

Bucking the trend: South American soy and beef soar in times of Covid-19

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Photo: Alam







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Foreword from the editor:

ith over 10 million confirmed cases and Latin American countries numbering five of the world's ten worst-hit by COVID-19, the pandemic has taken a devastating toll on the region's populations and economies.

Lockdowns and the lower availability of certain goods and services have meant that regional GDP is expected to contract by 8.1% in 2020. According to the IMF, Latin America is not expected to return to precoronavirus growth levels until 2023.

Somewhat surprisingly, Brazil, which accounts for almost half of all Covid-19 cases in the region, is projected to suffer less than its regional counterparts, at least in terms of crude macroeconomic indicators (-5.1%).

One reason for Brazil's resilience is that its economy has been buoyed by record sales of soy and beef to China. In June, Brazil's soy exports to China were 91% above levels of June 2019, topping 10 million tonnes for the first time. Beef, too, is moving between the two countries in record volumes. Sales in the first half of 2020 were up 50% on the corresponding period last year.

And it's not just Brazil. This year, Argentina's beef exports to China are set to match the 800,000 tonnes it sent last year, regardless of the challenges of the pandemic. Despite these unprecedented times, South America's soy and beef exports to China have prospered remarkably. Efforts towards a resolution of US-China trade tensions have faltered and populations of Chinese pigs - top consumers of South American soy - have begun to recover following an outbreak of African Swine Fever, countering some of the negative effects of coronavirus. At the same time, the malaise of soy- and beef-driven deforestation and forest degradation has continued.

Fires in Brazil's Amazon were up 13% in the first nine months of 2020. August and September fires were more numerous even than during the same months of 2019, when the upsurge attracted international condemnation. Even Argentina's Paraná Delta has been set ablaze to a degree not witnessed in living memory, as forests were felled for unplanned industrial development.

With commodity-related forest loss continuing apace, Diálogo Chino presents a special series of articles that examine South American soy and beef supply chains amid the backdrop of coronavirus, to demystify and illuminate the lesserknown aspects of a surprisingly resilient, and often murky, trade.

The articles in the series identify new

deforestation hotspots in the Brazilian Amazon and locate meat plants licensed to export to China; They explore importers' exposure to deforestation risk; explain the process of sanctioning new plants for export; and interrogate the sustainability of both Brazilian producers' and Chinese buyers' suppliers.

Equally importantly, the series looks at policy developments in China, as the country tries to improve self-sufficiency in grain output. Understanding Chinese consumer preferences is key to achieving greater sustainability. We also look at Argentina's efforts to neutralise the carbon embedded in agricultural exports, and report on misguided finger pointing at Chinese beef eaters that implied they were responsible for the destruction of the world's largest continuous rainforest.

With Chinese demand for soy and beef expected to remain high, agriculture in Brazil and Argentina will continue to play an important role in their respective national economic recoveries postcoronavirus. But closer scrutiny of the actors and institutions that set the parameters of the trade is vital if it is to transform itself into a net contributor to the good health of South America's economies and ecosystems. We hope the articles in this series offer this essential scrutiny.

Isabel Hilton founder and editor, Diálogo Chino



Ibama firefighters tackle blazes in Apui, Brazil's Amazonas state, in August Photo: Alamy

<u>Manuela Andreoni</u>

Fires threaten the Amazon once again. What have we learned?

Data suggests an Amazon fire season worse than 2019's that shocked the world. So what are international investors doing about it?

This year's Amazon fire season is already breaking records. In July, there were 27% more fires in Brazil's portion of the world's largest rainforest than last year, when images of trees ablaze shocked the world. And the numbers are still rising.

The fires became an unwelcome hallmark of the administration of Jair Bolsonaro, Brazil's far-right president, after he took office in 2019. Though Brazil has invested millions in fighting fires in the Amazon since last year, the root of the problem remains intact.

Amazon fires typically follow deforestation, a problem

Bolsonaro's administration has resisted fighting. Bolsonaro refused to strengthen the country's environmental protection agencies as increasingly large parts of the forest were converted to pasture and illegal mining sites.

The fire season comes as Brazil's soy and beef exports are booming, raising concerns among foreign investors and business leaders that they're profiting from the Amazon's demise.

"This story that the Amazon is burning is a lie," said President Bolsonaro in a recent meeting. But Brazil is struggling to change the narrative around the crisis. And this year's fire season has intensified the focus on its environmental problems.

So what, if anything, has changed?

WHAT'S DIFFERENT ABOUT THE AMAZON FIRE SEASON THIS YEAR?

In short, there is more dead wood available to feed the flames.

When political and business leaders across the globe expressed outrage last year at Brazil's inability to stop the Amazon burning, former army captain Bolsonaro sent in the military.

Data suggests that helped curb fires in the ensuing months, but deforestation kept rising and the military didn't hold the perpetrators accountable. That means that this year, farmers and land grabbers were free to burn what they meant to last year, plus all the trees they've cut down since.

Research from the Amazon Environmental Research Institute (Ipam) calculates that roughly 9,000 square kilometres of destroyed forest have been left to burn as of August this year. If 60% goes up in flames, this year's season will be as bad as last year's. If all of it burns, however, it could lead to "an unprecedented health calamity" in the region by adding to the effects of Covid-19, Ipam wrote.

DID THE WORLD'S OUTRAGE LAST YEAR MAKE A DIFFERENCE?

Yes, but there have been no significant changes in policy or in farmers' profit margins.

Investors from Brazil and abroad reacted strongly to the government's inability to control deforestation and fires. Links between environmental destruction and the supply chains of major agribusiness players have also been spotlighted.

The government made setting fires in the Amazon illegal after a group of global investors said it was concerned about the country's environmental record. Yet inaction led Nordea Asset Management, the investment arm of Europe's largest financial services group, to drop JBS, the world's largest meat packer in July. HSBC also warned investors about the risk of investing in JBS, arguing

2023

the year by which Cofco, China's largest grain trader, pledges to have a fully transparent soy supply chain

the company was unable to monitor its own supply chain for connections to illegal activity. China's Cofco, one of the biggest trading companies in Brazil, promised to make its soy supply chain fully traceable by 2023.

Still, there has been little sign that investors have taken significant amounts of money out of Brazil because of environmental issues, and exports of agricultural products are booming, even as their links to illegal deforestation become apparent.

While the Chinese press has acknowledged the increase in deforestation in the Amazon in recent months, Chinese investors and business leaders haven't mirrored US and European firms' threats to divest their Brazilian assets if the issue isn't effectively addressed.

Action from China could have major positive consequences, researchers say, as the Brazilian meat industry's dependence on Chinese buyers continues to grow. Many farmers believe that if European firms boycott them, they can simply offset their losses by turning to China. Chinese officials have so far avoided taking a stand against surging deforestation in Brazil. During last year's fire season, the number two ranking diplomat at the Chinese embassy in Brazil praised local environmental laws. And at a press conference earlier this year, Chinese diplomats ignored journalists' attempts to elicit comments on deforestation in the Amazon.

Suely Araújo, who was head of Brazil's main environmental protection agency, Ibama, until last year, said international pressure in the late 1990s was behind the country's most important law against environmental crimes.

"If there is one way this government will improve its policies in this area, it is through international pressure," she said.

WHAT HAS THE GOVERNMENT DONE DIFFERENTLY SINCE LAST YEAR?

The government's move to put the military in charge of protecting the Amazon has been critisied by environmentalists as a lot more expensive and a lot less effective than empowering environmental agencies.

The government spends roughly 60 million BRL (US\$11 million) per month on its Amazon military task force, only a little less than Ibama's annual budget for law enforcement.

Throwing money at the problem hasn't worked so far. Deforestation has

kept rising and fewer environmental crimes have been reported, as funding to the environmental agencies has been slashed. The Brazilian government has also repeatedly punished Ibama agents for doing their jobs – once firing the head of law enforcement after a massive, successful operation against illegal mining.

"Militarising deforestationcontrol is not efficient," Araújo said. "They don't have the expertise."



Gustavo Faleiros

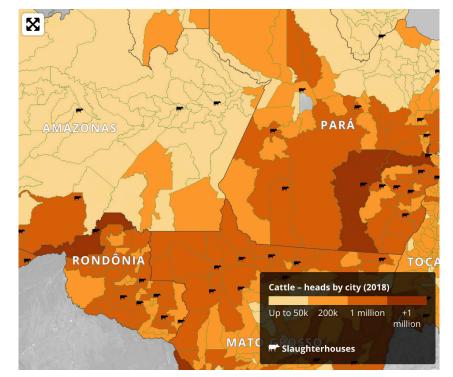
Rising beef demand linked to Amazon deforestation

Brazilian beef exports are causing around 70,000 hectares of deforestation each year

Porto Velho is one of the biggest cities in the Brazilian Amazon but it still feels like a small town. Located in the heart of Rondônia state, trade is modest and the population is growing relatively slowly, increasing from 428,000 to 530,000 in a decade.

The cattle population, however, is growing much more quickly. A decade ago, the human and bovine populations in the Porto Velho municipality were similar. Today, there are twice as many cattle as humans.

This same trend is repeated in the other states that



encompass the Amazon biome. Data from the Brazilian Institute of Geography and Statistics (IBGE) show that cattle herds in the north of the country have grown more than any other Brazilian region. Here, herds grew 22%, compared to the national average of 4%, as shown in a new cattle-ranching map of Brazil, produced by InfoAmazonia and Diálogo Chino.

This growth is driven by demand. With more money in their pockets, families worldwide, and especially those in developing countries, are consuming more meat.

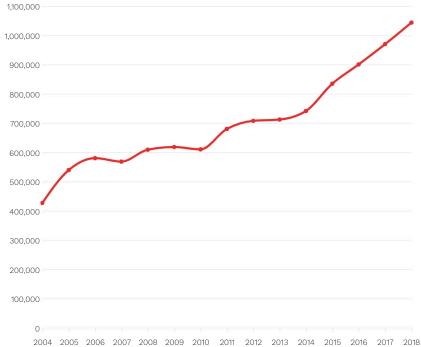
China, the final destination of more than a third of meat produced in Porto Velho, is a case in point. Chinese consumers eat 30% more meat compared to a decade ago. Though the average person in China still consumes almost ten times less meat than the average Brazilian, the size of the country's population means consumption habits have a tremendous impact.

Higher levels of beef consumption worldwide have brought prosperity to Rondônia's farmers. Adélio Barofaldi is CEO of Grupo Rovema, which owns the largest network of car and truck dealers in the state, and invests in energy and livestock. He is also president of the Association of Rural Landowners of Rondônia (APPRO).

"We are the fifth-largest producer of beef from Brazil, with 70% of land preserved and not deforested,"



Numbers of cows in Porto Velho (2004-2018)



Source: The Brazilian Institute of Geography and Statistics (IBGE)

Barofaldi told Diálogo Chino at his Porto Velho office.

But the market has also become a powerful driver of deforestation. Rondônia was among the states most affected by this year's fires. As local ranchers become more successful, the value of pasture in the region also increases, which has the common consequence of encouraging land fraud and the conversion of more tropical forest.

The irregular process of land occupation affects conservation units (areas), even in the state of Amazonas, which neighbours Rondônia. In the southern region, mainly the district of Santo Antônio do Matupi and the municipality of Apuí, the agricultural frontier is advancing alongside land fraud schemes, wood theft and forest clearance for pasture by unlawful fires.

Researchers and environmentalists are calling this process "Rondonization".

According to IBGE's most recent Municipal Livestock Survey (PPM), Porto Velho's herd has grown 145% in just 15 years. By 2018, there were 1.04 million head of cattle, compared to 426,400 in 2004. Today, the Porto Velho municipality has the thirdlargest herd in the Brazilian Amazon, and the fifth largest in Brazil.

Porto Velho was indicated as having the highest risk of deforestation in Brazil's entire beef export chain.

SUPPLY CHAIN TRANSPARENCY

The Trase initiative, a group of researchers studying the impacts of the commodities trade, indicated in its latest report that Brazil's annual beef exports, estimated at 1.4 million tonnes, generate 65,000 to 75,000 hectares of deforestation.

Of this, 22,700 hectares were attributed to exports to China, with some 18,000 of those hectares linked to Hong Kong, the number one destination of meat produced in Brazil.

The report explains that most deforestation (52%) occurs in the Amazon, meaning Hong Kong's imports are more exposed to "deforestation risk". Since mainland China gets most of its meat imports from meatpacking companies in the Cerrado biome, a vast tropical savannah, they carry a smaller deforestation footprint.

Since 2015, when Chinese health authorities approved imports of Brazilian beef after a years-long ban, business has skyrocketed. Imports from Hong Kong and mainland China account for a combined 38.2% of Brazil sales of packed meat. Recently, Chinese authorities approved supplies of meat from 17 new packing plants,



A cattle feedlot in the Amazonian state of Rondônia Photo: Fábio Nascimento

more than half of which are in the Amazon region.

"China is the largest market. They are definitely exposed [to the risk of deforestation]," said Erasmus zur Ermgassen, a researcher at Trase and the University of Louvain in Belgium.

Ermgassen said that the research team reviewed import contracts from 2015 to 2017 to identify which processing plants exports came from and to calculate the deforestation risk. They checked this information against deforestation data at the municipal level, taking into account conversion to pasture and each meatpacking plant's radius of activity.

Ermgassen hopes that the private sector will adopt the Trase indicator, since it translates pressure on forests into actual numbers.

"With this analysis, we are showing that it is possible to know how much deforestation exists within each exported cargo," he said.

Even with the high correlation between meat exports and deforestation, Chinese companies do not seem to be paying attention.

At the beginning of the year, Trase had already identified Chinese companies with major potential to influence the Brazilian market. But a search on these companies' websites did not find any mentions of sustainability. A few reported concerns over health issues and pollution, but all seemed inattentive to the threats faced by forests.

MONITORING TOOLS

A decade ago, Brazil's federal public prosecutors found links between the meat industry and land fraud, fires and deforestation.

Launched in 2009, the Legal Meat programme established deferred prosecution agreements (TAC in Portuguese) to give meatpacking plants time to get their houses in order and meet tracking requirements along the beef production chain.

That same year, Greenpeace was able to get the country's four largest beef producers to agree to support zero deforestation in the production chain.

Then in 2017, the Chinese Meat Association, which represents 40 importers, signed an agreement.

Though positive, such initiatives remain insufficient. Even with agreements covering 80% of meat exports, the challenge of total traceability is still a huge one.

Researchers who work on the topic, such as Imazon and Greenpeace, recently indicated that transparency is decreasing. They experience difficulties accessing information on livestock transport routes on the federal government's website, as well as updates on companies' own websites.

The main problem is that the herds are extremely mobile. This is partly the nature of the business. Cattle are born on one farm and fattened on another. They then go to the slaughterhouse and finally the meatpacking plant. Yet there are many cases of "triangulation" to legalise herds that at some point lived on pastures that had been illegally deforested.

Paulo Barreto, a researcher at Imazon who has studied ranching in the Amazon for decades, noted that it benefits neither producers nor the government to establish a system that permits total traceability since there is an economic advantage in keeping part of the herds invisible.

He added that the complex interaction of different actors within the system means it's unlikely there is a direct connection between growing Chinese demand for beef and increased deforestation, Barreto said.

"In this system full of holes, any additional demand generates risk."

RANCHERS FIGHT CRITICS

Rancher Adélio Barofaldi insists on the need to "tell the truth about the Amazon," which he says differs from the alarming headlines about fires that appeared in newspapers worldwide.

He says that criminalising deforestation is a mistake, since Brazilian legislation allows clearing on 20% of rural properties in the Amazon region.

"(Satellite) photography does not show whether deforestation is legal or illegal," he says.

Barofaldi says that he has a



Adélio Barofaldi says people need to "tell the truth" about beef and deforestation

500-hectare area on his farm that he will not clear. If he were to do so now, he would run the risk of being called a criminal.

Barofaldi does, however, admit that livestock ranching needs to become more efficient, with better pasture management and intensified production.

In the Amazon, herd concentration is still low at only one animal per hectare. This number must be improved, he says, and explains that the goal is seven to eight head per hectare.

In Rondônia, the trend is toward using more technology, such as electric fencing, and recovering degraded pasture, to produce cattle and grains for export. "It would be possible to double the size of the herd in Rondônia without additional deforestation," he says. **(**

This article was originally published by Diálogo Chino

Chinese outrage at WWF video linking beef demand to deforestation

Why did a film designed to promote sustainability certification receive such a backlash online?



On 21 March, World Forest Day, a short video on conserving global forests sparked angry protests on the Chinese internet, and was taken down by its makers the next day.

The five-minute film was a joint effort by PaperClip, a group which produces educational films, and the WWF. It showed how farming for livestock and soy is destroying forests in the Amazon region, in an attempt to encourage consumers to choose products certified sustainable. But linking the purchase of meat, eggs and milk by Chinese shoppers with deforestation sparked accusations that it was "insulting China."

This is not the first time advocacy of environmentally friendly consumption has received a backlash in China. With Chinese markets having an increasing impact on the global environment, efforts to guide sustainable consumption must navigate the fraught terrain of online opinion, rubbing up against nationalism and the "right to development."

'INSULTING CHINA'?

The video was provocatively

titled How to Quickly Destroy the World's Forests. It was first challenged on Bilibili. com, a video streaming site popular with young Chinese people, where Paperclip is well-known as a producer of science and technology content. A video Paperclip published on 2 February, "Everything You Need to Know About the Coronavirus". provided detailed and accurate information on the epidemic and was watched over 100 million times. A mere seven weeks later, Paperclip was being attacked on the platform, for a video about protecting forests.

The film starts by describing how human activity has damaged forests over the last two decades. Citing the WWF's 2015 "Living Forests Report," it links production of beef and soy to the destruction of the Amazon rainforest. It describes this global chain linking production and consumption as "the most efficient forest-elimination machine" and points out the role of Chinese markets. According to the voiceover: "Brazil can't cut soybean farming, because it needs to sell to the world's biggest buyer, China." The film also discusses other commodities associated with deforestation: "The production, trade and consumption of palm oil, rubber, timber and paper impacts on forests in places including Sumatra and Kalimantan." Finally, the video suggests opting for products with sustainability certification to avoid becoming inadvertently involved in deforestation.

Within 24 hours, the video had sparked a huge backlash that spread to other social media platforms such as Weibo.

The attacks focused on whether it was fair to link consumption of meat, milk and eggs in China with destruction of the Amazon rainforest. "We've only had meat to eat for a few years, and it's us that have harmed the planet?" asked one poster. Many contrasted per capita meat consumption in China and the US, where people eat twice as much, and mainly beef which has a far larger carbon footprint than the pork favoured in China.



CR code to watch QR code to watch on your phone

The anger did not stop there. Some called Paperclip's politics into question, after ploughing through its old videos and finding some in which Taiwan island was not clearly visible on what were supposed to be maps of China. Others pointed out that sustainability certifications charge fees, so "It's all commercial."

Paperclip then removed the video and made a statement: the video had not blamed China and the uses of "we" referred not to Chinese people, but to humanity as a whole.

Before being taken down, it was copied and published on YouTube.

WHO CHANGES FIRST?

Jian Yi, founder of non-profit the Good Food Academy and director of the documentary What's for Dinner, told China Dialogue that environmental advocacy needs to avoid "ascribing responsibility to any particular group" as this "will always make someone uncomfortable." This isn't the first online controversy over calls for lower meat consumption in China.

In March 2019, international organisation WildAid launched its Less Meat Is My New Dish campaign in China, calling for lower meat consumption to reduce greenhouse gas emissions. Chinese film stars featured in the campaign, online and on posters in subways and airports.

The adverts were soon challenged by internet opinion leaders. In a nowdeleted Weibo post, popular science blogger Scientific Future Man asked: "Why are Americans, beef-eaters with higher per-capita carbon emissions, always banging on about how Chinese people should eat less pork?" before pointing out that WildAid is an American organisation and saying such advocacy has "other motivations." Guancha. cn soon joined in, with an article asking: "What was this foreign organisation thinking in asking Chinese people to eat less meat to protect the Earth?" and describing the adverts as "repulsive."

Businesses using health and the environment as selling points have also wandered into the minefield. On 8 January this year, in an article on the prospects for meat alternatives in China the New York Times guoted Pat Brown, CEO of plant-based "meat" manufacturer Impossible Foods: "Every time someone in China eats a piece of meat, a little puff of smoke goes up in the Amazon." Nationalist media outlets Global Times and Guancha.cn complained America's environmental responsibilities were being shifted onto China's shoulders.

Fang Kecheng, assistant professor at the Chinese University of Hong Kong's School of Journalism and Communication, expects this atmosphere to continue. In the past, Chinese nationalism was based around websites and forums, with limited reach and regular participants. But now a focus on building traffic has changed this. "There's profit to be made by playing up conspiracy theories," Fang said, adding that large numbers of accounts are chasing the nationalist topics that resonate with the public.

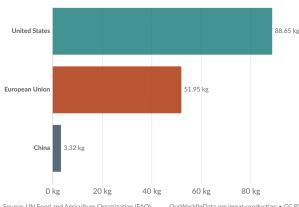
RELIANCE ON OVERSEAS AGRIBUSINESS

Since 1961, per capita meat consumption in China has increased by a factor of 17. Yet while the average Chinese person ate 61 kg of meat in 2017, the average European consumed 83 kg and the average American 124 kg, according to UN figures.

That Chinese average hides urban/rural and class Meat supply per person, 1961 oply per person measured in kilograms per year Average total m



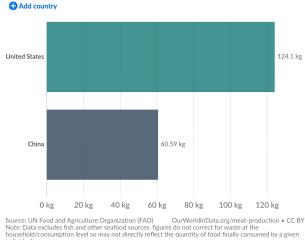
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Source: UN Food and Agriculture Organization (FAO) OurWorldInData.org/meat-production • CC BY Note: Data excludes fish and other seafood sources. Figures do not correct for waste at the household/consumption level so may not directly reflect the quantity of food finally consumed by a given individual

Meat supply per person, 2017

Average total r person measured in kilograms per year.



individual

differences within the country. In 2016, the State Council's Development Research Centre predicted that meat consumption by China's city-dwellers will peak as soon as 2022, at 85 kg per year. Meanwhile, in rural China a peak is not expected to arrive until 2030. So while some Chinese people may be eating as much meat as Europeans, others are still getting less than they want.

Interestingly, while China's overall meat consumption is increasing, in the US and Europe it is levelling off or falling in response to health, environmental and climate concerns. For example, in UK supermarkets last year

beef sales fell by 4% and pork by 6.4%, while meatfree alternatives rose 18%, the highest growth of any category.

Health issues such as high blood pressure and obesity, linked with meat consumption, are also drawing attention in China. The China Nutrition Society's 2016 nutritional guidelines recommended eating 14.6-27.4 kg of meat every year less than half the current national average.

Meat production stresses water and soil resources, worsens climate change and makes humanity more vulnerable to it. In 2019, a

major report from the UN's Intergovernmental Panel on Climate Change suggested global cuts in meat eating.

In 2017. China consumed over 89 million tonnes of meat, more than a guarter of the global total. China produces the vast majority of that but relies on imports for most of its livestock feed – including 90% of its soy meal, the most important feed. China's 2017 soy imports accounted for over a quarter of global consumption. Agricultural economists have said that China's arable land cannot currently produce the soy meal needed for the country's livestock industry, and so in effect it "imports" arable land in this way. China is self-sufficient in staples, but heavily reliant on overseas agribusiness for the fodder needed to meet demand for meat, eggs and milk.

In a 2016 report on lowcarbon development in China, the Tsinghua-Brookings Centre suggested that US-style carbonintensive consumption should not be an aim for Chinese society, and that China's building of an ecological society means it must remake energy and consumption systems to find a more moderate, higher quality mode of consumption.

China's heavy reliance on imports for primary goods gives it great influence over supply chains. That influence could produce far-reaching positive effects, for example by ensuring food on Chinese tables is not linked to deforestation overseas.

BECOMING A GREEN RULE-MAKER

During the debate sparked by the video, one old topic again stirred up nationalist sentiment – the rights of latecomer countries to develop. But on issues like climate change, China has actually moved beyond such sentiments.

Eleven years ago, the Chinese government received strong public praise for its defence of development rights at the Copenhagen climate change talks, regarding the allocation of responsibility for carbon reductions. At the time, conspiracy theories that climate change was not manmade and that the west was using it to restrain China's growth were common. When Chai Jing, hosting CCTV's Face-to-Face interview show, asked Ding Zhongli, a scientific adviser to the Chinese delegation in Copenhagen, about fairness in emissions reductions, he even replied with: "Aren't the Chinese also human beings?"

China has since shifted from protecting its right to develop and a passive role in international climate politics to active participation in the global climate programme. According to environment journalist Li Jing, since 2011 various domestic policy priorities - ensuring energy security, tackling air pollution and responding to changes in international energy markets have aligned with a more active stance on climate change. The country's 12th Five Year Plan (2011-2015) sent positive signals. Then, in 2014, China publicly committed to peaking greenhouse gas emissions by

2030, and helped create the Paris Agreement. Li wrote: "Debate over emissions rights and development rights in the media gradually faded away, and once noisy conspiracy theorists fell silent. Questions over the scientific reality of climate change virtually vanished from Chinese media."

The authors of the Tsinghua-Brookings Centre report wrote: "If China's emissions peak target is to be achieved as soon as possible, a transformation of our current consumer culture is needed," before explaining that "transforming consumption" did not mean sacrificing the economy for the sake of the environment, but rather achieving more stable economic growth and transforming the industrial structure, while improving health and happiness.

Some greener consumption trends have already appeared. The popularity of shared bikes has changed how urban residents travel; restrictions on car registrations has led to more people choosing new energy vehicles. Will "transforming consumption" mean Chinese consumers use their buying power to help protect global goods such as the Amazon rainforest?

May Mei, executive director of advocacy group GoalBlue Low Carbon Development & Promotion Centre, thinks this is the right approach. She told China Dialogue: "Consumers should know how China's strong markets and spending power can influence global supply chains and how they can play a role in making those supply chains more sustainable."



A new investigation has linked JBS, the world's largest meat-packer to a process known as cattle laundering Photo: Alamy

Manuela Andreoni

Investigation implicates JBS in 'cattle laundering'

New report reveals world's biggest meat packer transported cattle linked to illegal deforestation to its Hong Kong-approved slaughterhouses

For years, JBS, the world's largest meatpacking company, has claimed it is unable to monitor indirect suppliers and ranchers accused of illegal activities. The claims have allowed the company to dodge responsibility for 'cattle laundering', the wellknown practice of moving cows from 'dirty' farms linked to illegal deforestation to reputable ones, before then sending to abattoirs, creating the appearance of a 'clean' supply chain.

But a new investigation by Repórter Brasil, The Bureau of Investigative Journalism (TBIJ) and The Guardian has found evidence that the company, whose sales to Europe and Asia have boomed in recent years, might be directly implicated. The report found photographic evidence from July 2019 that a JBS truck hauled cattle from a farm embargoed from grazing cattle because of illegal Amazon deforestation to a clean farm with the same owner, an approved JBS supplier.

The embargo, imposed by Brazil's main environmental protection agency Ibama, is both a punishment and a protective measure to allow deforested land to recover.

The findings come as the Brazilian government and agribusiness are under increasing pressure from international and local investors to fight deforestation, especially in the Amazon. Under Brazil's far-right president Jair Bolsonaro, deforestation has skyrocketed, and researchers expect this year's fire season to break records.

In a statement, JBS said the report "does not reflect its operating standards." The company also told TBIJ it had investigated the evidence and found that the collection farm was not shown to be within any embargoed area, according to its own system. JBS said it introduced a new system on 1 July that it expected to make "a significant impact" in the reduction of cattle laundering. "We are working towards a completely

transparent supply chain," the company said.

The investigation uncovered a July 2019 Facebook post by a driver' picturing him in a JBS uniform alongside images of at least four four or five trucks in transit from one farm to another. In the post, the driver says his team is transporting cattle from the Estrela do Apurinã farm, which was fined over 2,200,000 BRL (US\$420,000) in 2012 for illegal deforestation, to Estrela do Sangue, which supplies JBS.

According to Repórter Brasil, 39% of the Estrela do Apurinā farm is under embargo, leaving 61% that could rear cattle legally. Documents show 7,000 cattle were transported between the Estrela do Apurinā and Estrela do Sangue farms between June 2018 and August 2019, the report says.

The image was crosschecked against official cattle transport records showing that Estrela do Sangue transferred roughly 3,000 cows to two JBS processing plants in the state of Mato Grosso between November 2018 and November 2019.

The two plants — in the cities of Juína and Juara are approved to export beef to Hong Kong.

According to data released by supply chain monitoring initiative Trase, almost 4,000 tonnes of beef from JBS logistics hubs in those two cities ended up in Hong Kong in 2017, almost 2% of sales to that destination that year.

In recent months, JBS has become a major beef

\$420,000

the fine the Estrela do Apurinã farm received in 2012 for illegal deforestation (US\$)

supplier to China, as growing incomes changed traditional diets and, more recently, the swine fever outbreak pushed local suppliers to source other forms of animal protein from foreign markets.

Brazil's beef exports to China grew 53% in 2019 and continued to grow in 2020. The result was that, even as deforestation rates soared last year, JBS's market value shot up. More recently, the Covid-19 pandemic has curbed gains.

Researchers have long suspected that JBS had a role in cattle laundering. Paulo Barreto, a senior researcher at Imazon, an Amazon-based think tank that tracks deforestation, said that the evidence in the report takes the connection to a new level.

He said the findings merit an investigation by Brazilian authorities and investors demanding better practices from agribusiness companies.

"I don't have expectations the company will make any great changes unless there are concrete implications," he said.

JBS has previously said it uses an audit conducted independently by DNV GL, a Norway-based auditing company, that concluded all its direct suppliers in the Amazon meet socioenvironmental criteria.

But the auditor always said the company has failed to track its indirect suppliers. In messages exchanged with Amnesty International following a recent investigation, DNV representatives stressed that its audit does not represent evidence of good practices in JBS's supply chain.

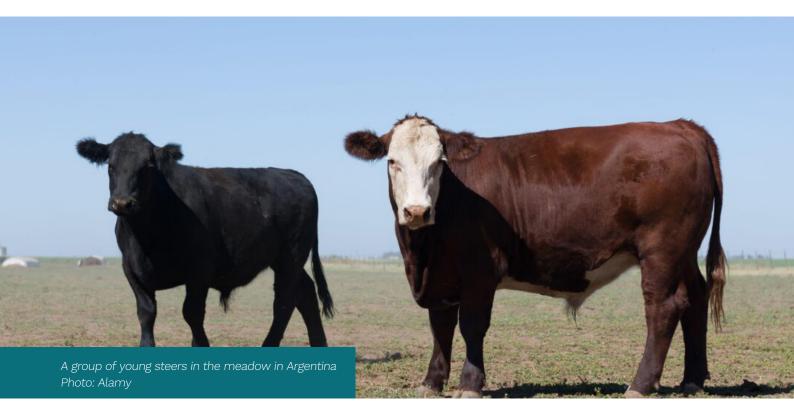
JBS has been implicated in using suppliers connected to illegal practices in the past. In April 2017, Ibama, Brazil's main environmental protection agency, embargoed several of JBS's plants and one exporter, as it faced allegations it bought 20,000 cattle from farms that had been punished for illegal deforestation. But favourable court decisions meant JBS has yet to pay any fines.

Barreto said no previous investigations or threats from investors have yet resulted in significant punishments against JBS. But he says Chinese buyers are in a privileged position to force the company to make changes since farmers often dismiss investigations and complaints by international NGO's and investors from Europe.

"They normally say: 'we will just sell to China instead," he said. "If China signaled that it cared about this, it would make a difference."

Coronavirus pandemic disrupts global meat supply

Covid-19 has raised food prices and the spectre of shortages, but so far there are no signs of a drop in cattle farming across Latin America



In recent weeks, over 20 meat-processing facilities in the US have faced temporary shutdowns as a result of coronavirus outbreaks among workers.

An estimated 6,500 workers have been infected, and lower processing capacity has led producers and farmers to cull millions of animals.

The closures have also led to a spike in the wholesale price of beef and pork, while raising the spectre of a potential shortage of food. In Latin America, where coronavirus cases are accelerating at a faster rate than other regions, a similar dynamic is beginning to take hold in the meat sector.

Brazil's southernmost state of Rio Grande do Sul has reported outbreaks in nine meat processing facilities, with 124 confirmed cases between March 20 and April 27.

Earlier in March, ten other Brazilian meatpacking plants temporarily suspended operations due to a decline in demand as a result of the epidemic.

Meanwhile in Uruguay, 22 out of the country's 51 meat-processing facilities were either inactive or partially active as of early April, with overall production down 50%.

The widespread disruption in Uruguay was partially driven by a strike led by the Meat Industry Worker Federation (Foica). The union's Cerro branch, which represents approximately 50% The drop in meat production in Uruguay

50% of the country's meat workers, cited health concerns as a reason for calling the strike.

Martin Cardozo, President of Foica Cerro said in a radio interview that "it's a strong measure [...] because it weighs on businesses, workers and union leaders alike. We are acting out of solidarity with the population and the government. We are convinced it's for the better."

In Argentina, a meat plant in Buenos Aires province closed following the death of a food safety inspector. Five additional employees also tested positive for coronavirus, and previously 10 other plants had halted operations due to logistical disruptions.

In normal circumstances, international trade can address temporary supply disruptions or production shortages in any given country, caused for example by disease or storms.

The current situation is unprecedented in that all major producers in the Americas could face supply disruptions, with the US, Brazil, Argentina and Uruguay accounting for an estimated 45% of international beef exports.

MIXED SIGNALS FROM CHINA

Even prior to coronavirus, global meat supplies were down due to an outbreak of African Swine Fever, which lowered China's pork production to a 16-year low.

The shortage of pork led to a surge in meat imports in 2019, with beef increasing 60% to 2.1 million tons, and pork 75% to 1.66 million tons, compared to 2018.

Partially driven by trade restrictions with the US, Latin America was one of the biggest beneficiaries of China's higher imports, with major producers in the region all seeing strong growth in sales.

In 2019, Brazil's beef exports reached a record 1.83 million tons, up from the previous record of 1.64 million tons set in 2018. The jump was largely driven by increased sales to China, which were up 39.5% compared to 2018.

Data from Argentina tell a similar story, with exports during the first 10 months of 2019 reaching a record 666,000 metric tons, and China accounting for close to 50% of sales.

While 2020 was expected to be another strong year for Latin American producers, coronavirus has temporarily disrupted meat consumption and trade patterns.

Although specific figures are not available, Rabobank estimates that Chinese consumption of beef, poultry and pork all declined during the first quarter of 2020, driven by the closure of restaurants and fresh markets.

Imports of beef are also expected to be lower during the first half of 2020, due to a large quantity purchased ahead of the Lunar New Year, and subsequently not consumed.

Nevertheless, the impact of Chinese market dislocations on Latin America has so far been mixed.

Argentina saw a reduction in shipments of 35% in January compared to December, with a further 30% decline in February. Sales in March were only 15% of those registered in late 2019.

In an interview with Reuters, Mario Ravettino, president of the ABC consortium of Argentine meat exporters, said that the decline is due to "port logistics difficulties caused by quarantine measures, which have also affected demand patterns of beef."

Brazil on the other hand has doubled its March

45%

of international beef exports come from the US, Brazil, Argentina and Uruguay shipments of beef to China compared to 2019, following a slowdown during the first two months of the year. With decreased demand from other major markets such as the European Union, exports are now even more dependent on China, which accounted for 35% of sales in March.

ENVIRONMENTAL AND ECONOMIC IMPACT

In recent years, increased production of beef and grains has been tied to deforestation and loss of biodiversity in the Amazon. Farming of cattle also generates significant amounts of planet-warming methane.

While a protracted reduction in demand from China and other major markets could in theory reduce some of these environmental pressures, lasting changes would take longer to materialise.

Alejandro Salemme, a cattle producer and member of the Argentinian Angus Association, says that "beef production cycles can last two to three years, so any changes in supply won't be reflected from one day to the next."

So far there are no signs of decreased cattle farming across Latin America, in spite of plant shutdowns and logistics disruptions. And while some US producers are slowing the growth of their livestock to cope with plant closures, experts believe there has been no fundamental, long-term shift in the supply outlook.

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The greatest challenge will be on the supply side and on the industry's capacity to continue supplying products in the same way"

As long as meat exports remain a fundamental economic engine for countries such as Brazil, Argentina and Uruguay – particularly on the back of record sales to China – there will be a strong incentive to continue production.

Mr Salemme believes that, short-term disruptions notwithstanding, Argentinian production will continue to grow, and that China represents a huge untapped market for premium cuts, which have traditionally been sold to Europe.

PUBLIC HEALTH CONSIDERATIONS

As an essential industry, food production has largely been exempt from lockdown measures. But with rising infections within meat plants, governments now face a difficult choice between public health and the economic impact of shutdowns. Following reports of infections within plants in Rio Grande do Sul, state prosecutors filed a lawsuit to temporarily close two plants, in order to slow the spread of the virus.

To try and increase worker safety, Brazil's Secretariat of Health is also requiring all meat processors to establish a contingency plan to prevent, monitor and control Covid-19.

The plan calls for increased distancing and the installation of physical barriers between workers, use of personal protective equipment, staggered work shifts and active monitoring of symptoms.

Argentina has implemented similar guidelines, which include changes in production workflows to reduce the risk of contagion, increased sanitation requirements, and a protocol if positive cases are detected.

Meanwhile in the US, President Trump has taken the drastic step of classifying meat plants as "critical infrastructure" in order to avoid a shortage of food amid coronavirus. The decision has been controversial due its potential implications on public health and worker safety.

Lorival Luz, CEO of BRF, one of Brazil's largest meat producers, said in recent conference call that "the greatest challenge will be on the supply side and on the industry's capacity to continue supplying products in the same way."

The murky process of licensing the Amazon's meatpackers

Meatpackers in the Amazon are eyeing the Chinese market, but export certifications are often the result of intense pressure and neglect of environmental requirements

Politicians and meatpackers in Brazil's Amazonian state of Pará gathered for a celebration in September 2019, cheering the official announcement that four processing plants in the state had won approval to export to mainland China. Photos show delighted participants posing with boxes of meat products.

"The ability to enter the Chinese market is something that meat processing plants in our state have been requesting since 2011," said governor Helder Barbalho who had lobbied hard for the licences.

Decades of growth in cattle ranching have meant Pará is now the state with the largest herd nationwide. At 20.6 million heads, it has 2.5 cattle for every human inhabitant. At the same time, the region has also broken records for deforestation, sharpening the focus on its contribution to climate change.

RAMPANT DESTRUCTION

The Amazon region suffered a fire season in August 2019 that shocked



Photo: Alamy



of the 22 Brazilian meat plants approved to export to China since 2019 are in the Amazon

the world. And the destruction has continued into 2020. Barbalho explained the fires were "burning the forest to make pasture." In the last twelve months. Pará lost almost 3,000 square kilometres of forest, an area almost the

size of Beijing, becoming the state that has destroyed most rainforest in Brazil during this period.

Environmental devastation was not mentioned in publicly disclosed documents about recent agreements between Brazil and China on beef, as political and economic pressures dominated the negotiations. The lengthy certification process for meat processing plants focuses almost exclusively on sanitary standards, as can be seen from the applications forms, hearings, and protocols analysed by Diálogo Chino for this article.

Since 2019, China has approved 22 new beef processing plants, 14 located in the Amazon region. The Amazon biome now is home to almost half of the Brazilian meat processing plants authorised to export to China

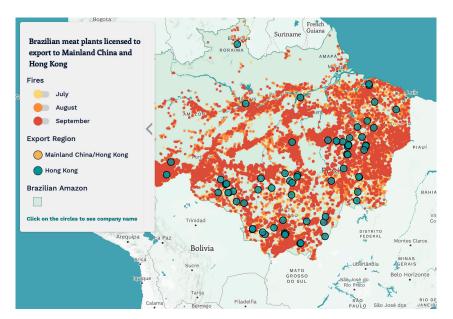
Environmentalists are alarmed by the sector's rapid growth: "Clear criteria for controlling deforestation and respecting the land rights of indigenous peoples and communities should be mandatory for exports of Brazilian beef, particularly when it comes from biomes [that are] under attack," says Adriana Charoux, spokesperson for Greenpeace's Amazon campaign.

For Pará's vast beef farming sector, however, the China licences were doubly welcome following past freezes in the trade because of food safety scandals. In 2017, an exposé caught food inspectors conspiring to approve meat that was unfit for consumption. International embargoes followed, and China temporarily halted new export accreditations for Brazilian meat processors.

MEATPACKERS SEEK MAINLAND MARKET

Meat exporters must follow tougher rules to sell to China's mainland market than to enter Hong Kong, and the mainland is now becoming Brazil's main market.

Hong Kong has imported Brazilian beef for two



decades, although demand is limited and concentrated on cheaper products, according to Thiago Bernardino, a livestock researcher at the Brazilian Centre for Advanced Studies in Applied Economics.

However, demand from Mainland China is rising, largely due to the impact of African Swine Fever and trade tensions with the US. Gaining market access through China's central administration allows sales to all provinces, not just Hong Kong, and sales are often of better meat with higher added value.

"The Chinese market is increasingly looking for quality and paying extra for it," says Bernadino.

DITCH MEATPACKERS' EXPORT PERMITS

To sell meat abroad or nationwide, Brazilian meat processors must be registered with the Federal Inspection Service (SIF). However, SIF's requirements for its environmental operating licence are limited to waste and water management and noise and traffic nuisance near the plant.

Meat processing plants are subject to ongoing inspections, but these do not monitor licence renewals or the status of embargos issued by environmental protection agencies for deforestation.

Once the meat processor has its SIF registration number (used in all future inspections), it needs approval from the purchasing country and an international health certificate.

Hong Kong's market access rules broadly follow exporting countries' protocols, meaning Brazilian meatpackers can respond to direct requests for export without mediation by Brazil's federal government. Hong Kong's requirements, set out in an official letter from the Brazilian Ministry of Agriculture (MAPA), are only that meat must be fit



Fire in the Jaci-Paraná Extractive Reserve, in Porto Velho, Rondônia state, one month after a presidential decree forbidding fires in the Amazon and Pantanal Photo: Christian Braga/Greenpeace

for consumption, without contaminants or prohibited substances, subject to inspections and originate from registered farms.

Mainland China's rules are much tougher. Authorities audit plants in exporting countries, and may also receive a list of recommended companies for local governments to assess.

The credibility of Brazil's SIF inspectors was cut to shreds when the Operation Weak Flesh investigation caught officials passing unfit meat, prompting China to freeze export permits.

China's central administration now

requires meatpackers and the Brazilian government to comply with rigorous standards covering a plant's production capacity and sanitary conditions. In a registration form, China requires details of veterinarians responsible for inspection, potential sources of pollution in the vicinity, risk of crosscontamination inside the factory, the cleanliness of the premises and facilities during storage and transportation, and water treatment.

Besides ensuring quality standards, entrepreneurs must have the capacity to meet growing demand: "China is a giant in terms of consumption, and they need volume," says Jean Manfredini, Brazil's agricultural attaché in Beijing.

As Philip Fearnside, an authority on the subject, points out, "This represents a danger that deforestation in the Amazon may increase."

UNCONTROLLED PRODUCTION CHAINS

Demand for high volumes of beef have stoked the cattle ranchers' interest in the Amazon, a geographic shift that originally began in the late 1990s and early

152,000

square kilometres of forest were deforested in the state of Pará in the six months up to June 2020

2000s in response to foot and mouth outbreaks elsewhere in Brazil.

The Brazilian Ministry of Agriculture responded to the crisis by tightening regulations and hiring more inspectors.

However, contact-tracing rules could provide a way to protect the Amazon if environmental concerns were prioritized. In granting permits to meat exporters, both Hong Kong and mainland China require a brief description of where the cattle have come from in order to ensure sanitary quality from the point of origin.

If this mechanism were strengthened, it could stop purchases from areas where there is illegal deforestation.

"Big meatpackers are already moving towards that," said Bernardino, the livestock researcher, pointing to recent promises by Marfrig and JBS to trace their entire supply chains. But, on the subject of adding further environmental protocols, he said, "there would have to be demand on meatpackers from the consumer, retail side for this information and then pressure to change the system."

Today, the Brazilian government monitors the movement of animals through compulsory transport documentation, while the meat industry monitors suppliers through satellite data and audits. One of the main obstacles to better traceability is 'cattle laundering', where thousands of ranches act as middlemen, providing cattle not to the meat processors but to other, reputable farms. The practice is common and cattle may spend up to 75% of their lives in the pastures of indirect suppliers who may be involved in illegal deforestation and land grabs

The EU imposes stricter requirements on livestock tracing, which are summarized in a MAPA directive guiding inspectors: it stipulates that the monitoring process should start when animals are first transported and received and track their meat all the way through to the final, export-ready product. The EU has excluded Pará and other Amazon states from the list of exporting regions.

Nonetheless, a study published in the journal "Science" revealed that at least 17% of beef exports to the EU from threatened biomes may be linked to illegal deforestation.

POLITICAL AND ECONOMIC PRESSURE

China's authorities have shown themselves willing to exert pressure on Brazil within their current framework's purely sanitary rules on safe provenance. Meanwhile, in Brazil tight links between politicians and Amazon cattle ranchers have sidelined environmental protection.

Bilateral talks to resume

Brazilian beef exports to China after Operation Weak Flesh began in 2018 when Chinese inspectors delivered a harsh judgement after visiting only 11 of dozens of meat processing plants recommended by the Brazilian government.

"[Their] report was not very favourable, excluding one [plant] and was full of questions about the other 10," said agriculture minister Tereza Cristina da Costa Dias at a public hearing. Costa Dias scheduled a trip to Asia in 2019 in an attempt to rectify Brazil's image.

Meanwhile, Pará's meat industry readied itself to fight for exports to China. Governor Barbalho visited Brazil's capital more than 10 times and took ranchers to lobby MAPA on behalf of Pará's meatpackers. State-level problems over environmental licensing and improved livestock monitoring were resolved, although measures still fall short of what would be necessary to sever the industry's connections to illegal deforestation.

The agriculture ministry received petitions demanding transparency about China's requirements from two federal deputies, Fausto Pinato, chairman of the Federal Commission on Agriculture (PP), and Cristiano Vale (PL), a rancher from Pará.

Three major companies dominate the industry: JBS, Marfrig, and Minerva. In terms of export volume,

If China says, 'I want an environmental protocol', you will have to have one

JBS accounted for more than 30% of meat shipped to Hong Kong in 2017.

Many smaller meatpackers were also keen to become listed exporters. But the government's frustration at their unwillingness to meet China's standards can be seen in a video of a closed-door meeting in April 2019, where Costa Dias warned they would be left behind if they didn't do more.

CLOSE TIES

Pará's politicians have strong links to agribusiness. Governor Barbalho and his father, former senator Jader Barbalho, are under investigation by Brazil's Federal Police for receiving supposedly illegal donations from JBS in 2017. Helder was also an agribusiness entrepreneur.

Federal deputy Vale is a rancher who has declared almost BRL\$1 million in assets (US\$188,000): BRL\$ 145,000 (US\$27,000) in seven farms, including one plot of 250 hectares "without documentation, to be legalised." "The environment is certainly a priority," said his fellow deputy, Pinato. "But we always look for balance, respecting the law, with a very moderate position. In other words, without damaging economic growth of exports."

AGREEMENT REACHED

On 22 May 2019, Cristina returned from China with news that the list of approved exporters would soon be finalised.

"I called the entire sector, everybody is at the Ministry of Agriculture, everyone is jetlagged, but the meeting has to be today to see how many plants there will be," she said. "It is the sector itself that will decide which plants [will be accredited]."

Four months later, 17 accredited beef processing plants were announced, along with six chicken plants, one pork-processor, and one for donkey meat. In October 2019, China and Brazil also signed sanitary protocols to export heatprocessed meat products. And in November, another 13 meatpacking plants were certified, five for beef.

Announcing the news in Pará's state capital, Vale said: "I'm sure there will be even more facilities [accredited], with the potential that the state has to absorb this market."

Mainland China has eased inspections of Brazilian plants this year, conducting them by videoconference. Nonetheless, the coronavirus outbreak has paralysed new certifications, and six meatpackers had their exports banned, amid concerns over Covid-19 transmission.

Yet mainland China has quickly become the largest purchaser of beef from Pará: 22,500 tonnes were exported between late 2019 and June from the state's four accredited plants.

That same month, the state led the rankings for deforestation in the Brazilian Amazon. Some 152,000 square kilometres of forest were lost, an area nearly the size of Tunisia.

For Greenpeace's Charoux, it is frustrating.

"Although a significant portion of the deforestation is concentrated in the state...we did not see companies taking measures to restrict purchases or even stricter purchase criteria," she said.

Livestock researcher Bernardino says that for now China is more interested in price than in the environment, but that cattle ranchers are very carefully following its signals.

"If you ask everyone in the market what they're afraid of right now, [they'll say they are afraid that] China will halt purchases," he said. "If China says, 'I want an environmental protocol,' you will have to have one." **(**

Leonardo Coelho and Manuela Andreoni contributed reporting to this article



Wang Chen

Beijing's food vision: quality and quantity

Policymakers want more productive farmland to feed a growing appetite for meat and dairy and to ease reliance on high-quality imported grain

Since 1949, China's grain harvests have increased fivefold, with per capita harvest doubling, and supply roughly matching demand. Yet food remains a top concern for China's policymakers, as detailed in an October white paper by the State Council Information Office.

Rather than focussing on simply having enough for its citizens, China's major goals are now to grow better quality crops for human consumption and enough animal fodder to satisfy a growing meat and dairy demand.

To these ends, researchers are developing more productive and resilient crops. Meanwhile, the Ministry of Agriculture aims to ensure 80 million mu (53,000 km2) of highquality arable land is made available this year alone. Making land 'high quality' includes improving irrigation systems, access for machinery like combine harvesters, and soil quality.

BIGGER HARVESTS, OR BETTER?

In 1994, American environmental analyst Lester Brown published "Who Will Feed China?" The book sparked concern that China's food insecurity would trigger a global food crisis. With 7% of the world's arable land, Brown asked, how could China feed its 20% share of the population?

In a 1996 report on food security, the government

tried to address this concern. It boosted research into food issues and provided more policy support for farmers. By 2019, advances in agricultural technology had led to far higher yields.

There have now been two decades of good harvests, with yields of over 650 billion kilograms for the last four years, according to Zhang Zhaoxin, a researcher at the Ministry of Agriculture. Yet China's food security is still internationally important. "Our responsibilities to the world mean we cannot allow a large food gap," Zhang warned.

He added that China's food priority has moved from producing enough grain to improving its quality. Focussing only on increasing output has given food firms a headache, he said. China produces a surplus of wheat, for example, yet continues to import the grain from Canada and the US.

"Because in China various types of wheat are mixed together, it's hard to get a consistent quality. If a company wants to make a particular high-quality flour, they have to import the right type of wheat," Zhang explained.

Luo Shiming, former dean of South China Agricultural University, told China Dialogue that the government has been paying increasing attention to seeds, boosting investment in research and breeding. China's Seed

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Because in China various types of wheat are mixed together, it's hard to get a consistent quality. If a company wants to make a particular high-quality flour, they have to import the right type of wheat,"

Zhang Zhaoxin

A researcher at the Ministry of Agriculture

Law, which came into effect in December 2000, was revised in 2015, with protections for new strains and controls on imitations.

GREATER HARVESTS HIDING WORRIES

According to the white paper, China will see food supply and demand remain "tightly balanced" in the mid- and long-term. Though China's population is stabilising, increased demand for meat, eggs and milk will necessitate the production of more animal fodder. The white paper expects this trend to continue for some time, with annual increases in grain output not resulting in a surplus.

Zhang points to a fundamental scarcity: "First, we need to make sure we have land, and good land."

Food output in China fluctuated in the years after 1996, and even started to shrink in 1999, not growing again until 2004. Harvests did not return to 1998 levels until 2008. This was partly due to flooding and the El Niño effect, but mainly down to arable land loss. Urbanisation and industrialisation bit into China's arable land for 11 consecutive years from 1997, forcing the government to set a 1.8 billion mu (1.2 million km2) "red line" in 2006. Strong protection policies have meant, according to a recent report, slight increases in arable land area, and the red line is, for now, safe from being breached.

But what about quality? Intensive farming, chemical pesticides and monocropping have caused rapid falls in the productivity and resilience of the land, making it more vulnerable to natural disasters. So government departments, including the Ministry of Agriculture and the Ministry of Land and Resources, have implemented a series of initiatives to ensure the availability of good farmland. In 2013, the government set a target of creating 800 million mu (53 million km2) of high-quality arable land by the end of 2020.

The white paper stresses maintaining the arable land red line and improving quality. The prominence given to protecting the environment highlights the importance of pollution to food security issues, according to Luo.

INFLUENCING THE INTERNATIONAL MARKET

The impacts on international markets of how China feeds itself are profound.

China started importing grain after joining the World Trade Organisation in 2001, abolishing import quotas and license. "Soft quotas" for wheat, corn and rice still exist but imports in excess of quotas are permitted on payment of a tariff. Meanwhile, tariffs for other grains have been cut significantly.

China's main concern on participating in international food markets was to make use of relative advantages in grain production to boost rural incomes while also ensuring food security. Imports to make up for weaknesses in China's output, and exports of some high-quality grain, meant better returns for Chinese farmers. This saw China move from being a net exporter to a net importer of soybeans, and the country is still the world's

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Soft quotas" for wheat, corn and rice still exist but imports in excess of quotas are permitted on payment of a tariff

largest soy importer. But in 2002, China became a net exporter of wheat, which it sends to Southeast Asia.

The white paper repeatedly stresses that China "conscientiously fulfils its commitments to the WTO," opening grain markets and actively cooperating internationally. Luo said it seems China will continue to focus primarily on being self-sufficient, while drawing some assistance from international trade.

However, China's relationship with international food markets is not always easy. Trade frictions with the US and natural disasters have meant problems for soy imports in the last year or two, prompting China to look to increase domestic production and find alternative suppliers. But Zhang thinks that while policies such as those stimulating soy production aren't in conflict with cooperation via international markets, the future will see more emphasis on stability

of imports and capacity to respond to policy changes and natural disasters.

Zhang and Luo both think that China should make good use of international markets, but also increase competitiveness of its own agriculture, whether by promoting exports or reducing reliance on imports.

China's own grain crops suffer from variable quality and are facing rising labour and transportation costs, land loss and pollution from agrichemicals. This gives good quality and cheap imported grains a market advantage. The big question for Chinese agriculture is how to improve quality while reducing costs?

The two challenges may to an extent have a shared solution. Zhang has repeatedly emphasised the importance of developing better crop strains by selective breeding and genetic modification. Luo, meanwhile, says increasing crop resilience will help reduce reliance on chemicals.

International markets have noticed new Chinese tastes and concerns about eating better. Brazil, for one, wants to go beyond just exporting soybeans to trading superior food products with China, Nepstad said.

"Low margin commodities like soy are unsustainable and China's economy is also transitioning to higher quality development [that] will begin to demand higher quality imports."

Covid-19 spike hits at peak soy export season

Chinese government tries to calm food security fears, while Brazil and Argentina work to guarantee functioning logistics chains

The coincidence of the first peak peak of the Covid-19 epidemic in Brazil and Argentina with the soy export season spanning April and May sparked concerns in top buyer country China as roadblocks and transport worker sickness create logistics problems.

During a press conference on the subject in early April, Wei Baigang of the Chinese Ministry of Agriculture made it clear that the government was focusing on soy, one of the few essential foodstuffs that China imports in massive quantities. Imported soy is mainly used to feed China's vast pig population

"[We] will strengthen coordination with exporting countries and continue to promote plans to revitalise soya at home to ensure supply," he said, referring to a policy released in October last year that aims to develop Chinese selfsufficiency for key crops. Wei also said China would resume importing soy from the US following the latest trade agreement between the two countries, sparking concerns in Brazil.



The Covid-19 outbreak has has heightened questions questions about the ability of Brazil's logistics network to get soy to China. Photo: Alamy



There is a concern that truckers will get sick, since they are extremely exposed

Meanwhile, agribusiness in Brazil moved to allay fears. According to Sérgio Mendes, executive director of the Brazilian Association of Grain Exporters (ANEC), coordination between the ministries of agriculture, infrastructure, and health would stop the crisis from decimating the supply chain.

"They are doing a great job, working quickly and anticipating events with decrees that would normally take weeks," he said.

Yet worries persist. In Brazil, China's main soy supplier, truck drivers have complained about their exposure to Covid-19 and the lack of essential supplies on highways, since most businesses are closed.

In Argentina, the world's third largest soy exporter, the government's Covid-19 isolation measures blocked access to 70 cities, alerting agribusiness to the risk of acute shortages in both the domestic and export markets over the two months of the first peak.

Shipments of soy, maize and other agricultural products were delayed in the early spring due to sanitary inspections by the Argentine government, which tested cargo ship crews for coronavirus infections.

COVID-19, SOY AND LOGISTICS

The pandemic and restrictions on movement have already affected Argentine grain exports, which saw revenues dip 6.9% in March compared to the same period last year.

It was a different story in Brazil. According to the Brazilian Department of Foreign Trade, soy exports grew 37.6% in March compared to March 2019.

"We believe that any future specific impacts of Covid-19 could mainly reflect logistics issues related to the flow of exports," Herson Brandão, Brazil's secretary of foreign trade intelligence and statistics, told journalists. "We have information that exports of goods such as soy, petroleum and iron ore were not impacted."

Chinese media have reported that stores of essential products are sufficient, in an attempt to quell worries about food security in a country that needs to feed a fifth of the world's population with only

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If the goal is to invest in fighting the coronavirus, it is important to take care of truck drivers as well as doctors and nurses



growth in Brazil's soy exports in March compared to the same month last year

around 7% of its arable land.

As the pandemic spreads, some countries like Kazakhstan have begun to limit exports to China. But although the Chinese government may have secure supplies of wheat and rice, the same cannot be said of soybeans.

"The countries that need special attention are [in] Africa, South Asia, and Central and South America," said Fan Shenggen, professor at the School of Economics and Administration at China Agricultural University, in an interview with China Science Daily in late March. "Because these developing countries still suffer from hunger and malnutrition, they have much less capacity to deal with crises than developed countries in Europe and America."

GOVERNMENT ENSURES FLOW OF EXPORTS, BUT TRUCKERS WORRY

Officials from the Brazilian ministry of infrastructure wrote to Diálogo Chino claiming exports of commodities during April and May would be unaffected, and that work continues to maintain and improve roads, ensuring that soybeans and other raw materials can be shipped as normal.

The ministry has implemented a series of measures since the beginning of the coronavirus crisis, including the nationwide coordination and maintenance of services essential to truckers, like mechanics' workshops and tyre shops, as well as roadside restaurants, many of which have closed. It has also mapped the 130 support stations that remain open on federal motorways.

Other moves included flu vaccinations to reduce drivers' vulnerabilities and enable quicker diagnoses, and the temporary suspension of document renewal requirements for professional drivers.

But Brazil's logistics network's dependence on individual

truckers continues to be its biggest weakness. Drivers are subject to working conditions that are often precarious, along with extremely volatile freight values. In 2018, a truckers' strike knocked Brazilian GDP growth down by 1.2%.

Unions representing truckers, who transport about 60% of the country's cargo are fearful of the coronavirus pandemic's impact on the sector. Members of the National Confederation of Independent Transporters (CNTA) are working to provide working drivers with regular information on the coronavirus through WhatsApp.

"We need to be aware that there is a human being behind the wheel. Great care has been taken. There is a concern that truckers will get sick, since they are extremely exposed," said Marlon Maues, executive adviser to the CNTA, which represents 800,000 truck drivers and 140 unions in Brazil.

Even so, there is much room for improvement. In early April, the Brazilian Association of Truck Drivers, which represents 560,000 drivers in the country across its 92 unions, wrote to Brazil's president, Jair Bolsonaro, complaining about conditions on the roads and the lack of incentives for this sector:

"If the goal is to invest in fighting the coronavirus, it is important to take care of truck drivers as well as doctors and nurses."

Damian Profeta

Argentina's farmers go 'carbon neutral' to retain agriculture markets

Soy and cereal producers from Argentina want to neutralise production chains' carbon footprints through new Carbon Neutral Programme

"We are facing an important change for the entire Argentine productive sector. The challenge now is that at the end of an agricultural season we not only ask ourselves 'How did your soybeans do?' but also, 'How did this year go with your carbon balance?'"

This is how Eduardo Serantes, representative of South American agribusiness organisation the Group of Southern Producing Countries (GPS), introduced the new Argentine Carbon Neutral Programme for agriculture, an ambitious private sector initiative that he hopes will give Argentina an advantage in international markets.

The Argentine carbon neutral agriculture programme aims to export food, beverages and bioenergies that will reduce and compensate for the amount of greenhouse gases (GHG) emitted during their life cycle. 66

It is not about selling an additional value, but about being on par with the new global demands

Created by associations of Argentina's agricultural producers, the carbon neutral programme calculates the carbon footprint of each sector, and certifies the 'carbon balance' of their exports.

"There is a new productive paradigm that we have to start considering if we want to sell more," said Sabine Papendieck, a business consultant. "Public and private standards have an impact on market access, our



Argentina's Carbon Neutral Programme for agriculture was launched in November 2019 Photo: Programa Argentina de Carbono Neutro

competitiveness, our production costs and the perception that consumers and marketing chains have."

Papendieck acknowledged that rather than winning new markets, the programme is designed to help Argentina keep its market share "Ten years ago, [environmental standards] were a plus, but today it's about not losing markets. They are a condition of access demanded by European markets, but which is also beginning to be seen in countries like China," she said.

Argentina finds itself in competition with neighbouring countries with an agricultrual production base such as Uruguay and Mexico, whose farmers have begun to adhere to stricter conditions on carbon emissions in the production chain.

José Martins, president of the Buenos Aires Cereal Exchange, agreed: "It's not about selling an additional value, but about being on par with the new global demands for environmental certification."

Although participation in the programme is voluntary, Martins is optimistic about the challenge its signatories are setting themselves.

"We managed to align the entire agribusiness chain and all the country's exchanges in pursuit of one aim: to work to look after the environment, an issue that we are very worried about," he told Diálogo Chino.

HOW TO ACHIEVE "CARBON NEUTRAL" FOOD

A producer can generate greater efficiency through investment in clean technology, implementing direct compensation for its emissions via activities such as afforesting, or changing land use. Countries can also buy bonds that compensate for the carbon emitted. For Ramiro Costa, executive subdirector of the Buenos Aires cereal exchange, it is an opportunity for companies.

"We believe that there are clear benefits because consumer demand points towards this," he said.

Companies that reduce their emissions can begin to be included in investment banks' lists of green companies and receive financing at different rates, Costa said. "It's not just about entering an international market, but also about productive and financial efficiency."

NEW CONSUMERS

Be it the countries of the EU, the US or China, entrepreneurs must increasingly take into account environmental responsibility as a factor in the production, transport, storage and distribution chain of their products.

"Consumers in the vast majority of buyer countries are increasingly concerned about environmental issues and requests for

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Even when developed countries reduce their territorial emissions, the import of incorporated carbon partially counteracts this

environmental certifications are growing," said Costa.

Miguel Ángel Cinquantini, coordinator of the Corporate Carbon Footprint Program of the Argentine Network of Municipalities against Climate Change (RAMCC), said: "Climate change is very present in consumers because it is a pressing problem."

In China, many new consumers who care about the environmental impacts of the products they buy have emerged.

Ernesto Fernández Taboada. executive director of the Argentine-Chinese Chamber of Production, Industry and Commerce, told Diálogo Chino: "More than half of the Chinese population is already urban, the middle class grew and has a better quality of life. That allows them to try new products and broaden their diet. Those new consumers - young people - have a preference for organic products."

For Fernández Taboada, products that are certified carbon neutral will soon be a reality for many producers: "The evolution of international markets, 177%

companies made pledges to reduce their emissions at the COP25 climate summit

especially the Chinese one, is staggering."

THE PRIVATE SECTOR AND CLIMATE CHANGE

According to the latest national inventory of greenhouse gases, agriculture and livestock (along with forestry and other land uses) are responsible for about 40% of Argentina's greenhouse gas emissions.

A reduction in emissions from these activities, as proposed by the programme, would help meet Argentina's climate change mitigation objectives.

Likewise, countries that buy food and raw materials seek to reduce their "imported emissions."

The recent UN Environment Program's Emissions Gap report noted: "The net flow of carbon incorporated goes from developing to developed countries. Even when developed countries reduce their territorial emissions, the import of incorporated carbon partially counteracts this effect".

For Cinquantini, the 2015 Paris Agreement clarified that the private sector has a strong role in tackling climate change and the task can't be left to national, local and provincial governments.

A total of 177 companies have pledged at COP25 climate summit to set ambitious emissions reduction targets to help limit the effects of climate change. The companies represent over 5.8 million employees, spanning 36 sectors and with headquarters in 36 countries.

Jorge Segura Mora, president of Planeta Carbon Neutral, a consultancy firm that grants environmental certificates to companies in Latin America, praised the initiative in Argentina: "In a world increasingly concerned about the future of the planet, we hope this programme will make Argentine products more attractive internationally."

Argentina's government has also praised the programme. Carlos Gentile, former secretary of climate change and sustainable development, said: "These are the kind of initiatives that the private sector has to promote. It is the way to show an x-ray of what the sector is and isn't in terms of emissions."

Questions persist over giant Chinese soy trader's track and trace plan

COFCO's pledge to protect Brazil's vast Cerrado watersheds from deforestation is welcome but looks less bold on closer inspection

The Chinese agribusiness giant COFCO International released plans in July to achieve full traceability of its direct soy suppliers in Brazil by 2023, an effort that could help curb the devastation of the Cerrado biome. However, environmentalists say the plans fall short on transparency.

"Soy production can go hand in hand with the conservation of forests and native vegetation," Wei Peng, head of sustainability at COFCO International, said on announcing the pledge, adding; "We make our traceability commitment public because we are prepared and we want to be held accountable for it."

In recent weeks, the plan, which was a response to a sustainability-linked U\$2.3 billion loan, has won high praise in the financial sector. But, questioned by Diálogo Chino, COFCO did not say how big an increase in the volume of soy it currently traces would be required in order to meet its goal, and it has released very little information about how it plans to do so.

"We still need to



Chinese agribusiness giant COFCO's pledge to monitor its direct Brazilian soy suppliers is welcome but critics say it could do more Photo: Alamy

70%

of the Brazilian soy COFCO buys from Mato Grosso and the Matopiba region comes from indirect suppliers

understand what these instruments are that they have adopted for verification," says Lisandro Souza, coordinator for the Imaflora programme on climate and agricultural production chains. "Then, the degree of transparency of this policy." In a statement, COFCO said it would release results of the policy in their annual sustainability reports and other "concrete indicators" regularly.

The most glaring omission in the plan is the issue of the company's indirect suppliers and COFCO has not revealed how much Brazilian soy it sources from them. COFCO says 70% of the soy it buys from the state of Mato Grosso and the so-called Matopiba region that encompasses the states of Maranhão, Tocantins, Piauí and Bahia, comes from direct suppliers, suggesting its 2023 pledge has significant room for improvement.

In a written response to questions from Diálogo Chino, COFCO said it was making an effort "to engage with indirect suppliers."

The whole of Matopiba and almost half of Mato Grosso fall within the Cerrado biome, from where COFCO sources almost a third of all its Brazilian soy. Less well known than the Amazon rainforests to its north. the Cerrado savannah covers over a fifth of Brazil's land area, but enjoys far fewer environmental protections. At 2 million square kilometres, the Cerrado is equivalent in size to France, Germany, Spain, Italy and England combined.

Preservation of the Cerrado is essential for water stability in Brazil. Known as the "cradle of Brazilian waters," the savannah highlands feed the headwaters of such major rivers as the Araguaia and São Francisco and supply eight of Brazil's twelve major river systems. Only 8% of the vast partially tree-covered grassland is currently protected land.

As protection of the Amazon region has risen up the agenda in the last 20 years, agribusiness

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has moved into the neighbouring Cerrado biome. Soy production tripled in the Cerrado between 2001 and 2019, and 51% of the land area dedicated to soy in Brazil is found there.

AMAZON OVERSPILL

Unlike the Cerrado, the Amazon is currently protected from the advance of soy plantations by the 2006 Soy Moratorium, a voluntary zero deforestation agreement made by major food companies to protect the rainforest.

"The success of the Soy Moratorium partly depended on the simple fact that the Cerrado existed alongside the Amazon region," says Toby Gardner, a researcher at Trase, an organisation that monitors deforestation linked to commodities.

Producers in the Cerrado are opposed to COFCO's conservation pledge, though details of what the company will do remain hazy.

"There could be an impact immediately, especially in the Cerrado region of Matopiba, where new areas can still be cleared legally, if [the company] begins to restrict purchases from these producers," Fabrício da Rosa, executive director of the Brazilian Association of Soy Producers, told Canal Rural shortly after COFCO's announcement.

The Cerrrado covers 13 states but the four states of the Matopiba sub-region represent the main frontier in the expansion of soy farming. Currently, soy covers 8% of the biome.

AMBITIOUS NEWCOMER

COFCO International is a subsidiary of China's giant state-run COFCO Corporation. The parent firm has annual turnover of \$US70 billion. COFCO International was set up in in 2014 to become a world leader in grain supply. Headquartered in Geneva, it is expanding fast and aims to compete with global agribusiness leaders like Bunge and Cargill.

In less than a decade, COFCO International has set up operations in 35 countries. It arrived in Brazil in 2017 and quickly became a major exporter of Brazilian soy, sending most of its 4.5 million tonnes of soy to China in the form of pig feed by the end of the following year.

COFCO International says it already monitors all its direct suppliers within 25 priority municipalities in the Cerrado. However, this only accounts for 25% of the soy COFCO obtains from the biome and 7.2% of the total sourced from the entire country, according to

They kept quiet and evaluated the situation much more carefully to determine the level of the challenge

calculations by Diálogo Chino based on company data.

This suggests that to achieve full traceability of direct suppliers by 2023, the company would need to increase the monitored area multiple times.

COFCO wrote to Diálogo Chino saying the calculations were incorrect because it currently monitors more than the 25 municipalities it mentions in its sustainability reports, although it didn't say how much more.

COFCO has also promised to trace 85% of its direct suppliers in Matopiba, the soy heartland that Greenpeace says accounts for 62% of forest devastation in the Cerrado biome, earlier, by 2021.

Paulo Adario, founder of Greenpeace's Amazon Campaign, believes that the company "missed the opportunity" to commit to a shorter period, ending in 2020.

QUESTIONS OVER INDIRECT SUPPLIERS

COFCO didn't reveal how much of the soy it buys from Brazil would be traced by its plan, promising only full traceability of direct suppliers. The company also refrained from spelling out what proportion of its total output and purchases from the Cerrado region (or in Brazil) its goals for Matopiba represent.

COFCO International said it would use maps of farms and satellite images as well as official data such as the Rural Environmental Register (CAR) of private properties within forest areas to monitor suppliers, and hire external auditors to monitor the process.

Explanations of how compliance with the new target will work remain vague. The information is scattered throughout its official announcement, environmental report and its most recent outcomes report from June 2020 at the Soft Commodities Forum, a private sector initiative to curb deforestation in the Cerrado. Nor has COFCO revealed details of the external audit it has carried out in the 25 priority municipalities it cites.

PRESSURE FROM BANKS

The plan is at least in part a response to a US\$2.3 billion loan that COFCO International obtained from 21 banks in 2019, the company says. The low interest loan is linked to compliance with environmental goals that prioritise product tracing.

In response to growing deforestation in Brazil over the last two years, financial institutions such as HSBC bank and Nordea, the investment arm of Europe's largest financial services group, are putting pressure on the commodities market. Greenpeace's Adario says; "COFCO says it is concerned about the environmental issue. It is a concern that exists, and is linked to defending the market".

COFCO has also promised that its suppliers will not use forced labour, or farm on preservation areas or those under embargo by Brazil's environmental protection agencies for irregularities. It also says that its new measures will follow the framework set by the Soy Moratorium.

TRANSPARENCY ESSENTIAL

The Soy Moratorium has been among the main tools in reducing deforestation in the Amazon biome (as studies in Plos One and Pnas, have shown) and was effective up to 2018, though it has recently drawn criticism from Minister of Agriculture Tereza Cristina da Costa Dias.

1.8%

of last year's Amazon soy crop violated pledges made under the 2006 Soy Moratorium

Even when rates of deforestation in the Amazon started to rise again in 2019, soy was not the culprit. A report by the Soy Working Group (made up of producers, environmental organisations and the Brazilian government) found that only 1.8% of the 2018/2019 Amazon soy crop violated the moratorium. The performance of individual companies is not given, though a template for doing so could be copied from the livestock sector's Meat Conduct Adjustment Agreements.

Souza, from Imaflora, says that transparency is essential to allow participation by civil society groups who demand effective verification systems.

THE HUMAN COST

Although the growth of agribusiness has boosted the GDP in the Matopiba region's municipalities, it has not advanced social development there.

Only 45 of the 337 cities in the region have well-being indexes that exceed the averages for their states, according to a study led by the Sao Paulo-based Federal University of ABC. In most cases, well being indicators in soy-growing regions are worse than elsewhere.

Soy cultivation in the Matopiba region is responsible for degrading springs and riverbeds, and the widespread use of agricultural chemicals has had adverse health impacts, a 2018 report by social organisations revealed.

Altamiran Ribeiro of the Pastoral Land Commission lives in a farming community near Bom Jesus, in southern Piauí. Like most peasant farming communities, Ribeiro's home sits in the lowland river valleys of the Cerrado, whereas agribusiness is taking over the plateau areas.

The expansion of soy monoculture impacts the bodies of water that supply communities like Ribeiro's: "First, deforestation causes the water to dry up," he says.

Next, there is the effect of the agrochemicals used in the fields."Many communities are downwind, then the wind blows and brings with it the chemicals," he adds. "When it is five in the afternoon, there's this cloud that looks like mist, but it's just pesticides."

Ribeiro also complains that soy monoculture is advancing without dialogue or transparency. "Sometimes we know who is farming it. But the buyers, who the soy belongs to, where it's going and how it gets there, this we don't know," he says.

As for the environmental impacts of soy, COFCO International says that it invests in education and in the development of communities in the regions where it operates.

JOINT ACTION OR GOING IT ALONE?

Whereas the Soy Moratorium covered the entire sector, COFCO International has adopted a go-it-alone approach.

"COFCO's stance is interesting because it is unlike the other traders, which ended up making ambitious commitments," says Toby Gardner of Trase. "They kept quiet and evaluated the situation much more carefully to determine the level of the challenge. On top of that, they are making their commitments more concrete."

Paula Bernasconi, coordinator of the Centro de Vida Institute, has welcomed COFCO's pledges, saying it pushes the industry to raise the bar, and shows it is possible to "create a restrictive policy against deforestation". However, she concedes sector-wide agreements are essential to stop environmentallydestructive producers putting soy into the supply chain by selling to less demanding buyers

Meanwhile, the Brazilian Association of Vegetable Oil Manufacturers opposes a sector-wide agreement (like the Soy Moratorium) for the Cerrado.

Big companies have been known to dodge their pledges in the past. Several, including Cargill, adopted promises to halt deforestation and promote product traceability by signing the 2014 UNDPbacked New York Declaration on Forests. Although Brazil was not a signatory, Cargill did sign. Even so, it ducked its 2015 commitment to monitor all Brazilian soy purchases by 2020 by deferring the goal to 2030.

Trase ranks COFCO International seventh among the 30 companies most exposed to the risk of obtaining soy from illegally cleared areas.

Besides soy, COFCO International also trades coffee, sugar, and cotton in Brazil. To keep a handle on this market, 70% of its 11,000 employees are in Brazil.

COFCO International's strategic focus on Brazil brings risks and benefits. Its increasing presence heightens the risk of environmental impacts if its advances are uncontrolled, while at the same time making it more susceptible to pressure to change from campaigners. •



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