

## Research "puzzle"



## Brazil declares a record harvest of soy beans, 156 million tons in 2023



The Brazilian Association of Vegetable Oil Industries (Abiove) reported that the soybean harvest in Brazil, already completed in 2023,...

29.06.2023

■■■ BBC

### Brazil: Amazon rainforest deforestation at record high

Deforestation in Brazil's Amazon rainforest has reached its highest level in over 15 years, new data has shown.

20.11.2021



MercoPress

### Food insecurity hits nearly 60% of Brazilians, study shows

"We have gone back 30 years in the fight against hunger," said one of the researchers carrying out the research. A study from the Brazilian...



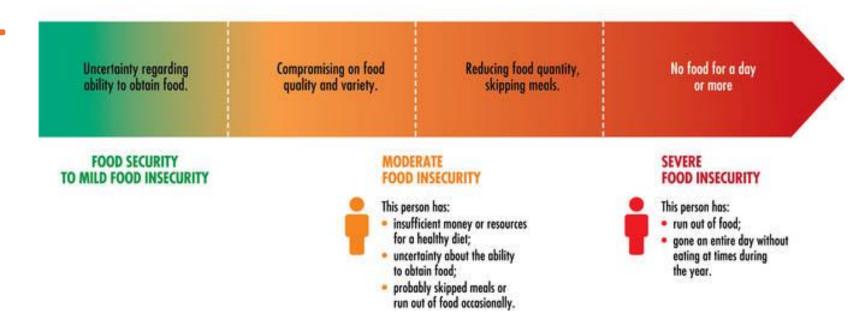


09.06.2022

# Food security

"A situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (FAO 2022).

### FOOD INSECURITY BASED ON THE FIES: WHAT DOES IT MEAN?





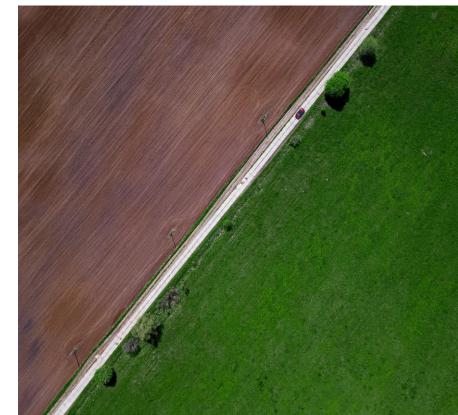
### Productionism

- Dominant paradigm in the 19<sup>th</sup> century
- Productionism is when increasing food production and efficiency becomes a "policy to deliver societal goals such as health and food security" (Lang & Heasman, 2016, p. 30).

### Agribusiness

- "The sum total of all operations involved in the manufacture and distribution of farm supplies; the production operations on the farm; and the storage processing, and distribution of farm commodities and items made from them" (Davis & Goldberg, 1957, p. 2).
- "Agribusiness is understood to be a capitalist enterprise focused on large-scale agricultural, livestock and mineral production, with connections to industrial, financial and banking capital" (Xavier, 2017, p. 153, my translation)





### Food supply

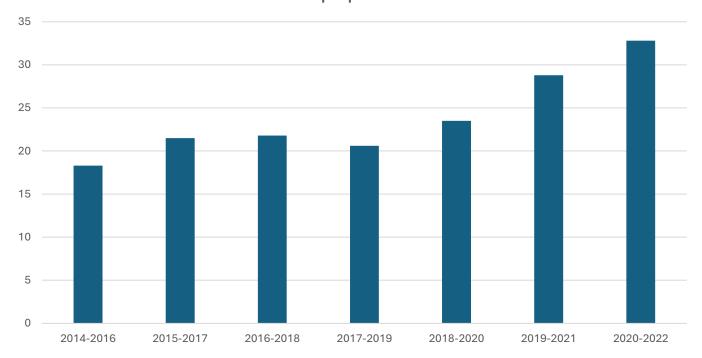
Data from Ritchie et al. 2023.

Consider the recommended daily intake of 2000-2500 kcal per day for an average adult (NHS, 2022).



### Food insecurity

## Prevalence of moderate or severe food insecurity in the total population in %



FAO (2024) Suite of Food Security Indicators.

#### Improved in 2023:

- moderate food insecurity in 5.3% of households
- severe food insecurity in 4.1% of households

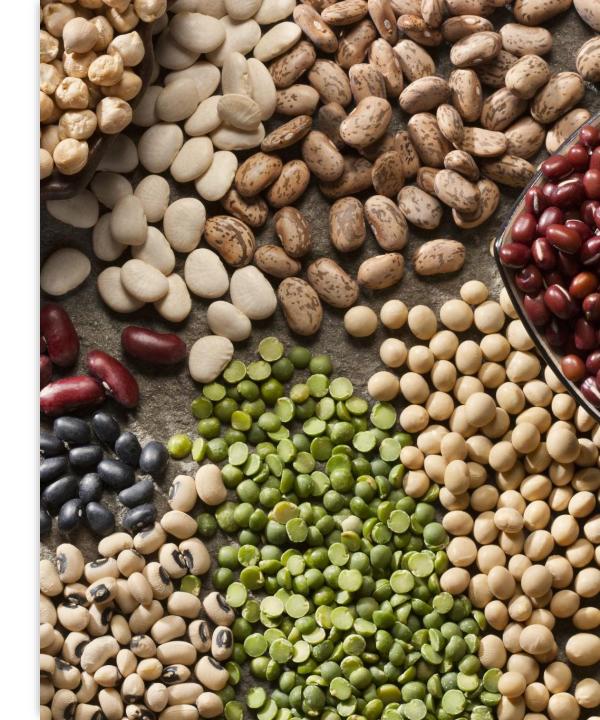
(IBGE 2024)

Note: Brazil had previously reduced hunger by 82% from 2002-2013 (Campelo and Bortoletto 2022).

## The world's bread basket?

"Brazilian agribusiness feeds 800 million people globally" (Contini & Aragão 2021)

"In Brazil, despite the global crisis, rural production hasn't stopped. Rural workers worked as hard as ever and produced food for more than 1 billion people. Brazil has helped ensure that the world continues to be fed... We guarantee food security for a sixth of the world's population (...) Brazil is the world's largest food producer." Jair Bolsonaro at the UN (BBC 2020, my translation)

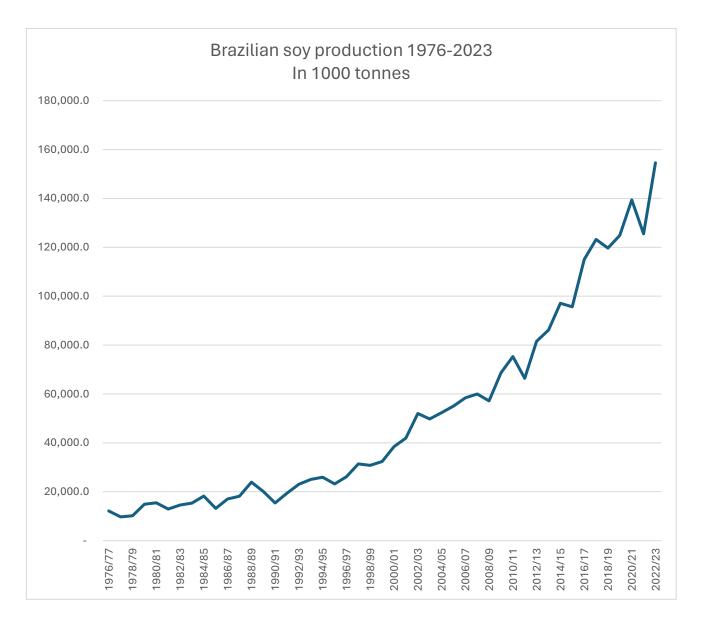


### Soybeans

World's largest soy producer and exporter

#### • In 2023:

- Soy was 40% of total BR exports and most exported agricultural commodity (Brasil 2024).
- 75% of which to China (Santos 2024).



Data from Conab 2024

## Walk down history lane

Short-lived, highly lucrative and destructive economic cycles.

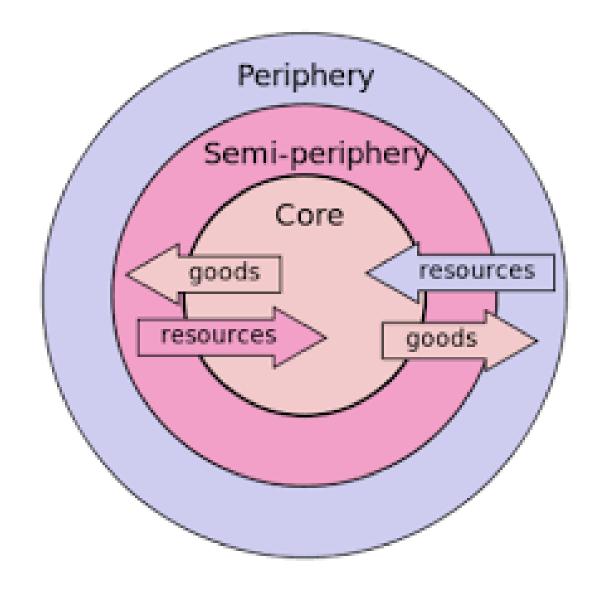
Based on "extensive use of natural resources to satisfy external demand" (Furtado 1965, p. 85)



Soybean cycle since 2000s (Siqueira 2004)

## Underdevelopment and dependence

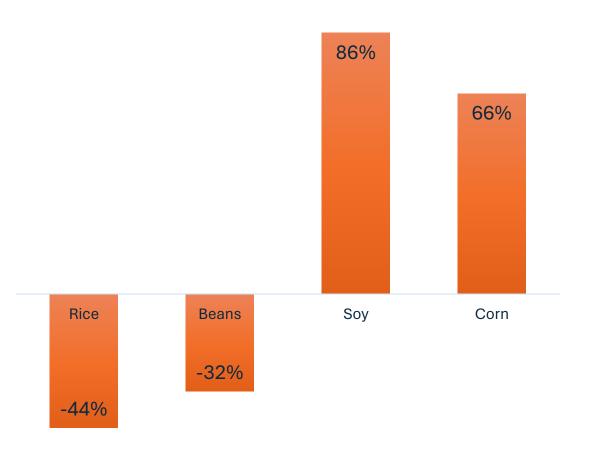
- "Situation in which the economy of certain countries is conditioned by the development and expansion of another economy to which the former is subjected" (Santos 1970, p. 231).
- Dependency in Latin America began with the integration of the region in international markets through colonialism, thus creating an international division of labor, where colonies exported primary goods in exchange for manufactured goods (Marini, 2017)



## Reproducing patterns that increase food insecurity risks: **Export commodity specialization**

- 5 23 % of GDP (IBGE vs CEPEA)
- Commodity export dependence: 73% (UNCTAD 2023)
- Export economy: food production is driven by external demands for soy rather than the domestic need for affordable and healthy food

## Production variation by area 2006 - 2022



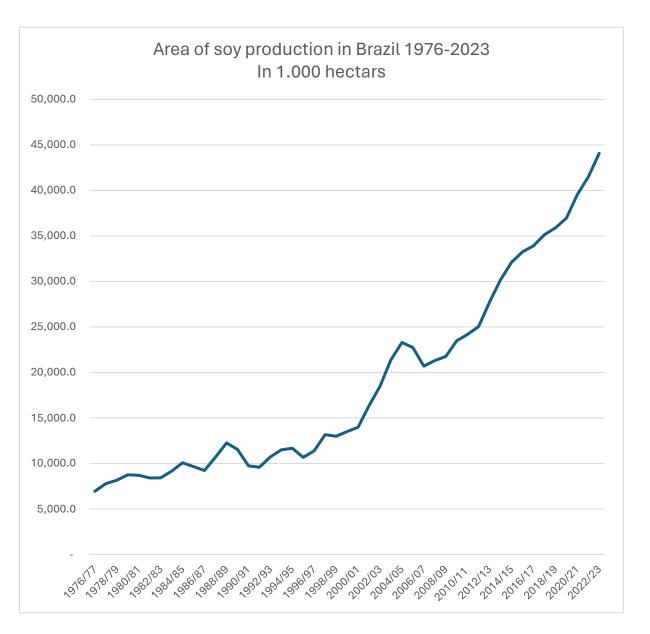
## Reproducing patterns that increase food insecurity risks: **Technological dependence and dominance of foreign corporations**

Product	Multinational market share 2020 (%)
Seeds	90%
Fertilizers	80%
Pesticides	94%
Machinery	99%
<b>Farming</b>	<mark>7%</mark>
Commercialization	84%

Data compiled by Medina (2021). Rounded.

## Reproducing patterns that increase food insecurity risks: **extractivism**

- 95% of deforestation is a result of agribusiness expansion the same sector that represents an estimated 70% of greenhouse gas emissions in the country (Azevedo, 2022).
- Soy displacing cattle farming the main driver of deforestation (Reis & Moro, 2022).



Data from Conab 2024

## Climate vulnerability

 90% of Brazil's agriculture is rainfed, which makes food production "highly vulnerable to droughts, heatwaves and other climatic disruptions" (Rattis et al., 2021).



Yahoo

### Brazil floods strike blow to powerful agriculture sector

Floodwaters in Brazil have swallowed up soybean fields and farming equipment, cutting off roads, livestock farms and warehouses in the...





FT Financial Times

### The precarious future facing Brazil's new boomtowns

Agriculture is creating fast wealth and boosting the nation's economy. But can 'green gold' survive an increasingly extreme climate?







### So what?

- Not about blaming farmers or the agribusiness sector, but understanding what incentives are in place to support these dynamics.
- Current production model both deepens and is vulnerable to the climate crisis, thus worsening future food security prospects.



(Grilli 2024)

## Preliminary analysis of institutional incentives



#### **Taxation**

Lei Kandir (1996): Tax law that exempts payment of ICMS for exports

Estimated R\$60 billion in exemptions for soy – double the exemptions for "cesta básica" (Campos 2023)



### Chinese trade policy

3x higher tariffs on processed soybean products (e.g. oil) than unprocessed (Gereffi 2018)



#### **Rural credits**

Plano Safra 2020: smallholder and médium-sized farms accessed ~ R\$ 57 billion while agribusiness accessed ~ R\$ 135 billion (Mitidiero Junior & Goldfarb, 2021).



### Lobby

"Bancada ruralista" votes for deregulation of environmental laws, approval of new pesticides, etc.

324/513 congress seats and 50/81 senators (FPA 2023)

Thank you!



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