

# Brazilian Agriculture in 2022-23

## What to Expect for Acreage?

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Joana Colussi, Ph.D.

Gary Schnitkey, Ph.D.

Image by Diogo Zanatta

# Topics

- Ag Production and Exports
- Leadership in Soybeans
- Corn in Three Crops Per Year
- High Fertilizers Dependence
- Meat Production and Exports
- Grain Transportation and Storage

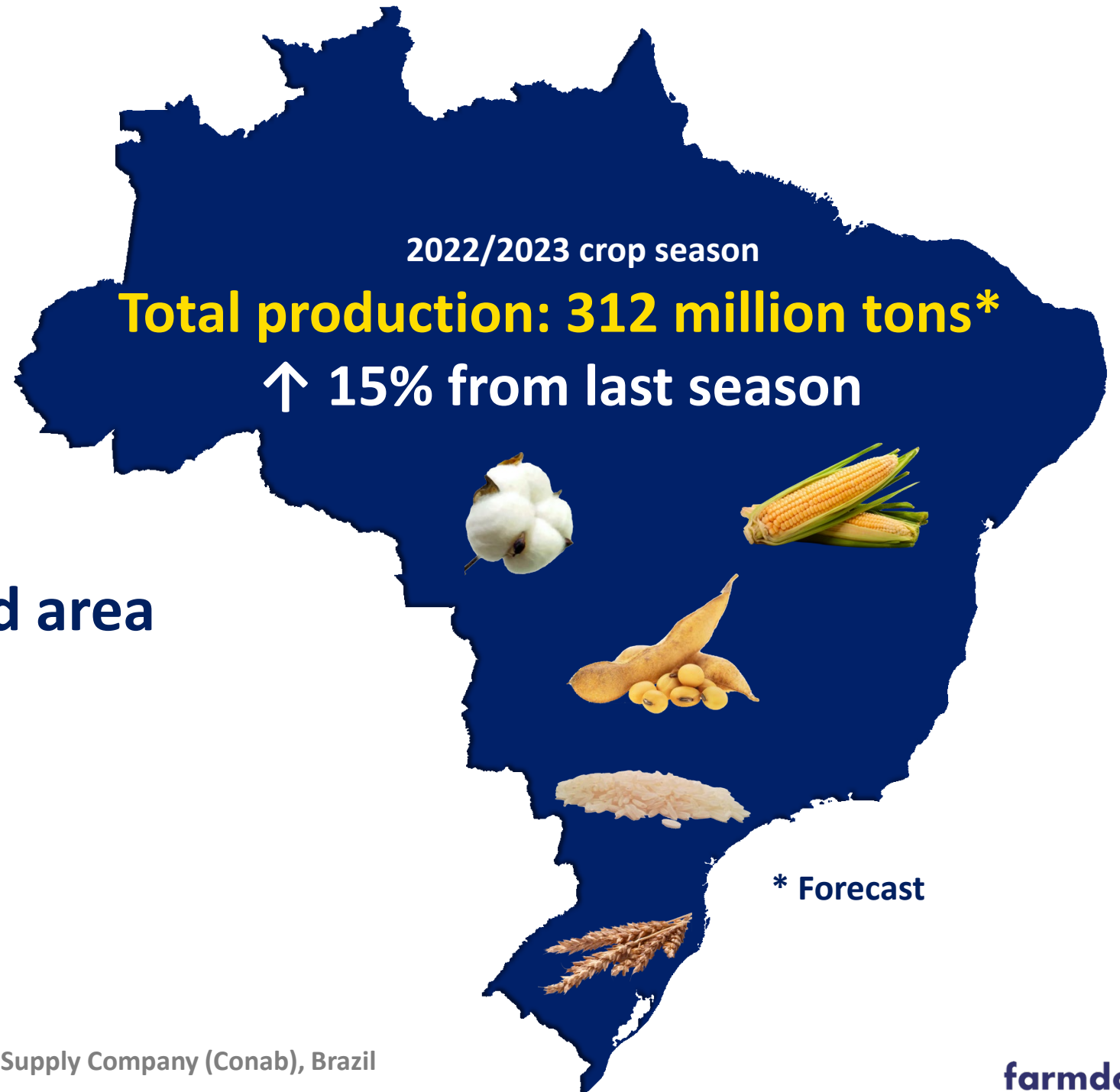


# Largest projected grain harvest in Brazilian history

## Two factors:

↑ 2.8% increase in planted area

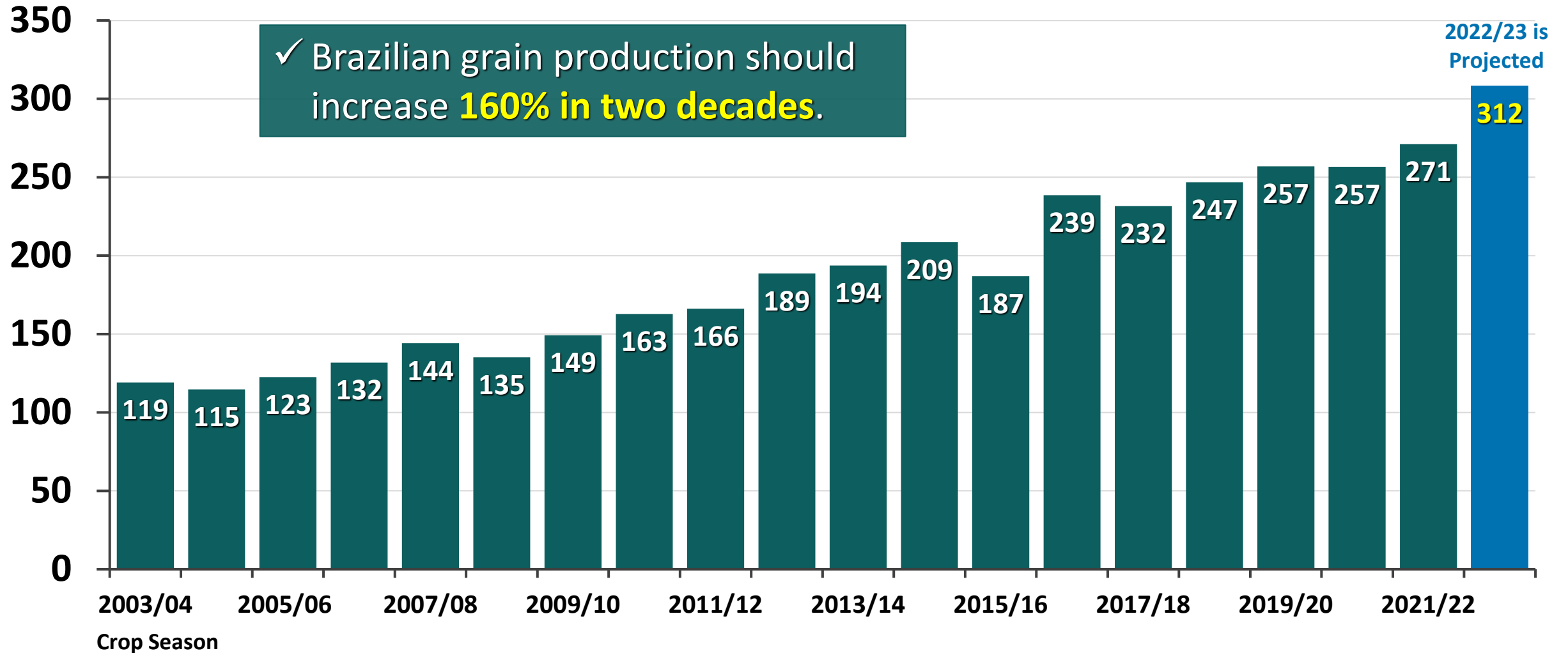
↑ 12% higher yields



Source: National Supply Company (Conab), Brazil

# Grain Production in Brazil

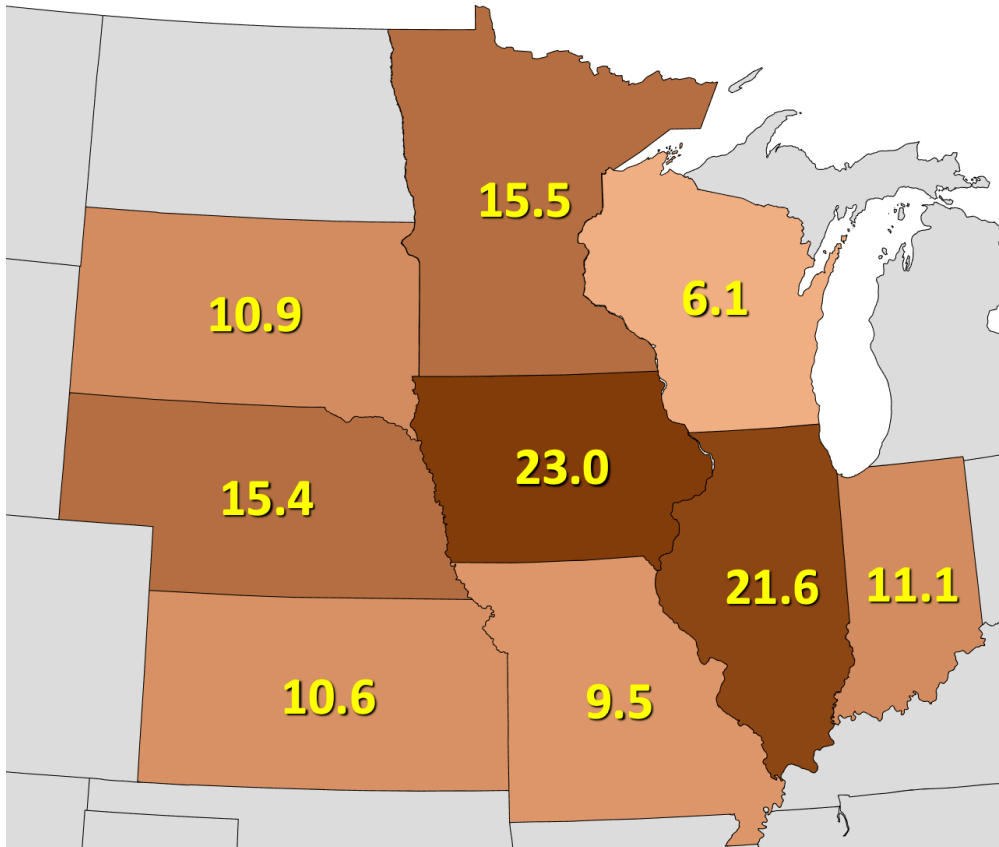
in **Million** Metric Tons



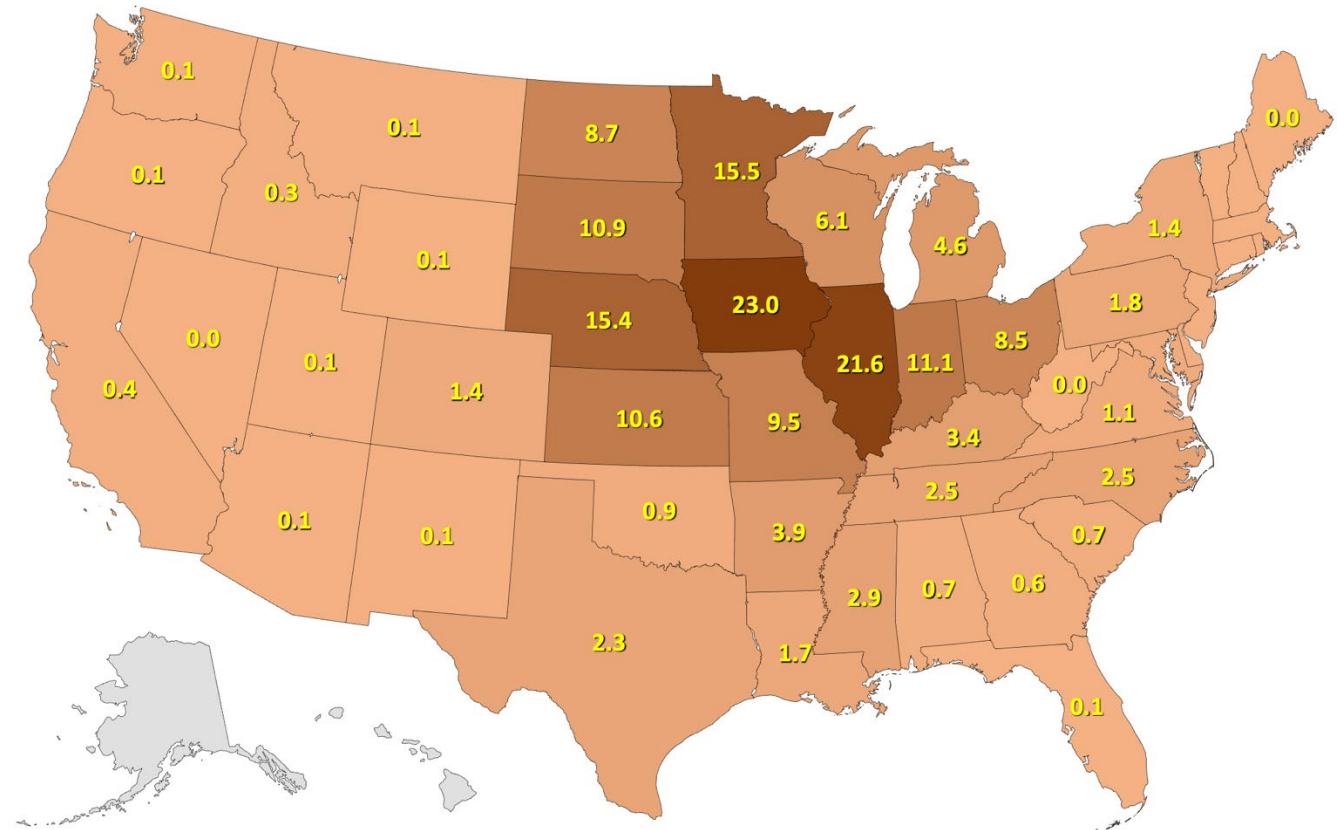
# United States Perspective

## Corn and Soybeans Planted in 2022

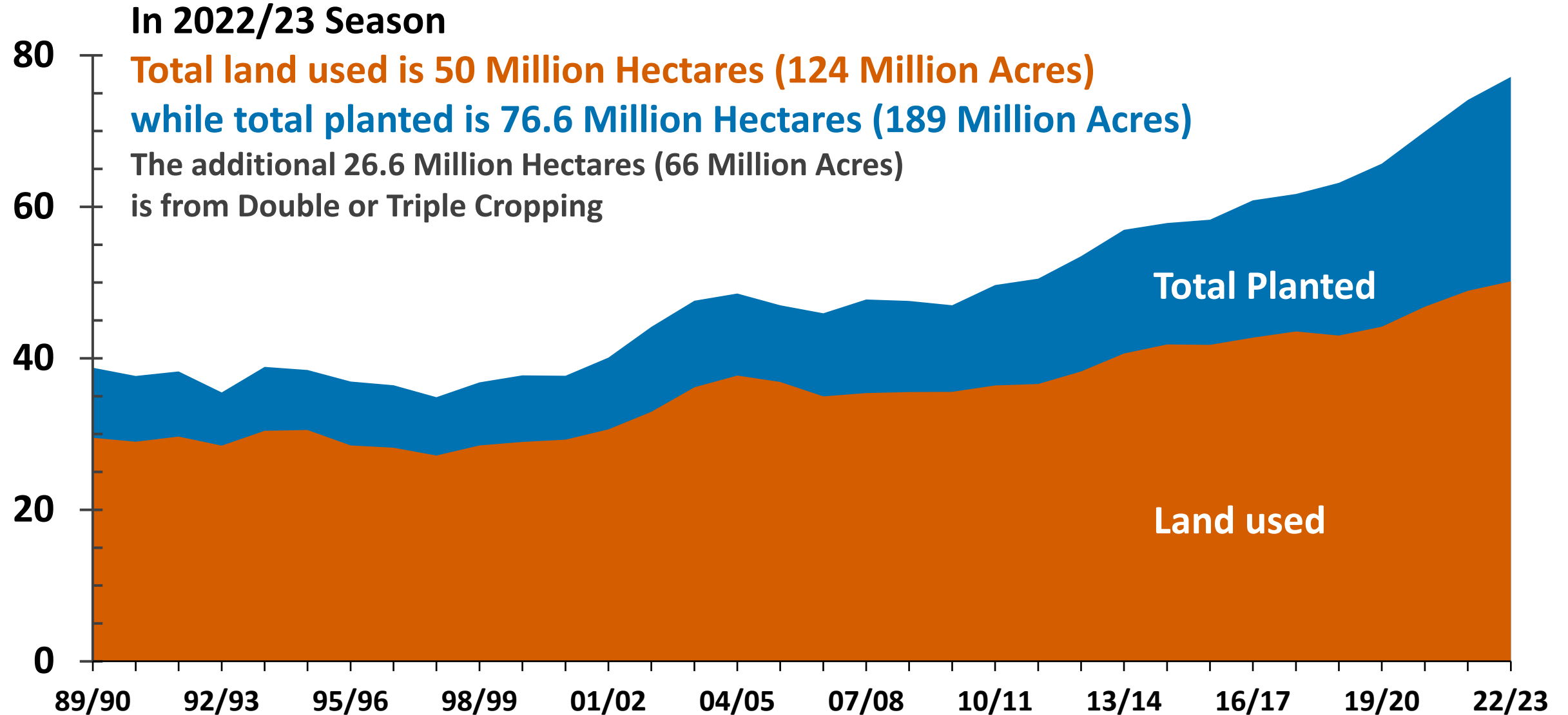
123.5 Million Acres



Total for United States 176.1 Million Acres

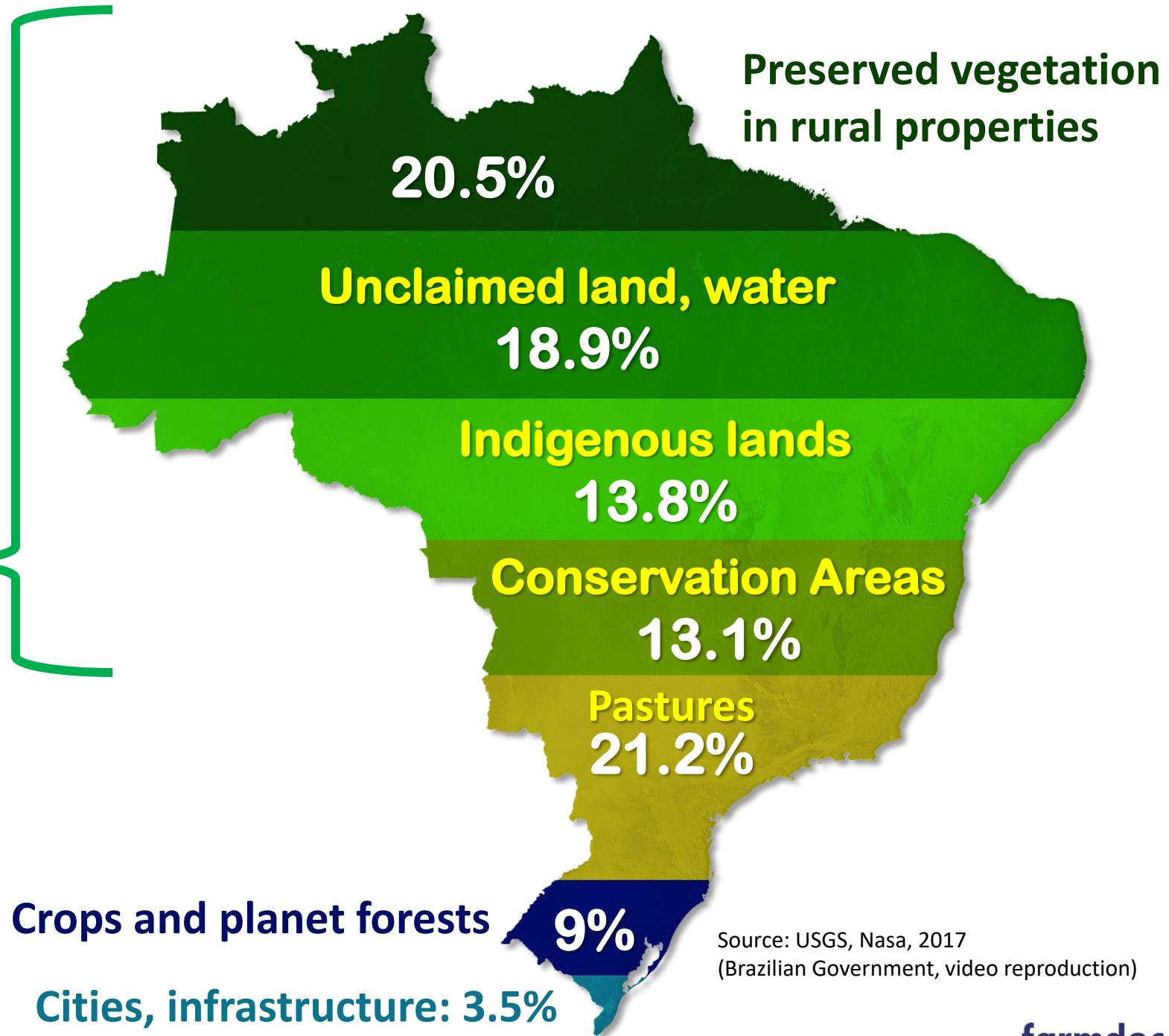


# Brazil Grain Area in million hectares



# Land use and occupation

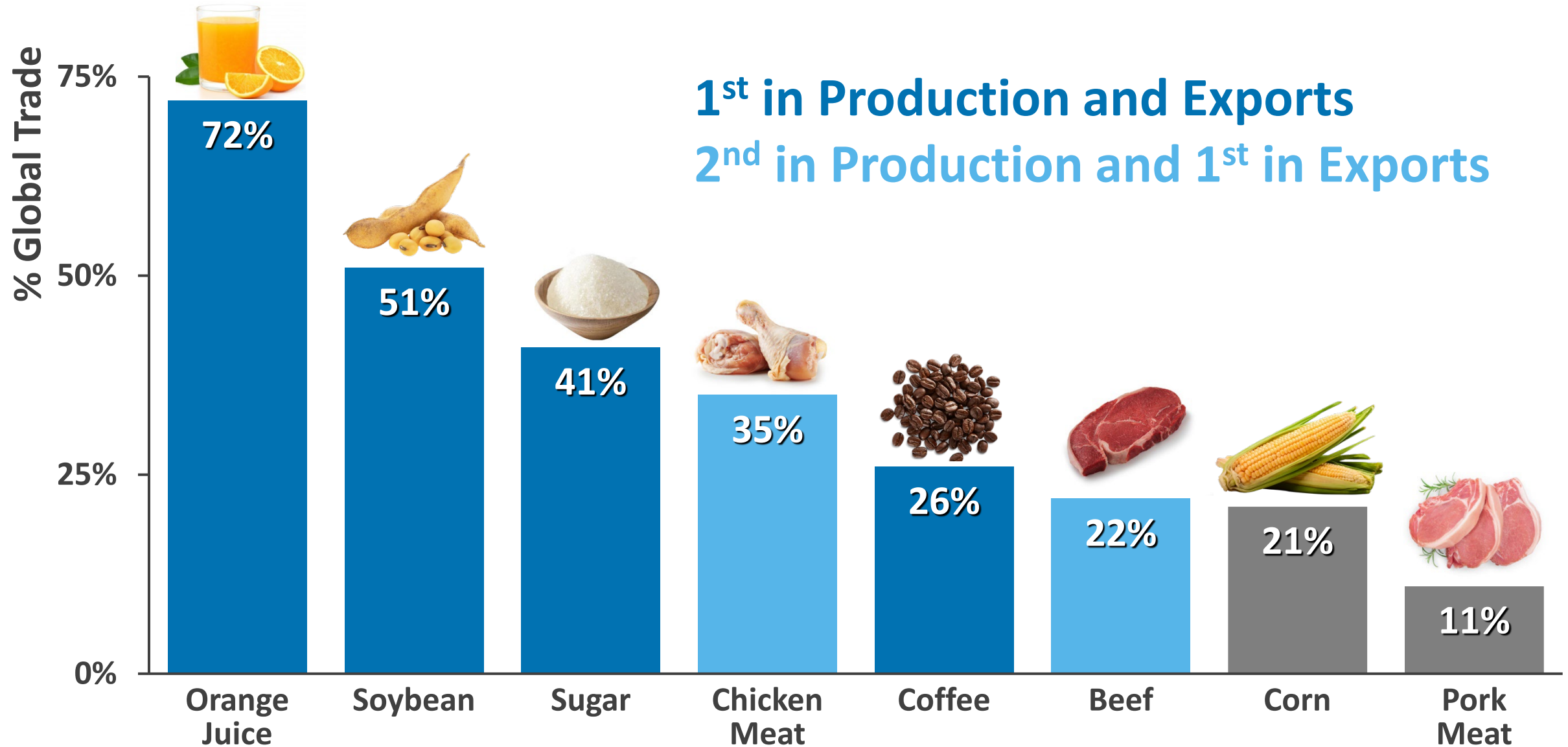
**66%**  
of it's  
Native Vegetation



Source: USGS, Nasa, 2017  
(Brazilian Government, video reproduction)

# Brazil Ranking in Exports by Commodities

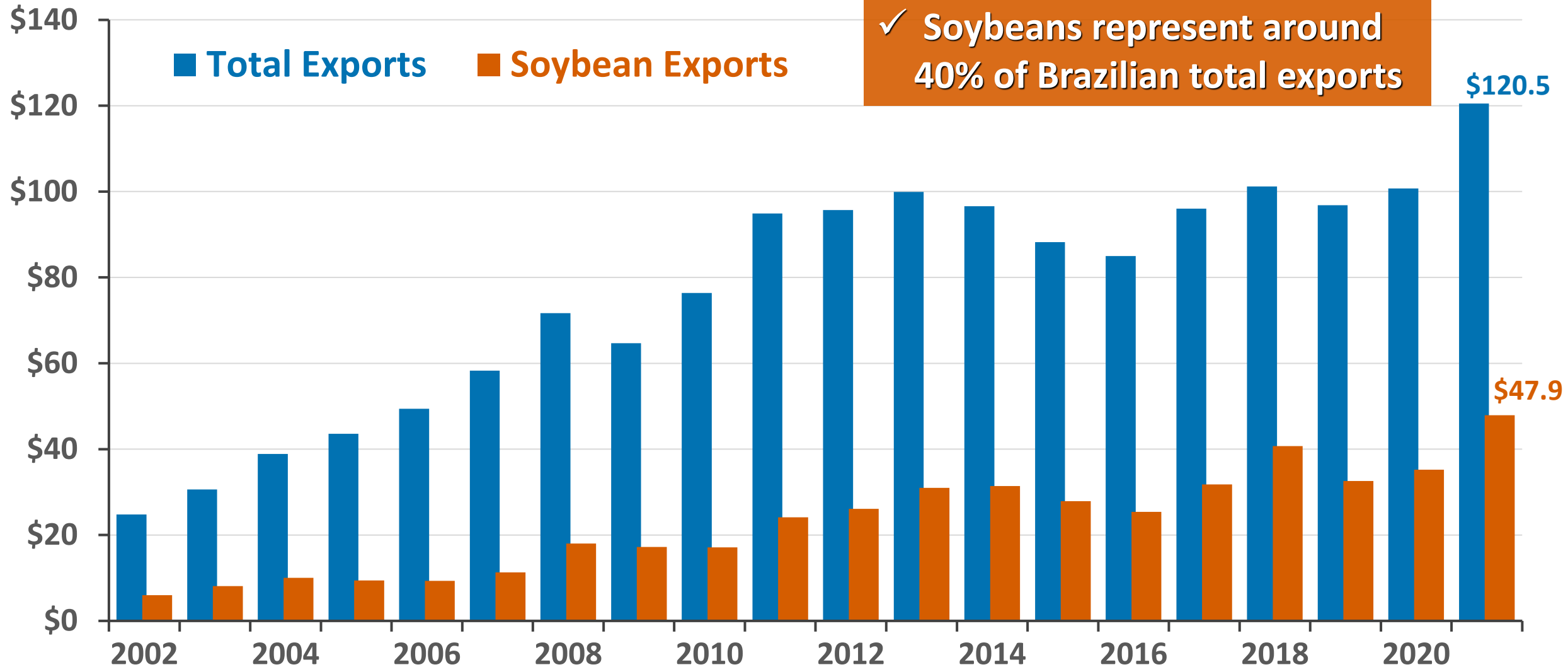
Forecast in 2022



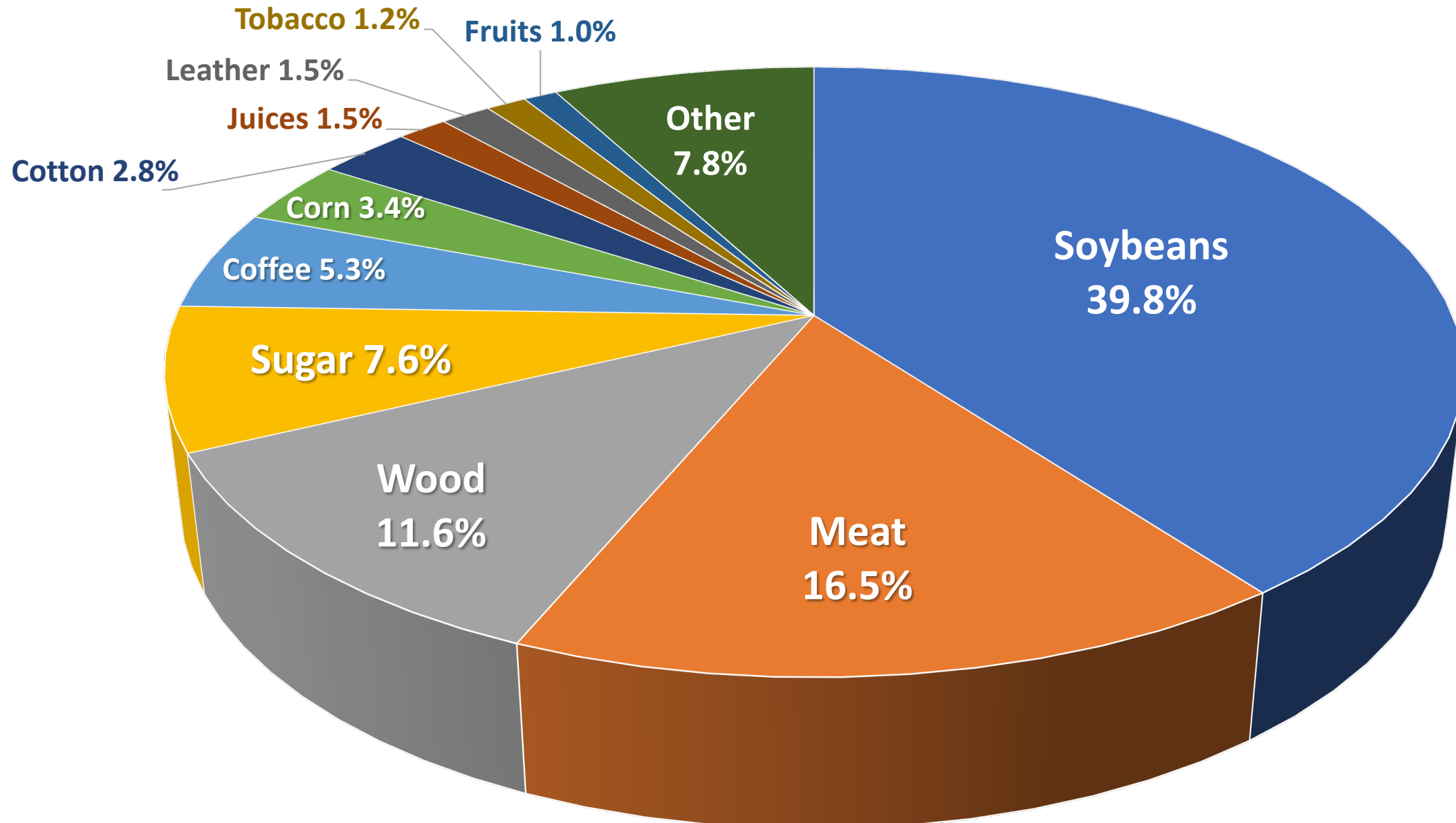


# Total exports increased **fivefold** in 20 years

in Billion US Dollars



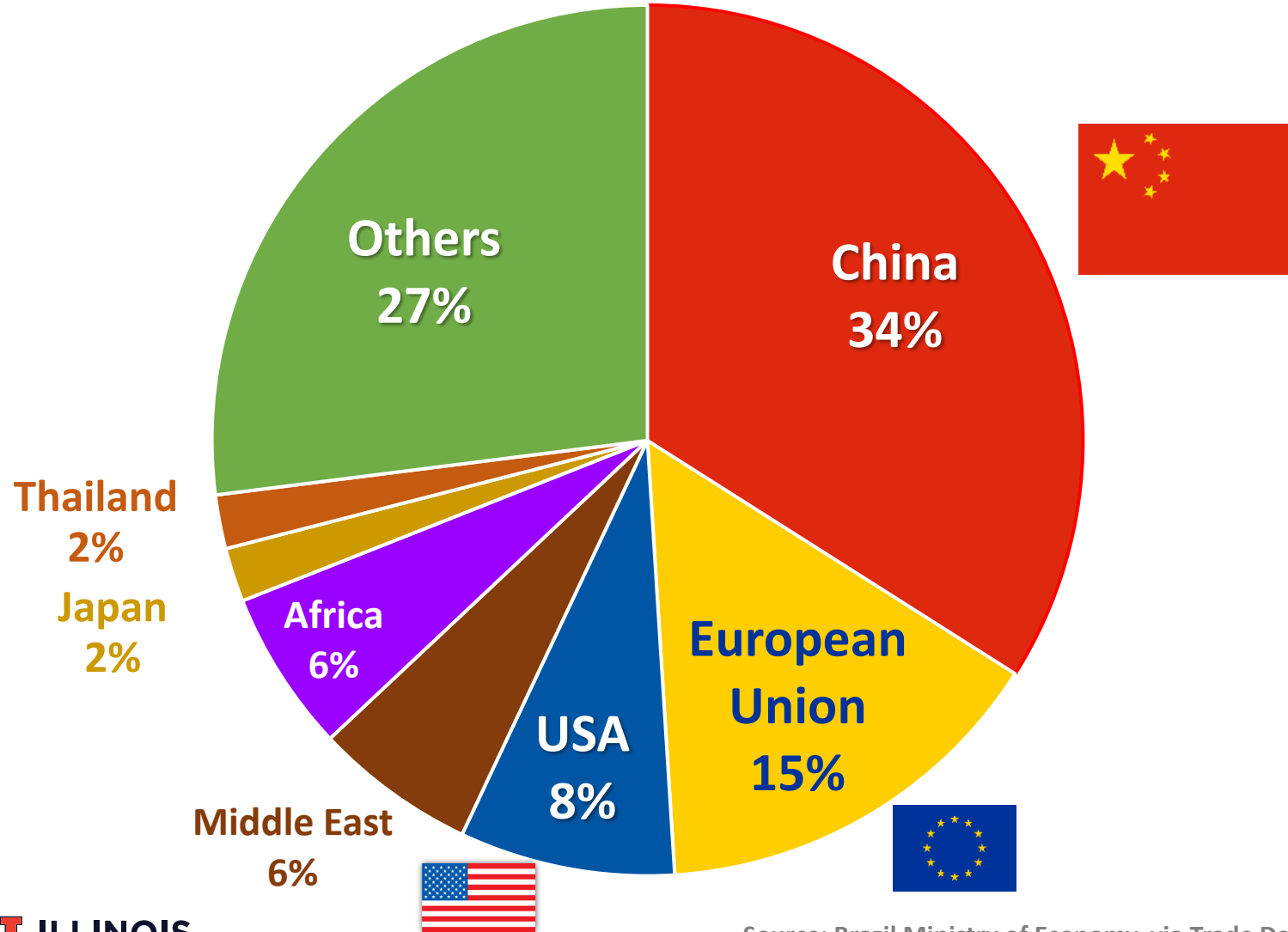
# Brazil Exports of Agriculture in 2021 (share in US\$ billion)



Source: Brazil Ministry of Economy, via Trade Data Monitor

# Agricultural Exports by Destination (Revenue Share US\$)

From January do December 2021



**China is the largest importer from Brazil of:**



# Leadership in Soybeans

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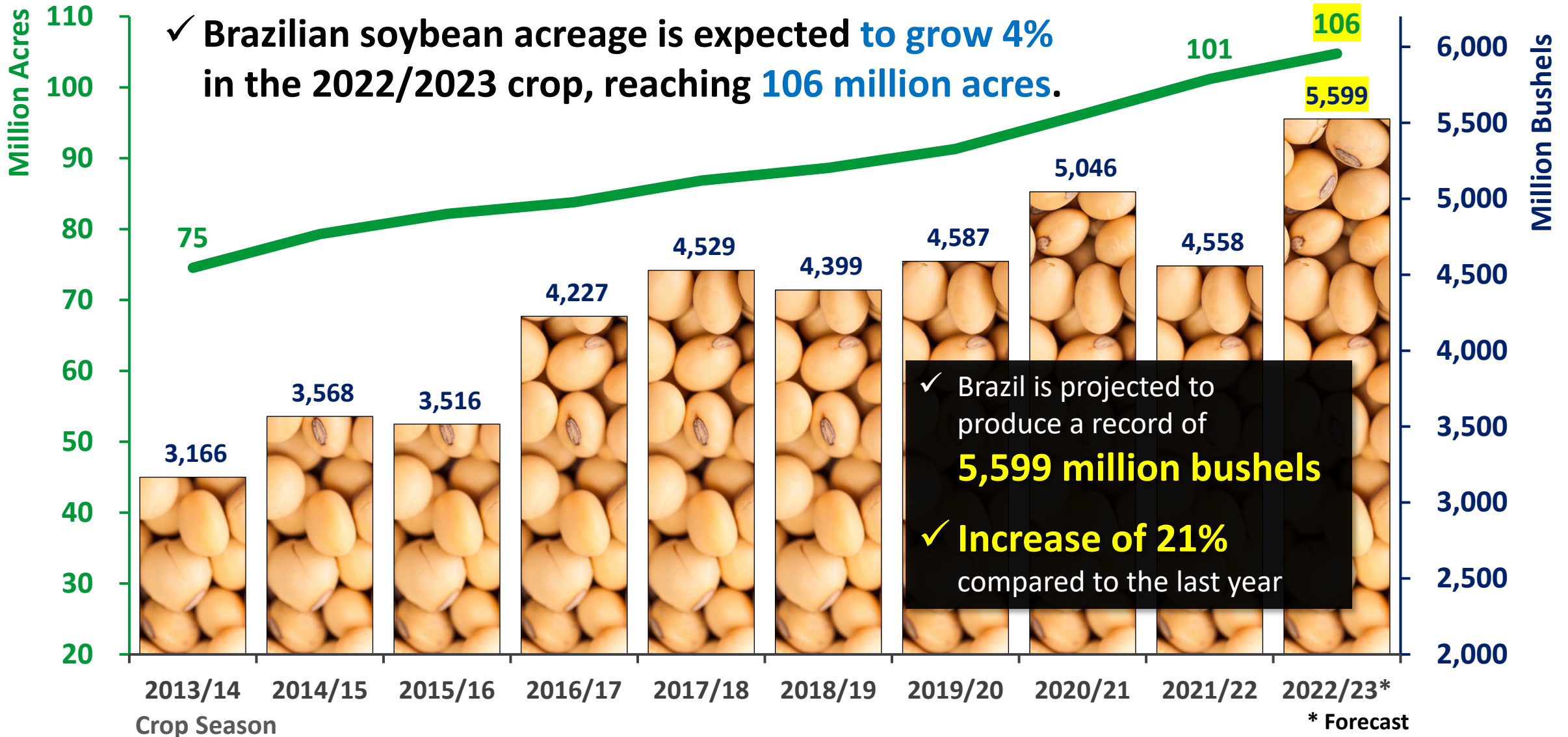


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Image by Diogo Zanatta

# Soybean Acreage and Production in Brazil



# Soybean Market Outlook in Brazil

Brazilian farmers are motivated to plant more acreage especially because:

- **High prices** and **profits last season**
- Depreciation of the **Brazilian currency** relative to the dollar
- The expected **margins for soybean remain positive**, despite the rise in production costs.



# Exports from Brazil are forecast to increase 22%

## New-Crop 2022/23 Brazilian Balance Sheets for Soybeans



Quantity (million tons unless noted)	2020/21	2021/22	2022/23*
Beginning stocks	4.2	7.6	5.9
Production	138.1	124.0	150.4
Imports	0.86	0.9	0.5
Domestic Use	45.9	47.9	51.2
Exports	86.1	75.2	91.9
Ending Stocks	7.6	5.9	9.9
Stocks-to-Use Ratio (%)	16.7%	12.5%	19.3%



56.7

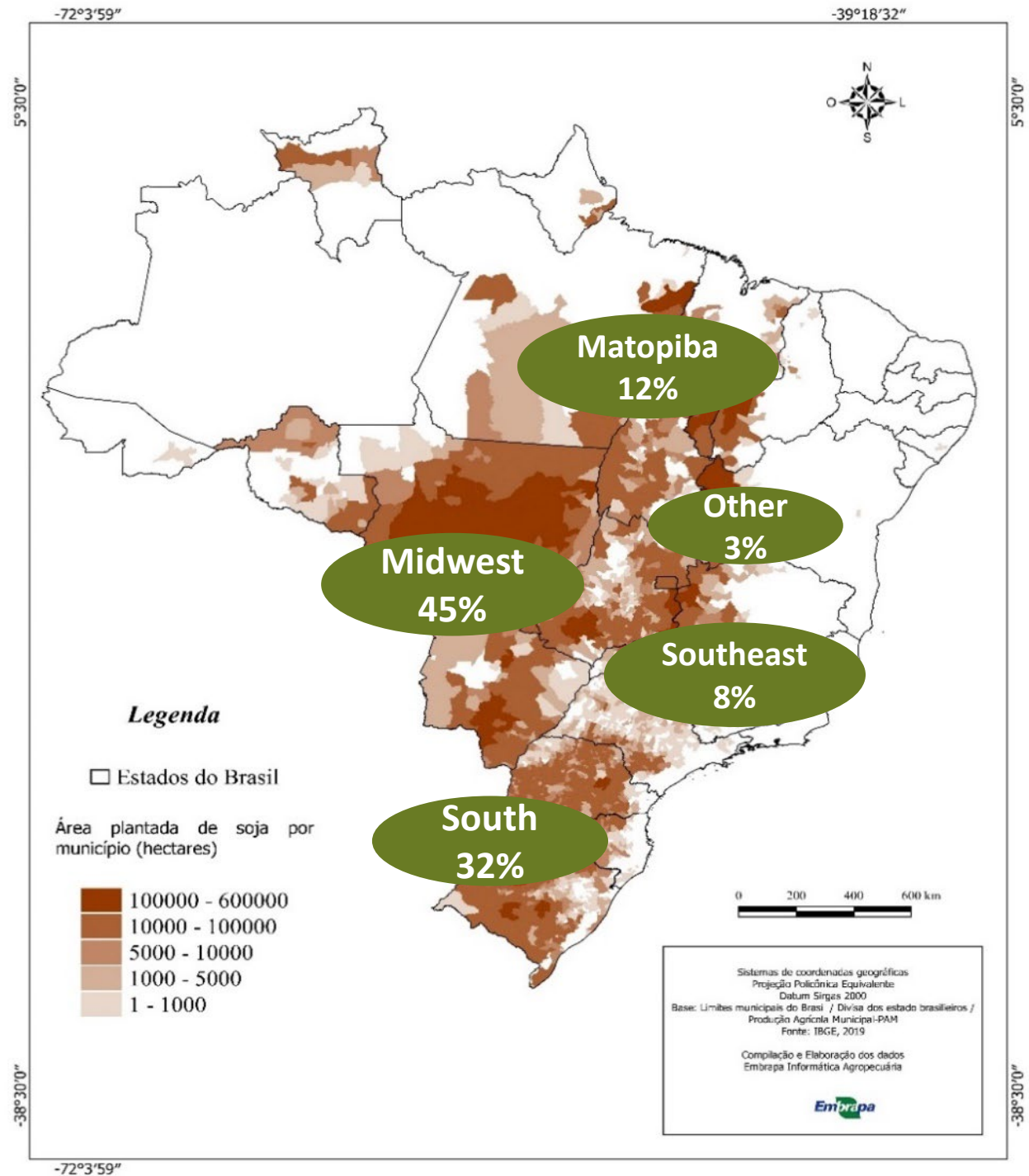


\* Forecast

Source: Conab, Ministry of Economy, National Agency of Petroleum, Natural Gas and Biofuels, Brazilian Institute of Geography and Statistics, and USDA.

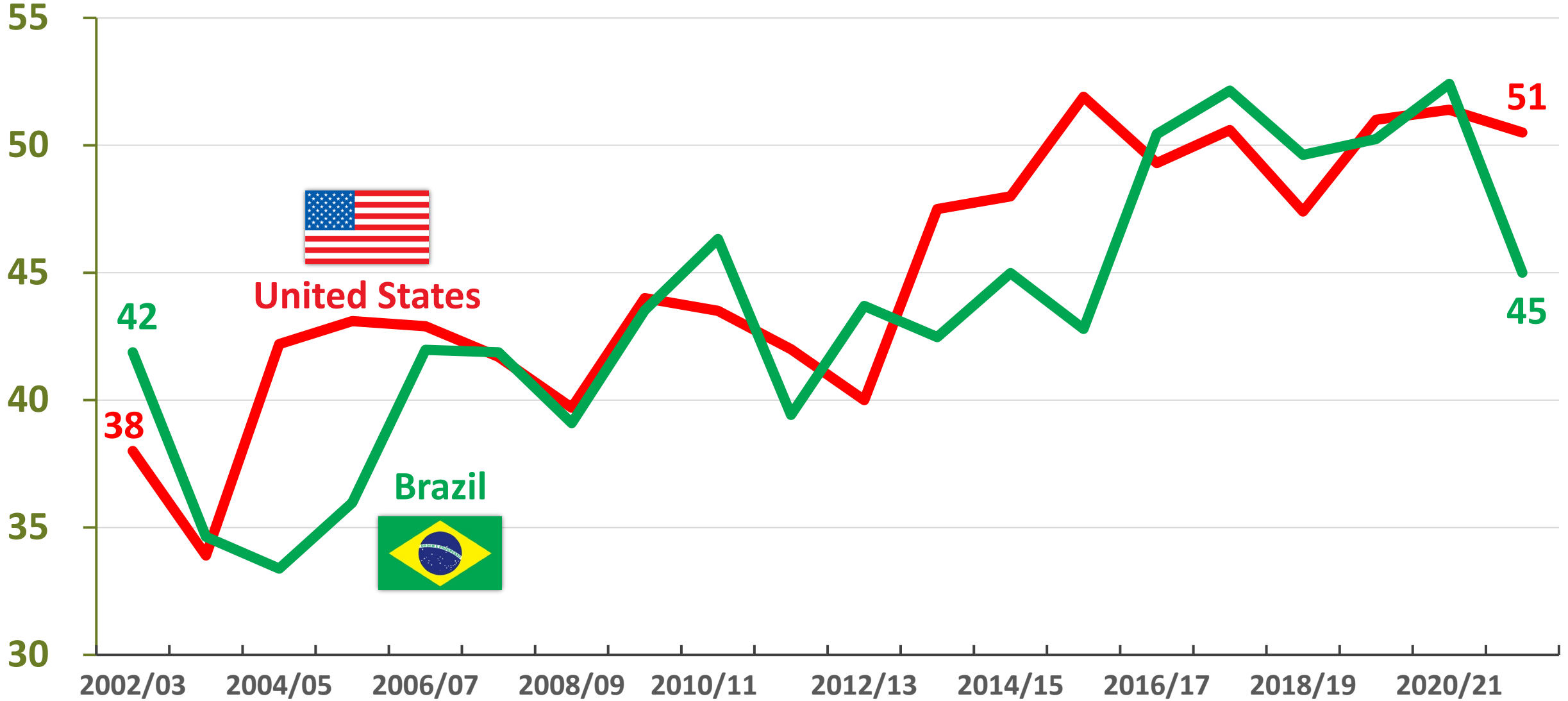
# Soybeans by regions

- **Three states in the Midwest** (Mato Grosso, Goiás, and Mato Grosso do Sul) and **two southern states** (Paraná and Rio Grande do Sul) represent **75% of soybean** production in Brazil.
- Matopiba region (Maranhão, Tocantins, Piauí, and Bahia), in the North and Northeast, is considered the **new agricultural frontier in Brazil**.





# Soybean Yields in Bushels per Acre



Sources: Conab and USDA

# Corn in Three Crops Per Year

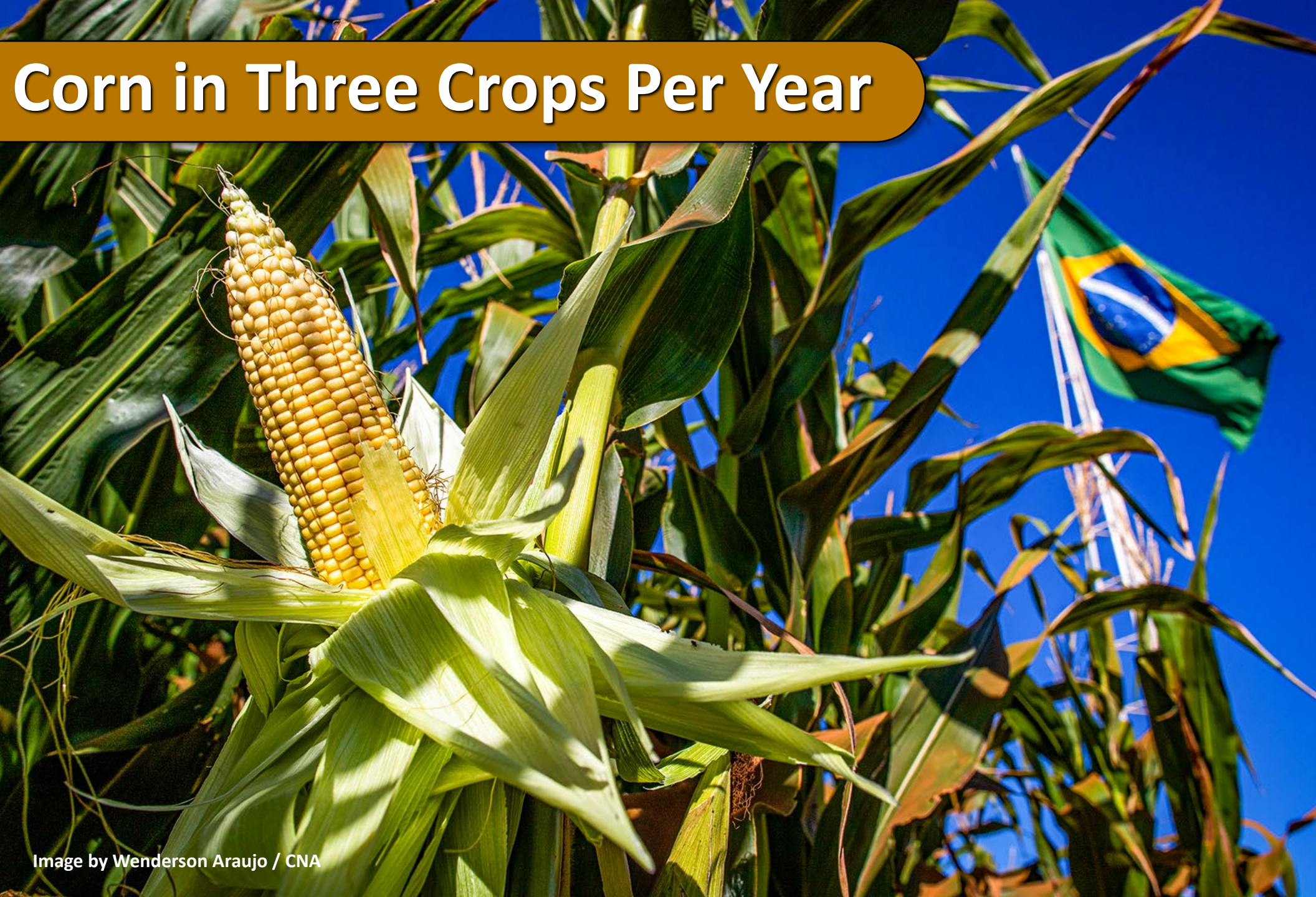


Image by Wenderson Araujo / CNA

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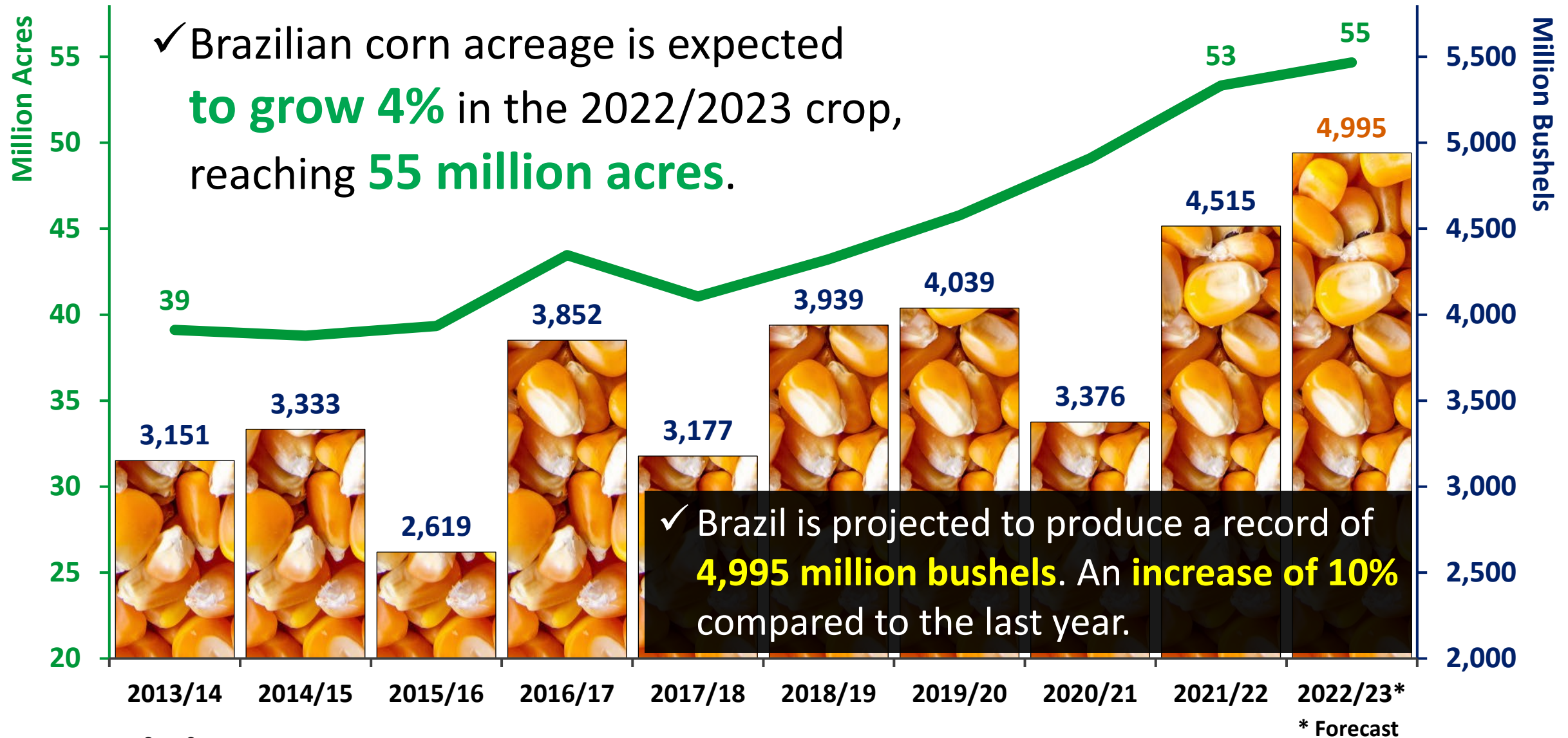
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# Corn Acreage and Production in Brazil



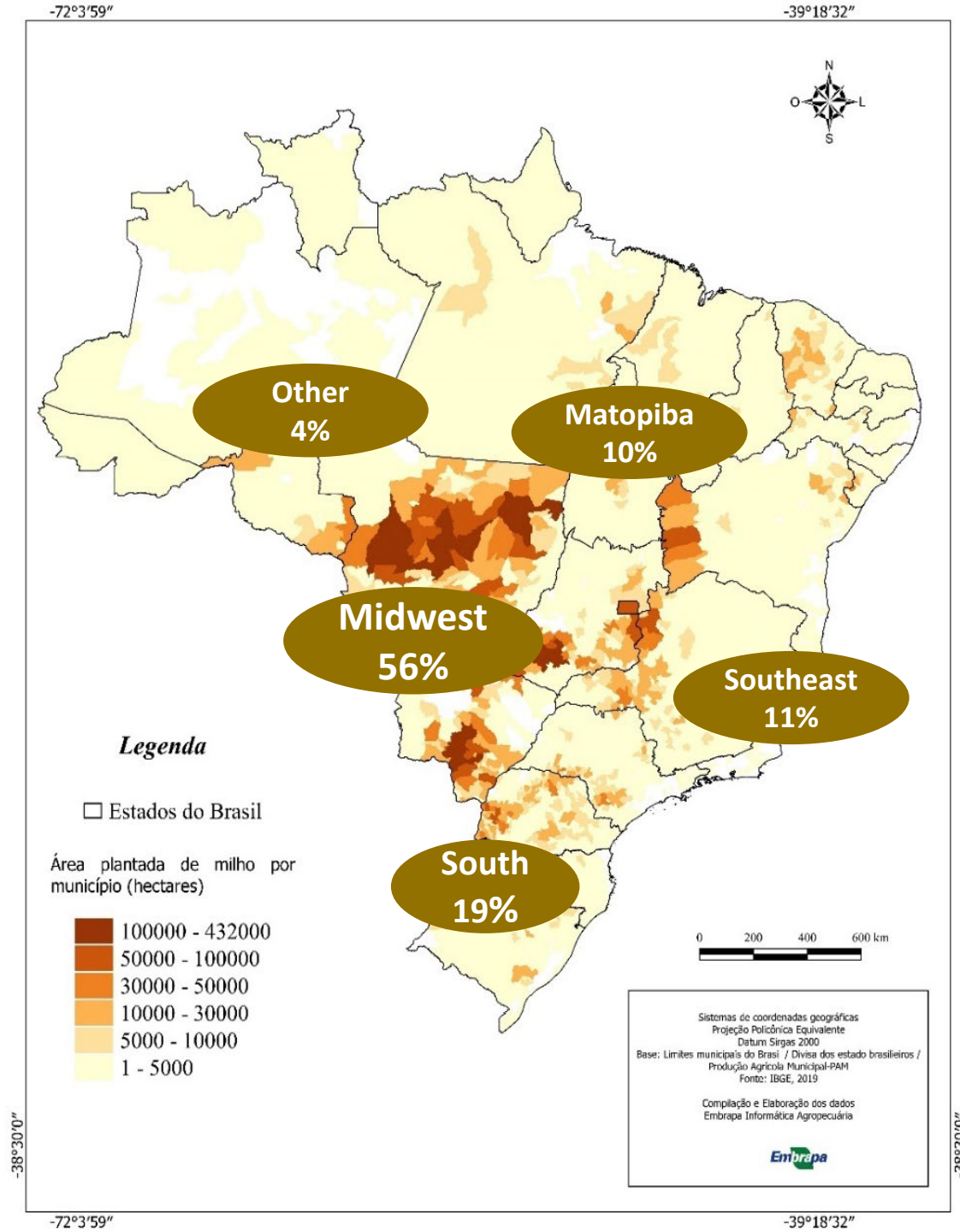
# Corn Market Outlook in Brazil



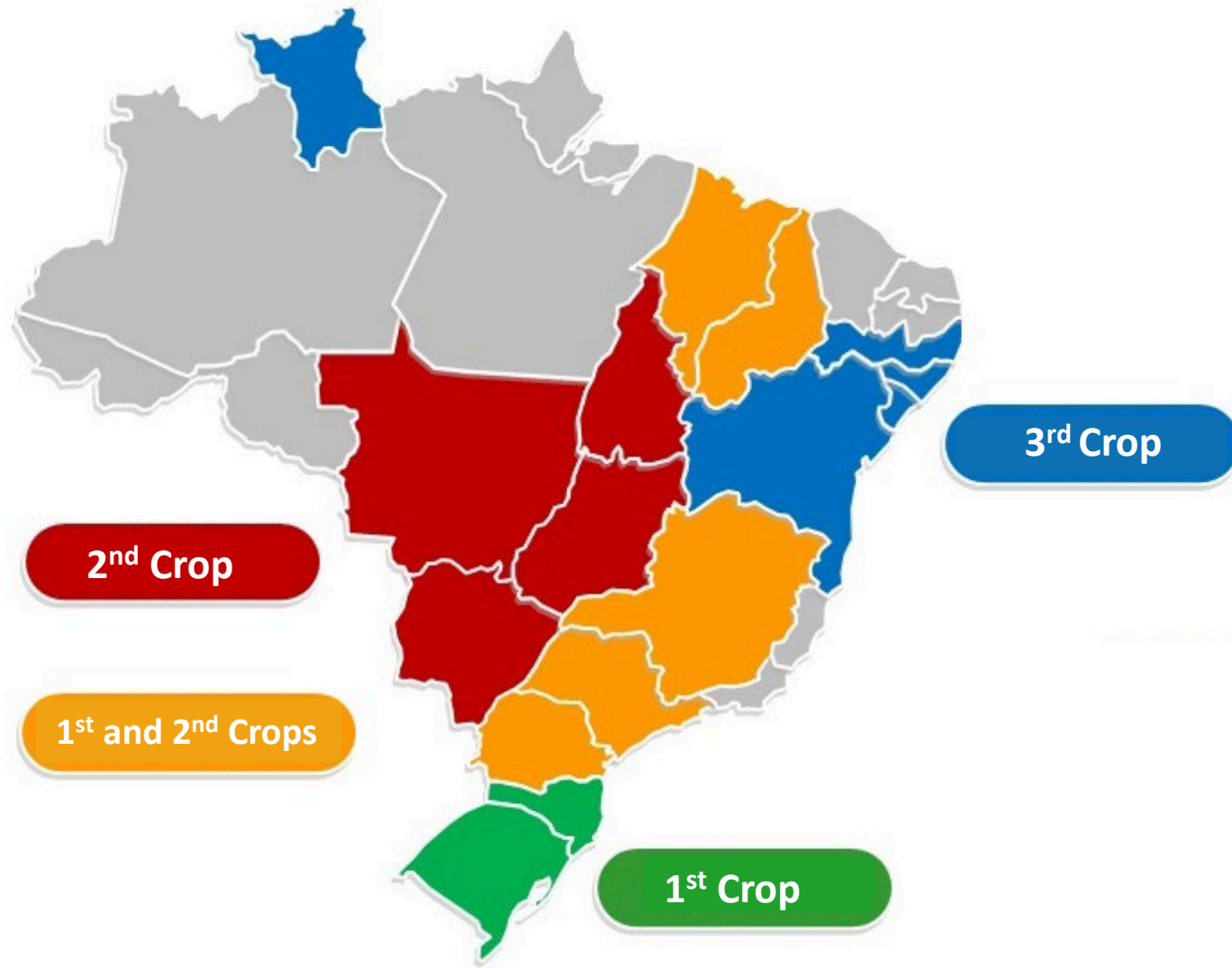
- **High domestic and global corn prices** are the primary drivers for the expanded corn planting area.
- The **net operating** margin for corn in the 2022/23 crop season in Mato Grosso should **decrease from 9% last season to 7%**, according to Conab.
- Brazil is the **world's third-largest** corn producer and exporter, behind the United States and China.
- The **growth in the safrinha crop** is an opportunity for Brazil to double its corn production in the coming years.

# Corn by regions

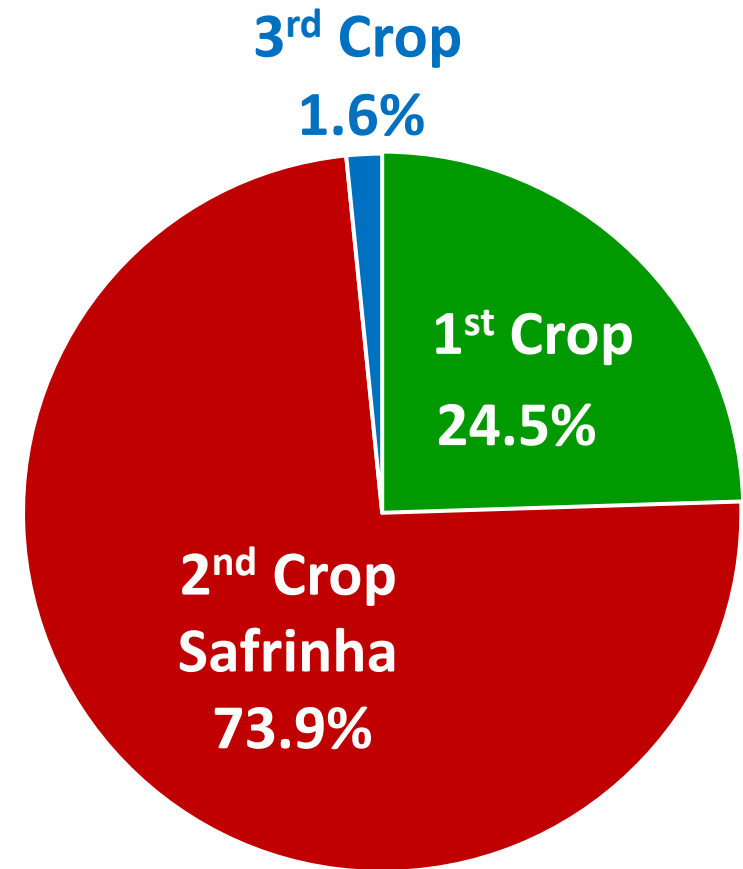
- The **growth in the safrinha crop** is an opportunity for Brazil to double its corn production in the coming years.
- **More than half** of corn production is concentrated in the Midwest as a second crop (safrinha).
- Production is advancing also to the new agricultural frontier **Matopiba**.
- Brazil is expanding its **ethanol production**. Currently, 17 corn ethanol plants are in operation, 15 in the Midwest.



# Corn Production: 3 Crops per Year



Source: Cogo Intelligence in Agribusiness



Source: National Supply Company (Conab), Brazil

# Exports from Brazil are forecast to increase 24%

## New-Crop 2022/23 Brazilian Balance Sheets for Corn



Quantity (million tons unless noted)	2020/21	2021/22	2022/23*
Beginning stocks	10.7	7.8	9.7
Production	87.1	114.7	125.5
Imports	3.1	1.9	1.5
Domestic Use	72.3	77.1	81.7
Exports	20.8	37.5	46.5
Ending Stocks	7.8	9.7	10.5
Stocks-to-Use Ratio (%)	10.7%	12.6%	12.8%



59.5



\* Forecast

Source: Conab, Ministry of Economy, National Agency of Petroleum, Natural Gas and Biofuels, Brazilian Institute of Geography and Statistics, and USDA.

# Could U.S. corn exports be affected in the longer term by the emergence of Brazil as a major corn producer?

- Yes
- No
- I don't know

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# Fertilizer Dependence



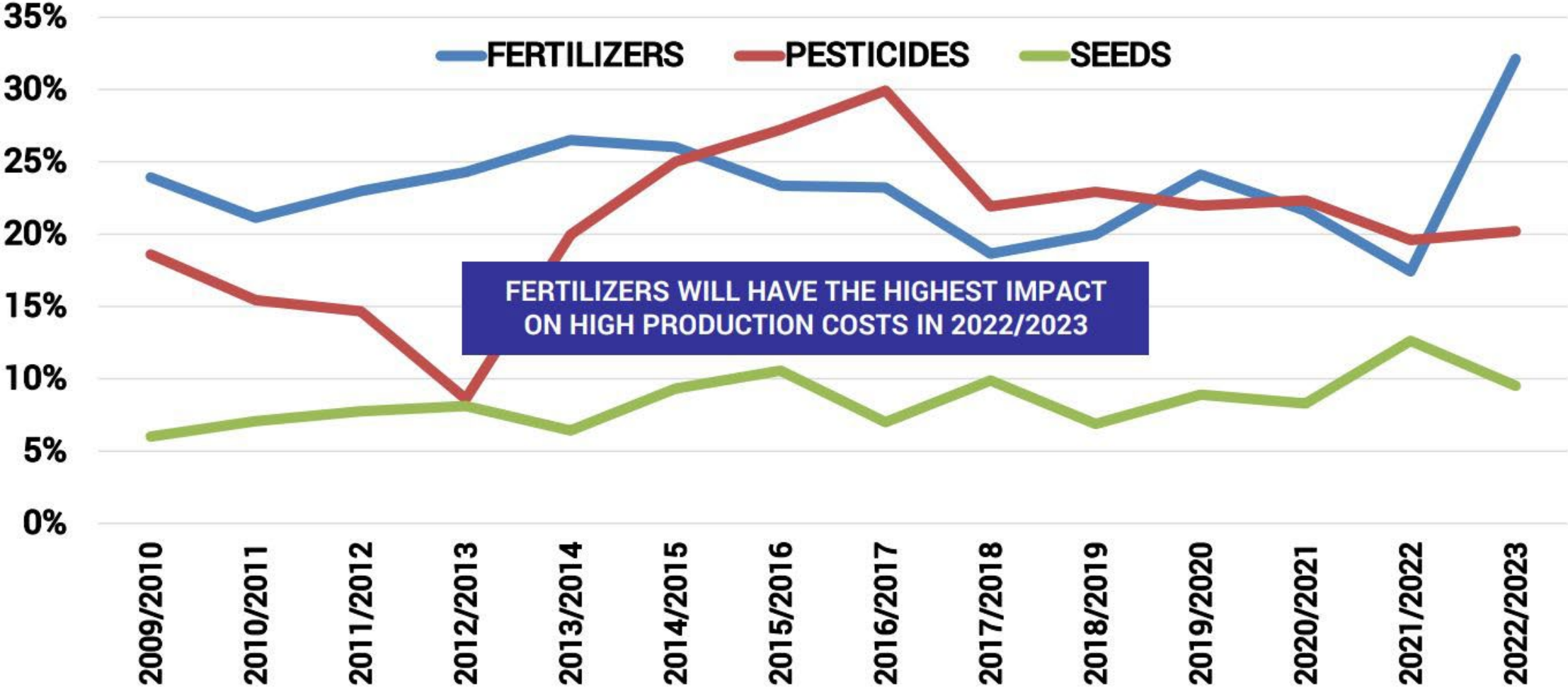
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# Share of the **cost per hectare** of inputs on the soybean production in **the Brazilian Midwest**

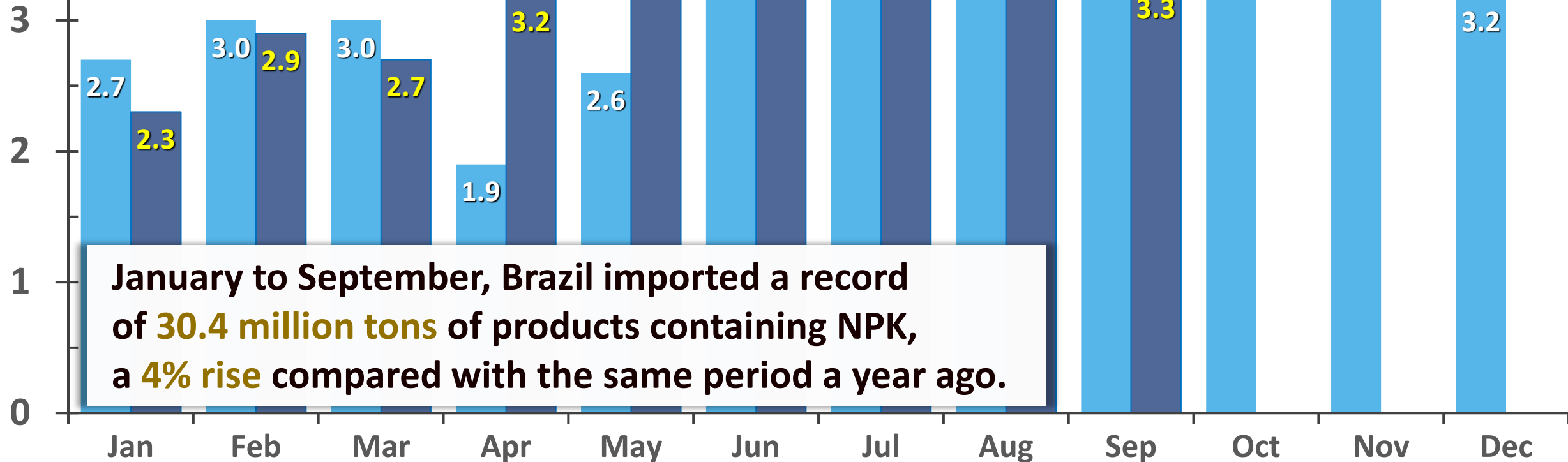


FERTILIZERS WILL HAVE THE HIGHEST IMPACT ON HIGH PRODUCTION COSTS IN 2022/2023

# Brazilian Fertilizers Imports for 2021 and 2022

5 Brazil imports **85%** of its fertilizers.

4 Brazil did not have significant **fertilizer supply** problems for this season.



1 January to September, Brazil imported a record of **30.4 million tons** of products containing NPK, a **4% rise** compared with the same period a year ago.

Sources: General Exports and Imports (Comexstat), National Association for the Diffusion of Fertilizers (ANDA), and National Association of Agricultural and Veterinary Input Distributors (ANDAV).

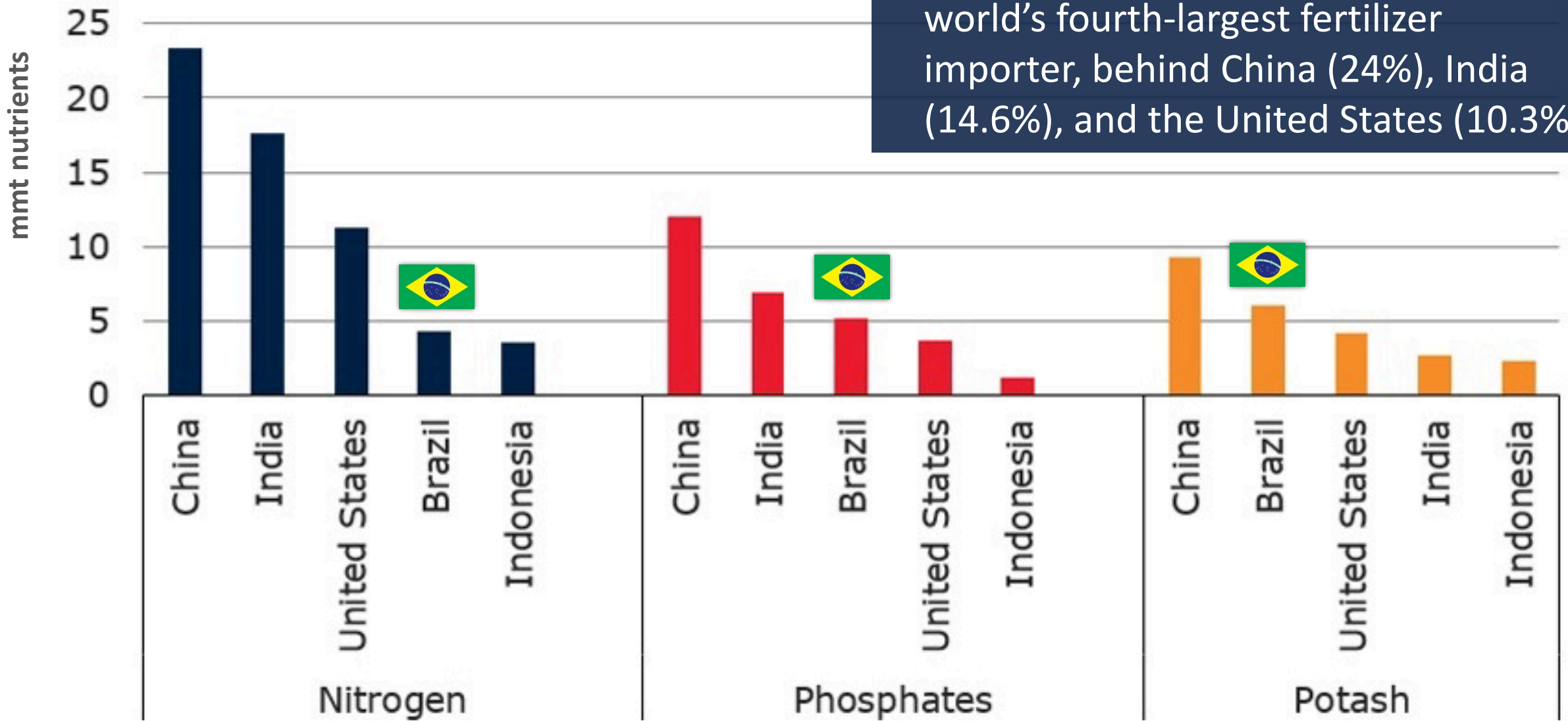
# Brazil's Dependence on Imported Fertilizers

	Nitrogen (N)	Phosphate (P)	Potash (K)
Percent Imported	95%	75%	91%
Main Origins	<ul style="list-style-type: none"> <li>Russia (21%)</li> <li>China (20%)</li> <li>Qatar (17%)</li> <li>Algeria (15%)</li> <li>Iran (5%)</li> <li>Other (22%)</li> </ul>	<ul style="list-style-type: none"> <li>Morocco (38%)</li> <li>Russia (15%)</li> <li>Saudi Arabia (11%)</li> <li>United States (8%)</li> <li>China (7%)</li> <li>Other (21%)</li> </ul>	<ul style="list-style-type: none"> <li>Canada (32%)</li> <li>Russia (26%)</li> <li>Belarus (18%)</li> <li>Israel (11%)</li> <li>Other (13%)</li> </ul>

Sources: General Exports and Imports (Comexstat), National Association for the Diffusion of Fertilizers (ANDA), and National Association of Agricultural and Veterinary Input Distributors (ANDAV).

# Top Fertilizer Consumers

✓ Brazil is responsible for **8% of global fertilizer consumption** and is the world's fourth-largest fertilizer importer, behind China (24%), India (14.6%), and the United States (10.3%).



Note: mmt = million metric tons. Top fertilizer consumers in 2018  
Source: International Fertilizer Association; World Bank

# Plan to Lower Dependence

- In March 2022, after Russia's invasion of Ukraine, the Brazilian government instituted a **plan to lower its dependence on imports.**
- The program aims to reduce Brazilian fertilizer imports from the current **85% to 45% by 2050.**
- The plan includes a **new tax policy** and provides support for **private firms to expand** fertilizer production capacity.
- It includes incentives to increase the use of **organic fertilizers.**

# Meat Production and Exports



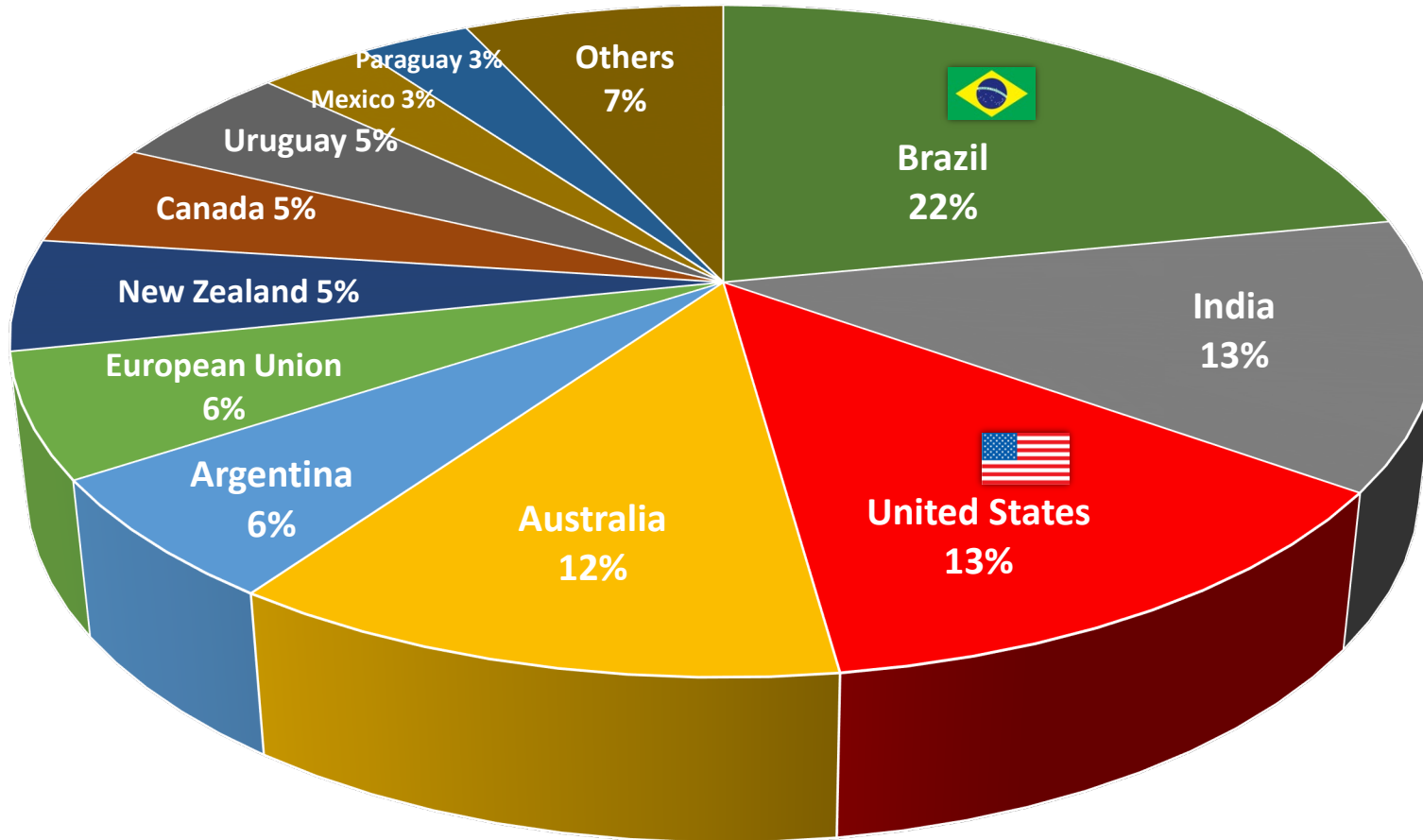
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# Beef Exporters by Countries in 2022

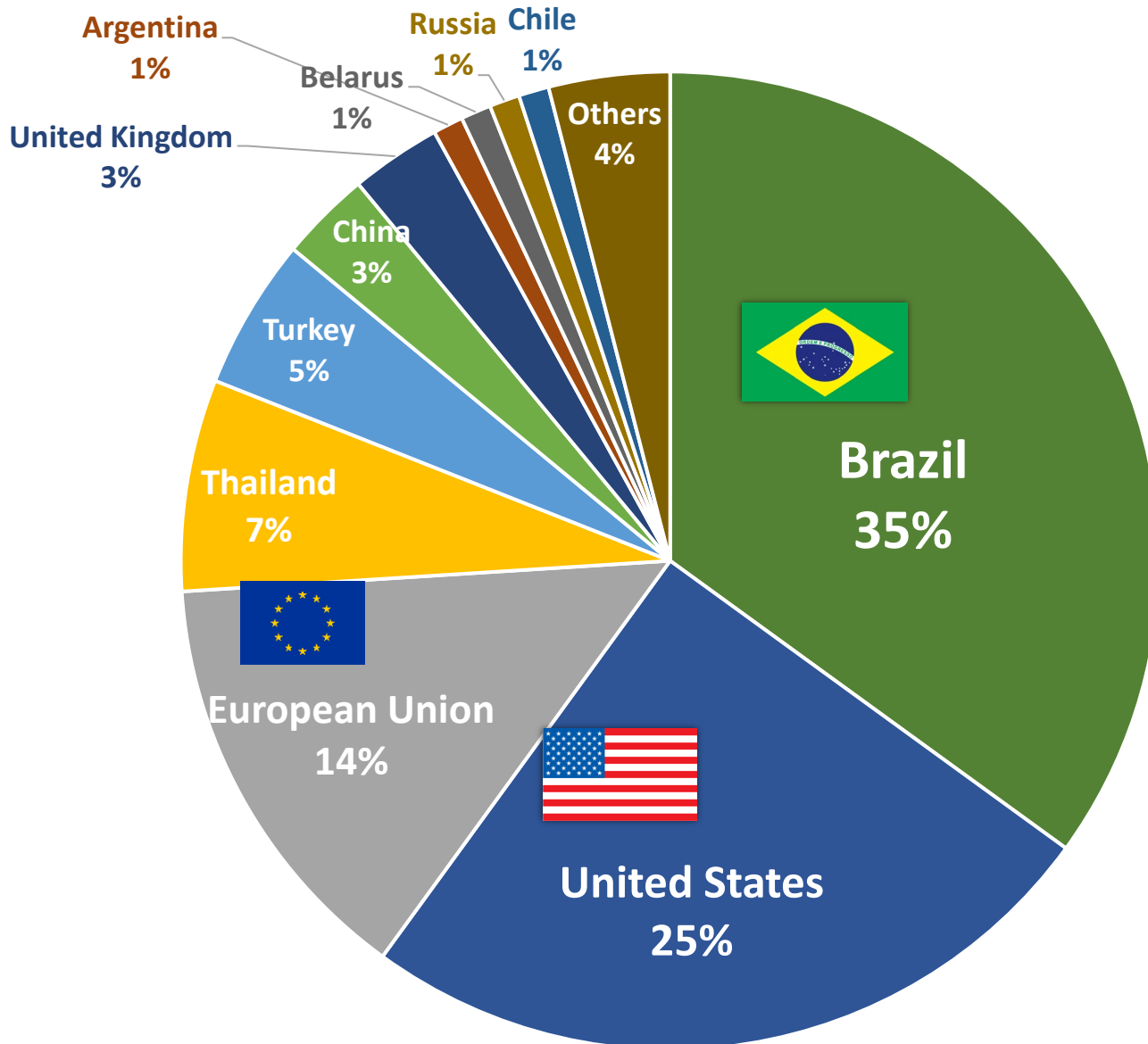


Source: Foreign Agricultural Service (USDA)

- Brazil is the **largest global beef exporter** since 2015.
- The high demand for beef, **especially from Asia**, is an incentive for Brazilian farmers to increase their production.
- The **top five markets** for Brazilian beef exports are **China, the United States, Hong Kong, Chile, and Egypt.**



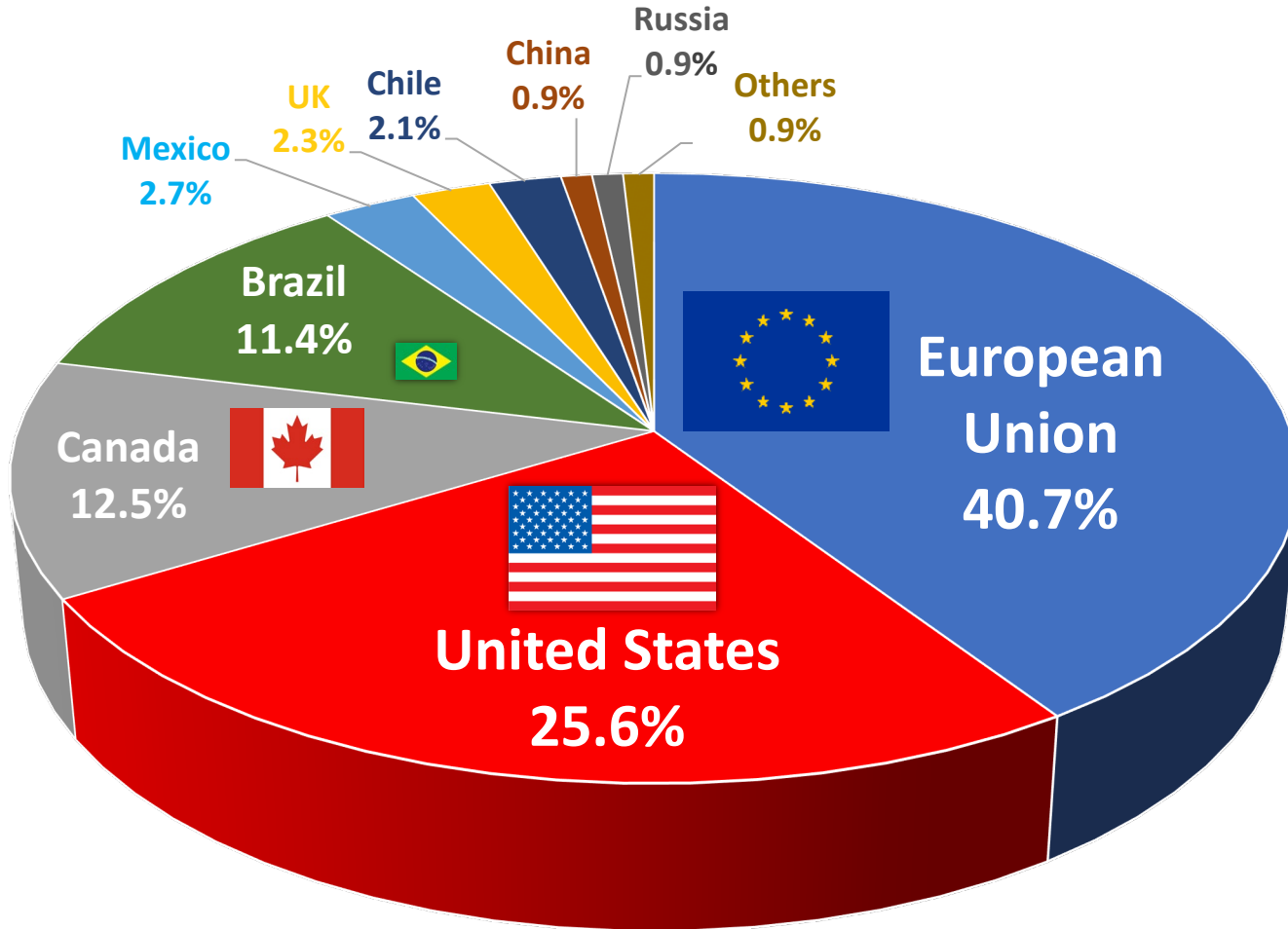
# Chicken Meat Exports by Countries in 2021



- Brazil is the **world's largest exporter** of chicken meat.
- As Brazil was not affected by diseases, such as **African swine fever**, increased demand and opportunities for poultry.
- Brazil's top export markets are **China, Saudi Arabia, and Japan.**

Source: Foreign Agricultural Service (USDA)

# Pork Meat Exports by Countries in 2022



Source: Foreign Agricultural Service (USDA)

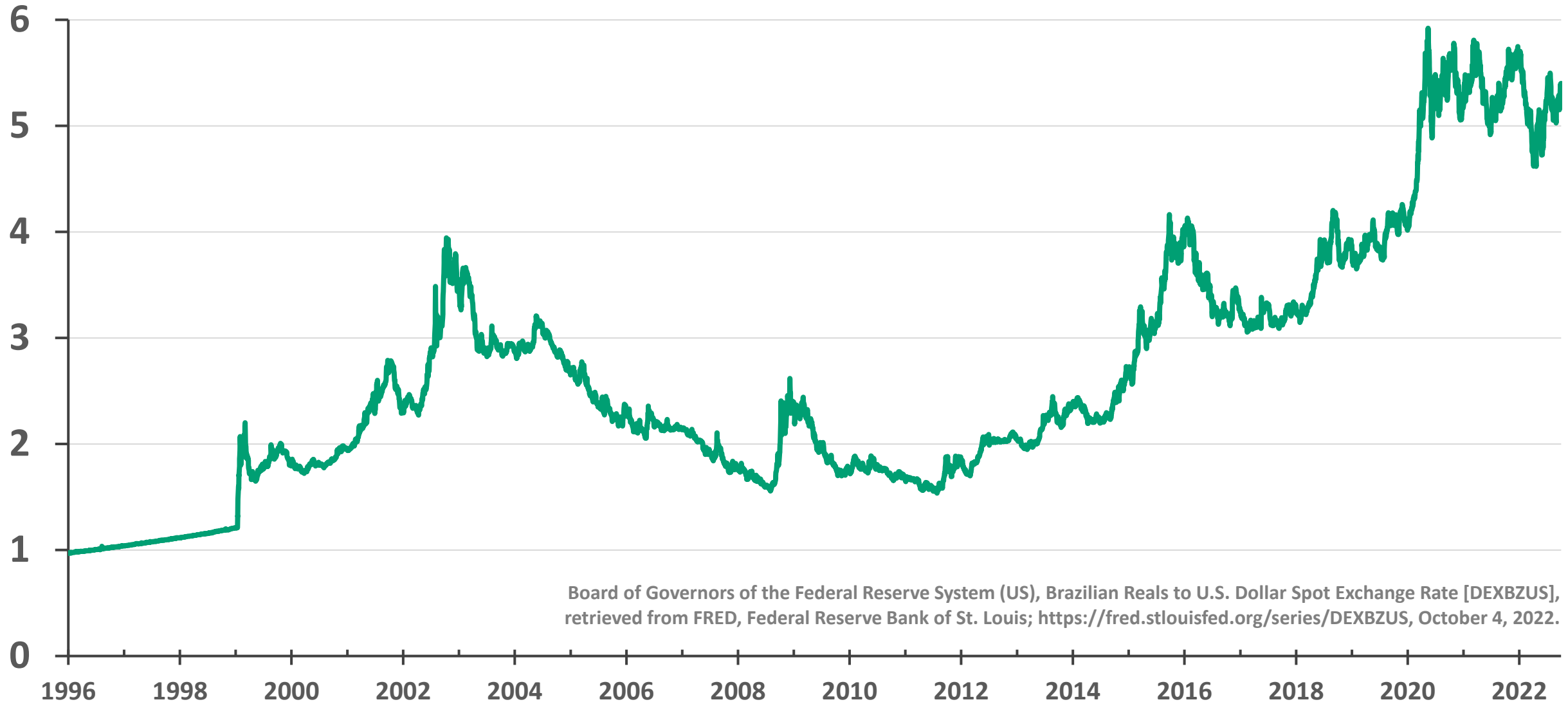
- Brazil is the **fourth world's largest producer and exporter** of pork meat.
- The Brazilian swine sector **benefitted from China's growing demand** for pork to the African Swine Fever outbreak.
- This growth in **demand for pork** increased world market prices
- The Brazilian **consumption of pork increased** during the pandemic crisis.

# Meat Market Outlook in Brazil

- Increase in beef production motivated by **higher prices** and strong **global demand**. Record in exports.
- Increasing production costs, **especially feed prices**, inflation, and unstable weather are challenges to producers.
- The **exchange rate** should remain at **BRL 5 to the 1 USD**, boosting the attractiveness of Brazilian commodity exports, including beef, pork, and chicken meat.

# Brazilian Reals to U.S. Dollar Spot Exchange Rate

Brazilian Reals to One U.S. Dollar, Daily, Not Seasonally Adjusted



Board of Governors of the Federal Reserve System (US), Brazilian Reals to U.S. Dollar Spot Exchange Rate [DEXBZUS], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/DEXBZUS>, October 4, 2022.

# Transportation and Storage



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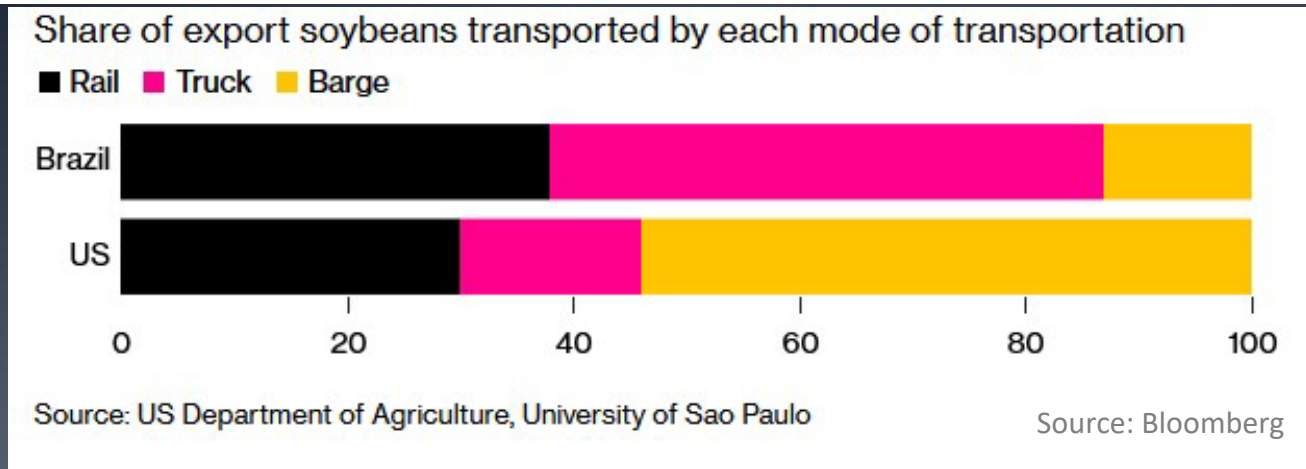


Image by Wenderson Araujo / CNA

# Investments in Brazilian Grain Transportation

- Traditionally, grain transportation **costs in Brazil** have been much higher than in the United States.
- However, Brazil has been **improving infrastructure** so that transportation costs are narrowing.
- Factors leading to improved Brazilian infrastructure are:
  - ❖ Expansion of agricultural frontiers;
  - ❖ Need for new export corridors in the North and Northeast;
  - ❖ Investments in waterways, and
  - ❖ New railroads for transporting grain.

# Brazil Tries to Reduce the Dependence of Trucks



- Recent investments led the Brazilian government to project that **barge** and **rail** will play a more significant role.
- From 2019 to 2025, the share of **highways** for general cargo in Brazil is expected to decrease from **60% to 30%**.
- The role of **railways** in moving grain to ports will grow from **21% to 35%**, and the role of **barges** will more than double, from **14% to 29%**.

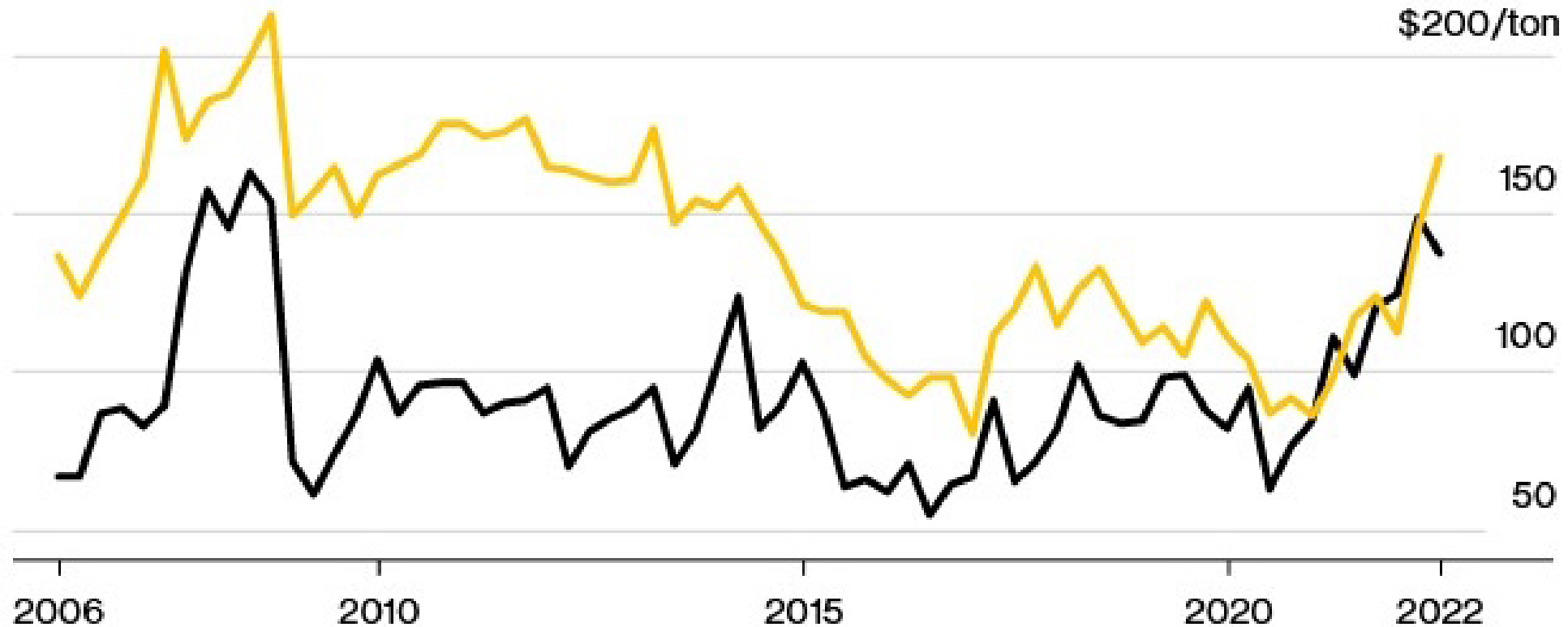


Image by Wenderson Araujo / CNA

# Brazil Narrows Gap with the US on Soybean Transport Costs

The cost of shipping soybeans from Brazil to China is now similar to US

▀ Iowa (via Davenport) ▀ Mato Grosso (via Santos)

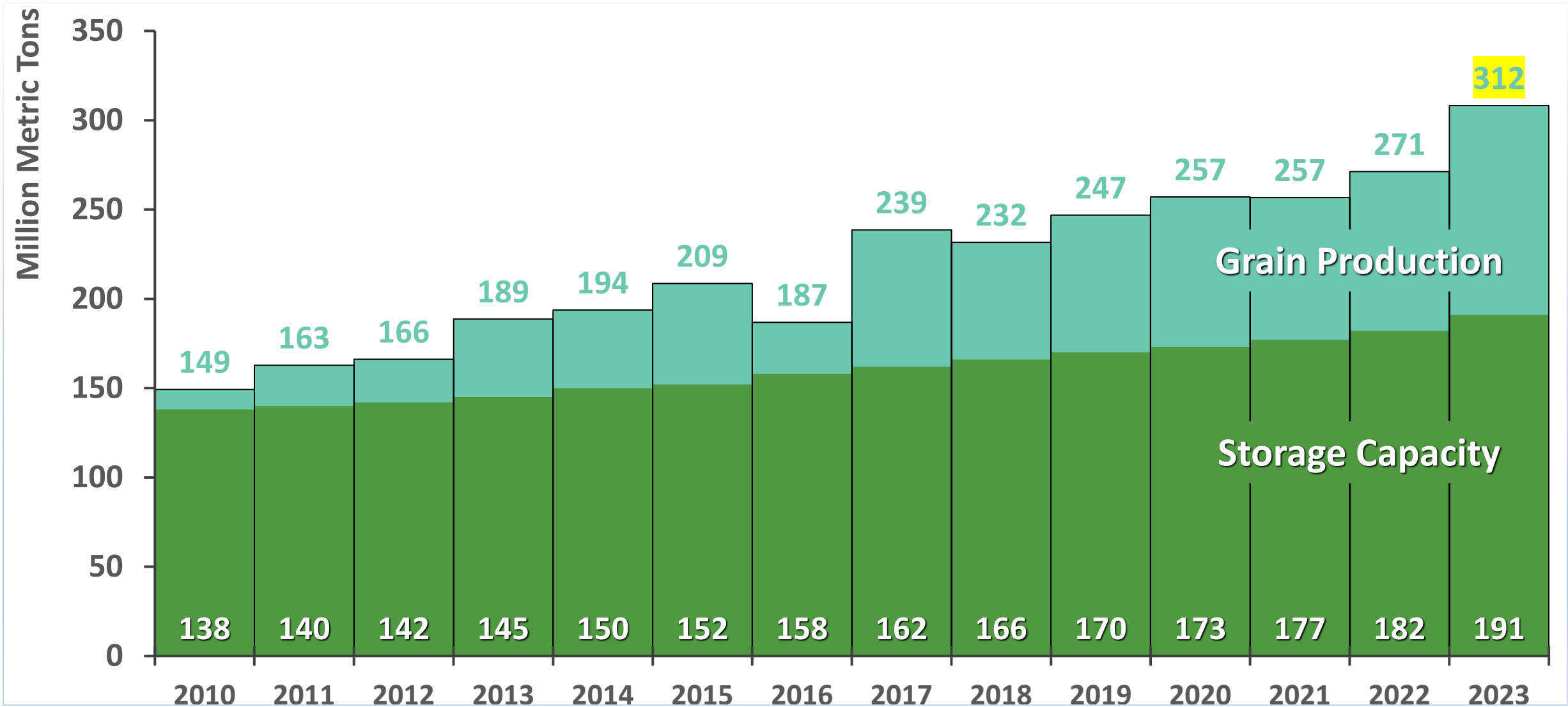


Source: US Department of Agriculture

Note: The data show the transportation cost of shipping soybeans from select US and Brazil origins to China



# Storage deficit of 90 million tons in 2022



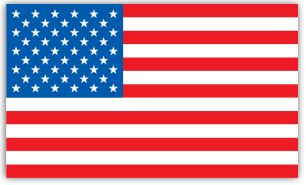
# Topics to keep an eye over the next years



- The potential for increase in **safrinha corn** (second crop).
- Brazil has emerged as a challenger **competitor to the U.S in corn.**
- Expanding **ethanol production** in Brazil.
- **Environmental** Issues and the **Carbon** Market.
- Brazilian **exchange rate** fluctuation: challenges and opportunities.
- **Political** instability (Bolsonaro x Lula)

# Brazilian Advantages in Relation to the US

- **Available land** in new agricultural frontiers.
- Possibility to **harvest three crops** in the same year.
- **Favorable climate** for agriculture in the majority of regions.
- **Opportunities to increase the yields** in grain production.
- **Younger producers** leading the adoption of new technologies in agriculture.



# U.S. Advantages in Relation to Brazil



- Availability of **risk management tools**, such as crop insurance.
- **Transportation & storage** on farms are more mature.
- **Low interest rates** in the financial system.
- **Specialized workforce** in agriculture.
- **No direct currency risk** with dollar fluctuation.

# Upcoming Webinars

## Oct 13: Machinery Investments and Farm Financial Trends

**FBFM, Brad Zwilling**

Machinery investments on farms have been increasing due to various factors. Brad Zwilling with Illinois Farm Business Farm Management (FBFM) will use FBFM data to look at the farm machinery investment over time as well as some other farm financial trends affecting farms.

## Oct 20: Young Farmer Programs

**Krista Swanson and Nick Paulson**

Access to financial capital is one of the many challenges that young and beginning farmers face. Learn more about these challenges and programs offered by agriculture lenders and the USDA that can provide expanded access to capital for operating costs and land purchase.



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