TECHNICAL NOTE

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CHINA-BRAZIL TRADE RELATIONS: TOWARDS A NEW PATH FOR SUSTAINABLE COOPERATION

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1. Introduction

The current geopolitical context has brought Brazil and China into an unprecedented phase of cooperation, marked by high-level visits, joint statements, and new agreements. As leading members of BRICS and G20, both countries have consolidated their roles as key voices of the Global South, promoting multilateralism and defending equitable development in an era increasingly marked by fragmentation and unilateralism.

In 2024, China and Brazil celebrated 50 years of diplomatic relations, elevating their partnership to a "China-Brazil Community with a Shared Future for a More Just World and a More Sustainable Planet" (Brazil, 2024). This milestone reflects not only the deepening of political ties, but also the emergence of a shared vision linking economic cooperation, environmental responsibility, and sustainable development.

According to statistics from China Customs, over the past decade (2014-2024), China–Brazil bilateral trade has grown steadily, with China serving as Brazil's largest trading

Key Messages

- China-Brazil trade has evolved beyond commodity exchange into a structurally interconnected food, land-use, and climate relationship. With agricultural trade expanding, both countries are increasingly recognizing the need to address sustainability challenges associated with land-use change, biodiversity conservation and climate resilience across global supply chains.
- China's evolving sustainability agenda is gradually reshaping the context of bilateral agricultural trade: with traceability, and environmental performance becoming steadily more important components of long-term market access and risk management.

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partner and export destination since 2009 (MFA Brazil, 2026). This growing cooperation extends beyond trade: both nations have emerged as leaders in the climate agenda, with China advancing the transition toward an "Ecological Civilization" – a national development strategy formally adopted in 2012 that integrates environmental sustainability into economic planning and governance (Wei et al. 2021) –, and Brazil holding stewardship over the Amazon rainforest and the Cerrado – two of the most biodiverse and climatically critical biomes on Earth, together representing almost ¾ of the national territory (Mapbiomas, 2023). Both biomes, however, continue to face significant deforestation pressures, underscoring the ongoing governance challenges of translating environmental leadership into sustained on-the-ground outcomes.

This leadership is also reflected in each country's domestic and international environmental trajectory. Brazil has long played a central role in shaping the global environmental and climate agenda, with leadership dating back to the 1992 Rio Earth Summit. Over the past decades, the country has demonstrated that it is possible to reconcile agricultural expansion with environmental governance, notably through periods in which deforestation was significantly reduced alongside rising production, supported by a combination of scientific capacity, public policy, and monitoring systems (Moutinho et al. 2016). In parallel, China has also consolidated its role as a global environmental actor, embedding sustainability within its broader development strategy, including large-scale investments in green technological innovation, advancing ambitious climate targets and strengthening its institutional framework through the adoption of the Ecological and Environmental Code in March 2026 – China's first comprehensive environmental codification, which enters into force in August 2026 (Wei, 2026).

- Cooperation on traceability, sustainable intensification, and green finance offers a practical pathway to decouple agricultural growth from deforestation – however significant institutional, governance, and economic barriers remain.
- If successfully advanced, a China-Brazil sustainable trade partnership could serve as a replicable South-South cooperation model for balancing food security, economic development, and environmental sustainability under growing global climate challenges – one where environmental co-responsibility emerges from shared development priorities rather than external conditionality.

At the same time, both countries are increasingly recognizing that environmental sustainability is becoming structurally linked to economic competitiveness, food security and supply-chain sustainability. The same agricultural commodities that underpin

China's food security (e.g. soybean, corn, meat) are also increasingly associated with broader sustainability challenges, including land use change, deforestation pressures, and climate resilience in major producing tropical regions. This creates an emerging strategic dilemma: on one hand, China depends heavily on Brazilian agricultural commodities; on the other hand, the long-term stability of these supply chains depends on the ecological integrity of Brazilian production areas, mainly located in the Amazon and Cerrado. Realizing the full potential of this new phase of cooperation will require acknowledging that significant challenges remain – including the persistence of economic incentives that still favor territorial expansion, and the risk that bilateral trade continues to reinforce Brazil's primary-export specialization unless deliberate steps are taken toward value-added diversification.

This technical note examines how evolving trade dynamics, climate risks, and sustainability governance are reshaping China--Brazil relations for food consumption and production. It analyzes the environmental dimensions of bilateral commodity trade, the emergence of traceability and green governance frameworks, and the opportunities for cooperation in sustainable supply chains, technological innovation, and low--carbon agricultural development.

2. Trade dynamics between China and Brazil

The China-Brazil trade structure mainly underscores Brazil's role as a primary commodity exporter and China's position as a global industrial hub, reflecting a high degree of economic complementarity. Over time, however, this relationship has evolved beyond conventional trade complementarity into a structurally interconnected food, commodity, and land-use system, in which changes in trade patterns and agricultural demand increasingly shape the investment decisions, agricultural production, and infrastructure development across Brazil's agricultural regions (Figure 1). This can be illustrated by the evolution and composition of the top 10 products traded between Brazil and China, highlighting the asymmetry between Brazil's commodity-based export profile and China's industrial and manufactured exports (Figures 1A and B).

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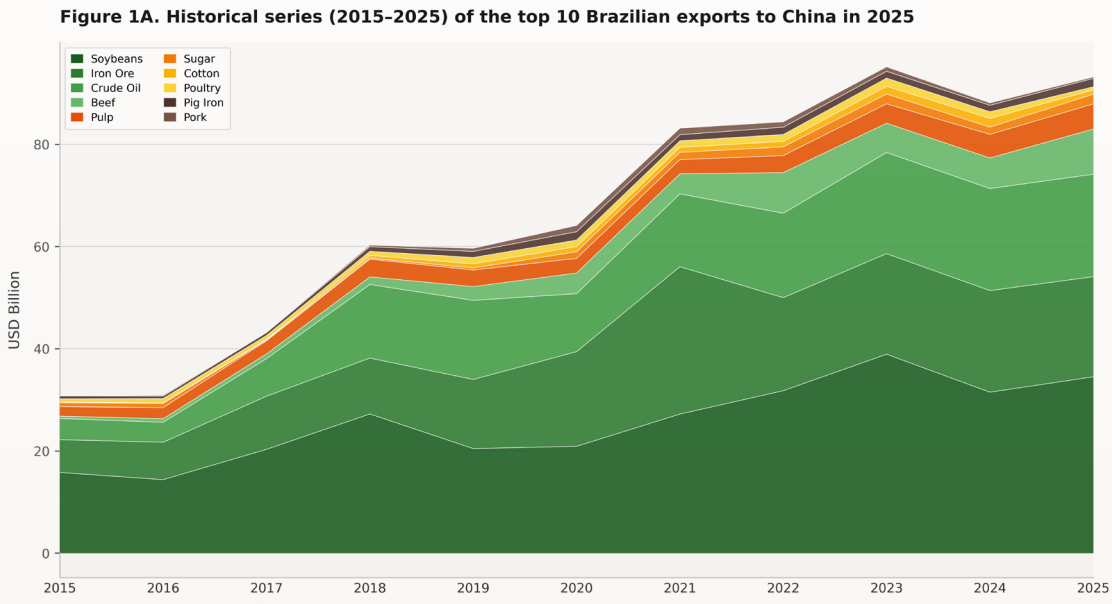

Figure 1. (A) Historical series of the top 10 products exported from Brazil to China in 2025
Source: Prepared by the authors based on data from the Brazilian Ministry of Development, Industry, Trade, and Services (MDIC/ComexStat), 2026.

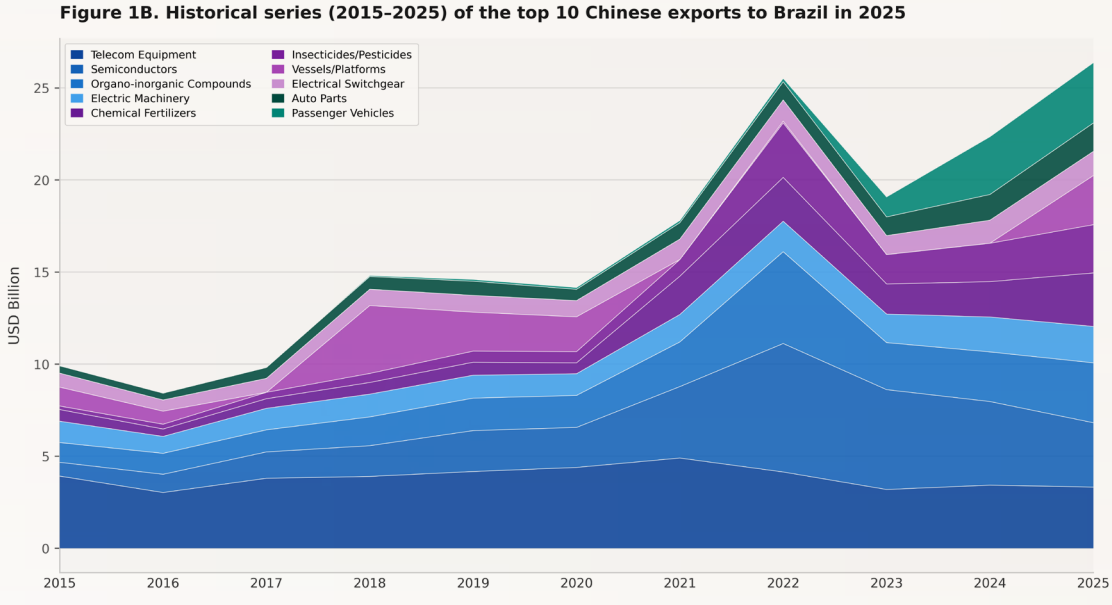

Figure 1. (B) Historical series of the top 10 products exported from China to Brazil in 2025
Source: Prepared by the authors based on data from the Brazilian Ministry of Development, Industry, Trade, and Services (MDIC/ComexStat), 2026.

"Within this broader trade pattern, agricultural commodities play a particularly strategic role. Brazil has consolidated its position as China's leading agricultural supplier, accounting for approximately 24.9% of China's total agricultural import value in 2023 (General Administration of Customs of China (GACC). 2024. China's Agricultural Trade Statistics for 2023.)".

CATEGORY	BRAZIL'S EXPORT POSITION TO CHINA IN 2025	PROPORTION OF CHINA'S TOTAL IMPORT VOLUME
Soybean (HS 1201)	Largest Supplier	73%
Corn (HS 1005)	Largest Supplier	59%
Beef (HS 0202)	Largest Supplier	56%
Chicken (HS 0207*)	Largest Supplier	43%
Cotton (HS 5201)	Largest Supplier	42%
Pork (HS 0203)	Second Largest Supplier (after Spain)	19%

Table 1: Brazil's Export Position to China, 2025. Source: International Trade Centre (ITC) Trade Map, based on data from the General Administration of Customs of China (GACC).

***Chicken (HS 0207)** includes fowls of the species Gallus domesticus (chicken) along with ducks, geese, turkeys, and guinea fowls; chicken alone represents the large majority of this trade flow.

Global agricultural commodity trade, particularly of soybeans and beef in the Brazilian context, has become central to debates on deforestation, climate change and supply-chain sustainability. In the soybean sector, China is the world's largest importer and depends heavily on Brazilian soy to meet its growing demand for animal feed and cooking oil (Zhang and Shi, 2024; Ali et al, 2022). In recent years, Brazil has also become an important supplier of beef to China, driven by rising incomes, changing dietary preferences, and domestic protein needs. In 2024, soybeans accounted for 33.4% of Brazil's exports to China, while beef represented 6.3% (MDIC, 2026). Additionally, that same year, 73.3% of Brazil's total soybean exports and 51% of its beef exports were destined for China (MDIC, 2026).

This growing interdependence has also been accompanied by significant investments in transportation corridors, storage infrastructure, and export logistics, mainly in agriculture frontier regions connected to the Amazon and Cerrado. While these developments improve trade efficiency and competitiveness, they may also accelerate land use change and increase environmental pressures in areas already vulnerable to degradation.

Correlation analyses presented in this technical note indicate a strong temporal association between China's GDP per capita and the expansion of Brazilian soybean, corn and livestock production and exports to China over recent decades (Figure 2). As Chinese demand for food, feed, and agricultural commodities has increased, Brazil has consolidated its role as a major supplier of soybeans, meat, and other products, with production and export trends broadly tracking the evolution of China's domestic consumption and economic performance. While these correlations do not establish direct causality – and emerging evidence suggests that technology adoption (such as transgenic soybean varieties) may be as significant a driver of agricultural expansion as demand itself – they illustrate the increasing interdependence between Chinese demand dynamics and Brazilian agricultural expansion.

Figure 2. Correlation between China's GDP per capita and Brazilian production and exports of soybeans, beef, and corn to China

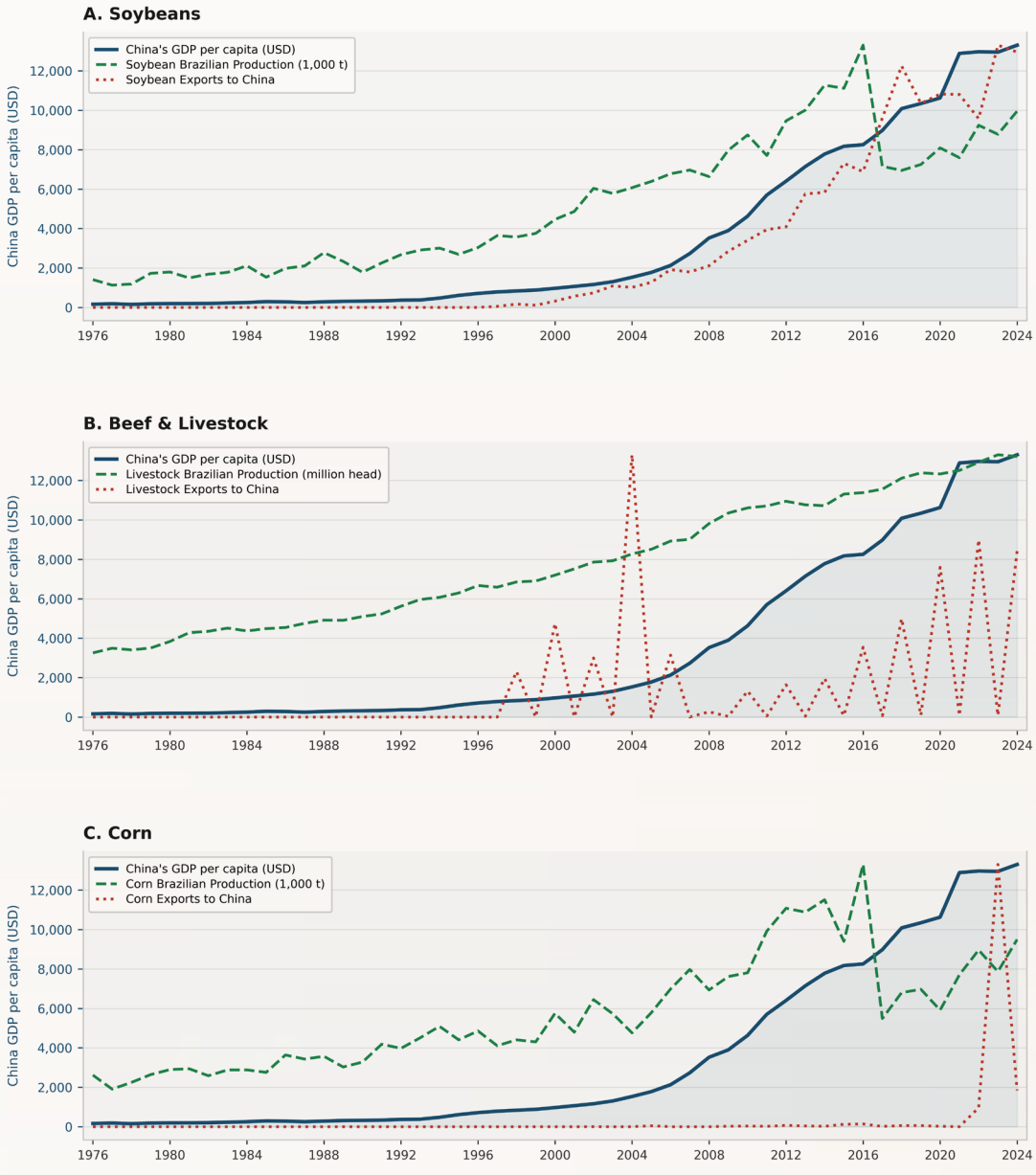

Figure 2. Correlation between China's GDP per capita and Brazilian production and exports of soybeans, beef, and corn to China

Source: Prepared by the authors. GDP per capita: Penn World Tables / World Bank. Production: FAOSTAT. Exports to China: MDIC/Comexstat.

While correlation does not imply direct causation, the observed patterns suggest the presence of a deeply interconnected food and commodity system linking the two economies, in which shifts in Chinese demand are associated with changes not only in Brazilian production, but also in export volumes and land-use dynamics. In practice, this means that fluctuations in commodity demand and trade flows progressively shape decisions related to agricultural expansion, infrastructure development, pasture conversion, and land-use change across key production regions in Brazil. Rather than any single driver, these trends should be interpreted as reflecting broader market dynamics, technological change, domestic policies, and international demand.

To better understand how this relationship materializes in practice, the main agricultural commodities traded between the two countries reveal distinct patterns of trade volumes, strategic dependence, and market dynamics:

1 Soybeans: Systemic Dependency and Climate Exposure

- China has long imported close to 100 million tons of soybeans annually, a volume that has grown further in recent years, reaching a record 111.8 million tons in 2025. Brazil supplied approximately 73% of that total — about 82 million tons (ITC, 2026). Rising production (approx. 150 million tons in 2024), improved logistics, and the maturity of transgenic varieties have consolidated this position.

- This high level of dependence makes China's feed and livestock sectors increasingly sensitive to climate shocks and land-use governance outcomes in Brazil.

2 Corn: Geopolitically Driven Substitution

- In 2023, U.S.-China tensions prompted China to pivot to Brazilian corn, with imports surging from zero in 2022 to 14 million tons in 2023 (40% of China's total corn imports). Brazilian corn is expected to permanently replace a significant share of U.S. corn, reflecting China's broader effort to reduce geopolitical exposure – but also growing sensitivity to environmental and climate conditions in alternative supplier countries.

3 Beef: Biggest Beneficiary of Demand Upgrade

- China's beef imports grew tenfold over the past decade, exceeding 3 million tons in 2023. Brazil is the top supplier, with a 10–15% price advantage over Australian beef and expanding production capacity (pastureland covers 25% of national territory).

- China's January 2026 safeguard measures – an additional 55% tariff on imports exceeding quota levels and a 2026 quota of 1.106 million metric tons for Brazil, well below recent export volumes – highlight how trade policy shifts can directly affect Brazil's export revenues and reinforce the need for more resilient bilateral cooperation. Beyond trade policy, beef supply chains also face increasing scrutiny related to deforestation, land tenure, and methane emissions.

4 Cotton: Supplementing China's Textile Supply Chain

- China imports around 2 million tons of cotton annually.Brazilian cotton is gaining favor due to its complementary quality with U.S. cotton, making it suitable for blending.

The evolution of these four trade flows over the past three decades illustrates the growing structural weight of Brazil in China's agricultural supply system, as well as the distinct dynamics – geopolitical, dietary, and environmental – that shape each commodity (Figure 3, panels A-D).

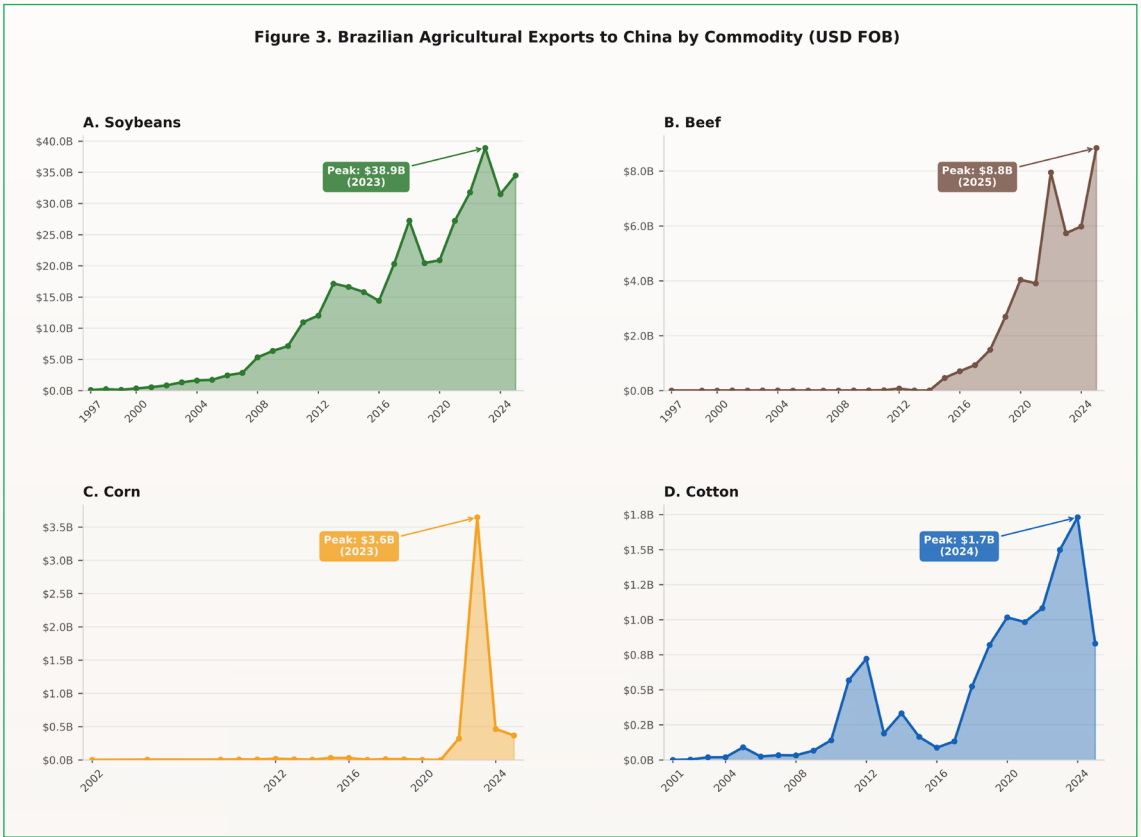

Figure 3. Historical series of Brazilian agricultural exports to China by commodity (1997–2025). Panel A: Soybeans; Panel B: Beef; Panel C: Corn; Panel D: Cotton.
Source: Prepared by the authors based on MDIC/ComexStat data, 2026.

As shown in figure 3, the trade profile outlined above highlights both the opportunities and vulnerabilities of Brazil-China interdependence. Brazil's dominance as a supplier of soybeans, corn, beef, and cotton underpins China's food and feed security, but it also links the stability of global agricultural markets to the sustainability of Brazilian land-use and production practices. In other words, the sustainability of bilateral trade is increasingly influenced by how land-use, climate and deforestation are managed in major agricultural production regions. Recent network analysis of global staple food trade confirms this systemic exposure: the Brazil-China trade route alone accounted for 11.58% of total biodiversity loss embodied in global staple food trade in 2022 (Huang et al. 2025). Understanding these dynamics requires a closer look at the environmental footprint of Brazil's agricultural production and its implications for sustainable trade.

3. Brazil's environmental context on agricultural commodities production

Brazil has become one of the world's leading producers and exporters of agricultural commodities, driven by favorable climatic conditions, strategic subsidies, investments in science and technology, and supportive public policies. This expansion has been largely driven by the dynamics of agricultural growth, which led to the loss of 15.84% of the Amazon and 47.2% of the Cerrado (MapBiomas, 2023) – two critical biomes for regional climate stability, biodiversity and freshwater conservation, and consequently, the long-term sustainability of agriculture.

The Amazon, the largest tropical forest on Earth, stores carbon equivalent to 12 years of global emissions (Nobre et al. 2023) and provides critical freshwater and biodiversity services. Brazil has demonstrated that it is possible to reduce deforestation in the Amazon while increasing food production, having doubled commodity output while reducing deforestation by 83% in the past (Moutinho et al. 2016; Nepstad et al. 2014) – though these gains have proven difficult to sustain consistently and have not extended to the Cerrado, where deforestation pressures have continued largely unabated. Recent declines in Amazon deforestation reflect renewed enforcement, public policies, private sector agreements, and monitoring systems – yet forest degradation from fires and selective logging continues to rise, underscoring the limits of progress achieved so far.

A historically significant example of supply-chain governance in Brazil is the Soy Moratorium, established in 2006 as a voluntary agreement between major traders, civil society organizations, and the federal government. The initiative prohibits the purchase of soybeans produced on land deforested in the Amazon after 2008, using satellite monitoring systems to ensure compliance. Over time, the Soy Moratorium has been widely recognized as one of the most effective mechanisms in reducing deforestation associated with agricultural expansion, without constraining production growth. However, the initiative has recently faced a significant setback, with major trading companies withdrawing from the agreement, and the remaining commitments under growing political and economic pressure from segments of the agribusiness sector advocating for its revision or weakening. This illustrates the broader governance challenge: maintaining robust environmental safeguards while preserving competitiveness in a rapidly evolving global trade landscape.

In contrast, the Cerrado – Brazil's second-largest biome, covering 198 million hectares – is experiencing high rates of native vegetation conversion due to soy and beef expansion. It is also the region with most of Brazil's agricultural and cattle production, concentrating a significant share of national output. The Cerrado is critical for regional water systems and biodiversity, and ongoing habitat loss is raising local temperatures and reducing rainfall, threatening crop yields and livestock productivity.

Against this backdrop, deforestation – exacerbated by extreme weather events linked to climate change – compromises

water availability and fuels more frequent droughts and climate extremes. These changes directly threaten crop yields and livestock productivity, resulting in higher production costs and potential supply shortages. Projections suggest that by 2030, over half of farms in the Amazon–Cerrado frontier may face increasing risks of crop failure under current climate conditions, rising to 74% by 2060 (Rattis et al. 2021). In the long term, continued environmental degradation could trigger systemic disruptions in agricultural supply chains, with global implications for food security and trade stability. For China, these dynamics translate into a long-term risk to the reliability of agricultural imports, directly affecting food security and price stability.

4. China's Domestic Evolution in Sustainable Commodity Governance

Over the past decade, China's sustainability agenda has evolved significantly. Initially focused on pollution control and energy efficiency, its policy framework has expanded to include green finance, ecological civilization, and sustainable supply chain management. The 2021 Guidelines for Green Development in Overseas Investment and Cooperation urge Chinese enterprises to align with international environmental standards, including traceability and certification systems (UN PRI, 2025). Domestically, several agencies have advanced the regulatory foundation for traceability. The State Administration for Market Regulation (SAMR) has promoted national standards for product identification and traceability, while the Ministry of Commerce and the Ministry of Ecology and Environment have emphasized integrating green development into trade facilitation reforms (MEE & MOFCOM, 2022; MOFCOM, 2025).

This growing focus on traceability aligns closely with the ecological security and resource responsibility goals set out in China's 14th Five-Year Plan. Pilot initiatives for sustainable palm oil, coffee, soy, and beef demonstrate a gradual trend toward reinforcing sustainability requirements for imported commodities (Cromwell, 2025). Together, these domestic developments indicate a gradual but significant shift: sustainability and traceability are becoming embedded components of China's import governance, not optional corporate social responsibility tools.

4.1 Strategies of China's Agricultural Imports

China's agricultural import strategy is shaped by four interrelated priorities. Food security remains the top imperative: the country relies heavily on imports of feedstock (corn and soybeans) to support its vast swine and poultry industries, and in 2023 its soybean self-sufficiency rate was only 15%. Rising per capita meat consumption – particularly pork, beef, and chicken – has further reinforced demand for both feedstock and direct protein imports. To manage supply disruption risks, China pursues active diversification across supplier countries, a strategy made explicit by the sharp decline in U.S. imports following the U.S.–China trade war. Finally, strategic reserves and counter-cyclical procurement – such as large-volume

purchases of low-cost Brazilian corn in 2023 – help stabilize domestic markets and mitigate inflationary pressure. Together, these strategies reflect a core policy imperative of safeguarding food security not only in terms of volume and price, but increasingly in terms of supply reliability under climate and geopolitical uncertainty.

5. China-Brazil cooperation for sustainable development and green trade

Building on China's evolving domestic sustainability agenda, recent policy developments are reshaping the broader logic of global trade and, consequently, the nature of China-Brazil relations. Against the backdrop of global supply chain restructuring and the accelerating pace of climate governance, China-Brazil trade relations are entering a new phase in which sustainability is becoming a central organizing principle. Historically, this relationship has been driven by scale, cost efficiency and resource complementarity: China as the demand side and Brazil as the supply side formed an efficiency-oriented division of labor centered on commodities such as soybeans, beef, and iron ore. Over the past two decades, this model has significantly expanded bilateral trade and has stood as a prominent example of economic complementarity across the Global South.

However, tightening climate policies and a growing focus on supply chain risks among economies are reshaping the global trading system, pushing it beyond a singular focus on efficiency toward a more balanced model that places equal weight on security and sustainability. China's 15th Five-Year Plan and newly-established Green Trade Policies reflect this transition. These policy frameworks not only emphasize low-carbon development goals, but also call for the development of green supply chains, strengthened carbon management in supply chains, enhanced cross-border data flows security, and the mutual recognition of green standards. In other words, trade is no longer treated as a standalone economic activity; it is increasingly embedded within broader policy objectives related to climate governance, supply chain security, and digital governance.

Within this emerging framework, sustainability considerations are being integrated into trade governance, risk management and supply-chain resilience frameworks. Factors such as product carbon footprints, exposure to deforestation risks and full supply chain traceability are shifting from "nice-to-have" attributes to essential criteria, now reflected in import requirements, corporate compliance obligations, and market entry conditions. At its core, this represents a shift from quantity-driven expansion to quality-based integration.

Importantly, the integration of digital technologies and data governance provides the operational backbone for this transformation. With advances in satellite remote sensing and data platforms, practicable solutions are now beginning to emerge: satellite monitoring enables near real-time tracking of forest cover changes, while data platforms such as GS1 standards can facilitate secure cross-border data sharing and veri-

fication. Together, these tools are beginning to make 'zero-deforestation supply chains' technically feasible – though translating this potential into governance solutions at scale remains an open challenge.

5.1 Traceability and supply chain governance

Brazil has developed a sophisticated framework for land-use monitoring and livestock traceability through systems such as the Rural Environmental Register (CAR) and the Bovine and Bubaline Identification and Certification System (SISBOV) (Brazilian Coalition, 2020). Its PRODES satellite program provides public deforestation data, while the Term of Conduct Adjustment (TAC) agreements hold non-compliant suppliers accountable. Building on these mechanisms, Brazil and China have initiated bilateral technological cooperation on cross-border traceability systems (SAMR, 2024).

Joint research initiatives and technological exchanges, such as the "Green Passport" program in Mato Grosso, are exploring interoperability between Chinese and Brazilian data platforms, enabling mutual recognition of sustainability credentials, facilitating domestic and international compliance, and ensuring product-level transparency and credibility in trade. This collaboration exemplifies a South-South approach to sustainable governance, where producer and consumer countries jointly assume responsibility rather than relying solely on external market pressures.

The challenge is no longer the absence of technical tools, but the lack of institutional integration, incentives, and mutual recognition mechanisms. Despite progress, significant barriers remain:

1. **Limited data interoperability:** The two countries' traceability standards differ in design and transparency levels. Achieving cross-border integration will require common data protocols and reliable confidentiality safeguards.

2. **Uneven private-sector engagement:** Many Chinese importers and Brazilian producers still perceive traceability as a compliance cost rather than a value-adding investment. Without clear incentives – such as preferential financing, trade facilitation, or reputational benefits – market transformation will remain slow.

3. **Fragmented local governance:** Brazil's state-level capacity varies widely, while China's institutional responsibilities are spread across multiple agencies. Scaling pilot projects into national systems will demand stronger coordination across sectors and jurisdictions.

These barriers are real, but so are the structural complementarities that could help overcome them. Brazil's advanced deforestation monitoring technology and China's expanding sustainable regulatory framework point toward a complementary architecture.

Several concrete initiatives illustrate this emerging architecture. At the technical level, the China-Brazil Earth Resources Satellite (CBERS) programme – a bilateral cooperation dating back to 1999 – has provided the operational backbone for Brazil's official deforestation monitoring system, PRODES, supplying real-time imagery of forest cover changes across the Amazon and other biomes (Dialogue Earth, 2019; Revista Pesquisa FAPESP, 2023). This long-standing cooperation demonstrates that the technical infrastructure for China-Brazil environmental governance already exists, but the remaining challenge is institutional integration, not technological capacity. At the market level, COFCO International signed an agreement to deliver 1.5 million tonnes of certified deforestation- and conversion-free soybeans from Brazil to China between 2025 and 2030, with third-party verification and on-farm audits covering water management, biodiversity conservation, and labour standards (COFCO International, 2025) – the first bilateral trade agreement of this scale to incorporate zero-deforestation commitments.

5.2 Technological Cooperation for Sustainable Agricultural Intensification

Technological cooperation represents another critical pillar for ensuring the long-term sustainability of China-Brazil agricultural trade. As climate risks intensify and geopolitical uncertainties reshape global markets, increasing productivity in already cleared areas becomes essential to decouple agricultural expansion from deforestation.

Brazil possesses at least 28 million hectares of degraded pasturelands with high potential for agricultural conversion – roughly the size of the United Kingdom – that could significantly increase productivity without further pressure on native ecosystems (Bolfe et al. 2024; Embrapa, 2024). Converting these areas alone could expand Brazil's total grain-planted area by approximately 35% compared to the 2022/23 harvest (Bolfe et al. 2024). Chinese investments and technological partnerships could play a significant role in supporting this transition, particularly in livestock intensification, improved pasture management, and integrated crop-livestock-forestry (ICLF) systems. These approaches allow higher productivity per hectare while restoring soil quality and reducing greenhouse gas emissions.

At the same time, China's growing technological capacity in precision agriculture, digital farming, and agricultural machinery presents opportunities for joint innovation. Collaborative research initiatives between Chinese institutions and Brazilian research centers could accelerate the adoption of climate-resilient technologies suited to the Amazon and Cerrado regions, and strengthen support for smallholders through climate-resilient seeds, digital advisory platforms, and low-carbon production practices. A concrete illustration of this potential is the cooperation agreement signed between

Embrapa (the Brazilian Agricultural Research Corporation) and Sinomach Digital Technology Corporation (one of China's largest state-owned machinery conglomerates) valid from 2025 to 2030, with formal participation of Brazil's Ministry of Agrarian Development (MDA). The agreement covers agricultural mechanization for family farming settlements, digital farm management platforms, and high-technology industry development, embedded within MDA's National Program for Innovation in Family Farming and Agroecology (Embrapa, 2025). The partnership also underpins the construction of an agricultural machinery factory dedicated to family farming in Maricá, Rio de Janeiro, developed in collaboration with the Brazilian Landless Workers' Movement (MST) and the municipality of Maricá. Targeting a segment historically underserved by Brazil's machinery market, the factory has a projected capacity of 5,000 tractors per year designed for small-scale properties (Brasil de Fato, 2026; Compre Rural, 2026).

By combining Brazil's expertise in tropical agriculture with China's technological and industrial capabilities, both countries may jointly advance a model of sustainable intensification that increases productivity, enhances climate resilience, and reduces the need for further land-use expansion.

5.3 Sustainable finance, investment and value-chain development

Financial cooperation and investment frameworks represent another key dimension for strengthening sustainable China-Brazil trade relations. Chinese investment could play a catalytic role in supporting the transition toward low-carbon agricultural production in Brazil. Strategic investments in pasture recovery, sustainable livestock intensification, and integrated production systems can increase productivity while reducing deforestation pressures. Similarly, investments in green storage infrastructure, logistics, and processing capacity can help Brazil move beyond raw commodity exports toward higher value-added agricultural products – a structural shift that would also help address the long-term risk of primary-export dependency. Expanding processing capacity, biofuel production, and biobased industrial applications could diversify export structures while supporting global decarbonization efforts.

In parallel, financial taxonomies and green finance standards are emerging as important tools for aligning investment flows with sustainability objectives. Greater dialogue on taxonomy alignment could facilitate cross-border investment in low-carbon agriculture and green infrastructure, reducing uncertainty for investors and supporting the development of joint financing mechanisms for sustainable land-use transitions.

A landmark step in this direction is the joint investment fund established by Brazil's National Development Bank (BNDES) and China's Export-Import Bank (CEXIM) in 2025, with a target size of up to US$ 1 billion – the first bilateral fund between a Brazilian and a Chinese financial institution (BNDES, 2025). Under the agreement, BNDES will contribute US$ 400 million and CEXIM US$ 600 million, with investments directed toward energy transition, green infrastructure, bioeconomy, and agriculture in Brazil,

operating primarily through instruments denominated in reais (R$). Expected to begin operations in 2026, the fund represents a structural shift in the financial architecture of China-Brazil cooperation: from commodity-driven capital flows toward long-term, development-oriented investment aligned with low-carbon objectives.

Through coordinated financial instruments, technology partnerships, and strategic investments, China and Brazil could transform their agricultural partnership from a primarily commodity-based relationship into a platform for sustainable rural development, climate resilience, and green industrial innovation.

6. Directions for Future Research

The convergence of U.S.-China trade tensions, China's evolving green trade policies, and the global shift toward compliance-based governance marks a turning point for China-Brazil trade relations. Both countries are increasingly oriented toward shaping – rather than merely responding to – international norms through cooperation, though the institutional frameworks to sustain this shift are still being built. The following hypotheses frame key research priorities:

South-South Governance and Global Environmental Leadership
Brazil-China cooperation may be reconfiguring global environmental governance by introducing mechanisms based on co-responsibility rather than conditionality – potentially serving as a testing ground for a new form of green regionalism in the Global South, where emerging economies jointly design sustainability standards aligned with their development priorities.

Sustainability and Agricultural Supply Chains
The adoption of joint traceability mechanisms could reduce indirect deforestation risks and enhance climate resilience, especially in soybean and beef supply chains. Sustainability policies driven by importers may have stronger transformative potential when linked to economic incentives rather than purely regulatory pressures.

Food Security and Forest Conservation
Increased demand for Brazilian agricultural commodities can be decoupled from deforestation through sustainable intensification, improved traceability, and restoration of degraded lands – but only if sustainability and productivity are integrated into a shared governance framework that aligns land-use planning, supply chain traceability, and investment in low-carbon production systems.

Technological Innovation and Investment
Green technology transfer – in traceability, satellite monitoring, small-

scale production and bioeconomy – and the role of Chinese investment in supporting sustainable agricultural intensification represent critical research frontiers, including the potential of joint investment funds and green finance instruments to align agricultural productivity with forest conservation goals.

Socioeconomic and Territorial Dimensions

Rising pressure for traceability and environmental compliance may reproduce regional inequalities or exclude small producers unless inclusive mechanisms are implemented. How the green transition can be linked to social and productive inclusion policies in rural areas – and how subnational cooperation can be scaled – remain open and important questions.

7. Conclusion

China and Brazil are ever more well-positioned to translate this emerging agenda into practice – and, if they do, to meaningfully influence the future of agricultural production and global commodity trade. As two of the most influential actors in the Global South, deeply interconnected through food, climate, and development dynamics, their partnership is no longer defined solely by economic complementarity, but increasingly by its capacity to integrate sustainability and resilience into the core of trade systems. By aligning traceability systems, advancing sustainable intensification, and mobilizing finance for low-carbon agriculture, both countries can jointly reduce deforestation risks, strengthen climate resilience, and enhance the long-term stability of global food supply chains – moving beyond reactive compliance with external standards and toward the co-design of governance mechanisms that reflect their own development priorities and position sustainability as a source of competitiveness, innovation, and long-term food security.

Within this context, the Brazil-China relationship represents both a challenge and an opportunity to embed sustainability standards within South-South trade. Unlike traditional North-South cooperation, which often relies on market access conditionality, the China-Brazil partnership is primarily driven by shared development priorities, commercial interdependence, and negotiated institutional alignment. This dynamic makes it an important case for exploring whether developing economies can co-design sustainable governance mechanisms that align with global standards while accommodating national realities. **Thus, China-Brazil collaboration serves as a meaningful test of whether South–South cooperation can deliver not only economic complementarity but also genuine environmental co-responsibility in global trade. What is ultimately at stake is not only the future of two of the world's most consequential food and land systems, but whether the Global South can build its own architecture for environmental co-responsibility – and the answer will depend on the institutional choices, investment decisions, and governance innovations that both countries make in the years ahead.**

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