. The methodology compares the 2017 baseline, indicating that the lower the ratio, the more favorable the index and the better the exchange ratio. A ratio of less than 1.0 indicates that fertilizers are more affordable than in the same period in 2017. A percentage greater than 1.0 means fertilizers are less affordable than in the same period. In May 2022, the IPCF hit the mark of 1.75.

Farmers consulted by Post have indicated that many have started investing in building their own silos and storage space. Faced with the impossibility of acquiring new land to grow crops due to high costs or lack of availability, many farmers focus on improving their properties to reduce the bottlenecks and expenses resulting from logistical issues.

The Brazilian Association of the Machinery and Equipment Industry (ABIMAQ) estimates that the grain storage deficit in Brazil in 2023 will be 115 million tons. They estimate this will continue to rise on average by five million tons per year due to the increase in Brazilian production. For the association, Brazil may run out of storage units already in the harvest of first-season crops for the first time in history. Traditionally, growers tend to store second-season crops out in the open when they overlap with first-season harvests and storage facilities are already full.

With the lack of storage affecting severely impacting prices, the federal government has announced plans to create regulatory public stocks once again to combat food inflation. For this, it will be necessary to restructure the storage network, including the company's warehouses and those of accredited third parties. To stimulate the accreditation process for private warehouses, the company approved a 34 percent increase in the values of storage fees. The recreation of public stocks is one of the tools to guarantee the minimum production price and the farmer's income, in addition to regulating the internal supply to mitigate price variations. Stocks can be used in CONAB actions, such as humanitarian aid, food donations, and the Over-the-Counter Sales Program (ProVB).

Figure 18
Evolution of Wheat Production Cost



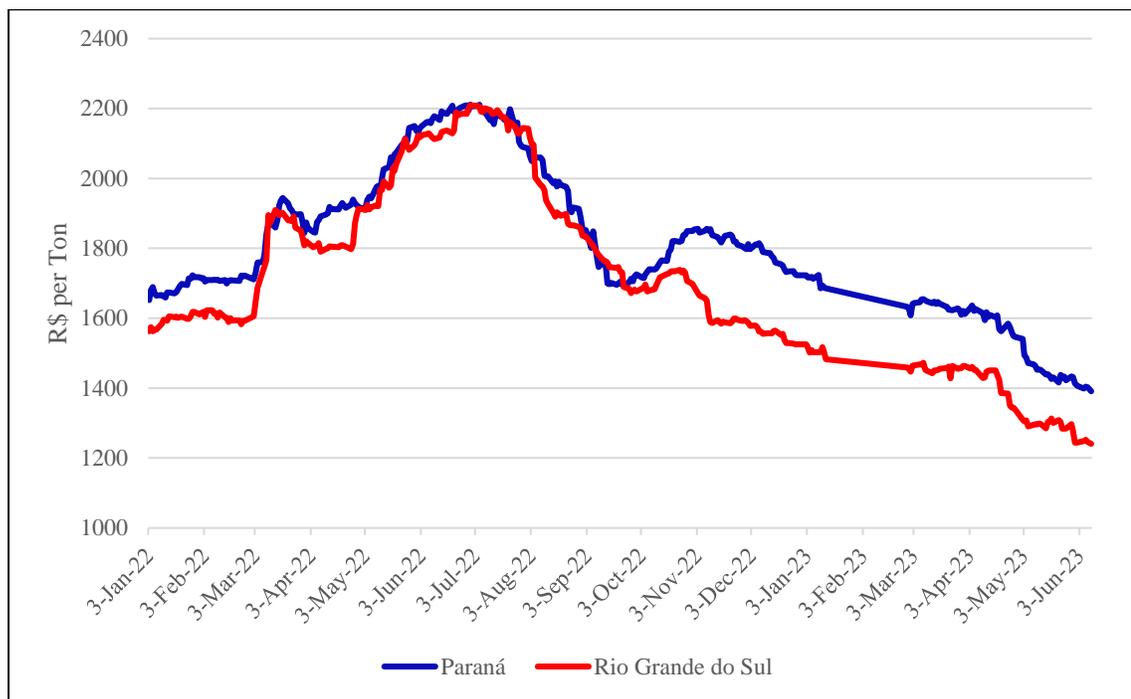
Data Source: National Supply Company (CONAB); Graph Post Brasilia

Wheat Prices Continue on a Downward Spiral

Wheat was traded in Rio Grande do Sul at R\$ 1262.1 (US\$ 264.15) per ton on June 22nd, 2023, according to the University of Sao Paulo's Center for Advanced Studies in Applied Economics (CEPEA). This is 3.5 percent lower than a month before when the commodity was negotiated at R\$ 1308.55 (US\$ 263.34). In Paraná, the drop was similar, with wheat being sold at R\$ 1369.59 (US\$ 286.65) per ton on June 22nd, 2023, and R\$ 1416.11 (US\$ 284.99) a month prior. The drop is credited to slow demand for wheat, as traders have their eyes set on harvesting the next crop. Meanwhile, pressures from the foreign market arose after the renewal of the Black Sea grain export agreement, which has been extended until July 18th.

Figure 19

Average Wheat Prices in Paraná and Rio Grande do Sul



Data Source: Center for Advanced Studies in Applied Economics (CEPEA); Graph Post Brasilia

The Brazilian agricultural Gross Domestic Product (GDP) recorded an increase of 21.6 percent in the first quarter of 2023 compared to the last quarter of 2022, pointed out the Brazilian Institute of Geography and Statistics (IBGE). This high performance of the agricultural GDP contributed approximately 1.7 percentage points to the 1.9 percent increase in the overall Brazilian GDP in the first quarter of 2023 compared to the fourth quarter of 2022. Agricultural GDP, which accounts for around 8 percent of total GDP, was boosted by a record harvest of grains, especially soybeans and corn. The GDP in the first quarter of 2023 totaled R\$ 2.6 trillion.

The Organization for Economic Cooperation and Development (OECD) has raised its projections for growth in Brazil's Gross Domestic Product (GDP) in 2023 and 2024, following a substantial boost in agricultural production in the first quarter of this year. The organization raised the projection for growth of the Brazilian GDP from 1.0 percent to 1.7 percent in 2023 and from 1.1 percent to 1.2 percent in 2024. However, the tendency is for moderation in the pace of GDP expansion, as restrictive interest rates and weak credit growth constrain domestic demand.

Wheat Trade

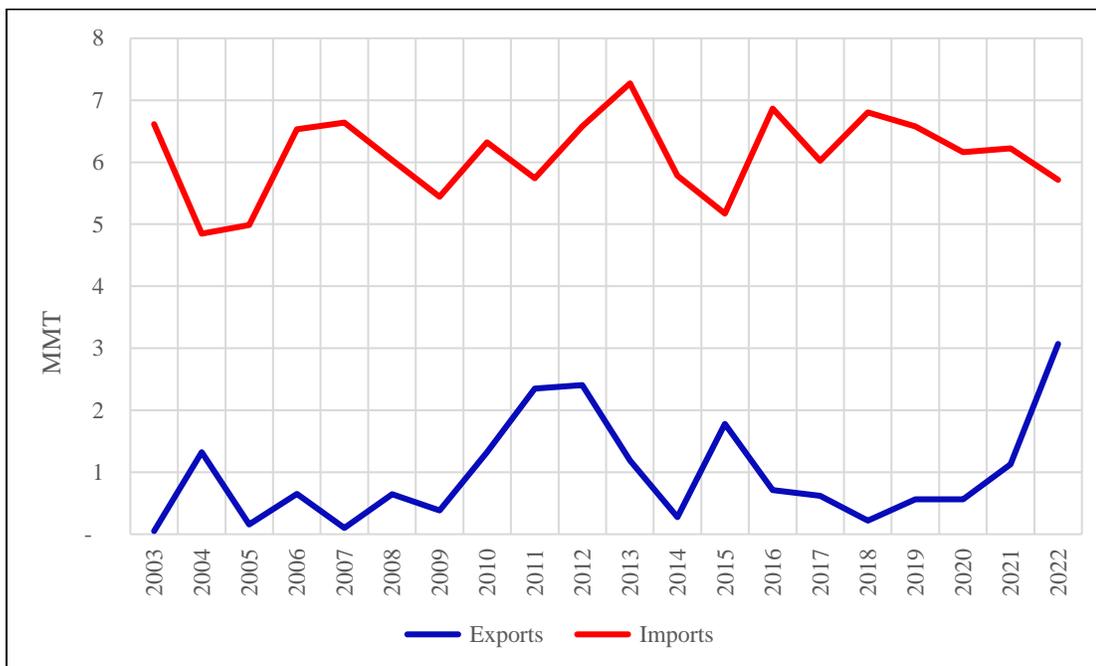
2023/2024 Exports to Rise Following Increased Production

Post lowers its forecast for wheat export for MY 2023/24 (October 2023 – September 2024) to 3.4 MMT, from its previous estimate of 4 MMT, on a wheat grain equivalent basis (WGE), based on readjusted expectations trends for 2022/23 and 2023/24, following increased production outputs in relation to the previous forecast. Note that USDA uses WGE for trade numbers, which in addition to wheat grain, include flour and wheat product volumes adjusted on a wheat grain equivalent basis. While Brazil is increasing its export volumes of wheat,

Post slightly increases its wheat imports forecast for MY 2023/24 from 5.5 MMT to 5.6 MMT on a wheat grain equivalent basis (WGE), based on an ongoing increase in consumption and the easiness of trade with Mercosur partners. Given the tax-free price and proximity for millers, Argentina remains the primary source of Brazilian purchases. While Brazilian production is expected to continue growing, it will likely not be enough to meet the internal demand for the upcoming year.

Figure 20

Timeline of Brazilian Wheat Exports and Imports



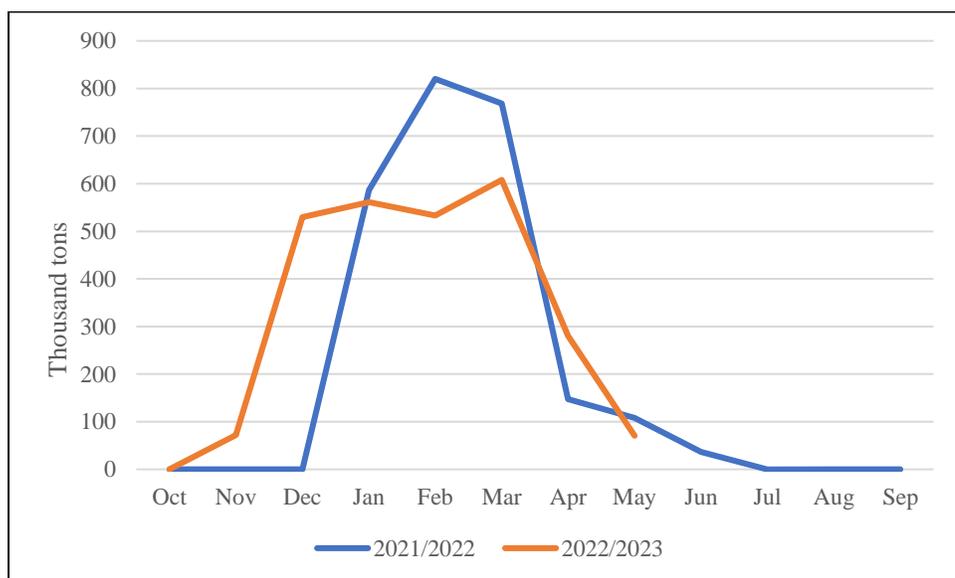
Data Source: National Supply Company (CONAB); Graph Post Brasilia

2022/2023 Exports and Imports

For MY 2022/23 (October 2022 – September 2023), Post readjusted its estimated wheat export to 2.8 MMT on a wheat grain equivalent basis (WGE), down 8.8 percent on the previous season, based on the end of the peak period of exports for wheat in Brazil. From June, Brazilian exporters focus on trading other commodities, such as corn, which traditionally has an export peak season between June and January.

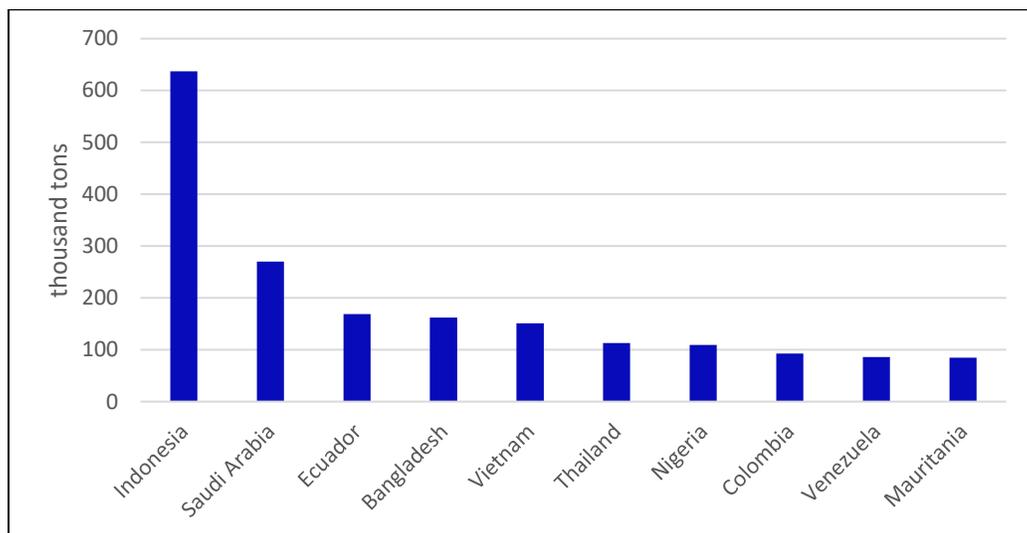
Figure 21

Brazil's Wheat Exports MY (October - September)



Data Source: Ministry of Industry, Foreign Trade and Services (MDIC); Graph Post Brasilia

According to data from the Brazilian Ministry of Industry, Foreign Trade and Services (MDIC), in May 2023, Brazil exported 70.8 thousand tons of wheat, almost 35 percent less than in the same month the previous year, when Brazil exported 107.9 thousand tons. This was a sharp decline from the exports registered in April 2023, when the country exported 281.8 thousand tons. Indonesia, a traditional wheat importer from Brazil, has been the top wheat buyer since the beginning of 2023, followed by Saudi Arabia, Ecuador, and Bangladesh.

Figure 22*Main Export Destinations of Brazilian Wheat (January - May 2023)*

Data Source: Ministry of Industry, Foreign Trade and Services (MDIC); Graph Post Brasilia

Post revised its estimate for wheat import MY 2022/23 (October 2022 – September 2023) to 5.1 MMT, down from its previous forecast of 5.6 MMT on a wheat grain equivalent basis (WGE), based on the updated pace of trade. In May 2023, Brazilian wheat imports totaled 283.5 thousand tons, almost 47 percent less than the amount imported in May 2022, when the country brought 533.2 thousand tons of wheat from abroad. Brazil imported 312.8 million tons of wheat in April 2023, considerably less than the 511.7 million tons registered in the same month of 2022.

Argentina remains the biggest wheat exporter to the Brazilian market, responsible for almost 69 percent of all wheat imports between January and May 2023. Uruguay provided 20 percent of the wheat, followed by Russia (9%) and Paraguay (3%).

Table 7*Main Origin of Wheat Imports to Brazil, January – May 2023*

	Imports (tons)	Participation
Argentina	1,205,346,970	68.63%
Uruguay	347,706,709	19.80%
Russia	154,559,725	8.80%
Paraguay	48,168,800	2.74%
United States	513,735	0.03%
Lebanon	15,286	0.00%

Data Source: Ministry of Industry, Foreign Trade and Services (MDIC); Graph Post Brasilia

Wheat Consumption

Post revises its forecast for total wheat consumption for MY 2023/24 (October 2023 – September 2024) at 12.7 MMT, a 1.2 percent increase from the original estimate. This is mainly based on the expected growth of wheat consumption for both industrial and feed purposes, as wheat use has been increasing for ethanol production, albeit in early stages, and as a substitute for corn in animal feed blends. Post notes that this boost in consumption, primarily industrial, will likely occur if Brazil opens its first wheat ethanol plant in Rio Grande do Sul in 2024, with a processing capacity of 750 tons of wheat per day, generating an annual production of 111 million liters of ethanol.

For MY 2022/23 (October 2022 – September 2023), Post revised its estimated consumption to 12.1 MMT based on the slight growth in feed consumption and an overall improvement in the socio-economic conditions of the Brazilian population.

Data from the Brazilian Association of the Wheat Industry (ABITRIGO) show that in Brazil, a total of 12.56 million tons of wheat were milled throughout 144 industrial plants in the country. Of this amount, approximately 8.5 million tons resulted in flour for commercial use. The main sectors that received the wheat flour produced were bakery and premixes (42.6% of the total), the pasta industry (12.5%), and the biscuit industry (10%).

Data from the Brazilian Institute of Geography and Statistics (IBGE) indicate that around 46 million tons of food are wasted annually in Brazil, which represents 30 percent of all Brazilian production. Putting it in terms, the financial loss is estimated at R\$ 61.3 billion annually, and waste occurs from food production to final consumption. According to the United Nations (UN), this puts Brazil in 10th place among those nations that most waste food worldwide. Some of the reasons are inadequate infrastructure, disposal due to the appearance of food, insufficient storage, and irregular transportation of food items.

Attachments:

No Attachments