

Global changes, local challenges for South American soy and beef



*Cattle breeding on a farm in Cerquillo, São Paulo state, Brazil
(Image: Dan Agostini / Diálogo Chino)*



Soybeans handled at a farm in Júlio de Castilhos, Rio Grande do Sul state, Brazil (Image: Daniel Marengo / Diálogo Chino)



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Foreword from the editors

Having weathered the Covid-19 pandemic and changing global dynamics since Russia's invasion of Ukraine, South American farmers may have looked towards 2023 with hopes of a steadier year ahead. For many, it has turned out well – Brazil, for example, counted a record soybean harvest for the 2022/23 season. But it has also been a year marked by extreme weather, exacerbated by climate change. In many regions, this has brought significant impacts on output and trade, on landscapes and on producers' resilience.

In Argentina's agricultural heartland, a severe drought triggered by a rare three-year La Niña weather pattern struck cattle and soy farmers and deepened the country's economic woes.

Producers in southern Brazil were also hit hard, and though La Niña has now passed, the arrival of its counterpart, El Niño, has already brought increased rainfall, and a new set of challenges that could impact the upcoming cycle.

Climate struggles have not fully deterred agricultural expansion in both countries, however, with various regions facing land-use pressures. In Argentina's wetlands, for example, environmental organisations have raised the alarm over record forest fires, which campaigners allege have been sparked deliberately by beef producers to clear for new pastures. Despite such threats, and despite covering 20% of Argentina's territory, most of these wetlands remain unprotected by law.

Broader global shifts have also been seen in 2023, with implications for the South American soy and beef trades. In May, the European Union adopted a new law that will ban the import of commodities associated with deforestation and human rights violations from 2025. This could help clean up supply chains that are most permeated by negative socio-environmental impacts and may compel other markets, such as the US and China, to implement similar regulations in time.

In China, the world's leading importer of soybeans, changing trends pose questions for South American growers, as the country looks to boost its domestic soybean output and reduce reliance on other producer nations, as part of a broader national food security drive. After years of growth to meet rising Chinese demand, this could herald changes for Brazil and Argentina, though analysts as yet see few short-term impacts on their sectors or sustainability.

Alongside policy changes in buyer countries, attempts to green trade and reduce agriculture's footprint are also being driven from within South America, both top-down and bottom-up. Deforestation in the Brazilian Amazon already fell by a third in the first six months of Luiz Inácio Lula da Silva's new presidency, while a national drive is underway to restore degraded land for agricultural use and deter further expansion into forests. Meanwhile, alternative futures are being imagined, with the northern state of Pará,

long a deforestation hotspot, announcing plans to boost its “bioeconomy” that could keep forests standing.

Traceability is perhaps the key hurdle. In Argentina’s soy sector, new monitoring platforms and transparency programmes are picking up in response to changing global market demands. In Brazil, big traders such as Chinese grain giant COFCO have made commitments to full traceability of supply chains, though their progress is as yet uncertain. Elsewhere, multilateral initiatives between Chinese civil society and Brazilian state organisations have led to proposals for ‘green passports’, which aim to boost transparency and sustainability in the two countries’ beef trade.

With the arrival of regulations such as the EU’s deforestation law, many observers see traceability as an inevitable direction of travel. It is, however, a movement that will face challenges in South America’s often complex soy and beef supply chains, and which will require assistance for small and medium-sized producers to reach compliance.

As market shifts and climate threats converge, we present this special series of articles examining how South American soy and beef is facing up to a changing world, bringing unique insights from across both sectors and across borders. With contributions from leading voices in business, science and government in Brazil and Argentina, civil society organisations in China, and on-the-ground reporting from the field, this collection illustrates the progress that is being made towards sustainable soy and beef trades, and the obstacles that may mark the road ahead.

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Latin America editors, Diálogo Chino





A worker watches soybeans being deposited at a farm in Firmat, Santa Fe province, Argentina (Image: Patricio Murphy / Alamy)

[Jorgelina Hiba](#)

Argentina's soy producers push for traceability to combat deforestation

Several businesses and producer organisations are making efforts to boost transparency and sustainable practices in soybean supply chains

Soybean producers and traders in Argentina are looking to establish traceability systems to ensure that produce comes exclusively from deforestation-free fields, efforts that come amid increasingly demanding regulations in export markets such as the European Union and pressure for sustainable food production

from environmental organisations.

Soy is one of the world's major sources of protein, with both its grains and by-products primarily used as animal feed. It is also a key crop and a huge foreign exchange earner for Argentina, the world's third-largest producer, behind the United States and Brazil.

Although soy's cultivation in Argentina dates back to the early 20th century, its expansion and elevation to the "top of the crops" has taken place in the last few decades. While some 80,000 hectares were planted with soy in the 1971-72 season, this number rose to 2 million hectares 10 years later. By 2007-08, this area had multiplied to 16 million hectares, at a time of record-high prices.

This expansion was accompanied by an intense process of land-use change that included forest loss, especially in the Gran Chaco

biome that stretches across northern Argentina. This ecosystem, the second-largest forest in South America after the Amazon, is one of the world's 24 major "deforestation fronts", according to WWF.

Northern Argentina lost over 110,000 hectares of forest in 2021, Greenpeace reports. Hernán Giardini, coordinator of Greenpeace Argentina's forestry campaign, told *Diálogo Chino* that about half of all deforestation in the country is illegal, either carried out in prohibited areas or with "weak permits".

Moving forward with traceability schemes that guarantee soy products are not linked to deforestation could therefore be key, Giardini said. But he warned that long and complex supply chains, as well as the accumulation of soy from different sources at export ports, will continue to make products with illegal origins difficult to trace.

RESPONDING TO DEMANDING MARKETS

Argentina and the other major agricultural producing nations in South America are facing an increasingly pressing need to move forward with traceability initiatives in response to fresh demands from Europe, one of their key export markets. In December, European Union legislators reached an agreement over regulations that will seek to ensure that no product sold to the EU comes from deforested land.

"Europe is moving fast with restrictions on imports of

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If Europe starts, the US and the UK will follow, then China, India and almost all the buyers thereafter

Gustavo Idigoras

President, Argentine Edible Oil Association (CIARA)

products that are currently the biggest drivers of global deforestation: soy, meat, cocoa and others," said Giardini. "If South American countries want to maintain their agro-export model, deforestation is the main issue to be resolved in the short term," he added.

Gustavo Idigoras, president of the Argentine Edible Oil Association (CIARA), made the same diagnosis and lamented a lack of earlier action from producers in anticipation of the new requirements: "The markets gave us an opportunity to develop these traceability programmes as a niche, but it is now becoming a condition of production and access to these markets, and that is a transformational change.

"Until now we could decide whether or not to do something [on traceability], but that will no longer exist. If Europe starts, the United States and the United Kingdom will follow, and then China, India and almost all the buyers thereafter."

Several crop traceability initiatives are already

underway in Argentina, coming both from individual companies and other groups working at the sectoral level.

One small-scale example is Ucrop.it, an Buenos Aires-based start-up that – through a partnership with commodity trader Viterra Argentina – offers soy producers more favourable crop values if they make their production data available via its app from the sowing stage through to the harvest.

Elsewhere, multinational trader and soy processor Louis Dreyfus Company (LDC) has made commitments to increase its percentage of sustainable soy output in Argentina. In collaboration with local producers, it has worked to improve documentation for traceability throughout the supply chain. For the 2020-21 season, it was able to certify that 77% of the soy handled at the General Lagos complex in Rosario – one of the world's largest soy processing facilities – was "sustainable", which they defined as soy

produced on land that had not been cleared since 2008.

At a larger scale are several sustainable agriculture initiatives in the Gran Chaco funded by the Land Innovation Foundation (LIF), a fund set up by global food corporation Cargill to seek solutions for deforestation and sustainable livelihoods. “Our goal is to promote and support innovative solutions to achieve a deforestation-free, carbon-neutral soy supply chain,” said Carlos Quintela, the fund’s director. Cargill has faced repeated allegations of driving deforestation and forest fires, including in the Gran Chaco region, as a 2018 report highlighted.

One project to receive funding from LIF is being developed by the Argentine Association of Regional Agricultural Experimentation Consortia (AACREA) and the Argentine Association of the Soy Supply Chain (ACSOJA). It targets innovative and sustainable agricultural production models for the Gran Chaco region, across environmental, economic and social indicators. The project works closely with 100 small- and medium-scale farmers working on 250,000 hectares in the Chaco, monitoring and promoting practices for sustainable intensification that boost production on their existing lands, as well as restoring degraded soils.

According to Federico Fritz, a specialist in sustainable development at AACREA,

the association hopes to have evaluated the initiative by 2024, which will allow them to identify and understand the most successful practices for sustainable soy production in the Chaco.

Another LIF-funded project is being carried out by the Argentine conservation foundation ProYungas, together with the Argentine Association of Direct-Seeding Producers (AAPRESID). Working at three pilot sites in the Gran Chaco over the course of three years, it aims to strengthen cooperation between farmers and civil society organisations, to support best practices, conservation and restoration of native vegetation on soy farms, and to enhance the value of standing forests. “We are targeting land management at a landscape scale, and working to measure the carbon footprint of the entire soybean chain,” said Sebastián Malizia of ProYungas.

NEW MONITORING PLATFORM


The LIF is also funding an ambitious three-year project, managed by CIARA, called VISEC: a monitoring platform for the soy supply chain in Argentina that combines public and private systems and seeks to trace the crop in priority conservation areas in the Gran Chaco – and ultimately curb deforestation.

Launched in May 2022, the VISEC system aims to bring together monitoring

and verification data for all the soy traded in Argentina on one unified platform, covering various environmental and social sustainability parameters and requirements. The initiative will require participation and contributions from across the supply chain, from farmers and traders to surrounding communities, looking to create a transparent, publicly accessible database.

Idígoras said the programme goes beyond the individual initiatives of specific companies to target a zero-deforestation certification for the entire Argentine soy supply chain. “We have been working on this platform for three years now,” he added.

“We have been talking to the organisations that represent Argentina’s 80,000 soybean producers, brokers, stockpilers and cooperatives. We are convinced that this has to be a consensual collective action.”

The challenge lies in implementing the system to meet market demands and provide “real and effective guarantees” of traceability and transparency, said Idígoras, who reiterated the goal of ensuring all soy oil, meal and bean exports are 100% deforestation-free: “The level of soy from illegal deforestation is less than 5% of annual production [in Argentina], which is low compared to other countries. We want to get to zero – that’s what we are going to work for.” 

Opinion: How China can help save the Amazon via the leather trade

New EU law means China must act to avoid becoming a 'dumping ground' for the products of deforestation



Cattle are raised next to a recently deforested and burnt area in Candeias do Jamari, Rondônia state, Brazil. Cattle ranching accounts for 80% of the deforestation in the Brazilian Amazon (Image © Victor Moriyama / Amazônia em Chamas)

Deforestation in the Brazilian Amazon reached a 15-year high in 2021, threatening global efforts to mitigate climate change and halt biodiversity loss. Aside from Brazil itself, there is perhaps no other country with as great an opportunity to help prevent this deforestation than China, Brazil's biggest customer for the two

agricultural commodities that are the main drivers of deforestation: soy and cattle.

In 2021, China was the destination for around 70% of the soybeans, 64% of the frozen beef and 34% of the processed cowhides exported by Brazil, valued at over US\$30 billion, according to data from UN

Comtrade. This gives China a significant opportunity to help shape how these commodities are produced in Brazil.

Cattle ranching accounts for 80% of the deforestation in the Brazilian Amazon, most of which is illegal under existing laws protecting the environment and

Indigenous peoples' rights. But in recent years, the country's government has not been adequately implementing or enforcing these laws. Those who profit from environmental crimes are also rarely held responsible.

Global markets that accept products linked to deforestation and crime also play a role. The Environmental Investigation Agency (EIA) recently published the findings of a multi-year investigation showing how cattle raised in illegally deforested areas in the Amazon, including inside a protected area, enter the supply chains of Brazil's largest meat and leather companies. These companies export to major consumer markets,

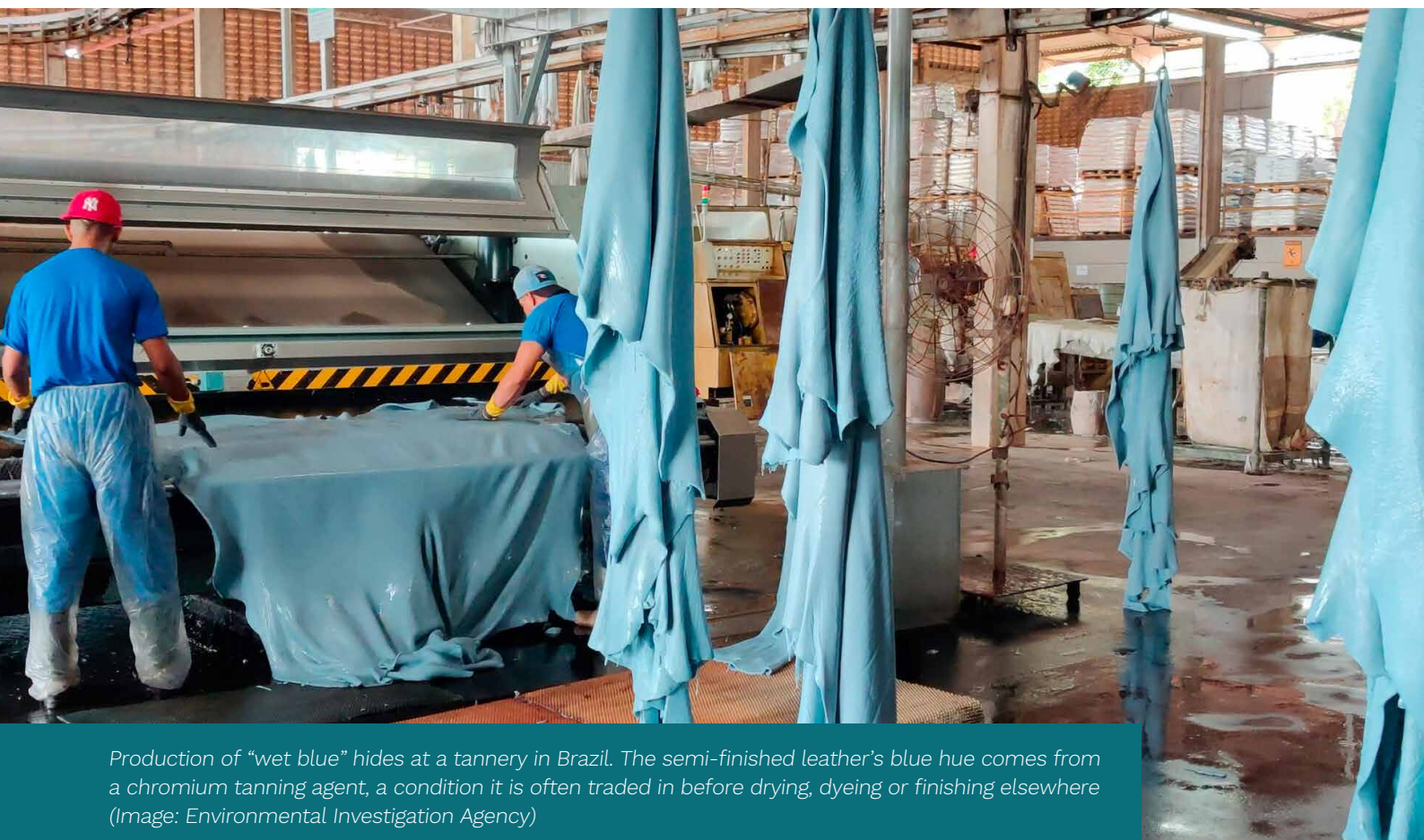
including the United States, the European Union and China, where the leather is used to make a wide array of products, from shoes to sofas to the car seats found in iconic brands like BMW, Ford, GM, Toyota and Land Rover.

The leather industry tries to wash its hands of its role in deforestation by claiming leather is just a by-product of the meat industry, but the sale of hides is important to the profitability of slaughterhouses in an industry where margins can be narrow. Brazil exports over 80% of its hides, and the global automotive industry is one of the largest end users.

EIA's investigation showed

how systemic weaknesses in government oversight and corporate traceability systems in Brazil allow the laundering of cattle raised on illegally deforested land into supply chains. Our findings add to an extensive body of evidence published by civil society and the government over the last decade, which has shown how voluntary commitments by Brazilian meat companies to eliminate these animals from their supply chains have proven woefully inadequate in curbing forest loss.

Brazil and its trading partners must now put in place regulatory measures to systemically delink deforestation from agricultural production and



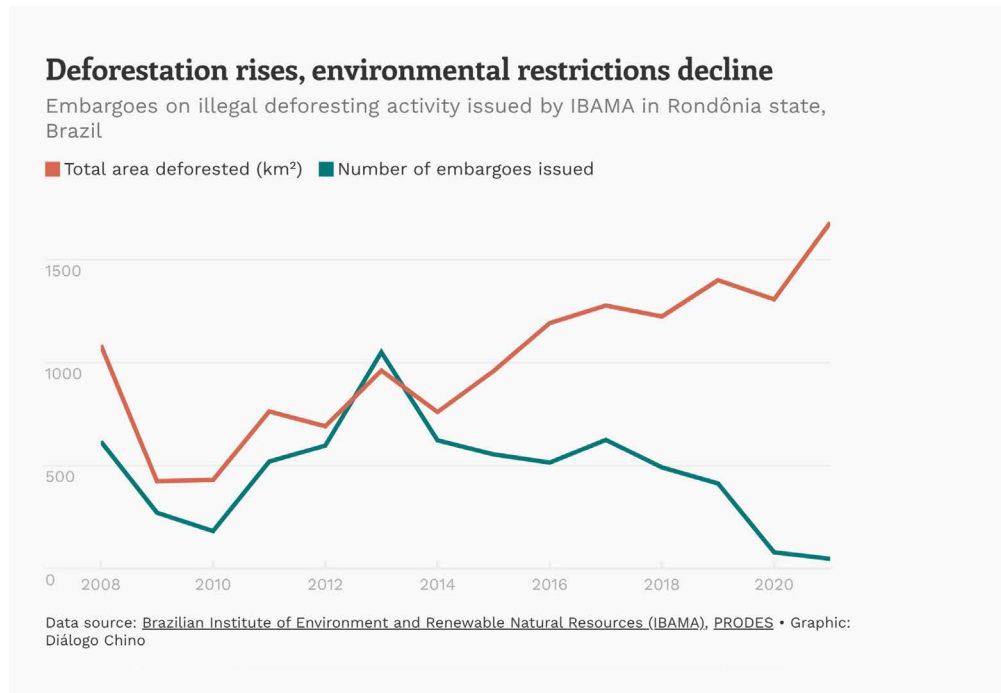
Production of "wet blue" hides at a tannery in Brazil. The semi-finished leather's blue hue comes from a chromium tanning agent, a condition it is often traded in before drying, dyeing or finishing elsewhere (Image: Environmental Investigation Agency)

trade. In the cattle sector, traceability requirements must take into account the full life-cycle of animals from birth to slaughter.

Newly inaugurated President Lula has made ambitious public commitments to stop deforestation and invasions of Indigenous peoples' lands, but he will face fierce opposition from the powerful minority that is profiting from the destruction. A strong market signal from Brazil's largest trade partners – none more influential than China – would backstop Lula's efforts by bolstering the business case for the systemic reforms needed. Such measures must help to create traceable and transparent commodity supply chains, enforce laws protecting the environment and the rights of Indigenous peoples and traditional communities, and halt deforestation.

Measures by the Chinese government to require importers to ensure soy and cattle products are not associated with deforestation or environmental crime would create a powerful incentive for the Brazilian government and agricultural producers to provide goods that meet these standards.

The flipside of this opportunity are the inherent risks in maintaining the status quo. The EU has now adopted a new regulation that will require companies placing key agricultural products on



its markets to carry out due diligence to ensure they weren't produced through deforestation or in violation of local laws. Lawmakers in the US are considering similar measures. As major markets close their doors to products linked to deforestation and environmental crime, the most destructive products will increasingly be routed to unregulated markets.

The US and EU consume far less soy and cattle products from Brazil than China does, making it all the more important that Chinese lawmakers also step up to ensure commodity imports are not in any way linked to deforestation. China would not want its markets to become a dumping ground for the products of deforestation and environmental crime as this would harm its credibility as a global leader in efforts to tackle climate change and halt

biodiversity loss, and as a signatory of the Glasgow Leader's Declaration to halt deforestation by 2030.

There are other interests for China to consider in stopping deforestation in Brazil. Scientists are warning that a rapidly approaching deforestation tipping point could cause a large portion of the Amazon ecosystem to collapse. Besides releasing billions of tonnes of carbon dioxide into the atmosphere, and putting the Paris Agreement's warming limits out of reach, this could have potentially dramatic impacts on rainfall patterns and the reliability of agricultural production in the region. Considering its dependence on food imports from Brazil, China's adoption of domestic regulations to ensure this trade does not contribute to deforestation may well be a matter of national security. 🇧🇷

Will fires finally force Argentina to protect its wetlands?



A capybara, a giant rodent native to South America, in a deforested wetland area in the Argentine province of Corrientes (Image © Emilio White / Greenpeace)

Environmentalists intensify calls for a law to protect the country's wetlands after devastating recent blazes

Esteban Martín keeps several dozen beehives at his home, a simple property at the edge of El Laurel stream, on one of the hundreds of islands in the Argentine province of Entre Ríos. The islands form part of the wetlands of the Paraná River delta, one of the largest, most populated and biodiverse in the world.

“I am an islander and a beekeeper,” says 66-year-old Martín. “I’ve lived here all my life – this is my life – and I’ve never seen this place like now, all dry and burnt. The landscape we had before has disappeared. After the fire it

changed forever. This was a wetland, and they are turning it into a field.”

Wetlands cover more than 20% of Argentina’s surface area. They are a diverse range of ecosystems covered by water, or with soils that are seasonally or permanently saturated with water, such as marshes, estuaries and riparian forests. They provide important ecosystem services, from drought mitigation to carbon sequestration.

Martín’s island has been struck by fires twice in three

years: in 2020, his house, the shed where he kept his tools and many of his hives burned down. “I had to start from scratch because I had nothing left,” he recalls. Then, at the end of 2022, a new wave of fires destroyed his entire honey production facility: “It was very hard. I am still trying to start producing again because I lost all my bees. The fire affected my health and my work.”

The Paraná Delta, which covers an area of 1.7 million hectares, is facing a historic fire crisis, one that has recently begun to reach further north, into the province of Corrientes and its Iberá wetlands – another area of swamps, bogs and lagoons that stretches over 1.3 million hectares.

More than half the area of the Paraná Delta has been affected by fire in the past three years. In the Iberá marshes, more than 100,000 hectares have so far burned in 2023.

This has brought negative impacts to ecosystems, their soils, habitats and species, while air pollution and smoke have posed serious public health problems for nearby cities such as Rosario and its 1 million inhabitants. “The burning of wetlands is one of the worst ecological

disasters in the region and seriously affects the health of our population,” according to the medical school at the University of Rosario.

The fires have coincided with a historic three-year drought in Argentina, the effects of which are being exacerbated by climate change. Prolonged dry spells, combined with a number of intense heatwaves, have created ideal conditions for wildfires to start – and spread.

Environmental organisations, however, have repeatedly alleged that fires have been started deliberately, pointing towards changes in land use driven by cattle ranchers seeking to expand their pastures by burning off natural vegetation. In order to regulate the use of these areas, they have for years been calling on Argentina’s national and provincial governments to sanction a Wetlands Law that would improve the protection of these ecosystems – but one that has faced a struggle to gain sufficient support.

DEMAND FOR MEAT, PUSH FOR PASTURE

Cattle ranching on wetlands is an activity long established in Argentina, a country home to some 53 million head of cattle. The province of Entre Ríos, where 80% of the islands that make up the Paraná Delta are located, has 2.8 million head distributed across its mainland and island areas,

according to the 2018 Agricultural and Livestock Census.

Argentina’s livestock production totalled over 3 million tonnes in 2022, a significant portion of which was sent overseas: exports reached 625,700 tonnes last year, a 9.5% increase on 2021, according to figures from CICCRA, the Argentine meat industry’s business chamber. China is the country’s biggest beef buyer, accounting for 485,700 tonnes of exports in 2022, a 14.4% rise on 2021 figures. Eight out of every 10 kg of meat exported went to the East Asian country, bringing revenues of US\$2.3 billion.

As demand grows and production looks to expand, Argentina’s wetlands have increasingly been targeted for conversion to pasture, including as part of government-backed

programmes, sparking controversy and debate.

“Cattle ranching can be the most appropriate economic activity in the Paraná Delta wetlands, but only if it is done in a sustainable way, not in an industrial way,” says Rubén Quintana, a biologist and president of the Fundación Humedales (Wetlands Foundation), the regional branch of the NGO Wetlands International.

Livestock farming in Argentina’s wetlands has seen a change in scale over recent decades: from a former landscape of small or subsistence farms, most are now industrial in size and character.

There has also been notable growth in cattle head in recent years, correlating to the flow of the Paraná: as the river suffers from prolonged



The city of Rosario engulfed in smoke from fires in the wetlands of the Paraná Delta, September 2022 (Image © Sebastián Suárez Meccia / Greenpeace)

low water levels, reaching the lowest levels in nearly 80 years, new lands have become available for producers. According to data from SENASA, the national agricultural and food safety service, the number of cattle in the Paraná Delta grew by 46% between 2017 and 2022, from 130,992 to 191,662.

However, agronomist Ernesto Massa, from the National Institute of Agricultural Technology (INTA), highlights that the peak in the number of cattle in the delta came in 2007, when it reached 1.5 million head – a figure that has never been repeated and has seen much fluctuation since. “Since 2010 the stock has been declining, although it is true that with the lowering of the river, the general load of animals has risen. Today we are at 60 or 70% of the record levels of 2007,” he explains.

Leonardo Scarparo, a livestock producer in the area, echoes Massa’s point. “We are at 10% of what the cattle load was at the best times. The islands were pretty empty before the fires,” says the farmer, who works 800 hectares with some 200 animals, with most of his meat going to export.

FIRE, COWS AND BLAME

Environmental organisations have claimed that fires in the wetlands have mostly been started by cattle ranchers to “clear” dry vegetation during the winter, to allow grass regrowth for

the cattle in the spring.

“The advance of the cattle frontier and the increased number of cows in the wetlands explain the many fires,” says Ivo Peruggino, of the Multisectorial Humedales, a conservation network that brings together citizens with social and environmental organisations. “Then there are other actors involved, such as real estate businesses and also wildlife poachers.”

For academics and analysts, the answer to the origin of the recent fires is not so simple. “It is a sum of factors, and I would not hold only the cattle ranchers responsible, although many of them set fire to their fields,” says Rubén Quintana. “In these exceptional environmental conditions, using this method is much more serious.”

From his island in Entre Ríos, Esteban Martín has his own interpretation: “Before, the person who set fires was the islander, the inhabitant. But not now – now, anyone comes and sets fires, and they don’t care about anything, starting with those who lease the fields for livestock.”

Ernesto Massa similarly highlighted fire’s long-standing use in livestock agriculture, but cautioned of its risks: “Fire is used for vegetation renewal, it is a cultural practice of pasture management that is cheap and easy, but you have to know how to manage it well.”


Scarparo argues the fires

were intentionally caused by big agribusiness to “generate social unrest” among the ranchers.

THE WETLANDS LAW: AN ONGOING SAGA

At the same time as the fire crisis, calls for the introduction of a Wetlands Law as a tool to regulate the productive uses of land have grown stronger. However, after the fourth attempt in a decade, the proposal once more did not advance through the Argentine congress in 2022.

According to the environmentalists, sectors with great economic power are holding back any possibility of legislation: “Agribusiness is constantly pushing its frontier without worrying about what it deforests,” reads a public letter from the Argentinean Association of Environmental Lawyers (AADEAA). “This combination of interests against the Wetlands Law causes enormous political and media resistance. They are the fire lobby.”

Agricultural organisations, meanwhile, claim that such a law would go against production interests and generate more poverty. In November 2022, a communiqué entitled “There is no need for another law on environmental policy” was issued by a coalition of influential agricultural groups, stating that this proposal “undermines” their activity and “puts at risk the rural roots and the development of the country”. 

COFCO: Chinese soy trader's progress on traceability in Brazil is unclear



Trees among the Cerrado's dry soybean fields in the Brazilian state of Goiás. Mainly composed of savannahs, the region has fewer protections from the government and international laws than forest biomes such as the Amazon. (Image: Trajano Paiva / Alamy)

Despite taking out significant loans linked to sustainability targets, the agribusiness giant has said little about its efforts to combat deforestation in key biomes such as the Cerrado

With revenues of US\$53 billion, Chinese agribusiness COFCO International is one of the world's largest food processors and traders, and concentrates 60% of its grain and oilseed assets in South America, partly leveraged by \$3 billion in loans linked to sustainability targets. Yet though it has continued to grow in the region with

the support of such green finance, the company has provided little and opaque information on the progress of its environmental commitments.

In 2020, COFCO International promised to achieve full traceability of its direct soy suppliers in Brazil, its main partner in South America,

by this year. The aim was to ensure that the company does not buy soybeans grown on land that has been illegally deforested.

With the deadline looming, the company appears to claim to have reached 80% of its target, according to its latest sustainability report released in June. But this information is just one line in a document that is over 80 pages long, and there are few details of this progress on its digital platforms.

Elsewhere in the report, Helen Song, COFCO

International's chief financial officer, said that "each year, the proportion of sustainably certified commodities in our portfolio increases." The company went on to say that it had achieved "all social and environmental and traceability targets connected to direct suppliers in relation to our sustainability-linked loan." But Diálogo Chino was unable to find further information in the report and across other platforms on which targets the company is referring to, nor on the proportion of certified commodities in the company's portfolio.

In 2021, during the United Nations' COP26 climate conference in Glasgow, COFCO International, along with 11 other trading companies, signed a declaration committing to produce an action plan to eliminate deforestation from their production chains. The proposal was presented at the next summit, COP27, and covered soy production in the Cerrado, Amazon and Gran Chaco, with a target to achieve this set for the end of 2025. However, the document, although available on the internet, does not clarify what actions the signatories are implementing to fulfil the short-term promise, though they are said to be required to produce "implementation plans", and report on their progress at the upcoming COP28 summit.

Trading companies may publicly make commitments in vulnerable

ecosystems, "but we need to see results happening on the ground," says André Vasconcelos, global engagement leader at Trase, a supply chain monitoring platform. "They need to be more transparent so that society can follow their efforts; this is a shortcoming of the entire chain."

Diálogo Chino approached COFCO International for comment on its traceability efforts and the information it has made publicly available, but the company did not respond to requests. Agrosatélite, the Chinese company's partner in the remote monitoring of farms, also did not respond to requests for information.

RISK OF DEFORESTATION

Analysis released by Trase in March showed that in 2020, COFCO International was exposed to the risk of having bought more than 12,000 hectares of soy from then-recently cleared land, mostly in the Cerrado.

Because it is mainly composed of savannahs, the Cerrado has fewer legal protections from both the Brazilian government and international laws – such as the recently approved

EU anti-deforestation law – than forest biomes, such as the Amazon.

This is not just a risk: an investigation by investigative journalism platform Repórter Brasil found that, in 2021, COFCO had bought soy from deforested areas in the state of Mato Grosso, which is covered by both Cerrado and Amazon, via indirect suppliers. These are intermediary operators, such as cooperatives, warehouses and resale warehouses, located between the farmers and the large buyers – the trading companies themselves.

The Soft Commodities Forum (SCF), a network of global agricultural trading giants that seeks to eliminate deforestation in the Cerrado soy supply chain, collects and publishes data on the progress made by the grain giants in protecting the biome.

The forum prioritises monitoring in locations it considers to be at high risk of deforestation. However, deforestation is advancing over a much larger area: while the organisation tracks only 61 producing municipalities in the Cerrado,

More than 10,000 km²

of savannah was cut down for agricultural expansion in the Cerrado biome between August 2021 and July 2022



A satellite image of farms in Chapadão do Céu, in the Brazilian state of Goiás. In these areas of the Cerrado, savannahs have largely been replaced by soybean and cotton fields. (Image: Oton Barros / INPE, CC BY-SA)

data from Brazilian vegetable oil industry association ABIOVE shows that 1,122 municipalities in the biome are documented as having crops planted in them.

“In the current harvest, we [the soybean sector] planted 21.4 million hectares in the Cerrado, which is equivalent to half the area planted in Brazil,” Bernardo Pires, ABIOVE’s sustainability director, told Diálogo Chino. “Practically the entire Cerrado has favourable conditions for cultivation and, in fact, it is an expansion that must be controlled,” he added. ABIOVE did not comment specifically on COFCO International.

SCF’s most recent report, from December 2022, says that COFCO maps 100% of indirect suppliers in these 61 municipalities, up to the first

point of aggregation (where grains from different farms are mixed, for example, in the silos of a cooperative). But the document doesn’t mention how this was done, nor how it arrived at the results presented.

The Cerrado has already lost half of its native vegetation and continues to suffer from record deforestation. According to Prodes, the Brazilian government’s deforestation monitoring system, the loss of savannah last year was the highest since 2015. In the latest one-year monitoring period, between August 2021 and July 2022, the biome loss was recorded as having reached more than 10,000 square kilometres.

Brazil’s Ministry of the Environment and Climate Change is currently drawing up its Plan for the

Prevention and Control of Deforestation and Fires in the Cerrado, which went to public consultation in September.

MATO GROSSO, A CENTRE FOR TRADE

COFCO International was one of the five largest soy exporters from Brazil in 2020 and one of the largest exporters of soy to China. It buys soy directly and indirectly from rural producers and intermediaries, such as cooperatives. This is partly processed in the trading company’s own factories in the country, which then send soymeal and oil to different ports in China through its subsidiaries.

However, it is not possible to determine the volume of soy produced or exported by COFCO International. In addition to the large number of subsidiaries involved, none of them have operations on stock exchanges – nor do they voluntarily disclose this information.

COFCO International claims to have traded 127 million tonnes of commodities in 2022, but it does not disclose specific data on the breakdown of this trade. In its Member Annual Progress Report for the Round Table on Responsible Soy – the Swiss organisation that monitors the global grain trade and in which COFCO participates – the Chinese company classified this information as “sensitive”.

By cross-referencing different databases, Trase

estimated that in 2020, COFCO International exported more than 5 million tonnes of soy from Brazil, with just over 3 million tonnes going to China and the rest to other countries, including Indonesia and Singapore.

The company operates in almost all of the 15 states permeated by the Cerrado, as well as the Federal District. It owns two processing plants and 18 silos in Mato Grosso. It also has offices and prospectors for farmers, the so-called “originators”, operating in highly productive epicentres such as Luís Eduardo Magalhães in Bahia, Sorriso in Mato Grosso and Balsas in Maranhão.

The heart of the Chinese company’s operations is in Mato Grosso, the state with Brazil’s highest agricultural output, and which has 40% of its territory covered by Cerrado. According to people familiar with their operations, the multinational company has a network of silos in the state with the capacity to store 1.1 million tonnes of grain.

These operations do not happen without significant government incentives: our research has found that COFCO International benefits from more than 10 tax waiver protocols, with exemptions of up to 85% in Mato Grosso state alone. Its infrastructure continues to expand in the state – even going beyond the Cerrado and its transitional zones with other ecosystems.



A survey conducted by FASE in the Matopiba region showed that problems faced by family farmers in the area stemmed from the existence of highly toxic pesticides and the activities of foreign companies (Image: Rosilene Miliotti / FASE, CC BY-NC)

TRACING IS DIFFICULT AS GROWERS TURN TO SOY


Farmer Cassimiro Pinheiro has joined those who have decided to invest in the crop in Buritizal, a municipality in the Cerrado region of Minas Gerais. For the last six years, he has only planted soy.

“It’s become a fever here, everyone wants to plant soy,” says Pinheiro, adding that circumventing environmental regulations is common practice in the region. Yet, they don’t have much incentive to stop, because “when they [farmers] are fined, they appeal in court a few times and end up paying very little.”

Pinheiro supplies soy to the Coagril cooperative, which sells to several companies. However, he does not know if the entity supplies COFCO International. The cooperative did not provide that information when requested by Diálogo Chino.

American researcher Donald

Sawyer has lived in Brazil for around five decades, and in 1990, helped found the Society, Population and Nature Institute (ISPN), which supports conservation projects. He doesn’t believe that it’s possible to track the huge volumes of soybeans transported across the country. He points to the fact that the world’s largest soy producer, Brazil, has finished harvesting the 2022/2023 crop and broke yet another record, with 154.6 million tonnes produced. “How are we going to know where each bag came from?” he says. “Deforestation has to be fought where it happens – at the end of the production chain, which is the farm – and not along the way.

“I think that if the promises of zero deforestation [by trading companies] are not fulfilled, some actors will be demoralised,” he says. “Certain segments have to be careful with symbolic gestures, which can backfire.” 

La Niña ends, but drought exposes deeper problems for Argentina

Farmers will see the worst soybean harvest in 23 years, as poor soil health compounds impacts of drought

Just as he has done for 35 years, Gustavo Recupero inspects some 70,000 hectares of farmland each week across the Pampas region of central Argentina. An agronomist and agricultural engineer, he advises producers here in one of the country's most fertile farming areas. But, he says, "I've never seen this," speaking of the impacts of a drought that has endured for the past three seasons.

According to data from the Rosario Stock Exchange (BCR), since mid-2020, Argentina's agricultural heartland, covering the provinces of Santa Fe, Buenos Aires, La Pampa and Córdoba, has recorded a water deficit equivalent to an entire year's rainfall. In 2023, the impacts of this shortfall will reportedly lead to estimated losses to the national economy of US\$20 billion, representing more than 3% of GDP.

This water deficit has been driven primarily by a third consecutive year of La Niña, a natural climatic phenomenon, though the effects of climate change have made the situation more severe. In February, scientists from the World Weather Attribution initiative reported that climate change, while not the direct cause, has exacerbated this period of drought, which has been felt across South America.

But the persistence of La Niña – which has left farmers and traders counting the cost of failed production – has not been the only contributing factor to these losses, according to experts such as Rubén Walter, director of agricultural estimates at the Santa Fe Stock Exchange. Drought, he says, has struck amid continuing soil deterioration due to deep-seated production cycles and practices, which figures across Argentine agriculture are now seeking to address to ensure the sector's sustainability.

A HARVEST TO FORGET

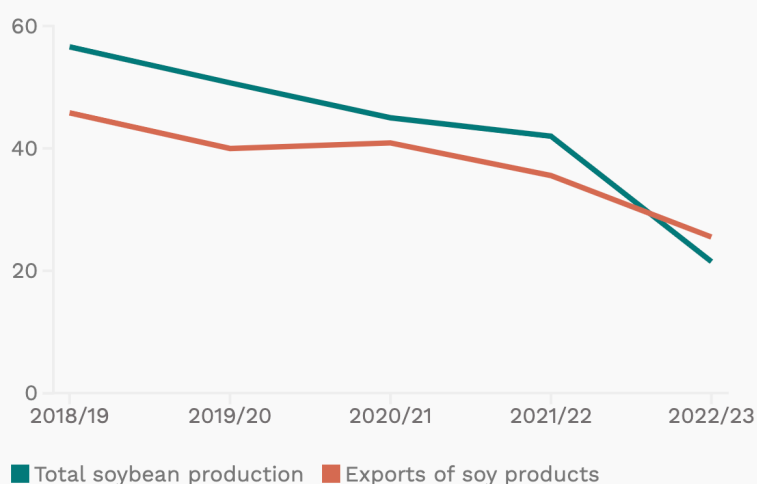
Due to the impacts of the drought, this season's production of Argentina's three main crops – soybean, corn and wheat



Dry soybean plants in dried-out soil. The 2022/23 soybean harvest is projected to be Argentina's worst in 23 years (Image: Rubén Walter)

Third year of drought takes its toll on Argentine soy

Soy production and export (in million tonnes)



Data source: Rosario Stock Exchange (BCR) • Graphic: Diálogo Chino
Note: Soy products include soybeans, soy flour, soybean oil and biodiesel

– will be around 65 million tonnes, a 45% drop year on year, according to BCR data seen by Diálogo Chino. It has been an especially tough time for soybean production, which is experiencing its worst season in 23 years.

“This year was disastrous,” says Valeria Caponi, a soybean grower from Cañada de Gómez, a town in the eastern province of Santa Fe. She describes how her best plots yielded, per hectare, just 11 quintals (a unit used in agriculture; one quintal is equivalent to 100 kg), compared to historical yields of around 35 quintals per hectare. “I had others that yielded barely one,” she added. “My father is 71 years old and he has never seen anything like this.”

The main indicators show the 2022/23 will be a season to forget. Perhaps the most striking figure is for Argentina’s

unharvested area, the land that was planted but whose crop was lost pre-harvest: according to BCR data, this area amounted to 36.4 million hectares – three times more than the previous high seen in 2015/16.

The drop in production is set to have a significant impact on Argentina’s foreign trade receipts. BCR estimates indicate that the country will see a 40% decline in export income from soy, compared to 2021/22, representing a loss of around US\$8 billion.

Among the main destinations for Argentina’s soy products are China – accounting for 90% of soybean trade – and India, the main buyer of soybean oil. For soybean meal and pellets, exports are more distributed, with Vietnam, Indonesia, Algeria and European Union countries among the top importers.

NOT ONLY DROUGHT

Drought is the primary cause of Argentina’s drop in agricultural output, but factors related to a “tremendously extractive” production model have contributed, says Recupero, who carries out his advisory work for the Rosario Rural Society. The agronomist describes the situation as “very serious”, with 30% of soybean fields seeing yields between 0 and 4 quintals per hectare, when usually those figures range between 28 and 32 quintals per hectare, according to a report he recently authored.

Rubén Walter of the Santa Fe Stock Exchange echoes Recupero’s concerns. “For the last ten years or so, we have been observing a process of physical deterioration of the soil,” he explains. “The structure of the soil – its permeability, the internal movement of the roots – is not in the same condition as it was a decade ago.”

For Sergio Montico, a professor of land management in the National University of Rosario’s Faculty of Agricultural Sciences, Argentina’s process of soil degradation has been underway for decades. “We have not done things right in terms of technological practices to mitigate it,” he says.

Several agricultural producers consulted by Diálogo Chino share this view, but they defend themselves, pointing out the difficulty of making the

necessary investments to improve soil health. “They are uneconomical, in the face of tax pressure or market disruption,” says one farmer, who asked not to be named. “You only invest in what you can, to be honest,” says another.

In November 2022, the World Bank published a report in which it recommended a series of measures for Argentine agriculture in the context of frequent and persistent droughts. It stated that the sector could help to ensure its resilience by adopting climate-smart techniques, drought-resistant crops and index-based insurance schemes, under which pay-outs are related to factors such as rainfall levels.

Initiatives to improve water management are also underway, such as the Argentine government’s national plan to expand sustainable irrigation systems, launched in April. Currently, only 5% of the country’s 42 million hectares of farmland is irrigated, and the plan aims to invest US\$2 billion to double this area. So far projects covering roughly 160,000 hectares have been implemented, but the announcement of new financing may help towards the plan’s ambitious goal of extending irrigation systems on 1.9 million additional hectares of land.

According to Montico, who has been working for more than three decades in soil management and

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The way we do agriculture in Argentina, we are not used to making forecasts, planning, mitigating or adapting

Sergio Montico

Land management professor, National University of Rosario

conservation practices, the country must make up for lost time, as a passive attitude has pervaded for too long. “The way we do agriculture in Argentina, we are not used to making forecasts, planning, mitigating or adapting,” he says.

Walter agrees, describing a dismissiveness around soil degradation among many seasoned farmers accustomed to the vicissitudes of production. “There is a phrase I often hear when I go to the field,” he explains, “that the soil ‘will hold out’.”


WILL THE SOIL HOLD OUT?

With work set to begin soon for the upcoming season, this extended period of severe drought is expected to fade into memory. But it will not be a season with normal water levels. Both Mario Navarro, director of the meteorological observatory for the city of Salsipuedes in Córdoba province, and José Luis Stella, a climatologist for the National Meteorological Service, tell *Diálogo Chino* of the projected arrival of El Niño, the counterpart

weather phenomenon to La Niña that will likely bring above-average rainfall.

For some, this could be seen as great news, counteracting the three years of drought driven by La Niña. However, the experts warn, readings are not entirely linear.

“It cannot be expected that after one or two rains, within two months, the soil profile will be in optimal condition again,” says Rubén Walter. Groundwater, he says, “will be partially recharged, but a good part of the water will run off. We will have areas with a lot of water running off, and if we measure the soil, we will see, at [a depth of] 80 or 90 centimetres, a lack of water.”

With soils in their “driest condition in the last 30 years”, according to BCR analyst Marina Barletta, the outlook for Argentine agriculture is still uncertain. A report from the Buenos Aires Grain Exchange puts it most clearly: though intense rains may come, after three years of drought, “quick relief should not be expected”. 

EU deforestation law presents a major test for South American farmers

Experts believe new rules will help combat negative impacts in exporter nations, but could present new problems and challenges for compliance



A cow at a ranch in Cerquillo, in Brazil's São Paulo state. New EU rules will bar the entry of South American beef into the European market if its production is linked to deforested land. (Image: Dan Agostini / Diálogo Chino)

New European legislation to ban the import of commodities associated with deforestation and human rights violations entered into force at the end of June, and could significantly impact the agriculture-dependent countries of Mercosur, the trade bloc formed by Argentina, Brazil, Paraguay and Uruguay.

The regulation targets the production and supply chains of palm oil, soy, cattle, timber, cocoa, coffee and rubber, as well

as derivatives such as furniture, chocolate and paper. These commodities account for most of the deforestation implicated in imports by the European Union (EU). Without these rules, the EU itself reports, these imports could cause the loss of more than 248,000 hectares of forest each year – an area almost the size of Luxembourg.

The European deforestation law applies to all countries with which the bloc has trade relations, but it could

have a particular impact on those of Mercosur, which counts the EU as its largest trade and investment partner and the second largest in trade in goods, behind only China. In 2021, EU imports from the four Mercosur countries totalled 43 billion euros (US\$48 billion), 20% of which were vegetable products such as soybeans and coffee.

Experts consulted by Diálogo Chino believe that these stricter trade regulations will help

to clean up the Latin American supply chains that are most permeated by negative socio-environmental impacts. However, they caution that the law could create new problems, such as the migration of damage to biomes not covered by the law. Agribusiness sectors and Mercosur governments, meanwhile, have described the regulation as protectionist.

HOW THE EU DEFORESTATION LAW WORKS

Under the new legislation, companies exporting to the EU will need to provide “conclusive and verifiable” information that their commodities are deforestation-free and in compliance with local laws in exporter countries. This will require traceability of all their suppliers, with geolocation of each establishment through which the products have passed.

The law sends a “strong signal” that the South American market needs to act, says André Vasconcelos, global engagement lead at Trase, a supply chain monitoring platform: “Some companies already have their own verification processes, but this needs to gain scale and be more transparent.”

A recent analysis by Global Canopy, the organisation behind the Trase initiative, showed that the companies driving the most deforestation in tropical

areas are unprepared to implement the new legislation, with more than three quarters of them lacking a commitment to traceability.

“This is an area where the EU can and should contribute with financial resources, so that there is an equal division of costs along the chains,” says Vasconcelos. Companies will have 18 months to

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This risk level assessment creates an incentive for countries to adopt reforms and clean up their production chains

Luciana Téllez
Human Rights Watch

adapt, dated from the law’s entry into force at the end of June, with smaller businesses given up to two years to prepare – a process in which, according to the law, the EU will provide technical assistance.

Luciana Téllez, a researcher with Human Rights Watch who has followed the new law’s development, points out that “its strongest aspect is to prohibit any kind of import

linked to deforestation,” regardless of whether it is legal or illegal. This, she says, prevents a country from adjusting its norms to legalise more deforestation, as well as facilitating the law’s implementation.

The law will also help combat ongoing human rights violations linked to agricultural production in South America, Téllez says: “It provides greater support for Indigenous peoples seeking land rights and in holding companies that violate their rights accountable.” However, the researcher adds, there are still doubts about the regulations that will serve as the basis for monitoring these cases.

In parallel, the EU will carry out a risk assessment of exporting countries by 2025, considering data such as deforestation and agricultural expansion rates, production trends and human rights abuses, according to “scientific evidence and globally recognised sources,” the law’s text reads. From there, the bloc must list the degree of risk – low, standard or high – of each exporting nation. “This assessment creates an incentive for countries to adopt reforms and clean up their production chains, because in the future the Commission can revise and lower the risk rating,” Téllez says.

The degree of risk will impose more or less rigidity in surveillance, so some countries have

already made it clear that they must react if they are considered high-risk. “The EU Commission will be under a lot of political pressure from its partners to downgrade the risks of the markets,” Téllez says.

BRAZIL: A NEW DIRECTION FOR LIVESTOCK?

Agribusiness, spearheaded by soy and beef production, is the driving force of Brazilian exports, with the EU being its second largest customer, behind only China. But this same sector also drives environmental destruction: in 2022, agribusiness was the vector for 95.7% of deforestation in the country, and almost all of it was illegal, according to MapBiomas.

Deforestation permeates various supply chains in the country, but cattle ranching is the most problematic, according to specialists. Part of the difficulty comes from this industry’s size – being comprised of 2.5 million different properties – and the supply chain’s complexity, being split into several stages: some farms specialise in breeding or raising cattle, while others fatten, slaughter and export them. Thus, it is common for an animal to pass through several different properties before reaching the market.

Besides its sheer size and spread, the cattle ranching supply chain also lacks transparency. Authorities monitor the sector through official documents filled

225 million

The number of cattle in Brazil – larger than the country’s human population of 203 million, and a significant challenge for traceability efforts

out by rural landowners. The information is self-declaratory and therefore depends on the farmer’s good faith. Slaughterhouses also have their own tracking systems, but do not disclose their data.

These flaws in tracking can result in so-called “cattle laundering” – that is, when a cattle rancher fined for socio-environmental crimes sells their production to another farm, which then carries the load with apparent legality.

A series of investigations, produced by environmental organisations and press outlets in recent years, has shown that the cattle sold by large slaughterhouses often come from illegally deforested areas.

Brazil’s agriculture minister, Carlos Fávaro, recently stated that full traceability is an “inevitable path,” because “those few who commit environmental crimes contaminate the whole system.” Today, around 80% of deforestation in the country is associated with large cattle ranchers in the latter stages of the production chain.

Faced with domestic and international pressures, the sector is slowly showing signs of moving forward. The Brazilian Confederation of Agriculture and Livestock (CNA) recently proposed a voluntary system to trace each of Brazil’s 225 million cattle – larger than the country’s human population of 203 million. Currently, according to Burnier, individual identification covers only 2% of the herd. Not surprisingly, the CNA estimates that it will take at least eight years to adapt – five times longer than the deadline set by European legislation. In addition, the data would remain under the control of the organisation and would not be made public.

On Brazil and Mercosur’s relations with the EU, Brazilian president Lula has appealed for “mutual trust, not distrust and sanctions.” After meeting with European Commission president Ursula Von Der Leyen in June, the Brazilian president said that a law whose effect goes beyond European territory will bring “potential restrictions on Brazilian agricultural and industrial exports.”

ARGENTINA: ANTI-DEFORESTATION PILOT PROGRAMME

In other Mercosur countries, the challenges to comply with European law are similar. In Argentina, beef and soy production, largely destined for export, were the main culprits behind the country's loss of 7 million hectares of forests in the last two decades.

Soy is Argentina's biggest commodity export, most of it in the form of soymeal, with India, China and the Netherlands its top buyers. Europe is the main destination for the country's chilled beef, although China is the largest buyer of frozen beef.

Patricia Bergero, deputy director of economic studies at the Rosario Stock Exchange (BCR), explains that 87% of the country's soy production is exported, which is why the European legislation "is not a small thing".

"There will undoubtedly be changes for

producers, especially with the identification or georeferencing of the property of origin of grains," says Bergero. "This will go through the entire oilseed value chain."

As for beef, Fernando Storni, president of the Argentine Roundtable on Sustainable Meat (MACS), adds that the country "needs a decisive improvement in the current traceability system." He calls, for example, for the mandatory use of electronic identification of animals.

Since 2020, the province of Santa Fe has been testing a pilot programme in this area. To date, 108 of the region's 26,000 cattle ranchers have signed up for tracking, with satellite images made available on a digital platform. "Some producers are not prepared, so we work with them on training," says Pablo Fiore, director of beef and poultry production for the Santa Fe authorities. "For now, the programme is

voluntary, but those who do not join will have less chance of exporting."

Juan Carlos Cotella is director of Aapresid, an association of soybean growers, and a member of VISEC, a platform that certifies producers in the Gran Chaco, a biome heavily impacted by the advance of deforestation.

The Chaco is where 13% of Argentina's soy is produced, but few farmers adopt traceability, notes Cotella. "There is a lot of work ahead and it is not clear how this will be conducted in the territory," he adds.

PARAGUAY: UNCERTAIN IMPACTS

Paraguay is the Mercosur country with the lowest exports of agricultural commodities to the EU – but it is still a relevant supplier. In 2020, Paraguay sent 6% of all its agricultural production, including soy and meat, to the European bloc.

Guillermo Achucarro, a Paraguayan climate change researcher at Base Investigaciones Sociales (Base-IS), celebrates the approval of the anti-deforestation law, but fears it will have little effect in a country that faces an "overpowering agribusiness" lobby and a relatively low trade exchange with the EU.

Paraguay's agriculture minister, Moisés Bertoni, claims that the country, like other nations in

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There will undoubtedly be changes for producers, especially with the identification or georeferencing of the property of origin of grains

Patricia Bergero
Rosario Stock Exchange

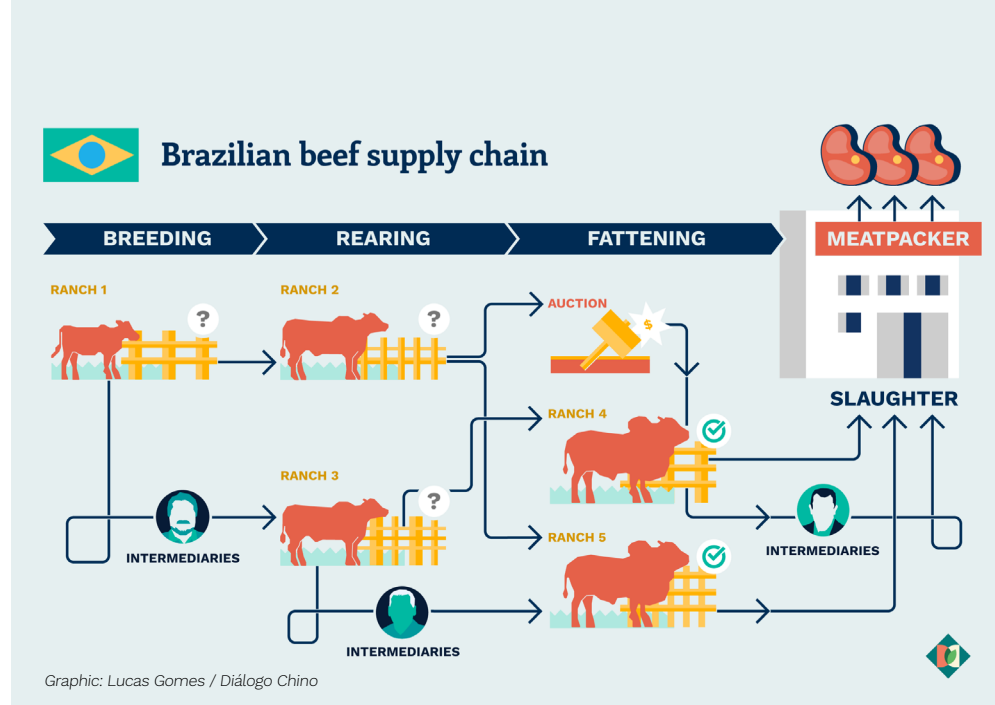
the region, already has its internal regulations to ensure food trade is decoupled from deforestation. “We have parts of the country with zero deforestation since 2005, while in others, each producer protects 50% of their area,” says Bertoni. “We are concerned about how the regulation will be applied and that it will end up excluding small producers.”

URUGUAY: SETTING THE EXAMPLE

Luciana Téllez considers Uruguay the South American country most prepared to meet the demands of anti-deforestation legislation. According to her, its system of cattle herd traceability is already compulsory, besides being “transparent and well regulated.”

Since 1998, the country’s traceability programme has been recognised by the EU. In 2004, the country started individual bovine monitoring, which later became the National Livestock Information System. “The traceability of cattle in Uruguay allows the trajectory of the animal to be followed from birth to slaughter, providing data such as the date and place of birth, sex, breed, movement and changes of ownership,” explains Jorge Acosta, agronomist at the National Meat Institute (INAC).

In this process, each bovine gets a kind of earring, which identifies



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We hope revisions recognise the great ecological importance of tree savannahs, grasslands and floodplains

André Vasconcelos
Trase

its numbering, and a radio transmitter, which stores information from the animal and its movements on a database.

Since 2007, all Uruguayan producers have also adopted a system that monitors animals at each step of the chain and on to domestic or international markets. Beef is Uruguay’s largest export. In 2022, the EU bought 12% of production – still well below the 58% share destined for China. Uruguayan soy, on the other hand, although it has increased its export market, has been leaving the EU’s shelves, with the bloc reducing its purchases

from the country by 93% in the last decade.

Therefore, the new regulation should bring fewer changes to Uruguay’s production chains. Another factor that reduces its influence in the country is that grassland, its predominant biome, is not covered by European law.

“Its emphasis is clearly on the Brazilian Amazon, so we will still see what happens to other forests,” says Eduardo Gudynas of the Latin American Centre for Social Ecology (CLAES).

Additional reporting by Yedan Li.



Production of fruit pulp in the Tapajós National Forest, Pará state, Brazil (Image: Flavio Forner / ASL Brazil, CC BY NC)

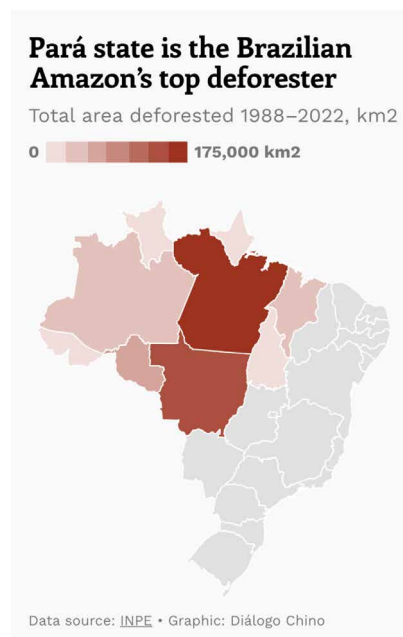
[Kevin Damasio](#)

Can one of Brazil's deforestation hotspots become a green leader?

Under pressure after racking up Amazon deforestation records, Pará state is now targeting the bioeconomy

São Félix do Xingu, in the Amazon state of Pará, is a place of superlatives: it is the municipality with the second largest annual greenhouse gas emissions in Brazil, the second highest rate of deforestation over the last 15 years, and the largest cattle herd in the country. It also has some of the Amazon region's lowest levels of development.

This municipality is also something of a symbol for Pará's broader condition. The state tops the table for deforestation in the Amazon since 2006, driven by the expansion of cattle ranching, soybean farming,



and the construction of roads and ports to facilitate

the flow of production to domestic and international markets.

But amid growing pressure to reverse the devastation in the Amazon, and the election of President Luiz Inácio Lula da Silva – who has promised to put environmental issues high on his agenda – there are signals that the state may be looking to take a greener turn.

In November 2022, the governor of Pará, Helder Barbalho, was part of Lula's entourage at the United Nations' COP27 climate summit in Egypt, where Brazil stated its intention to host COP30 in the Amazon in 2025. If the country is selected, Belém, the capital of Pará, will host the event. Barbalho also used his

time at the conference to present Pará's Bioeconomy Plan (PlanBio), which targets net-zero emissions from land use in the state by 2036.

The plan focuses on avoiding deforestation by valuing, restoring and promoting sustainable use of its biological resources – particularly its standing forests – as part of a “bioeconomy”. The state expects to invest 1.2 billion reais (US\$244 million) in biodiversity-linked initiatives over the next five years, and estimates that its bioeconomy could generate annual revenue of 170 billion reais (US\$34.5 billion) by 2040, roughly equivalent to the state's current GDP.

The initiative is unprecedented at government level, with projects driving the bioeconomy largely having been led by environmental organisations and traditional communities at smaller scales.

So, is the state's economic model – and its image as a major deforester – about to change?

For Celma de Oliveira, project coordinator for the environmental organisation Imaflora and a resident of São Félix do Xingu, there are promising developments at both the federal level with Lula's election, and the state level with the PlanBio.

“There is hope, with this resumption of a more participative government and of ministries and councils



Cattle ranching in an illegally deforested area in Pará state's Jamanxim forest, in the Brazilian Amazon (Image: Ricardo Funari / Alamy)

that were dismantled,” de Oliveira says, referring to the hollowing-out of environmental agencies seen during the presidency of Jair Bolsonaro (2019–2022). “Now, civil society needs to participate in management in order for it to function.”

CATTLE, SOY AND SMALL PRODUCERS

Cattle ranching and soybean farming have increasingly come to dominate the landscape in Pará, with pastures and plantations growing ever more extensive at the expense of the state's forests.

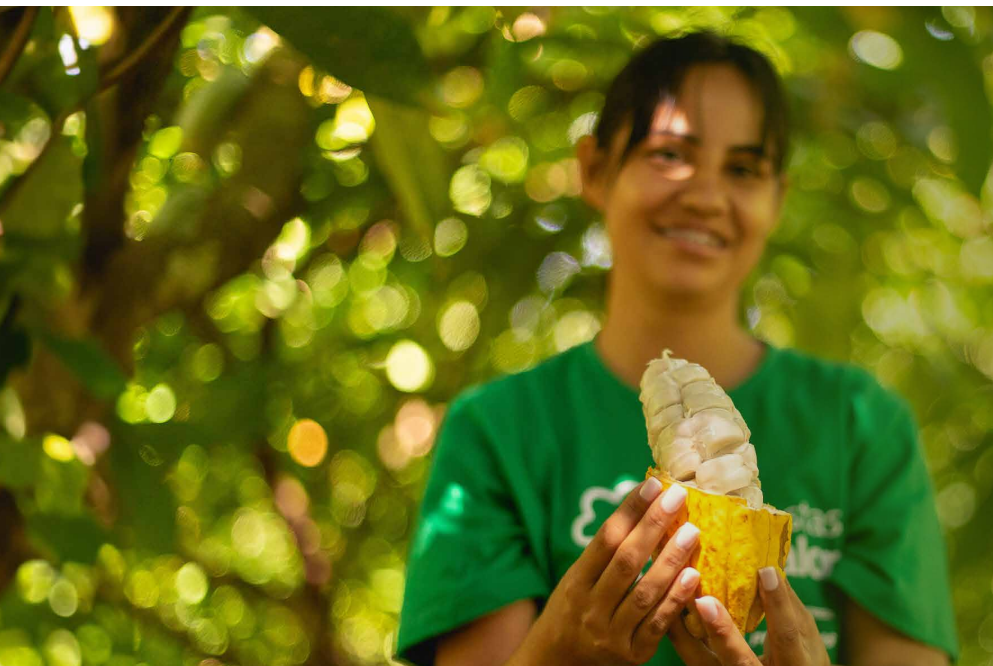
Soy crops occupied 849,000 hectares of land in Pará in 2022, an increase of 70% on the planted area in 2017. Meanwhile, the state has the second largest cattle herd in the country, with 26.7 million head and a rate of 1.5 head per hectare,

considered to be relatively low productivity.

“This stocking rate of Pará cattle is very low and would need to be dramatically improved to avoid it having to grow every year by land expansion,” says Sérgio Leitão, founder and executive director of the Escolhas Institute, which carries out studies focused on sustainable development.

Amid this continued expansion, many small-scale farmers in Pará are doing their best to resist the temptation to turn to soy and cattle production, and to clear land to make way for them.

Maria Josefa Neves, 51, owns a rural property in the community of Tancredo Neves, 120 kilometres from the centre of São Félix do Xingu. On one of her 12 hectares, on land that was



Cocoa production in the community of Tancredo Neves, Pará state, Brazil
(Image: Diego Formiga / Imaflora)

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Farmers are unable to generate enough income to diversify their production

once pasture, she practices agroforestry, planting a variety of native crops such as manioc, cocoa and acerola, a cherry-like fruit.

On the rest of the property, Neves allows the natural vegetation to regenerate. “I live in the middle of the bush, and monkeys come right up to the edge of the house,” she says.

The area around where she lives, however, is all deforested.

Neves is president of the Association of Women Producers of Fruit Pulp (AMPPF), founded in 2012. She grows pigeon peas and fruit in parallel with other trees, adopting techniques that make use of shade and help to ensure the necessary nutrients for the soil without applying chemicals, instead making use of homemade bio-fertilisers. Neves supplies

fruit pulp to schools in the region.

The AMPPF has 55 members, who for the past three years have been selling their fruit pulp to the federal government, which in turn distributes it. This partnership has seen strong progress: their contract with the authorities this year rose to 351,000 reais (US\$71,000), up from 231,000 reais (US\$47,000) in 2022.

However, to scale up and open to new markets, the association needs investment. For example, it currently has only a small cold room for storing its production and one refrigerated truck to transport it.

Celma de Oliveira says that a lack of dedicated public policies inhibits the expansion of agro-ecological producers such

as the AMPFF, and that one of the main problems such initiatives face is a difficulty in accessing credit.

“There is specific credit for the agroforestry system, but the banks put up a series of obstacles, so the farmers are unable to generate enough income to diversify their production,” says de Oliveira, who provides assistance to the AMPFF via Imaflora. She adds that it is “much easier” to get credit for livestock.

Pará state’s environment secretary, José Mauro O’de Almeida, agrees that it is necessary to create better conditions for these products to be marketed: “We have good initiatives in agro-forestry, bio-jewellery, bio-cosmetics, bio-products in general, but they are not gaining scale.”

For this, Almeida says it is necessary to improve

infrastructure, logistics and industrialisation, while keeping the processing of the product in the region. “In Paris, you can buy freeze-dried açai powder at 200 euros a kilo. It has high added value – much higher than soy – but it is necessary for there to be industrialisation,” he says.

PlanBio is expected to respond to some of these demands in an attempt to limit the expansion of the agriculture frontier, O’de Almeida claims. The plan highlights the importance of a sustainable economic model, and will reportedly see the creation of “entrepreneurship centres” in five regions of the state, as well as a “bioeconomy museum” and a “forest knowledge school”.

According to the secretary, some of the first financing for these initiatives may come from the Inter-American Development Bank, which will provide US\$300 million towards the state’s climate and decarbonisation efforts. The first instalment is expected to be paid in October, though the amount specifically allocated to the PlanBio has yet to be defined.

STATE GOVERNMENT PLAYS BOTH SIDES

Despite the greener turn signalled in recent announcements, agribusiness will likely remain a key industry and vital source of income for Pará and its government – and a possible source of tension with its bold

bioeconomy ambitions.

In 2022, agricultural exports from the state reached a value of US\$3 billion, a 70% increase on the previous year. The main commodities were soybeans, beef, and forest products such as wood, charcoal and paper.

According to Ministry of Agriculture data, China was the main international destination for Pará agribusiness, followed by the United States, the Netherlands and Spain. The Asian nation accounted for US\$957 million of exports – a third of the total – with meat and soybeans representing 92% of this value.

In April, Governor Barbalho joined Lula during the president’s state visit to China, where an agreement was reached over the construction of a railway connecting south-east Pará to the port of Barcarena, on the state’s north coast. The project, set to be built by China Communications Construction Company (CCCC), will help transport commodities to international markets, including China, and will see

an estimated investment of 7 billion reais (US\$1.4 billion).

Meanwhile, cattle ranching businesses in the state received almost 210 million reais (US\$42.6 million) in tax waivers in 2021. But the activity, says Leitão, “receives a lot and offers little in terms of productivity and efficiency from an environmental standpoint”.

In 2021, 85% of greenhouse gas emissions in Pará came from land use change, mainly deforestation driven by agriculture’s expansion, with 11% coming directly from farming and livestock activities themselves, according to data from the Climate Observatory, a Brazilian climate science network. Altamira, also in Pará, and São Félix do Xingu are the municipalities with the highest greenhouse gas emissions in the whole country.

Altamira is also home to the Riozinho do Anfrísio Extractive Reserve, a protected sustainable production area that is part of the territory of the Indigenous Xingu people.



Damião Barborsa in his nursery in the community of Xadá, Pará state, Brazil (Image: Flavio Forner / ASL Brazil, CC BY NC)



In the Xingu territory, almost a thousand producers have generated US\$1.9 million through the trade of their bio-products since 2016 (Image: Rafael Salazar / Origins Brazil)

Just like the fruit pulp producers in São Félix do Xingu, the workers of Riozinho do Anfrísio are under pressure from the advance of deforestation.

The expansion of land clearance towards the reserve, where Brazil nut, copaiba oil and rubber are harvested, has become a major concern for Pedro Pereira, one of its residents. But in recent months, he has noticed a decrease in the number of invasions of the territory, possibly as a result of the efforts of the new Lula government to resume the fight against environmental crimes. In April, Governor Barbalho and Marina Silva, Brazil's environment minister, signed a cooperation agreement to improve environmental enforcement, forest management and land use in Pará.

The producers of Riozinho do Anfrísio have shown that it is possible to generate income while keeping the forest standing. With the support of Origins Brazil – a network coordinated by Imaflora and the NGO Instituto Socioambiental

(ISA) that encourages sustainable businesses in the Amazon – they have negotiated improved terms with companies that buy their products. Not only do they obtain fairer prices, but the companies also cover the logistical costs of the business.

“Before, rubber went for 70 centavos [US\$0.14] a block, and today it is 13 reais [US\$2.64], a huge change, and with a contract that gives us security,” Pereira says.


In the Xingu territory, Origins Brazil has almost a thousand registered producers, who, since 2016, have collectively generated 9.5 million reais (US\$1.9 million) through the trade of their bio-products. In 2022 alone, revenue was 2 million reais (US\$400,000).

But this revenue from the bioeconomy could be much higher, according to a recent study by the Escolhas Institute, which assessed the possible income from the recovery of degraded areas and, therefore, the planting of native species that could be exploited by producers.

Their research estimated that the reforestation of 6 million hectares – an area roughly the size of Croatia – could create 1 million direct jobs, generate 13.6 billion reais (US\$2.7 billion) in revenue and reduce the poverty index in Pará by 50%. The jobs would be generated by labour in seed collection, seedling production, planting, maintenance and monitoring of the activity.

According to the institute's Leitão, a much-discussed bottleneck for the bioeconomy is the low level of productivity. But he points out that replanting forests together with other activities of lesser impact, such as horticulture produced by family agriculture, could expand its reach. “This creates a space for jobs, income generation and fighting poverty, and the necessary time for the scale of other activities to appear,” says Leitão.

Pedro Pereira is also excited about the prospects. His main challenge now is not the invaders, but the expansion of his production. He hopes that his community will be able to negotiate with more companies to sell the surplus production. But, for him, the preservation of the environment goes beyond an income opportunity.

“The forest is everything to us,” says Pereira. “It's where we get our family's sustenance from, all our food, our money. It is the source of water. Without the forest, we are nobody.” 

China's changing soybean trends pose questions for South America

Long the key driver of global soy trade, what do China's fluctuating imports and production goals mean for growers such as Brazil and Argentina?


China is the world's leading importer of soybeans, but changing dynamics and longer-term trends may pose questions for South American producer nations, which have seen years of reliable growth in the soy sector to meet rising Chinese demand.

After two decades of near-constant increases,

China's soybean imports have seen periodic dips and disruption since 2019, linked to the effects of the Covid-19 pandemic and African swine fever outbreaks in the Chinese pork industry, a major destination for soy as feed. Meanwhile, some analysts believe China's soy imports may already have peaked.

These trends come alongside official plans in China to boost domestic soybean production and reduce reliance on imports, as part of a broader national food security drive – potentially an alarm bell for countries such as Brazil and Argentina, which find their main buyers in China.

In 2022, China's total demand for soybeans was just over 115 million tonnes, over 80% of which was met with imports. Domestic soybean production reached 20 million tonnes last year,



Soybean harvesting in Heilongjiang province, China. The country plans to increase domestic soy production and reduce its dependence on imports. (Image: Alamy)

and the government has targeted an output of over 36 million tonnes by 2032 to reduce this reliance.

Several trade analysts have raised the possibility of potential impacts on South America from these changing dynamics, but key agribusiness figures in the region told *Diálogo Chino* that this situation is not a major cause for concern, at least in the short term.

“It does not seem likely that China will be able to significantly increase its own production, due to the water scarcity in its territory, and producers’ lower technical level and lack of adequate machinery,” said Rodolfo Rossi, head of the Argentine Soy Supply Chain Association (AcSoja). Along the same lines, the Brazilian National Association of Grain Exporters (ANEC) said that “the situation is not seen as a concern”.

However, interviewees raised other challenges in the global soybean market that will arise in the coming years. Among them are the consequences of increasing Brazilian production and the strong growth in the United States in crushing, the process of converting soybeans into other products.

SLOWDOWN IN DEMAND

At the turn of the century, when it imported more than 10 million tonnes of soybeans, China accounted for 25% of global soybean

purchases. Two decades later, these figures have multiplied several times over: in the past five years, China’s imports have ranged between 88 million and 100 million tonnes, accounting for around 60% of global trade.

“China has been the big market that has boosted world demand for soybeans,” said Gustavo Idigoras, head of the Argentine Edible Oil Association and Grain Export Centre (CIARA – CEC).

In the process, Brazil and Argentina, two of the main producers of soybeans, have benefited enormously, with China having become the main destination for their output, accounting for more than 90% of Argentina’s exports and 70% of Brazil’s shipments.

However, the situation has not always been smooth in recent years, and looking to the future, analysts see various reasons to anticipate a slowdown in the pace of China’s imports.

“China’s soybean imports will slow down and eventually decline through 2030 as a result of slower livestock production growth, continuous improvement in farming practices, and, more importantly, widespread adoption of a low-soymeal inclusion ratio in feed formulas nationwide,” said a recent Rabobank study. It believes this will have “profound impacts on the entire global supply chain”.

Another factor influencing this dynamic is the Chinese government’s drive to boost domestic soybean production, which reached 20 million tonnes in 2022. Its 14th Five-Year Plan (2021–2025) targets an output of 23 million tonnes by 2025, while the Chinese agriculture ministry forecasts that domestic production will reach 36.75 million tonnes in 2032.

Given that soybeans will ultimately be processed, mainly for animal feed, it is also necessary to consider the outlook for soybean meal. “In recent years, there has been a diversification in China, where the growth in demand for rapeseed, peanut and sunflower meal has been faster than that of soybean meal,” explained Bruno Ferrari, an analyst at the Rosario Stock Exchange (BCR) in Argentina.

Ferrari said that while the growth in demand for soybean meal in China has slowed, unprocessed soybean demand has slowed even more, while other oilseeds are starting to grow a little faster or are maintaining their usual production levels. “That takes a little bit of space away from soybeans,” he added.

The BCR analyst’s explanation is reflected in official plans. In April, the Chinese agriculture ministry issued an action plan to reduce the use of soybean meal in animal feed, proposing that its

share be reduced from the current 14.5% to less than 13% by 2025, Reuters reported.

Such a roadmap will “guide the feed industry to reduce the amount of soybean meal, promote the saving and consumption reduction of feed grains, and contribute to ensuring the stable and safe supply of grain and important agricultural products,” a ministry statement said.

NO MAJOR IMPACTS

Although the interviewees agreed that there is a slowdown in growth in soybean demand from China, none of them expressed concerns that the situation will generate abrupt changes in the export dynamics of Argentina and Brazil.

“I don’t think we should expect many implications for both countries as a result of changes in soybean demand from China,” said Gabriel Medina, a professor in agronomy at the universities of Brasília and Goiás.

The academic’s view is shared by Sávio Pereira, director of the department of economic analysis and public policy at Brazil’s Ministry of Agriculture: “We are not worried,” he said, explaining that, among other factors, “the idea of changing the way animals are fed does not seem likely to happen in the short term.”

From Argentina, Gustavo Idigoras said that although

there are analyses that indicate that China “may be reaching a plateau in its incremental demand for soybeans”, these should be taken “with caution”.

“Structurally, China is an importer of soybeans and will continue to be so,” Idigoras said.

Echoing the responses heard by Diálogo Chino, BCR analyst Bruno Ferrari said that China’s domestic production targets “do not move the import market”, as it is a marginal increase in relation to the total volume. The gap between its production and demand is still “very large”, Medina added.

For Rodolfo Rossi, who represents the main actors in the soy supply chain in Argentina, “it will not be easy for China to achieve its forecasts due to the lack of improvements in local efficiencies.”

Third-country reports also support the outlook of the interviewees. In a recent article, the Australian Strategic Policy Institute noted that “competing land-use needs, including for other crops such as wheat and maize, make it difficult for China to escape from its dependence on soybean imports.”

THE DESTINATION OF SURPLUSES

Against this backdrop, Brazil’s soybean production continues to grow. According to the latest US Department of Agriculture (USDA) estimates, the 2023/24 season is expected to see a 5% increase in total yield, up from 156 million tonnes in 2022/23 to 163 million tonnes. “And we still have a lot of new areas available for planting,” added Pereyra of the Brazilian



A worker at a pig farm in Guangdong province, China. One of the main destinations for imported soybeans in China is for use in animal feed. (Image: Amanda Ahn / Alamy)

agriculture ministry.

For Ferrari, the surplus generated by Brazilian producers will be destined for local industry: “The country has ways of continuing to generate virtuous production chains internally to introduce this merchandise and it is possibly the path they will follow in the future,” he said.

Something similar is happening in Argentina. Gustavo Idigoras explained that “there is a different strategy to that of Brazil, not focused on selling directly to China, but on selling processed products to other countries.” In fact, the country already exports large quantities of soy flours and oils to countries including India and Vietnam. Thus, according to him, potential increases in Argentine soybean production will go towards local industry,

which has reportedly been working well below its potential.

Unlike Brazil, however, Argentina does not foresee strong increases in its local production, at least in the short term. Moreover, since its historic peak of the 2014/15 season – when output exceeded 60 million tonnes – the figures have tended to fall. The current agricultural cycle saw the worst soybean output recorded this century, at just over 20 million tonnes, driven by a harsh and prolonged drought.

In addition to this difference in soybean output, the two countries also diverge in terms of the destination of their production. Although both are heavily geared towards soy exports, Brazil ships most of its production as grain, while Argentina largely exports it with

added value, in the form of processed flours and oils.

The fact that much of its production is destined for direct export does not mean that Brazil is not a central player in the processed products market. In fact, this year, all indications point towards it emerging as the world’s leading producer of soybean meal, displacing Argentina for the first time since the mid-1980s.

For Argentina, strong competition from Brazil is only one of the challenges in the short term. Rodolfo Rossi warns that the United States also foresees a “significant” increase in the processing of soybeans. “In any case, there are opportunities [for Argentine producers] in new markets in Africa and some Latin American countries,” he said.

With China’s push towards greater self-sufficiency in soybean production likely to take time and face various obstacles, Brazil and Argentina will have opportunities to remain significant players in the global market. Market diversification, boosting local processing and the exploration of new export destinations will be important areas for its agribusiness to explore.

But in a changing global landscape, and amid increasing climate volatility, the soy industry in both countries may need to show agility and invention if they are to maintain the stability – let alone growth – that has been so reliable in recent decades. 🇺🇦

Soybean harvest in Luís Eduardo Magalhães, state of Bahia, Brazil. Experts say that any soybean surplus generated by slowdowns in Brazil’s trade with China will be destined for local industry. (Image: Alamy)





Cattle ranching in Figueirópolis d'Oeste, in the state of Mato Grosso, Brazil. The livestock sector is the primary driver of deforestation in the Brazilian Amazon. (Image © Ricardo Funari / Greenpeace)

[Tian Yan Baxter](#)

Opinion: 'Green passport' can promote sustainable China-Brazil beef trade

Cross-border traceability of beef supply is a complex challenge, but bilateral initiatives are making progress, writes Tian Yan Baxter

Last year was something of a milestone for bilateral, multi-level diplomacy on sustainable trade between Brazil and China, and the start of a new chapter in their dialogue on agriculture's links with biodiversity conservation and climate change.

The year saw the Global Environmental Institute (GEI), a Chinese civil society organisation with which I work, launch partnerships with several Brazilian public entities to facilitate on-the-ground, cross-border initiatives that

nurture good governance and sustainable trade practices.

In March 2022, GEI signed a memorandum of understanding (MoU) to cooperate on sustainability initiatives with parties from Mato Grosso, the west-central Brazilian state that is the country's leading producer of both beef and soy. An agreement was also signed with the Legal Amazon Consortium, which brings together nine Amazonian state governments on sustainable development initiatives.

Concrete actions are now being explored following these agreements. These include the ‘green passport’ protocol for beef products, under which a pilot traceability system is being designed, which aims to provide sustainability information on Brazilian beef products to consumers in China using barcodes on food packages.

Through carrying out technical research, fieldwork, policy analysis and pilot design, there are four aims for this partnership, which brings GEI together with the state government and the Mato Grosso Meat Institute (IMAC), a beef-focused research and technology institute.

First, the partnership aims to guide the socio-environmental responsibilities of business stakeholders; second, to help Brazilian entities understand the market in China for sustainably produced quality beef; third, to evaluate the feasibility of distributing such products in China, and potential market-based and financial mechanisms to promote them; and finally, to analyse the establishment of traceability schemes in administrative, regulatory and institutional terms.

Traceability is a tool that all actors along a supply chain can champion, but also a process that requires transparency, information disclosure, trust-building and sustainable practices.

Done well, it can bring benefits throughout the chain, encouraging openness and adding value that can position products at a premium price. This can also help to promote traceability for sustainability as a broader change within the industry.

However, it is challenging to construct cross-border traceability systems as a tool to address deforestation linked to beef production. Firstly, it is technically tricky to track the movement of animals in Brazil, given the notoriously complex and indirect supply landscape, in which cattle are regularly traded among ranches at different stages of their growth. It is also time-consuming to connect and standardise traceability systems for international trade, in order to establish authoritative, harmonised systems that are not one-size-fits-all – and which are ultimately business-friendly to small and medium-sized enterprises in both China and Brazil.

Nonetheless, given the potential benefits of meeting this challenge, the partnership has set a path to facilitate the development of strong public policy in the state of Mato Grosso, and to foster a niche market for traceable, higher-quality meat products in China.

GREEN PASSPORT: TRACEABILITY AND PUBLIC POLICY

An important sustainability initiative arising from the

new partnerships is the development of Mato Grosso’s ‘green passport’ for beef products, launched in 2022. As well as planning the workings of such a labelling system, a key challenge is to bring about innovation that can help verify and spread the use of socio-environmental traceability standards across the state’s livestock sector.

The initiative plans, firstly, to supervise and empower the sector, helping businesses to engage with and access traceability schemes, so that verifiably socially and environmentally benign beef can attain the green passport label by 2026. Secondly, it aims to classify carcasses and designate those deemed to be of ‘superior’ quality. It is thus a means for both realising the state’s responsibilities of environmental governance, and for inspecting food quality.

It is an ambitious initiative, and potentially a breakthrough, as the state government will target both direct and indirect cattle ranchers, and aims for it to ultimately be a state-wide programme involving all producers.

From 2026, if producers and slaughterhouses’ activities and purchases fail to meet green passport standards – for example, in being linked to deforestation through their suppliers – they will face restrictions on their future transactions. Cattle

purchases will be limited to as low as 20% relative to their last transaction (i.e. two cows versus ten), until they satisfy the programme's socio-environmental criteria. In this way, it is hoped that verification of their transaction records can help to influence and improve the activities of indirect suppliers.

The green passport protocol is being jointly devised by two of the MoU partners – the state government of Mato Grosso and IMAC – together with the Amazon Environmental Research Institute (IPAM). Other public entities have since joined, including the Federal Public Ministry of Mato Grosso, and the state secretariats of the Environment, and of Economic Development.

Industry groups such as Mato Grosso meatpackers union Sindifrigio-MT, and breeders' association Acrimat, have also entered the partnership, as well as business stakeholders, including meat processing giants JBS and Marfrig.

The protocol is built on a solid foundation of national and sub-national regulatory frameworks, incorporating, among others: the Forest Code, a law requiring Amazon landowners to maintain a proportion of their land as forest; the Protocol for the Monitoring of Cattle Suppliers in the Amazon (BeefonTrack), which standardises the monitoring of animal origin



Production of leather in Cáceres, Mato Grosso. Cooperation between Brazil and China could create opportunities to reverse the harmful impacts of the beef sector. (Image: Alamy)

and auditing in a number of slaughterhouses; IMAC's Reinsertion and Monitoring Program, a platform for monitoring environmental remediation on farms that have engaged in illegal deforestation; and the Mato Grosso state law that established IMAC and outlined its responsibility to promote sustainability in the beef sector.

This fusion of regulations helps to bridge federal and regional initiatives, fostering positive synergies in a strategic and cost-effective way. Accordingly, the protocol takes into account contemporary Brazil's agricultural development and plans, and evaluates the environmental assets held by individual farms, through assessing their recovery of degraded pastures and/or irregularly deforested areas while enhancing productivity.

Moreover, taking advantage of the BeefonTrack monitoring system could help to spread and hopefully normalise the practice of tracking illegal deforestation among producers. This high degree of policy compatibility means that cattle producers may bear lower costs to adapt to newer and evolving policies. It also increases the opportunity to extend this sort of "verify-to-qualify" programme beyond Mato Grosso to a nationwide verification system – and thus enables the possibility of re-positioning the identity of Brazilian beef.

The protocol is also a timely initiative to prepare producers to smoothly connect with certain new regulations in consumption markets, such as the European Union's deforestation law,

which aims to prevent commodities grown on deforested land from entering the bloc.

In addition to the green passport, the Mato Grosso state government is also developing legally binding instruments for implementing verification of sustainability standards, designing financial mechanisms such as tax incentives, and developing monitoring and data platforms to identify responsible producers, to enhance their credibility and visibility.

POTENTIAL LINKS WITH CHINA

To support these sustainability endeavours, in May 2023 GEI took part in a field trip across five cities in China, organised by the Mato Grosso state government. The organisation acted as a bridge-builder and guide for Brazilian supply chain actors, helping to map the potential trade paths for verified traceable products from Mato Grosso to reach consumers in China.

There were concrete outcomes from the fieldwork, including GEI and IMAC's signing of MoUs with meat industry associations from the cities of Tianjin and Chongqing. These aim to promote data sharing and stable multi-stakeholder trade, among other goals. Tianjin Port handled over one-third of China's total imported goods in 2022, while Chongqing has a huge demand for frozen

beef as a key element its most famous dish – hotpot.

The trip also facilitated engagement with certification, financial and customs bodies in Beijing, and promoted government-to-government and institutional-level dialogues. These also analysed the integration of sustainable markets, looking at issues such as fiscal incentives and reciprocal trading agreements, among others.

These in-depth conversations make it apparent that both countries are at the beginning of mutual understanding and reaching a common discourse on sustainable agriculture, which is “carbon-neutral” and “low-carbon” to Brazil, but may have more of a focus on “green” and organic food for China. Technically speaking, it is not straightforward to transfer and translate Brazilian certification initiatives into China, as both apply individual systems to evaluate sustainable products. It is thus not easy to quickly integrate the established sustainable markets from both sides and acknowledge respective good agricultural practices.

Limited bilateral diplomacy and cooperation in recent years has meant that China's attention to Brazil's sustainable agriculture has been concentrated only on the

international mainstream issue of deforestation. Additionally, Brazil's rich policy and on-the-ground experience – be it the integration of forestry and livestock systems, or the agricultural intensification that has seen it transition from a net importer 50 years ago to today sharing the responsibility of feeding the world – are not well known in China. For the two countries' joint interests such as poverty elimination, alternative livelihoods and digitalisation, conversations are far from structured.

The image of Brazil's agricultural sector as being not environmentally friendly has gradually spread in China. This would not help with the promotion of Brazilian initiatives such as the green passport. It is therefore extremely urgent for both countries to communicate and cooperate on innovative approaches to reverse the harmful impacts of Brazil's beef sector, and to improve its bad image.

It is a priority for Mato Grosso to proactively engage with China and share each other's strengths. This engagement could make a significant impact in filling loopholes and gaps in the Brazil-China relationship, overcoming challenges in accessing information, building dialogues between both countries, and helping to grow the presence of Brazilian organisations in China. 🇧🇷

Brazil looks to boost recovery of degraded land

Small initiatives support efforts to recover 12 million hectares of land by 2030, as officials aim to increase production without deforestation

Farmer Dercílio Pupin arrived in the municipality of Piracaia, São Paulo state, in 2013, with a vision of growing organic food. Unfortunately, his newly acquired, four-hectare plot was dry, with compacted soil and little vegetation.

One of the state's worst ever water crises started that year. By 2014, the capacity of the five water reservoirs of the Cantareira system, which supply 8.8 million people in the

surrounding area, shrank to almost zero.

The deterioration of the region's natural environment preceded this crisis. Mapping of the region at the time by the Institute for Ecological Research (IPÊ) revealed 21,000 hectares of riverbanks without vegetation – areas that, by law, should have been protected – and 100,000 hectares of degraded pastures.



Those degraded pastures included Pupin's. He tells *Diálogo Chino* that the former owner grazed more than 300 cattle "in a disorganised way", including near springs.

Today, however, Pupin has seen improvements in the health of his plot after taking part in restoration programmes, launched amid a national effort to recover millions of hectares of degraded land across Brazil – a drive that has gathered pace under a new president, and presented opportunities and challenges for government and growers alike.

NEW ERA FOR LAND RESTORATION

To give his land a new lease of life, Pupin joined a restoration programme run by the city council, and another by IPÊ called *Semeando Água* (Sowing Water). Pupin can already see improvements: "The year we arrived here, it was all clearings, there was hardly a tree... In the [newly restored] agroforestry areas, there are already places where the forest is a little more advanced; there is better

What is soil degradation?

Soil classed as degraded has lost its healthy characteristics, thereby limiting its ability to provide beneficial services to its ecosystem, such as retaining nutrients and water. Soil degradation can be caused by human exploitation.



*Agroforestry incorporates trees into agricultural systems, and can help to improve soil health. Other potential benefits include erosion control, nutrient and moisture retention, and increased oxygenation. (Image: Lucas Ninno / *Diálogo Chino*)*

infiltration [of water] into the soil."

"The idea is to turn the area

around the Cantareira into a centre for agroecological production," says Alexandre Uezu, a *Semeando Água* coordinator.

Agroforestry

Agroforestry is the practice of incorporating trees into agriculture. This can be carried out in various ways, such as planting trees in and around pastures, or farming within a forest. Trees naturally sequester carbon and improve soil health and biodiversity, so agroforestry provides a sustainable alternative to simply clearing forests for agriculture.

Semeando Água is one of many independent initiatives across Brazil that contribute to the National Plan for Native Vegetation Recovery (*Planaveg*), published by the government in 2017. The targets of the plan include to "restore, reforest and induce the natural regeneration" of 12 million

hectares of forest land and to create 5 million hectares of “integrated farming systems” that combine croplands, pastures and forests, both by 2030.

According to mapping by the Observatory of Restoration and Reforestation, Brazil has so far added 9.35 million hectares of mostly single-crop tree plantations, but only 79,100 hectares of land has been classified as restored.

Moreover, the size of the problem is much bigger than Brazil’s targets suggest: according to the environmental monitoring network MapBiomass, the country has 95.5 million hectares of degraded pastures, equivalent to the area of Venezuela. “A large part of the deforested area in the country is for livestock, and these pastures are degraded,” explains Ane Alencar, a researcher at the network.

Through current and upcoming national policies and state-funded financial stimulus programmes, Brazil is now seeking to boost its land restoration efforts.

The reuse of Brazil’s degraded pastures is one of the main environmental goals of President Luiz Inácio Lula da Silva. In his inauguration speech in January, Lula mentioned the subject, while in April, he claimed that investments in the restoration of degraded pastures can “double

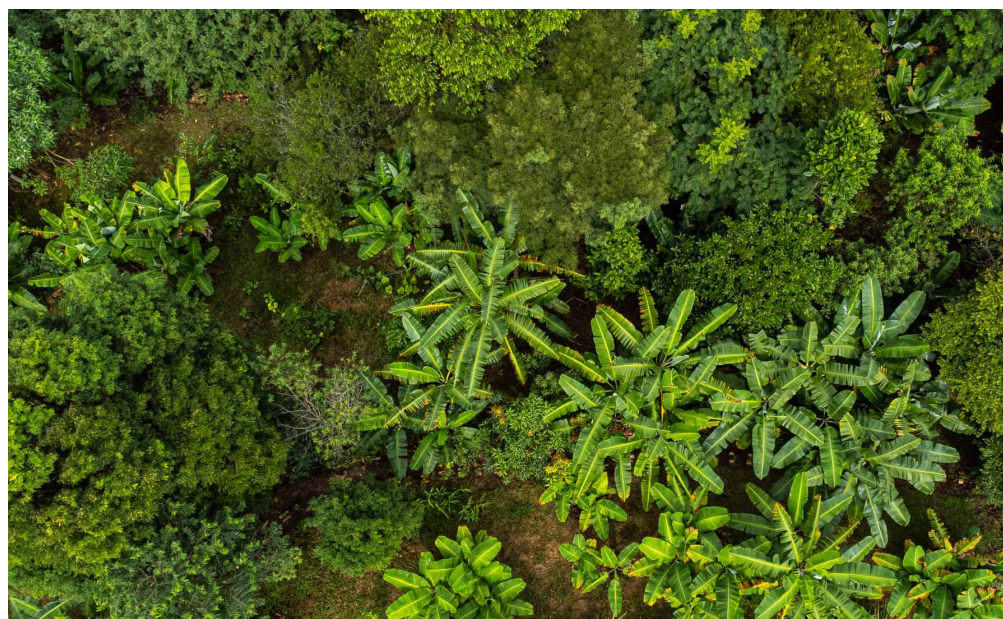
[agricultural] productivity, without disrupting Indigenous populations and forests”.

A GLOBAL CHALLENGE

According to the UN’s Global Land Outlook 2 report, published in 2022, humanity has “already transformed more than 70% of the Earth’s land area from its natural state, causing unparalleled environmental degradation and contributing significantly to global warming.” In 2018, land degradation and its consequences for water and food security were estimated to affect the lives of 3.2 billion people. The degradation of Earth’s soils is interlinked with other environmental crises, too. Alencar says fires, logging and landscape fragmentation are the main vectors of soil degradation in humid forests such

as the Amazon, while in savannas like the Cerrado, grain monocultures and extensive livestock farming are predominantly to blame. More frequent severe droughts and increasingly strong windstorms, driven by climate change, then exacerbate soil degradation, she adds.

In recent years, this global problem has provoked a global response. The 2021 New York Declaration on Forests saw more than 200 actors – including national and sub-national governments, Indigenous peoples, and companies – commit to restoring 350 million hectares of degraded land by 2030. This was followed by an agreement at the 2022 UN Biodiversity Conference (COP15), in which nearly every country in the world pledged to restore 30% of all terrestrial and marine



Aerial view of banana trees planted in a forest in Nazaré Paulista, São Paulo state. Agroforestry systems may involve the planting of trees in and around pastures, or see farming carried out within a forest. (Image: Lucas Ninno / Diálogo Chino)

ecosystems within this decade.

On a trip to Beijing in April, Marina Silva, Brazil's environment and climate change minister, said that the country "can learn from the Chinese experience" of recovering degraded areas.

Silva was likely referring to China's national Grain for Green programme, which aims to regenerate soil damaged by agriculture and livestock. Since its creation in 1999, the programme has restored more than 30 million hectares of forests, fields, mountain vegetation and wetlands.

Grain for Green is voluntary, but there are incentives to join. Between 1999 and 2019, the government invested more than 442 billion RMB (US\$60 billion) in

the programme, providing seeds, subsidies and technical assistance to landowners, among other benefits. By 2019, the programme's subsidies had directly benefitted more than 41 million farming households.

NEW INVESTMENT EMERGES

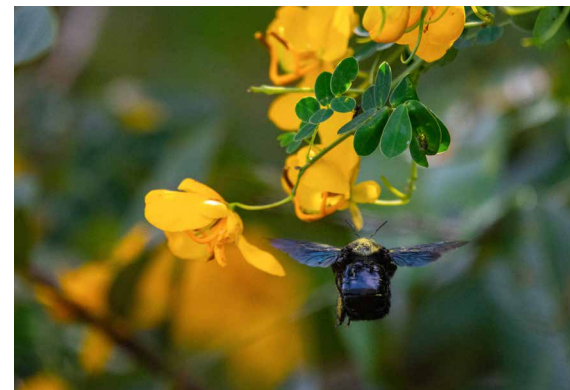
With Lula's return to office, environmental initiatives are once again a governmental priority. In May, the government set up the Council for Sustainable Social Economic Development, a body made up of representatives from civil society and the state. By August, the council had set up a working group on land restoration.

Brazil's minister for institutional relations, Alexandre Padilha, says the working group's goal

is to present Lula with "concrete proposals" for recovering degraded areas by early October.

Elsewhere, a new version of the Safra Plan was launched in June. With a budget of almost 7 billion reais (US\$1.4 billion), this government programme supports medium-sized and large agricultural producers in recovering degraded land.

Planaveg has also reportedly received funding: 14 million reais (US\$2.8 million) from one of the world's largest



A bee feeds on nectar in an area reforested by the Institute for Ecological Research (IPÊ) near the Atibainha reservoir, São Paulo state (Image: Lucas Ninno / Diálogo Chino)



Coffee seedlings growing among banana trees in an agroforestry area near Nazaré Paulista, São Paulo state (Image: Lucas Ninno / Diálogo Chino)



A female green scissor hummingbird in one of the areas reforested by IPÊ. Agroforestry can improve biodiversity as well as soil health. (Image: Lucas Ninno / Diálogo Chino)

“

Restoration has the potential to drive a local bioeconomy

Rita de Cássia Mesquita

secretary for biodiversity, forests and animal rights, Brazilian environment ministry

environmental funders, the Global Environment Facility. “The resources are assured,” says Rita de Cássia Mesquita, the environment ministry’s secretary for biodiversity, forests and animal rights. “We now have to discuss and move forward with the [restoration] strategies.”

Meanwhile, in November, the World Bank donated US\$25 million to recover degraded pastures in Brazil. A month later, the private investment firm Paramis Capital launched a fund to transform degraded Brazilian land into productive areas.

Elsewhere, in April, Chinese commodity giant COFCO International – a significant player in the Brazilian grain trade – also reportedly expressed interest in financing efforts to recover degraded farmland in the country, though firm commitments have yet to be announced.

Despite the large sums of money required, Mesquita says action on land and

soil degradation can bring financial returns: “Restoration has the potential to drive a local bioeconomy.”

Research by Brazilian sustainable development organisation Instituto Escolhas also suggests that big inputs will generate even greater outputs. For example, the institute estimates that Brazil still needs 228 billion reais (US\$46 billion) to hit its target of 12 million hectares of restored forests by 2030, but it also says this could create 2.5 million jobs and generate revenues of 776.5 billion reais (US\$157 billion).

However, the granting of rural credit using public funding has been heavily criticised. For example, Brazil’s Forest Code 2012 was brought in to manage the conservation of native vegetation on private rural land. The law dictates that landowners who have failed to conserve this vegetation must now do so at their own expense. Yet, according to the Forest Code Observatory

(OCF), which monitors the implementation of this law, these landowners are still able to obtain public rural credit.

The OCF estimates that as many as 20 million hectares of native vegetation protected by the Forest Code are yet to be restored. The OCF’s executive secretary, Roberta Del Giudice, told Diálogo Chino that there should be no granting of public credit “at least, to those who don’t comply with this law”.

RESTORING ENVIRONMENTS AND ECONOMIES

Ten years after his arrival, Dercílio Pupin’s land now employs an agroforestry system. Piracaia is located within the Atlantic Forest, so Pupin integrated plant species native to this biome, such as jacaranda, jequitibá-rosa and tamboril trees. More economically fruitful products, such as coffee beans, have also been incorporated.

The farmer says this agroforestry system is now making a sufficient income, and that he is setting up a cooperative with other Semeando Água members to help with access to food markets.

In a decade, Semeando Água has trained 334 local producers and technicians, regenerated 100 hectares of degraded pastures, replanted 70 hectares of protected areas and created 33 hectares of sustainable farming

systems, according to its team. Biological corridors have re-established themselves, benefiting endangered monkey species in the Atlantic Forest, such as the buffy-tufted marmoset and southern muriqui.

However, Pupin cautions that there is a lack of incentives to encourage small producers. For example, he receives just 283 reais (US\$57) of municipal funds per year to protect 1.06 hectares of forest on his land; Brazil's minimum wage is 1,320 reais (US\$265) per month. Gustavo Brichi, a forestry engineer at the IPÊ, says the institution must expand its strategy beyond vegetation restoration, to focus on productive but sustainable models for rural properties, "without the need for abrupt interventions".

"Today, after ten years that we've been here, I can see that the wheel is starting to turn," says Pupin. "We plant the corn, the corn goes to the chicken... we add manure to the plants, the plants grow, it goes back to the chicken. There's already a cycle closing... When payments for environmental services are advantageous, many people will join." 🌱

Yedan Li contributed to this report.

** Kevin Damasio and photographer Lucas Ninno travelled to the Cantareira region at the invitation of the Institute for Ecological Research (IPÊ).*



Gustavo Brichi, a forestry engineer for IPÊ, teaches students techniques for planting banana trees in agroforestry systems, at the Francisco Derosa State School in Nazaré Paulista, São Paulo state (Image: Lucas Ninno / Diálogo Chino)



Tamboril seedlings at IPÊ's nursery of native seedlings, used for restoration projects in Nazaré Paulista, São Paulo state (Image: Lucas Ninno / Diálogo Chino)



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