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Sustainable Nitrogen Management in Brazil: Public Policies

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Working Group on Nitrogen
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Brazil is expected to play a key role in providing agricultural products to meet the needs of the growing world population (FAO)

Total numbers from the 2024 harvest will add up to over 310 million tons of soy, corn, cotton, rice and other products. The country also has large production of other products such as fruits, sugar and roots

Brazil is also a global leader in the production of animal protein, being one of the largest producers and exporters of beef, poultry and pork in the world.

Promotion of agricultural production in Brazil, responsible for producing one in five of the world's plates of food

Agricultural production in the tropics requires appropriate crop management

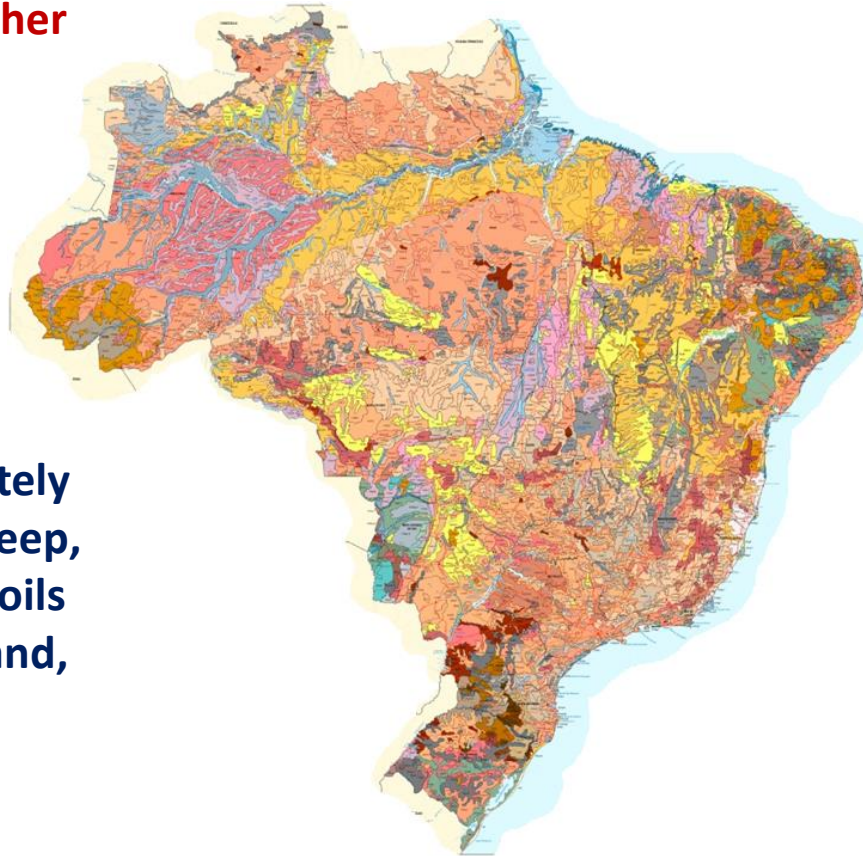


Sustainable agricultural management

Soil liming and fertilizer application are essential

Oxisols, Argisols and Neosols predominate, which together are distributed across approximately 70% of the national territory.

The Oxisols and Argisols classes occupy approximately 58% of the area and are deep, highly weathered, acidic soils with low natural fertility and, in certain cases, with high aluminum saturation.

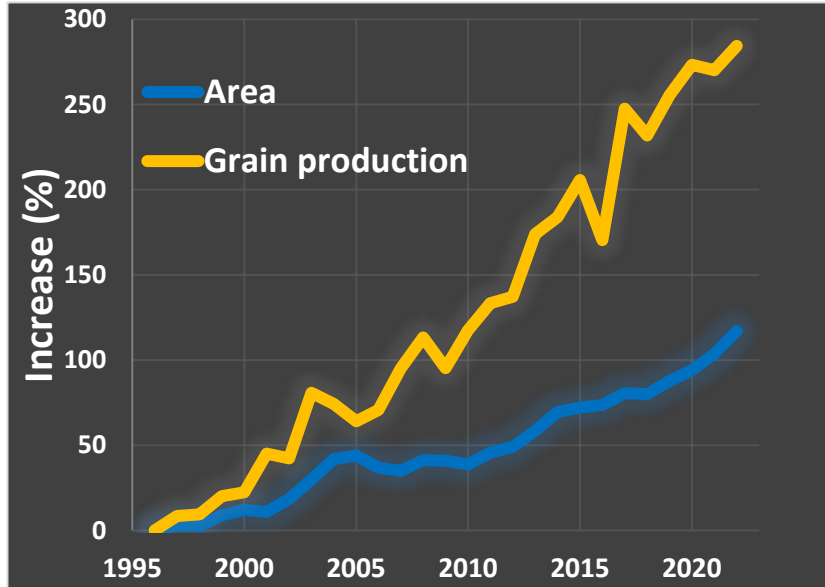


Fertilization is essential, especially N

Agricultural efforts

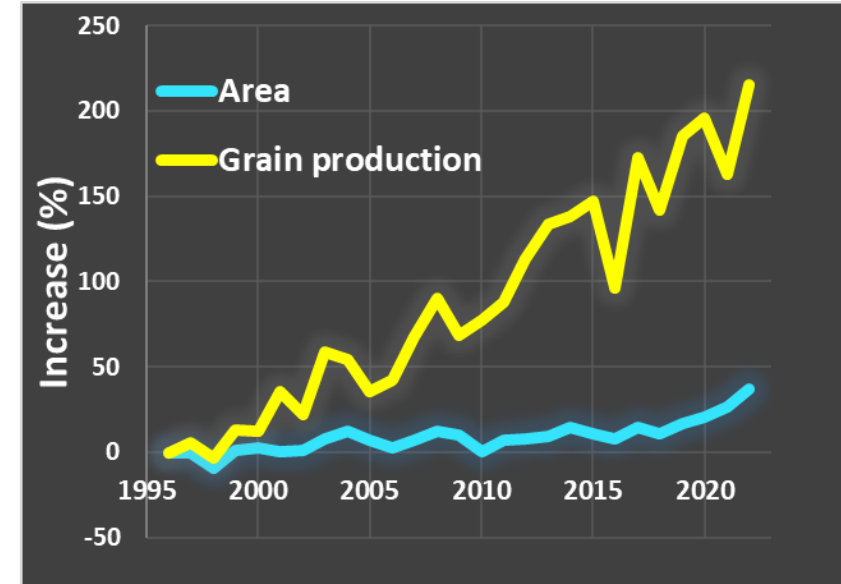
Agricultural intensification

Increase in cropped area and grain production 1996 - 2022

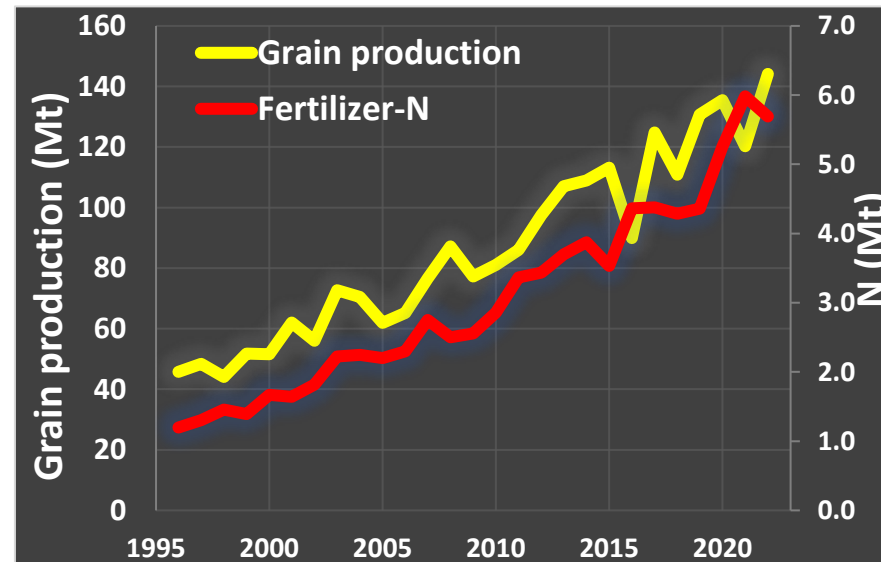


The grain area has doubled in the last 30 years, while production has more than tripled

Increase in cropped area and grain production, with soybean data excluded

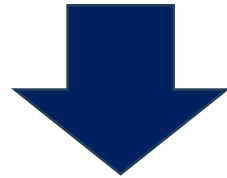


Fertilization



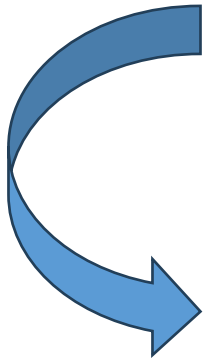
Nitrogen fertilization has been shown to be essential to keep up with the increase in production in Brazil

Brazil has the sustainability of agricultural production as one of the main objectives



The main direction for fertilizers in Brazil is the National Fertilizer Plan

The Plan aims to strengthen policies aimed at increasing the competitiveness of fertilizer production, distribution and use in Brazil in a sustainable manner - Decree No. 10,605, dated January 22, 2021.



Sustainable fertilizer management

Main tasks related to sustainability of fertilizer production and use

Promoting an innovation environment for new products and technologies aimed at diverse, competitive, and sustainable sources of nutrients for plants

Developing comprehensive adherence models for Brazil's plant nutrition industry to ESG parameters, thereby stimulating widespread adoption of sustainable agricultural practices, including concepts of circular economy and access to the carbon market

Promote and encourage the adoption of best practices in fertilizer production and agricultural practices for sustainable exploitation of the ecosystem with minimal environmental impact, diversifying and promoting the development of new nutrient sources for agriculture

To monitor and evaluate the natural gas and H₂ market scenario in Brazil, aiming to contribute to actions that promote the competitive use of these inputs in the production of nitrogenous fertilizers in Brazil

Recycling is particularly relevant to fertilizer policy, especially in certain regions of Brazil where large amounts of waste are produced annually

In 2022, poultry litter production was about 8.7 million m³ yr⁻¹ corresponding to 300,000 t N

Swine slurry is another abundant residue, corresponding to about 105 m³ yr⁻¹ and containing approximately 380,000 t N.

Mining waste residues. Works as Ca, Mg, P and K sources apart from micronutrients



Organic fertilizers



- Circular economy
- Reduction of GHG emissions
- Safe disposal of waste
- Support for small industry
- Use of local resources

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The 'Fertilizer Caravan' aims to promote the diffusion and transfer of best practices in soil fertilization to farmers

In 2023, 3,376 farmers attended the training courses



Technology transfer

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Low Carbon Emission and Adaptation Plan in Agriculture - ABC+ (2020-2030)

It is a national strategic agenda of the Brazilian government connected to the National Policy on Climate Change (PNMC), established by Law No. 12,187 on December 29, 2009

Objective: To promote adaptation to climate change and the control of GHG emissions in Brazilian agriculture, enhancing efficiency and resilience of production systems, considering integrated landscape management



It provides incentives for the use of biological nitrogen fixation (BNF) and plant growth-promoting microorganisms (PGPM) that improve BNF and/or nutrient use efficiency by plants.

This occurs through crop financing with lower interest rates and longer grace periods.

Thank you for your attention

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