

GREENPEACE

MAKING MINCEMEAT OF THE PANTANAL

THE MARKETS FOR (JBS) BEEF

() Marfrig & *Minerva Food*



Zandbergen
world's
finest meat

montesano



Carrefour

KAIBO
佳宝
食品



FM
FROSTMEAT
SINCE 1989

DANISH
CROWN

GRUPA
JUCARNE

Egatesa
carne de primeira

Casino

meat 2000

Nestlé



JAN ZANDBERGEN

שופרסל

Walmart





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'The opportunity that we have, with media giving us a break on other issues, is to pass the reforms and deregulate, simplify. So we need to give this a push here, while we are in this moment of calmness in terms of media coverage, because it only talks about COVID, and "pass the cattle" [push things through all at once] changing all the rules, and simplifying regulations.'

Brazilian Minister of the Environment Ricardo Salles, April 2020



'The livestock industry is not a threat to the future of the planet despite Greenpeace and certain other NGO claims. Livestock can deliver biodiversity, socio-economic development, sustainable livelihoods and meet food security goals.'¹

Maccio Nappo, Director of Corporate Sustainability,
JBS Brasil, February 2021



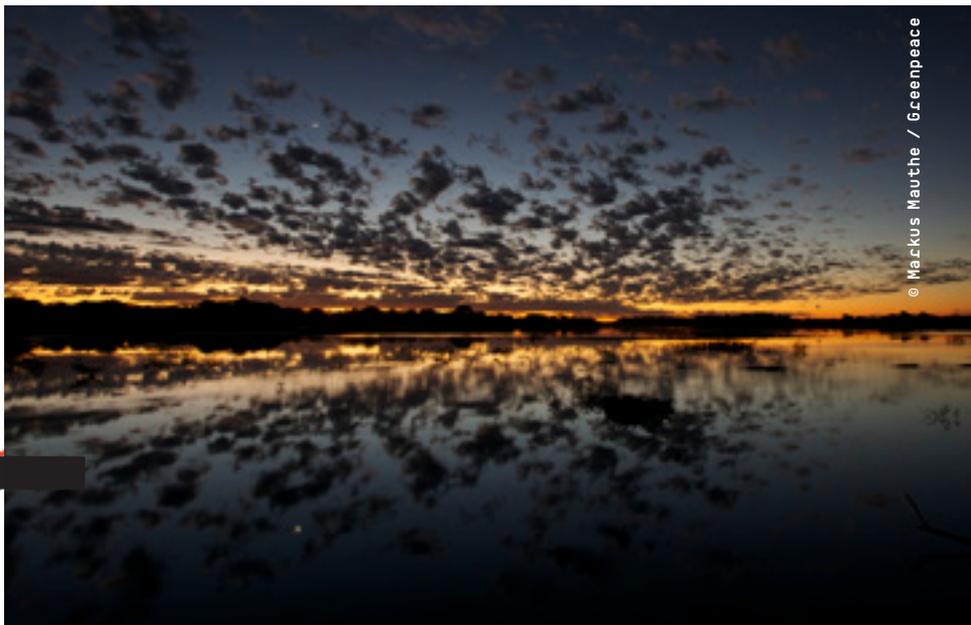
'The need for rapid reduction in GHG emissions from fossil fuels to meet the 1.5° or 2°C targets is widely acknowledged. We show that the same is true for food systems: Even if fossil fuel emissions were rapidly reduced, emissions from the global food system are on a trajectory that would prevent achievement of the 1.5° and 2°C targets. ... [M]eeting the 1.5° and 2°C targets will likely require extensive and unprecedented changes to the global food system.'²

Michael A Clark et al, *Science*, November 2020

EXECUTIVE SUMMARY: MAKING MINCEMEAT OF THE PANTANAL



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In 2020, thanks to two consecutive years of severe drought,³ some 30% of the Brazilian Pantanal – the world’s largest contiguous wetland⁴ – burned,⁵ with official sources saying that the vast majority of the fires were started by human activity.⁶ In many cases ranchers are suspected of starting fires deliberately,⁷ in defiance of official bans on the use of fire introduced in July by regional governments and presidential decree.⁸

Despite its value as a vital habitat for jaguars⁹ and other wildlife,¹⁰ about 90% of the Brazilian Pantanal is under self-declared land claims, where ownership is not verified by the state.¹¹ As a consequence, these land claims often overlap with Indigenous lands or public conservation units (including federal, state and municipal reserves). In the Pantanal, these land claims overlap with about 28% of Indigenous lands¹² and 58% of public conservation units.¹³ About 80% of the Pantanal is reportedly managed as cattle ranches.¹⁴

Greenpeace International¹⁵ has identified 15

ranchers who are either current or recent (2018–2019) suppliers of Brazil’s leading meat processors, JBS, Marfrig and Minerva, and that are linked to the devastating 2020 fires in the Pantanal, environmental violations and/or property registration irregularities.¹⁶ The fires within the boundaries of the case study properties alone burned more than 73,000 ha – an area the size of Singapore, or about half the size of Greater London¹⁷ – between 1 July and 27 October 2020, and in many cases appear to have contributed to extensive burning far beyond the property limits.

These 15 ranchers were linked directly or indirectly in 2018–2019 to at least 14 meat processing facilities owned by JBS, Marfrig and Minerva which trade globally. Direct trade links have been identified from one or more of these 14 facilities to customers including **Burger King** and **McDonald’s**, **Danish Crown Group**, **Nestlé**, Brazil’s **Pão de Açúcar** supermarket chain (a member of the French **Casino Group**), **Carrefour** and, reportedly, **Walmart**.¹⁸

According to shipping data, between 1 January 2019 and 31 October 2020 these 14 facilities collectively exported over half a million tonnes of beef and beef products worth nearly US\$3 billion to markets including Hong Kong (22%), China (21%), the EU-27 and the UK (8%) and the USA (1%). Exports from JBS's Pantanal-linked facilities alone reportedly accounted for almost US\$2 billion over the period, with the EU-27 and the UK representing around 9% of the export volume and over 13% of the value.¹⁹

Exports are a primary source of revenue for the Brazilian operations of JBS, Marfrig and Minerva.²⁰ Despite the chaos and economic upheaval caused by the global Covid-19 pandemic, Brazil's beef exports set a new all-time high in 2020, with volumes reported to have reached 2 million tonnes and revenues some US\$8.4 billion – up 11% over 2019.²¹ The main global revenue source for JBS SA (as for Marfrig²²), however, lies in its North American business units, with the United States accounting for around half of the company's global revenue in the third quarter of 2020.²³ JBS has business interests in every continent except Antarctica;²⁴ customers of the company and its subsidiaries internationally include **Costco, KFC, Lidl, Mars, M&S, Nando's, Nestlé, Pizza Hut, Princes, Sainsbury's, Subway, Tesco, Walmart** and **YUM**.²⁵

As a result of numerous damning exposés, including the 2009 Greenpeace report *Slaughtering the Amazon*,²⁶ JBS, Marfrig and Minerva first promised to deliver 'zero deforestation in the supply chain' by 2011.²⁷ But as this investigation into their Pantanal supply base exposes, the processors still do not have the fundamental procedures in place to guarantee that cattle from rogue ranchers linked to environmental destruction or legal violations are excluded.

Proper product due diligence procedures would mean JBS, Marfrig and Minerva only slaughter cattle where they have established full traceability to origin. This would also mean they could guarantee that they exclude any cattle where there is a risk that they may originate from destruction or degradation of natural forests or other ecosystems, or lands that have been exploited in violation of Indigenous Peoples' rights or conservation laws. When applied to ensure corporate transparency and accountability, due diligence

procedures would mean JBS, Marfrig and Minerva proactively identify and prevent any other adverse human rights and environmental impacts resulting from their own activities, from the activities of the companies they control and from the activities of their subcontractors and suppliers with whom they have an established commercial relationship.

Against this background, the meat processors' current approach to supply chain screening in the Pantanal focuses primarily on the supply ranch, without sufficiently considering practices in the rancher's other operations. This blinkered view enables the most transparent form of cattle laundering – the potential for ranchers to supply cattle from operations that violate law or company policy by passing them through approved intermediary ranches they also own before sending them to slaughter.

Thirteen of the 15 ranchers identified by Greenpeace were 'tier-one' suppliers: they directly supplied one or more of the meat processors from an approved ranch in 2018 or 2019.²⁸ In the majority of instances, the links between the case study properties themselves and the meat processors were indirect – cattle from those properties passed through one or more other ranches before the final sale. However, in most cases, the intermediary ranches were owned by the same individual.²⁹

The supply chain links established by Greenpeace between the ranchers and the big three meat processors predate the 2020 fires. As confirmed by the company responses to Greenpeace regarding the cases laid out in this report, the meat processors deem that all of the ranches that directly supplied them met their policy requirements at the time of purchase. Further, at least 11 of the 15 ranchers apparently remain tier-one suppliers – ie have at least one property approved to directly supply at least one of the meat processors.³⁰

Disturbingly, the processors provided no indication of having imposed meaningful requirements on their Pantanal suppliers in light of 2020's bans on deliberate use of fire, or of any intention to do so despite the evidence provided of supply to approved ranches from problematic ones. In the case of JBS, three of its current tier-one approvals as well as one of its historic (2018–2019) trading relationships appear to violate its sourcing

policy, and its assessment of the suppliers' compliance conflicts with that of Minerva in some instances.³¹ One of Marfrig's historic trading relationships similarly appears to violate its sourcing policy,³² despite the company's assertions about compliance. Marfrig has not indicated that it intends to review these trade relationships more closely.

As for JBS, presented with the summary findings of this report, the company confirmed to an industry journal that for the moment it has no intention to exclude suppliers – tier-one or third-party – that violate its policies. Instead, the emphasis is on getting Amazon suppliers onto a monitoring platform by 2025:

'Right now, we're not going to block them [noncompliant suppliers], we're going to try to help them solve the issue. Sometimes it's paperwork, sometimes they need to put together a conservation plan, sometimes they need to reforest part of their property. We are going to help them and we're hiring people to help these suppliers.'

'We think excluding the property and the supplier is a negative approach. It won't solve the problem because they'll go to the next meat packer and try and sell it. We don't want that because it won't address the issue.'³³

Such an accommodating approach sits uneasily with JBS's claimed 'zero tolerance' to deforestation and certainly fails to send a clear message to the sector that violations come with consequences – they seem to come with bonuses.

Beyond the Amazon, JBS reverts to a simple checklist of official legal findings³⁴ in a country where the government is systematically dismantling environment agencies and undermining law enforcement.³⁵

The profound deficiencies in the meat processors' policies and related enforcement procedures for their Pantanal supply base help explain the sector's failure to end its links to environmental destruction or to close the market to dirty suppliers. These include:

- **Failure to effectively and comprehensively ban and monitor for the deliberate use of fire, legal or otherwise.**
- **Failure to effectively and comprehensively ban and monitor for all new land clearance, not just illegal deforestation and not just within iconic**

regions such as the Amazon.³⁶

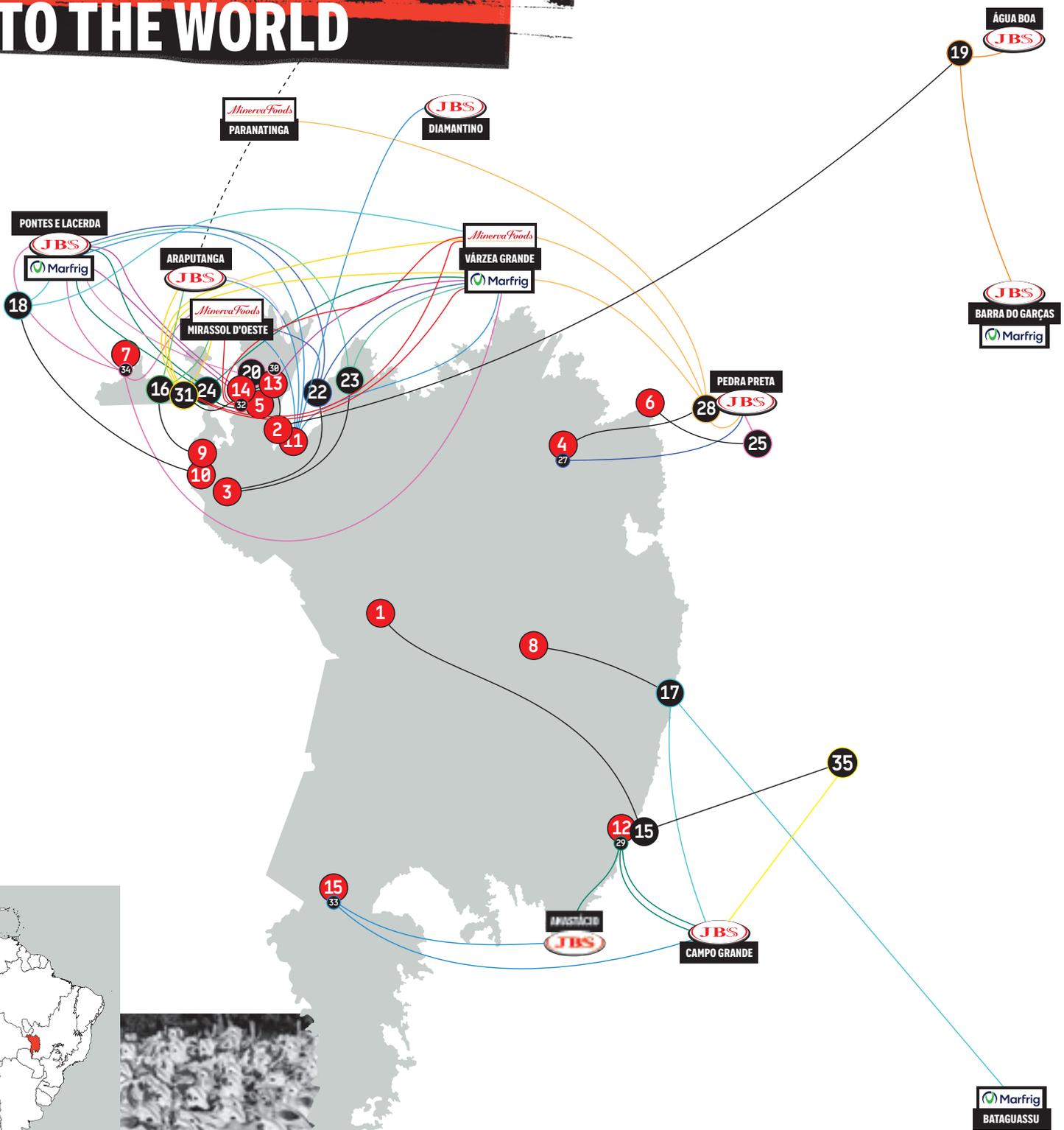
- **Failure to require, as a condition of trade, that ranchers comply with the law and zero deforestation policies across their operations.**³⁷
- **Continued failure to proactively identify and monitor their entire supply base (including indirect supply and third-party suppliers), despite a 2009 agreement to achieve this in the Amazon by 2011.**³⁸
- **Failure to make supply chain transparency a condition of trade (ie requiring ranchers to disclose the suppliers and origins of their cattle) and a model for responsible business (ie ensuring the public availability of data on all ranchers in the company's supply chain, including the locations of their operations, in order to enable independent scrutiny of their impact).**

These failures, underpinned by lack of transparency and traceability, both expose and contribute to the industrial meat sector's continued role as a leading global driver of land-use emissions, biodiversity loss and social injustice. Of particular concern is the potential for cattle linked to deliberate or illegal use of fire to find their way into the international market.

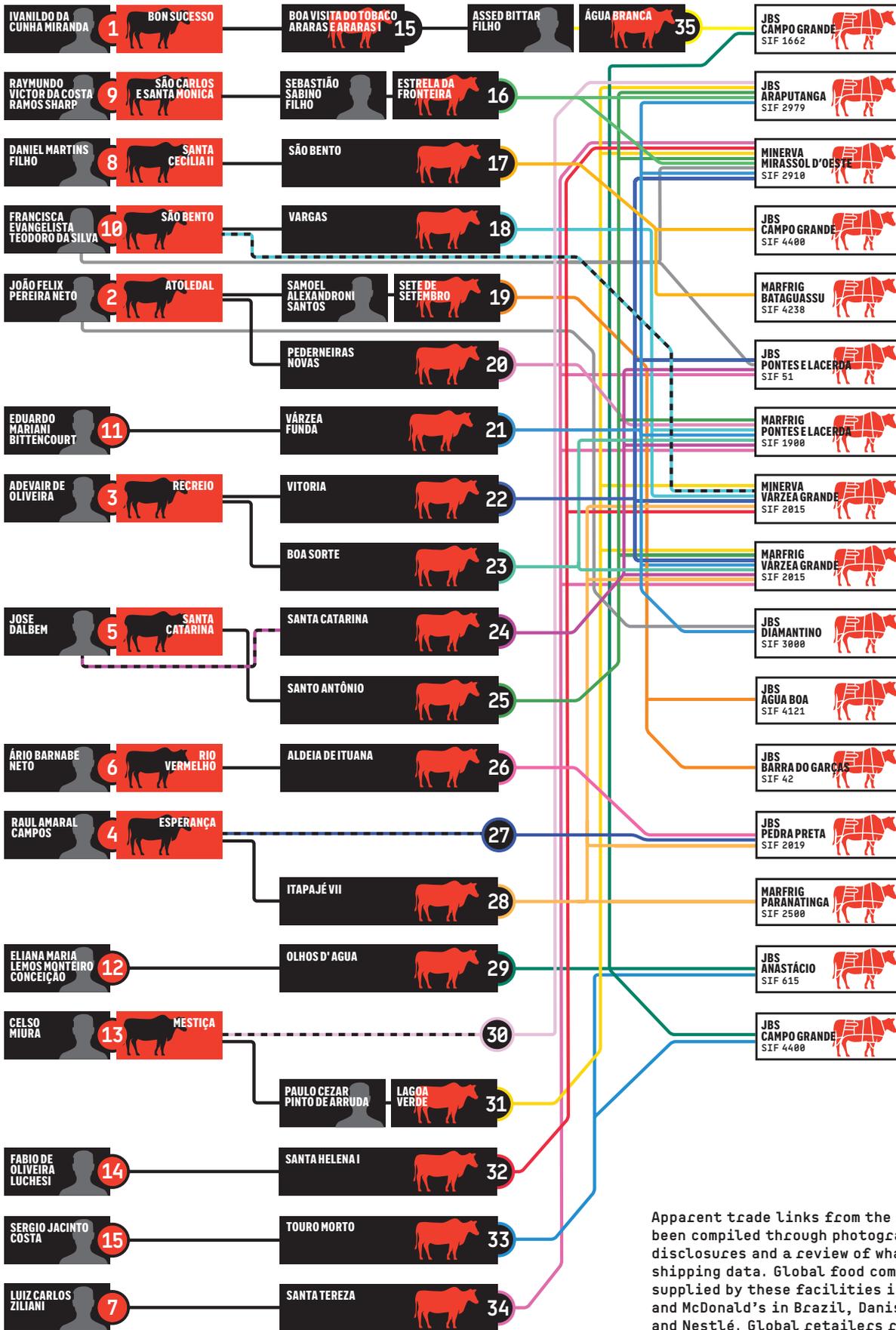
Given such structural failings, it is untenable for international consumer goods companies, supermarkets and fast food companies that claim to have zero deforestation policies to continue to trade with the meat processors named in this report. Further, if trade blocs such as the European Union³⁹ and the United Kingdom⁴⁰ are to end their consumption of products linked to environmental destruction then they must swiftly enact and enforce the necessary laws to ensure that products from these groups find no place in these markets.

The overproduction of meat and dairy is literally costing the earth. To halt and begin to reverse the current crisis, decisive action is needed from governments, finance and consumer companies to shift away from industrial meat and close markets to companies contributing to forest and ecosystem destruction. Without these vital steps our food system will continue to be a driving force of deforestation, climate change and future pandemic risk.

FROM THE PANTANAL TO THE WORLD



The map shows the point location of the Pantanal case study ranches (in red) linked to the 2020 fires, intermediary ranches (in black), and the JBS, Marfrig and Minerva slaughterhouses supplied by them. The connecting lines trace the historic (2018-2019) flow of cattle between operations. The numbers of the ranches correspond to those on the adjacent diagram.



The spider diagram shows how trade from the 15 ranches named in the investigation entered the cattle supply of 14 JBS, Marfrig and Minecva slaughterhouses, often via ranches controlled by the same individual. These slaughterhouses export to markets around the world (shown in red on the world map).

Apparent trade links from the slaughterhouses have been compiled through photographic evidence, company disclosures and a review of what reported in Panjiva shipping data. Global food companies reportedly supplied by these facilities include Burger King and McDonald's in Brazil, Danish Crown in Hong Kong, and Nestlé. Global retailers reportedly supplied by these facilities include the French groups Carrefour and Casino (Pão de Açúcar) in Brazil and Walmart in Chile. Importers of beef from these facilities reportedly include Germany - Frost Meat and Meat 2000; Hong Kong - Kai Bo Frozen Meat Supermarket; Israel - Neto Malinda Trading Ltd and Shufersal; The Netherlands - FN Global Meat and Zandbergen Brothers Bv; Spain - Egatesa, Jucarne Sa, and Montesano.

WHAT'S THE BEEF WITH JBS?

We live in a boom time for the meat industry. Worldwide meat consumption is predicted to rise 76% by 2050,⁴¹ with meat-heavy diets being energetically promoted, including in emerging economies and by fast food companies.⁴² Driven by its insatiable hunger for new markets and for land on which to rear livestock and grow soya for animal feed, the industrial meat sector poses a threat to the global climate, to the wildlife of some of the world's most biodiverse regions, to the human rights of Indigenous peoples and other communities and to the long-term health of populations in the West and elsewhere.⁴³

Global meat giant JBS exemplifies and is a main contributor to this threat. Based in São Paulo,⁴⁴ JBS claims to be the world's largest animal protein company⁴⁵ and the second-largest food company in the world by annual sales (after Nestlé).⁴⁶ It has grown internationally through a series of acquisitions largely funded by the state-owned Brazilian National Bank for Economic and Social Development (BNDES),⁴⁷ which owns more than a fifth of the company.⁴⁸

JBS's impacts on the climate and on the ecosystems of South America are profound: its operations have been estimated to produce around half the annual carbon emissions of fossil fuel giants such as ExxonMobil, Shell or BP,⁴⁹ largely as a result of forest clearance linked to its cattle supply chains and the production of soya for animal feed.⁵⁰

The scale of JBS's environmental and social destruction became a global scandal in 2009, when Greenpeace published a report, *Slaughtering the Amazon*,⁵¹ exposing how JBS and other major players in the Brazilian beef industry were linked to hundreds of ranches in the Amazon, including some associated with illegal deforestation and other destructive practices, as well as modern-day slavery. In the wake

of that report JBS and three of Brazil's other big meat processors signed a voluntary commitment – the so-called 'G4 Agreement' – to end the purchase of cattle whose production is linked to Amazon deforestation, slave labour or the illegal occupation of Indigenous lands and protected areas. The agreement included a commitment to ensure fully transparent monitoring, verification and reporting of the companies' entire supply chains (including third-party suppliers) within two years.⁵²

This pledge has not been honoured. For over a decade, investigations by Greenpeace and numerous others have repeatedly exposed JBS's links to corruption, deforestation and human rights violations.⁵³ But despite its failure to implement the terms of its 2009 commitment, as the company plans to seek listing of its international operations on the New York Stock Exchange (NYSE) in 2021⁵⁴ it appears to be attempting to bolster its environmental image and distance itself from its destructive legacy. In response to increasing pressure from its customers and shareholders,⁵⁵ in late September 2020 JBS launched its new 'Together for the Amazon' initiative. As well as setting up a fund to support sustainable development and conservation projects in the region, the company has given itself until 2025 to implement a system for monitoring the supply of livestock to the ranches that directly supply it in the Amazon.⁵⁶ This new supply chain commitment – which in real terms represents a step backward from the 2009 commitments – has numerous failings, chief among them:

- **Failure to explicitly extend the whole of the supply chain policy, including 'zero tolerance for deforestation', beyond the Amazon**
- **Failure to explicitly exclude as suppliers ranchers that use fire deliberately**

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1 October 2020, Estancia Cuatro Cierros, Paraguay: Cattle on grazing land near fires in the Chaco region. 2020 saw unprecedented fires across South America.



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- **Apparent abandoning of the transparency component of the 2009 agreement, notably to ensure fully transparent monitoring, verification and reporting of the company's entire supply chain by 2011**
- **Failure to explicitly require legal and zero deforestation policy compliance across the operations of ranchers who supply the company as a condition of trade**

JBS's 2020 zero deforestation commitment applies solely to the Amazon, ignoring neighbouring regions such as the Cerrado, said to be the world's most biodiverse savannah⁵⁷ (from which, according to the Trase supply chain transparency platform, JBS sources the majority of the cattle it exports⁵⁸), and the Pantanal – both regions where the cattle industry is also driving ecosystem conversion.⁵⁹ While in climate terms the preservation of the Amazon rainforests is a key objective in South America, as the Intergovernmental Panel on Climate Change's 2019 land use report pointed out, the prevention of widespread land use change across all ecosystems is vital.⁶⁰

The incidence of fires in the Brazilian Amazon in the first nine months of 2020 was the highest in a decade, and more fires than ever before were recorded in the Pantanal over the same period.⁶¹ Still, the new JBS initiative makes no mention at all of excluding from the company's supply chain ranchers who use fire deliberately for land management or clearance, despite the announcement of local and federal bans.⁶²

The 2020 commitment delays supply chain mapping in the Amazon beyond the ranches that directly supply it until 2025, 14 years after the original deadline.⁶³ The proposed monitoring platform⁶⁴ itself will be confidential – ie not publicly available for stakeholder review and scrutiny – which abandons the original commitment to a transparent monitoring system.

While the 2020 Amazon commitment reasserts the company's 'zero tolerance for deforestation', which was at the heart of the original G4 Agreement, the company also asserts that the proposed monitoring platform will 'ensure any cattle from producers involved in illegal deforestation cannot enter the JBS supply chain' (emphasis added).⁶⁵

What is clear is that JBS has not immediately extended its 'zero tolerance' to include clearance of natural ecosystems beyond the Amazon. Brazil's current Forest Code allows the clearance of up to 80% of any

land claim in the Brazilian Pantanal and other biomes outside the Amazon.⁶⁶ Across the country, that means some 88 million ha of native vegetation – more than 3.5 times the size of the UK⁶⁷ – could be cleared legally within existing land claims,⁶⁸ despite the huge climate and biodiversity costs.

JBS also fails to require comprehensive monitoring of the ranchers who supply it across their operations and across biomes. While this was not a requirement of the G4 Agreement either, in the years since that agreement was reached understanding of the adequacy of its approach to due diligence within the commodity trade has evolved. In the palm oil sector, for example, it is widely recognised today that if the sector is to be cleaned up, actors at all stages of the downstream supply chain must exclude any suppliers whose operations – including those of subsidiaries or associates – are illegal or environmentally destructive. This puts the appropriate emphasis on the exclusion of rogue suppliers, not just of tainted supplies.

In the case of Brazil's agricultural commodity sectors, including beef and soya, this should mean monitoring the activities of traders, ranchers and farmers across all their operations (that is, beyond the purchaser's immediate supply chain), not just in the Amazon and not just for deforestation but for other forms of ecosystem destruction, deliberate or illegal use of fire, unresolved land disputes and embargoes, outstanding fines and human rights abuses including the use of slave labour.

Considering the urgency of the global climate and nature emergency, initiatives such as JBS's new Amazon supply chain pledge that are based on self-regulation of voluntary commitments are a decade out of date in delivery and scope. They do not represent a decisive contribution to the radical shake-up of the global food system that science demands and that companies, financial institutions and governments need to deliver.

Food industry corporations that continue to source from JBS and financial institutions that continue to resource it are exposing themselves to financial and reputational risk. Worse, they are contributing indirectly to the existential risks faced by South America's iconic biomes and their inhabitants – and by all the inhabitants of an overheating planet – due in large part to the activities of the industrial meat sector. Governments are also stakeholders with exposure to JBS, and to the impacts of the industrial meat sector more broadly, through sovereign investments, trade and trade deals, and the choices they make regarding market and financial regulation.



WHO NEEDS TO DO WHAT

The steps that food industry, financial institutions and governments take in the immediate future in relation to JBS – and the global meat industry as a whole – will be a decisive test of their priorities. Governments and companies must align the economy with biodiversity and climate protection, along with social justice. They must ensure that private and public finance, trade policy and overseas cooperation do not drive further deforestation, but do support nature restoration and a transition to a green, just and resilient economy. This includes:

CLOSING THE MARKET TO ECOSYSTEM DESTRUCTION:

DROPPING FOREST AND ECOSYSTEM DESTROYERS:

End finance for or trade with groups such as JBS whose direct or indirect suppliers are linked to deforestation and alleged human rights violations – this includes ending trade with subsidiaries such as JBS-owned Pilgrim's Pride, which owns Moy Park and Tulip (recently renamed Pilgrim's Pride Ltd).⁶⁹

DROPPING COMMODITIES LINKED TO FOREST AND ECOSYSTEM DESTRUCTION:

Including through the adoption of a law on forest and ecosystem risk commodities (FERCs) and derived products, to ensure that commodities and products linked to deforestation, ecosystem destruction and abuses of human rights are not placed on the market. The legislation should include measures to cover the financial sector, ensure full supply chain traceability and transparency and rules on due diligence.

ENSURING TRADE POLICY ALIGNS WITH CLIMATE, BIODIVERSITY AND SOCIAL JUSTICE GOALS:

This includes refusing to ratify trade deals such as the EU–Mercosur agreement. Trade agreements of this kind are based on an extractive model that commodifies people and nature and is inherently incompatible with forest protection – governments should instead protect forests and other natural ecosystems by adopting policies to decrease meat production and consumption, and addressing their external forest and ecosystems footprint by means of product and supply chain regulations.

TRANSFORMING THE FOOD SYSTEM:

PHASING OUT INDUSTRIAL MEAT:

Immediately begin the phase-out of all finance for or trade in industrial meat, with the aim of reducing overall meat and dairy production and sales by at least 50% by 2025 and 70% by 2030 in countries with high levels of meat consumption.⁷⁰

MAKING FULL TRANSPARENCY A CONDITION OF TRADE:

Make full transparency of group operations and the supply chain a condition of finance or trade, requiring open and comprehensive monitoring and reporting systems to be in place.

PRIORITISING HUMAN AND ENVIRONMENTAL HEALTH:

Introduce targets, legislation and fiscal measures to decrease production and consumption of meat and dairy products in countries with high levels of consumption and support a fundamental shift towards ecological farming and healthy plant-rich diets in order to reduce pressure on natural ecosystems.



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THE PANTANAL

- THE WORLD'S BIGGEST INLAND TROPICAL WETLAND IS GOING UP IN SMOKE



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'The frequency and severity of fire outbreaks are worsening, as the climate warms and human impacts increase. Since 1980, average temperatures [in the Pantanal] have risen by 2 °C and humidity has fallen by 25%, according to the European Centre for Medium-range Weather Forecasts (ECMWF). This year saw the worst drought recorded in the Pantanal in 60 years.... By June, the Paraguay River was at half its usual level. ... Neglecting the connections between climate, land use and fire management will make it impossible to restore the Pantanal to its former state, let alone protect the region in the future. Any change to the natural pattern of burning disrupts ecosystems and food chains, sometimes completely. For instance, jaguars will struggle to find herbivores to eat, if the latter are killed by flames or are unable to find fruits and leaves in a scorched landscape. ... The impacts cascade quickly. Repeated wildfires lower the resilience of communities and vegetation; forests are replaced by open landscapes with fewer resources.'⁷¹

Renata Libonati et al, *Nature*, 8 December 2020



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WHAT'S AT STAKE?

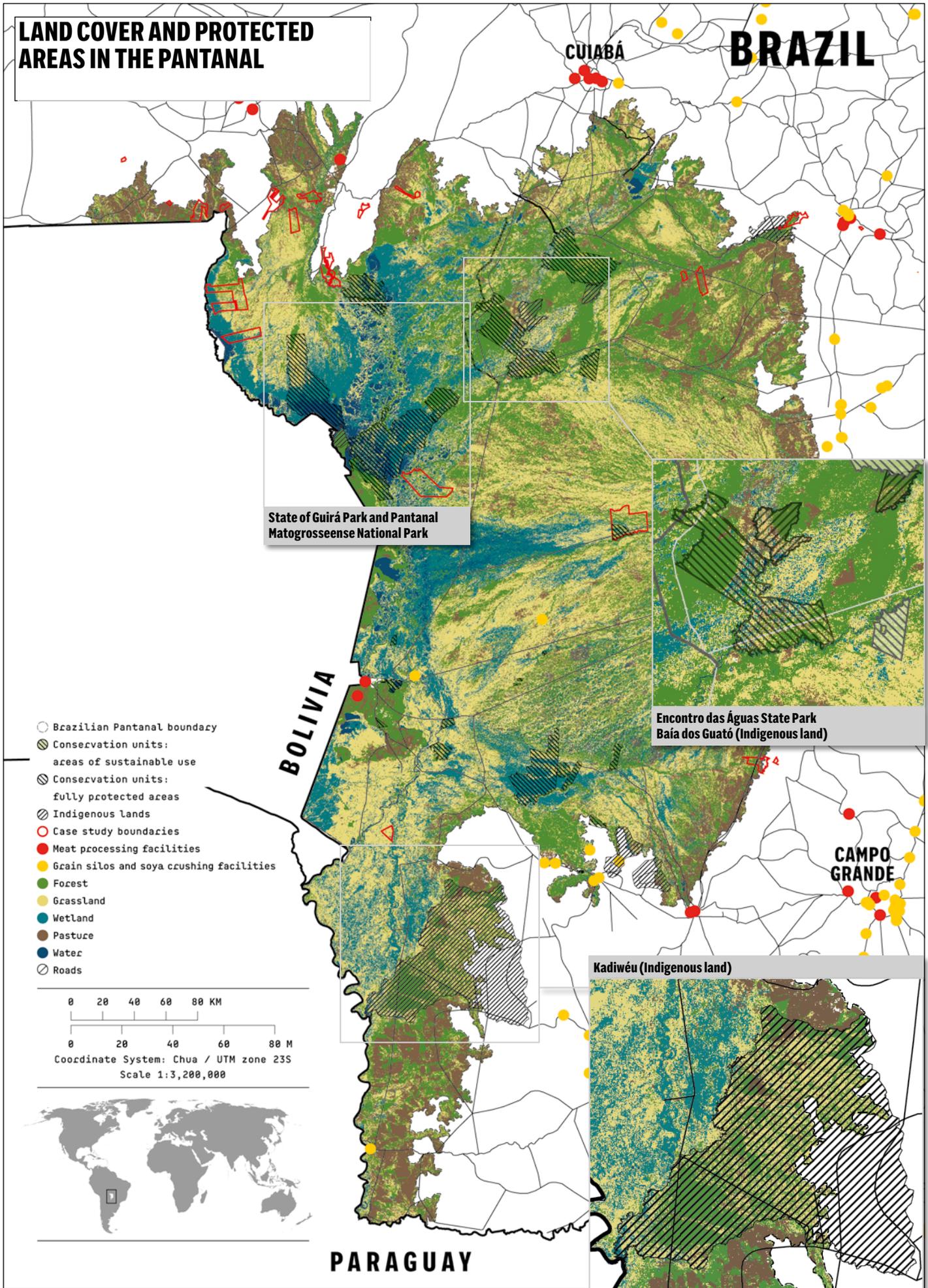


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A vast landlocked river delta covering some 20 million hectares (ha) of central South America,⁷² mainly in Brazil (in the states of Mato Grosso and Mato Grosso do Sul) but extending into Paraguay and Bolivia,⁷³ the Pantanal is the world's largest contiguous inland tropical wetland.⁷⁴ An annual cycle of flooding and drying gives the area a range of major habitats – among them permanent lakes and swamps, seasonally flooded savannahs and forest including flood forest⁷⁵ – helping to make the Pantanal biome one of the most biodiverse in the Americas. In addition to a remarkable diversity of aquatic plants⁷⁶ it is reportedly home to over 650 species of birds, 250 of fish and 170 of mammals,⁷⁷ including such iconic but endangered, threatened or near-threatened species as hyacinth macaws,⁷⁸ jaguars, maned wolves, giant river otters, tapirs, giant armadillos and giant anteaters.⁷⁹ The jaguar population, estimated in 2011 at 5,000, is reportedly Brazil's second-largest after that in the Amazon.⁸⁰ Around 12% of mammal species in the Pantanal are globally endangered.⁸¹

In recognition of its importance to vulnerable species and other wildlife, the Pantanal contains four designated Wetlands of International Importance under the Ramsar Convention (three in Brazil⁸² plus the Pantanal Boliviano⁸³) and a World Heritage Site (Brazil's Pantanal Conservation Area, which includes the Pantanal Matogrossense National Park but nevertheless covers only 1.3% of the Brazilian Pantanal⁸⁴). Just 712,000 ha – less than 5% of the Brazilian Pantanal's 15,098,800 ha⁸⁵ – are formally protected in conservation units, including over 270,000 ha (mostly in private reserves) where sustainable use is permitted.⁸⁶ In addition, about 443,050 ha (less than 3%) lie within recognised Indigenous lands.⁸⁷

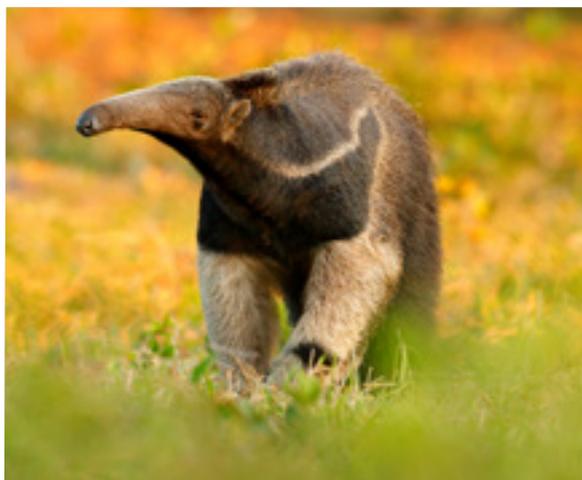
The Pantanal also provides vital ecosystem services to surrounding populations, including climate stabilisation, water purification, flood reduction and an extensive waterborne transport system.⁸⁸ The gradual release during the dry season of the water that the region has absorbed during the rainy season provides a steady water supply to millions of people downstream.⁸⁹



Sources: Brazilian Pantanal boundary, IBGE (2019). Land cover, MapBiomas. Conservation units, Brazilian Ministry of the Environment, ICMBio, IHP, INCRA, INTERMAT, SICAR (Federal Rural Environmental Registry (CAR)). Indigenous Lands, FUNAI. Case study boundaries, CAR (Federal, Mato Grosso and Mato Grosso do Sul). Meat and grain processing infrastructure, The Ministry of Agriculture.



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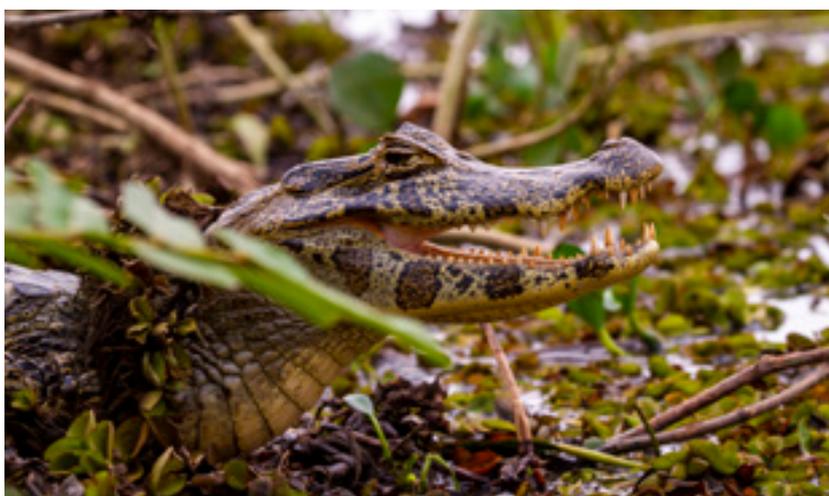
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THE THREATS - WHO IS DRYING UP THE WETLAND?



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The future of the Pantanal hangs in the balance due to multiple threats to its ecological stability. The most direct threat is from commodity agriculture, including cattle ranching,⁹⁰ with the use of fire to manage land and clear natural vegetation as part of the sector's expansion posing a particular risk.⁹¹ More broadly, agricultural development on the surrounding plateaux⁹² is impacting the hydrology of the wetlands, with planned infrastructural development yet another threat.⁹³ Further, climatic changes affecting the Amazon threaten to disrupt patterns of rainfall and the climate across the region.⁹⁴

Under Brazil's Forest Code, self-reported registration of rural properties (including identification of property boundaries) with the Rural Environmental Registry (Cadastro Ambiental Rural, CAR) is mandatory.⁹⁵ Designed to enable monitoring and enforcement of compliance with environmental regulations, CAR registrations are frequently used

to stake and secure land claims through evidence of agricultural use, even though they do not constitute legally binding land title.⁹⁶

According to the Ministry of Agriculture, Livestock and Food Supply (Ministério da Agricultura, Pecuária e Abastecimento, MAPA), about 90% of the Brazilian Pantanal is under private land claims today,⁹⁷ and about 80% of it is reportedly managed as cattle ranches.⁹⁸ Some 2,500 fazendas, or farms, are thought to be located in the region,⁹⁹ together with 8.2 million cattle in municipalities that fall wholly or partly inside the Pantanal.¹⁰⁰

According to CAR data, as of 31 January 2020, 6,756 self-registered properties covered about 12.7 million ha within the Brazilian Pantanal.¹⁰¹ Over 58% of the area of conservation units on public land (including federal, state and municipal reserves) within the Brazilian Pantanal,¹⁰² as well as more than 28% of Indigenous lands, is covered by registered rural properties.¹⁰³ This

CAR REGISTERED PROPERTIES, PROTECTED AREAS AN INDIGENOUS LANDS

BRAZIL

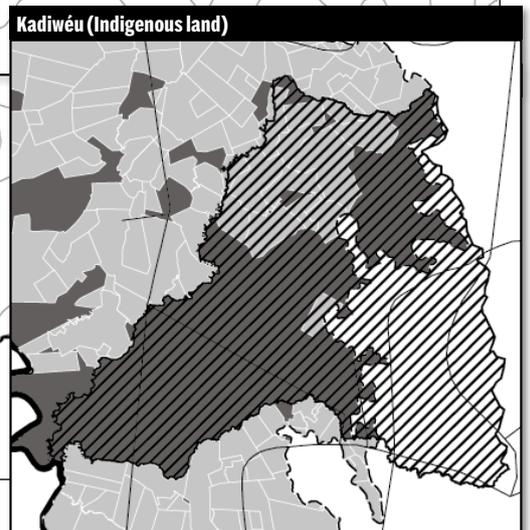
CUIABÁ



State of Guirá Park and Pantanal Matogrossense National Park



Encontro das Águas State Park Baía dos Guató (Indigenous land)



Kadiwéu (Indigenous land)

BOLIVIA

CAMPO GRANDE

PARAGUAY

- Brazilian Pantanal boundary
- Conservation units:
areas of sustainable use
- Conservation units:
fully protected areas
- Indigenous lands
- Case study boundaries
- Registered rural property (CAR)
- Area with no registered property
- Roads

0 20 40 60 80 KM
0 20 40 60 80 M
Coordinate System: Chua / UTM zone 23S
Scale 1:3,200,000



Sources: Brazilian Pantanal boundary, IBGE (2019). Conservation units, Brazilian Ministry of the Environment, ICMBio, IHP, INCRA, INTERMAT, SICAR (Federal Rural Environmental Registry (CAR)). Indigenous lands, FUNAI. Case study boundaries, CAR (Federal, Mato Grosso and Mato Grosso do Sul).



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means that despite their supposedly protected status, landholders have initiated processes to lay claim to the land, putting it at increased risk of clearance for cattle ranching or soya farming. Ready access to soya and beef transportation and processing infrastructure facilitates use of the land by these sectors. Data from the Federal University of Goiás's public Image Processing and Geoprocessing Laboratory (Laboratório de Processamento de Imagens e Geoprocessamento, Lapig) show that within the boundaries of the biome are four grain silos, with considerable presence of additional soya infrastructure and beef processing facilities within less than 100 km,¹⁰⁴ including a number of facilities owned by JBS – the world's largest meat processor¹⁰⁵ – and its main competitors Marfrig and Minerva.

Brazil's Forest Code permits extensive legal clearance of natural vegetation within rural properties. With the exception of Areas of Permanent Protection,¹⁰⁶ up to 80% of all vegetation types may legally be cleared within properties in the Pantanal. According to MapBiomas, nearly 16% of the Brazilian portion of the Pantanal had already been cleared of its original vegetation by 2019, almost all of it for pasture,¹⁰⁷ with the area of pasture increasing by over 450% between 1985 and 2019.¹⁰⁸ The rate of destruction in forest

biomes is of particular concern – data from MapBiomas show that the Brazilian Pantanal lost nearly a quarter of its surviving forest cover between 1985 and 2019.¹⁰⁹

Some of the most serious threats to the biome result from human activity not within the lowland wetlands of the Pantanal itself, but rather in the surrounding plateaux, whose rivers feed the wetlands. With 104 new facilities reportedly proposed or under construction on the rivers that feed the Pantanal as of 2018,¹¹⁰ hydroelectric dams threaten to significantly alter the hydrodynamics of the wetland,¹¹¹ affecting nutrient cycling, sediment flows and the seasonal pattern of flooding.¹¹² Impacts are already being felt from a rapid increase in land clearance for agriculture on the plateaux, which in Brazil lie mainly within the Cerrado biome.¹¹³

The Cerrado, said to be the world's most biodiverse savannah,¹¹⁴ is under extreme threat from agricultural expansion, with half of its natural vegetation already having been cleared by 2017.¹¹⁵ This clearance has led to widespread soil erosion and consequent silting of the Pantanal's rivers, changing flooding patterns and damaging biodiversity;¹¹⁶ in particular, silting of the Taquari River has led to near-permanent flooding of some 1.1 million ha.¹¹⁷ A study commissioned by a coalition of non-



governmental organisations (NGOs) found that by 2014 over 60% of the original vegetation in the Brazilian portion of the plateaux surrounding the Pantanal had been cleared by human activity, with more than 70% of this clearance due to the creation of pasture for cattle and most of the remaining land converted to arable agriculture.¹¹⁸ Close to 10% of the total area in Brazil planted with soya is estimated to be in the plateaux surrounding the Pantanal,¹¹⁹ with the current area planted with soya nationally reported to be 36.8 million ha.¹²⁰ Other significant crops in the Pantanal and/or its surrounding plateaux include sugarcane, corn and cotton.¹²¹

Further expansion of agriculture across the region has been predicted as a result of the reopening of the port of Cáceres, located in the western Pantanal on the Paraguay River.¹²² Cáceres is the northern terminus of the so-called Paraguay–Paraná waterway, and there has reportedly been heavy lobbying from agribusiness organisations, including those representing soya growers and cattle ranchers, to open the port and the waterway – but the associated dredging and canalisation works will inevitably alter the river’s hydrological characteristics.¹²³ The region’s watercourses are also affected by heavy agrochemical use, as well as mercury pollution from gold mining.¹²⁴

In addition to these threats from human activity within or adjacent to it, the Pantanal is also at risk from the massive ongoing deforestation in the Amazon.¹²⁵ This threatens to change continent-wide rainfall patterns by disrupting the so-called ‘flying rivers’ – air currents that carry huge quantities of water vapour from the Atlantic to the Amazon headwaters and back again in a repeated cycle of rainfall and evapotranspiration, as the forest’s trees draw water from the soil and release it back into the air.¹²⁶ The weakening of these flying rivers is believed to be exacerbating droughts in the Pantanal.¹²⁷

Even without taking the impact of land use change into account, the global climate emergency is predicted to have a significant effect on the Pantanal’s climate: a recent study estimated that in a scenario involving continued global fossil fuel dependence the region could see a 5–7°C increase in temperature and a 30% reduction in rainfall by the end of the century, leading to a significant reduction in the water budget.¹²⁸ Another study projects that climate change will lead to an increase in severe droughts in the biome, resulting in changes in the inter- and intra-annual flooding dynamics that will drastically affect the functioning of the Pantanal ecosystem, ‘with consequences for wildlife diversity and distribution’.¹²⁹

UNDER FIRE

While expansion of cattle ranching in the Pantanal itself has been slower than in the surrounding plateaux,¹³⁰ the cattle industry is implicated in one of the most acute current threats to the region's ecology – the destruction of large expanses of natural vegetation by fire.¹³¹

Fire is a natural part of the Pantanal's ecology, with many plant species, for example, needing extreme heat to stimulate seed germination.¹³² Every year, usually towards the end of the dry season, there are small wildfires, often started by lightning. However, these tend to burn out quickly due to lack of fuel and the wetness of the terrain; fires of human origin in the peak of the dry season typically cause the vast majority of the burning.¹³³

With the area's vulnerability to the uncontrolled spread of dry-season fires already heightened by a severe drought in 2019,¹³⁴ in 2020 the Pantanal saw its worst drought for nearly half a century.¹³⁵ This made the biome particularly vulnerable to the uncontrolled spreading of fires lit deliberately by ranchers, either to encourage germination on exhausted pastures¹³⁶ or to clear forest for pastures or arable agriculture.¹³⁷ According to a scientist from Brazil's National Institute for Science and Technology in Wetlands, the recent expansion of cattle ranching in the Pantanal is contributing to the

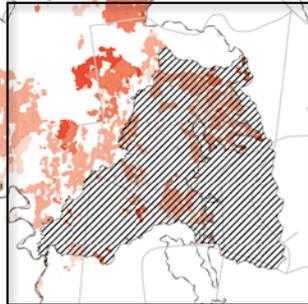
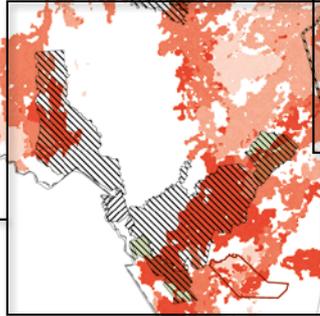
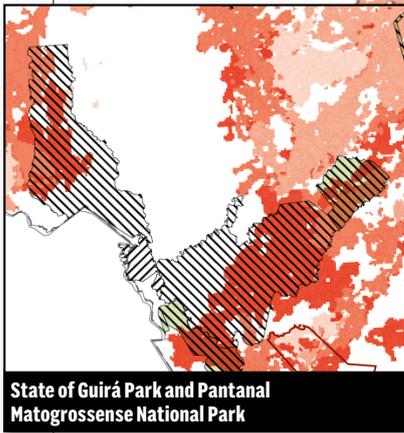
5 October 2020, Baía dos Guató Indigenous Land: Guató Indigenous leader, medicine woman and member of the community's health council, Sandra Guató Silva collects feathers and water hyacinths to make traditional headdresses in the dried bay. © Maria Magdalena Arréllaga



**BURNED AREA IN THE PANTANAL IN BRAZIL
1 JULY 2020 – 27 OCTOBER 2020**

BRAZIL

CUIABÁ



CAMPO GRANDE

PARAGUAY

- Brazilian Pantanal boundary
- Conservation units
- Conservation units: areas of sustainable use
- Conservation units: fully protected areas
- ▨ Indigenous lands
- Case study boundaries
- Burn scar
- July 2020
- August 2020
- September 2020
- October 2020

0 20 40 60 80 KM

0 20 40 60 80 M

Coordinate System: Chua / UTM zone 23S

Scale 1:3,200,000



Sources: Brazilian Pantanal boundary, IBGE (2019). Conservation units, Brazilian Ministry of the Environment, ICMBio, IHP, INCRA, INTERMAT, SICAR (Federal Rural Environmental Registry [CAR]). Indigenous lands, FUNAI. Case study boundaries, CAR (Federal, Mato Grosso and Mato Grosso do Sul). Fire hotspot and burn scar, INPE (MODIS Aqua), LASA.

problem because while long-established small-scale *pantaneiros* know to avoid setting fires when the land is dry, newcomers often have little understanding of traditional methods; moreover, the scale of cattle ranching in the plateaux surrounding the Pantanal is putting pressure on local farmers to increase the size of their herds, using more land as they do so.¹³⁸

In the Brazilian Pantanal, setting fires during the dry season in 2020 meant defying a federal moratorium on the use of burning for agricultural purposes extending for 120 days from mid-July.¹³⁹ Regional prohibitions on dry-season burning were also in place in Mato Grosso, from 1 July to 30 September,¹⁴⁰ and Mato Grosso do Sul, extending for 180 days from late July.¹⁴¹ Despite these measures, during the course of the year fires spread out of control across the Pantanal. According to the Federal University of Rio de Janeiro's Laboratory for Environmental Satellite Applications (Laboratório de Aplicações de Satélites Ambientais, LASA), by 22 November 2020 some 30% of the Brazilian portion of the biome had burned, including large portions of several Indigenous territories (an estimated 306,500 ha) and habitats of rare species (approximately

571,900 ha of protected areas); the total – some 4.49 million ha – represents an 84% increase in burned area over 2019 (2.44 million ha).¹⁴²

Extensive areas of the Pantanal also burned in Bolivia and Paraguay,¹⁴³ and smoke from the fires drifted as far as Peru, Uruguay and Argentina.¹⁴⁴ Within the Pantanal, the toll on wildlife has been severe: while reptiles, amphibians and small mammals are the most likely to be killed in fires, the associated loss of vegetation means that herbivores subsequently starve. The carnivores that rely on them for prey then starve in turn. While the grasslands, scrub and swamps may recover relatively quickly, according to one expert, the recovery of forested areas will take decades or even centuries.¹⁴⁵ Some Indigenous communities have seen their entire way of life go up in flames – houses, fields and the forests that provide them with food, building materials and medications.¹⁴⁶

Official sources in Brazil have stated that humans are responsible for as many as 98% of the fires in the Pantanal.¹⁴⁷ According to the Integrated Multiagency Operational Coordination Centre of Mato Grosso (CIMAN-MT), which was tasked by the Mato Grosso government with investigating fires in five areas of



© Rogério Florentino / Greenpeace

the Pantanal in 2020, all of the blazes investigated were caused by human activity; the fire that destroyed 40,000 ha in the SESC Pantanal Private Natural Heritage Reserve in Barão de Melgaço was determined to have been caused by intentional burning of deforested vegetation to create a pasture area for cattle.¹⁴⁸ In Mato Grosso do Sul, in mid-September federal police executed 10 search and seizure warrants in the municipalities of Corumbá and Campo Grande as part of an investigation seeking to determine criminal responsibility for fires in the southern Pantanal that they suspected were started deliberately,¹⁴⁹ possibly in a coordinated manner (as happened in the Amazon's notorious 'Day of Fire' in August 2019¹⁵⁰). Five farmers are reportedly being investigated for their role in the fires, which led to the burning of 25,000 ha within the boundaries of the Pantanal Matogrossense National Park and Serra do Amolar in Corumbá; no arrests were immediately made in relation to the fires, although one of the farmers was reportedly arrested for 'irregular possession' of a firearm and ammunition.¹⁵¹

Analysis of maps and satellite data by the NGO Instituto Centro de Vida (ICV) indicates that just

nine points of ignition led to the burning of over two-thirds of the 480,000 ha destroyed by fire between 1 July and 17 August 2020 in the portion of the Pantanal that lies within the state of Mato Grosso, with seven of the nine resulting fire fronts still being active at the end of this period. Five of these nine starting points were located within registered rural properties.¹⁵² Further research into the Mato Grosso fires by Repórter Brasil has found that all five registered properties are involved in livestock production.¹⁵³ Greenpeace analysis of mapping data¹⁵⁴ shows that more than 55% of the area that burned within the Brazilian Pantanal from 1 July to 27 October 2020 was located in forests, savannahs or wetlands, with wetlands disproportionately affected by the fires.¹⁵⁵

Given the previously mentioned public statements that the fires were almost universally caused by human activity,¹⁵⁶ and that many of them seem to have begun on cattle ranches, these findings support the widely reported belief that many of the fires are likely to have been set deliberately – with the intention of clearing natural vegetation for agricultural uses or to rejuvenate pasture – and then burned badly out of control.



18–25 September 2020, Mato Grosso:
Fires in the Pantanal.





17 August 2020, border of Kaxacari Indigenous Land, Amazonas, 9°6'44.4" S 66°9'52.53" W © Christian Braga/Greenpeace

HIGH-RISK REGIMES

– HOW THE BOLSONARO GOVERNMENT HAS FANNED THE FLAMES

The government of President Jair Bolsonaro has reduced the number of agents undertaking inspections in the Amazon. This reduction in oversight has been linked not only to increased deforestation rates but also to increased risk of labour crimes.¹⁵⁷ The Bolsonaro government appears to see the current chaos of the global pandemic as an opportunity to further strip away communities' rights and such protection as the forest has.¹⁵⁸ Moreover, Indigenous communities – who are particularly at risk from Covid-19 due to their culture of community living and limited access to health care – are at risk of being made yet more vulnerable to the disease by exposure to smoke from the fires that ranchers set on a massive scale to clear newly felled forest.¹⁵⁹

Satellite data reveal that between 1 January and 31 October 2020 there were more fire hotspots in the Pantanal than during the previous four years combined over the same period.¹⁶⁰ Nevertheless, Brazil's Institute of the Environment and Renewable Natural Resources (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis, IBAMA) reportedly imposed barely half as many fines for illegal deforestation and fire-setting across the states of Mato Grosso and Mato Grosso do Sul between 1 January and 14 September 2020 as it did in the equivalent period of 2019, reflecting a reduction in enforcement activity in the field that one official says has led to a sense of impunity.¹⁶¹ According to this and other current and former IBAMA officials (including a former president of the institute) interviewed by BBC News Brasil, while the coronavirus pandemic played a role, the reduction in enforcement efforts was largely due to other factors – including massive staff cuts,¹⁶² federal government appointments of managers with no relevant experience (sometimes replacing staff who had been achieving concrete results), needlessly cumbersome and obstructive new procedures and computer systems, and interference by the military.¹⁶³

'Pass the cattle' – the title of the January 2021 report published by the coalition Observatório do Clima. Its cover features the image of the Minister of the Environment Ricardo Salles who made infamous the idiomatic phrase, which refers to pushing a large volume of things through with minimal scrutiny. In an April 2020 ministerial meeting whose minutes were later made public by a decision of the Supreme Court, Salles recommended wholesale deregulation of environmental and other rules while media was occupied by the Covid-19 pandemic. Since the beginning of the Bolsonaro administration, Salles has systematically worked to dismantle environmental protection, slashed the budget and staffing of the environmental regulatory agency IBAMA, and transferred powers from the Ministry of Environment.



This last factor is key: since Bolsonaro came to power the federal government has been gradually transferring to the military responsibilities for monitoring and combating illegal deforestation and fire use that historically belonged to civilian agencies, including IBAMA, ICMBio and FUNAI.¹⁶⁴ The government has even recently announced that INPE is to be stripped of its three-decades-old responsibility for satellite monitoring of deforestation and fires.¹⁶⁵ As well as



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25 September 2020, São Paulo:
Climate protests (Ato Global pelo
Clima) in front of the IBAMA offices
with banners against the fires in
Pantanal and President Bolsonaro.



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9 July 2019, Brasília:
Environment Minister
Ricardo Salles and
President Jair
Bolsonaro speak to the
press after meeting at
the ministry. @Cruz/
Agência Brasil



contributing to a serious weakening of enforcement efforts, this process has been interpreted as a heavy-handed attempt to end transparency, making it easier for the authorities to assist forest-destroying industries – eg by building new roads and bridges in the Amazon to open up the forest to exploitation – while claiming to defend the environment.¹⁶⁶

The task of extinguishing fires in the Pantanal still falls mainly to IBAMA-coordinated fire brigades, a large proportion of whose members are Indigenous and seasonally hired. One Indigenous representative interviewed by the investigative news agency *Pública* emphasised the pressing need for firefighter numbers to be increased. However, a fire service representative explained that even though meteorological monitoring made a severe 2020 fire season predictable, a two-month delay in the hiring process meant that early prevention efforts were hampered by a lack of workers.¹⁶⁷ In addition to this inexplicable delay, the federal government reportedly decided to cut the 2020 budget for brigadiers by 58% compared with 2019, which reduced the number of staff that could be taken on.¹⁶⁸

According to one environmental academic, 'What we have is authorities that question numbers, question the extent of the fires, question the capacity of satellites to monitor and detect ... this ends up directly encouraging those who commit (environmental) crimes.'¹⁶⁹ The former IBAMA president interviewed by BBC News Brasil also blamed statements from President Bolsonaro and other government figures for undermining the work of IBAMA's inspectors by suggesting that they act with excessive rigour.¹⁷⁰ Bolsonaro has even attempted, without evidence, to blame the fires on Indigenous communities¹⁷¹ – but satellite images show that the fires that devastated at least one Indigenous reserve in the Pantanal, *Baiá dos Guató*, began outside its borders.¹⁷²

Government figures including Environment Minister

Ricardo Salles and Agriculture Minister Tereza Cristina, as well as President Bolsonaro himself, have also claimed that the Pantanal fires could be combated by grazing land with cattle to ensure that grass is kept short, depriving fires of fuel.¹⁷³ But this 'solution' seems to be no more than an opportunistic way of encouraging further expansion of cattle ranching, which – given that many wildfires begin as fires lit to 'refresh' exhausted pasture or to clear other vegetation types (such as felled forest or savannah) for pasture and then burn out of control¹⁷⁴ – seems far more likely to exacerbate the problem.

Despite the recent increase in fires in the Amazon and the Pantanal, it is not only funding for hiring personnel that has been reduced under Bolsonaro's government. According to Brazilian NGO Inesc, compared to 2019 – the last budget authorised by Bolsonaro's predecessor – 2020's budget reduced the amounts available for discretionary spending by over 30% for IBAMA and by nearly 33% both for ICMBio, and for direct administration of the Ministry of the Environment (*Ministério do Meio Ambiente, MMA*).¹⁷⁵ The Brazilian Climate Observatory (*Observatório do Clima*), a network of 37 civil society groups, warns that further severe budget cuts would further compromise the country's ability to combat deforestation and fires.¹⁷⁶

Under pressure from Environment Minister Ricardo Salles to reduce spending, in August 2020 IBAMA decided to cut the number of helicopters it rents to monitor deforestation and fires in the Pantanal and the Amazon – an area covering some 500 million ha – from six to four. The decision was reportedly made over the protests of the head of IBAMA's Air Operations Centre, who warned of the effects on operational capacity and was subsequently removed from his post. Retired Air Force commander Julio Cesar Basile, who was responsible for creating the agency's helicopter division in 2000, described it as 'an absurd and unjustifiable irresponsibility. ... If it is not ignorance, it is sabotage.'¹⁷⁷

11 September 2020, Brussels: Activists scale the European Commission headquarters calling attention to the role European consumption in driving forest destruction. © Johanna de Tessières/Greenpeace



21 August 2020, Trans-Pantanal road, 17°11'27.498" S 56°55'32.712" W: Firefighters work to control a fire burning in a wetland forest area on a private property. © Maria Magdalena ArceLLaga

HIGH-RISK TRADE DEALS



11 July 2019, Brussels: Tractors and the European Commission headquarters as farmers protest against the Mercosur trade deal. © Shutterstock

The EU–Mercosur free trade agreement (FTA) and related Association Agreement – which aims to increase trade in agricultural products like meat, soya and sugarcane, chemicals like pesticides, as well as manufactured goods such as cars and car parts – was agreed in principle in June 2019.¹⁷⁸

Although the aims of the FTA fundamentally undermine climate action and nature protection, and conflict with the goals of the European Green Deal,¹⁷⁹ its ratification remains under negotiation by the two blocs. A number of governments have reportedly raised concerns about the deal in light of rising deforestation rates, fires and lack of compliance with the Paris climate agreement in the Mercosur countries (particularly Brazil).¹⁸⁰ Further, the proposed treaty does not include sanctionable clauses requiring the signatories to respect climate or environmental protection commitments.¹⁸¹ For example, while Article 6.2(a) of the deal mandates that each Party shall ‘effectively implement the UNFCCC and the Paris Agreement’, no mechanism is provided to meaningfully enforce this single provision.

Under the 2015 Paris Agreement on climate change, countries were expected by the end of 2020 to submit updated plans to reduce their GHG emissions and align with the goal of keeping the global temperature rise this century below 1.5°C. According to the Climate Observatory coalition, ensuring Brazil – the world’s fifth-largest GHG emitter – is compatible with this goal would require a plan to reduce its emissions by 81% by 2030 compared to 2005 levels, with a net zero target of 2050. But Brazil’s revised submission, announced on 9 December 2020, reportedly falls well short, sticking to its previous goals of reducing net emissions by just 43% by 2030 and aiming for carbon neutrality by 2060. It also fails to reiterate its 2015 commitment to halt all illegal deforestation by 2030 and restore 12 million ha of forests – indeed, it fails to mention deforestation at all.¹⁸²

It is against this background that the threat from FTAs must be judged. The aim of such agreements is to increase production, trade and consumption of exactly the commodities that the world needs to be producing and consuming less of. This cannot be fixed through the addition or alteration of articles.





6 June 2020, Corumbá, Mato Grosso do Sul: Pantaneiro (wetlands cowboy) moving cattle in the Pantanal. © Shutterstock



JBS Campo Grande, May 2017 Newtrade.com/Youtube

OUT OF THE FIRE AND INTO THE FRYING PAN



Previous exposés by Greenpeace¹⁸³ and other NGOs have brought attention to the role of industrial beef production in the destruction of the Amazon and the need to ensure full visibility of cattle supply chains beyond direct suppliers within that biome. However, significant destruction of other frontiers – including the Cerrado and the Pantanal – continues, with little public awareness and free from the supply chain monitoring/policy commitments of the main meat processors. This lack of oversight breeds lack of accountability for the wider impacts of the sector.

The purpose of the analysis presented in this report is to shine a spotlight on the destruction of the Pantanal. The first step was to identify ranchers linked to the fires that devastated the biome in 2020, which officials in Brazil agree were almost universally of human origin.¹⁸⁴ The next was to investigate whether cattle from the affected properties or others owned by the same ranchers have historically entered the supply chains of Brazil's largest beef processors, which trade internationally and supply numerous well-known consumer goods and fast food companies.

WHAT IS AN EMBARGO?

IBAMA publishes a list of farms that have breached environmental legislation such as Brazil's Forest Code – eg by carrying out illegal deforestation – and that are prohibited (embargoed) from producing in a specified area of their landholding (which may comprise the whole farm or only part of it) until they regularise their situation, for example through payment of a fine and land restoration.

WHAT IS A PROPERTY REGISTRATION IRREGULARITY?

A criterion of Brazil's Forest Code is that rural producers must register the boundaries of their properties with the environment agency to aid it in its monitoring and enforcement of environmental regulations. Irregularities in this registration – notably its suspension or cancellation – signal problems such as overlap with protected areas, Indigenous lands or other registrations.

An irregularity is indicated by a registration status of 'pending', 'suspended' or 'cancelled' in the federal (CAR website 'Consultar demonstrativo do CAR') or state (Secretário de Estado de Meio Ambiente de Mato Grosso website 'SIMCAR portal público') land registry.

PROFITING FROM THE PANTANAL'S DESTRUCTION



Greenpeace has identified 15 current or recent (2018–2019) suppliers of Brazil's leading meat processors, JBS, Marfrig and Minerva, that are linked to the devastating 2020 fires in the Pantanal, environmental violations resulting in embargoes and/or property registration irregularities.¹⁸⁵

Although use of fire was banned by regional governments and presidential decree from July 2020 for a number of months,¹⁸⁶ in total more than 73,000 ha – an area larger than Singapore and about half the size of Greater London¹⁸⁷ – burned within the boundaries of the case study properties between 1 July and 27 October 2020, and in many cases these fires appear to have contributed to extensive burning far beyond the property limits.

These cases expose the failure of the meat processors to ensure they have adequate due diligence procedures in place to guarantee that dirty cattle from rogue ranchers linked to environmental destruction or legal violations are excluded from their supply base.

Thirteen of the 15 ranchers identified by Greenpeace were tier-one suppliers: they directly supplied one or more of the meat processors from an approved ranch in 2018 or 2019 (the most recent period for which analysis was possible).¹⁸⁸ In the majority of instances, the links between the case study properties themselves and the meat processors were indirect – cattle from those properties passed through one or more other ranches before being sent to slaughter. However, in most cases, the intermediary ranches were

owned by the same individual.¹⁸⁹

The supply chain links established by Greenpeace between the ranchers and the big three meat processors predate the 2020 fires. As confirmed by the company responses to Greenpeace regarding the cases laid out in this report,¹⁹⁰ the meat processors deem that all of the ranches that directly supplied them met their policy requirements at the time of purchase. Further, at least 11 of the 15 ranchers apparently remain tier-one suppliers – ie have at least one property approved to directly supply at least one of the meat processors.¹⁹¹ In the case of JBS, three of its current tier-one approvals appear to violate its sourcing policy, as does one of its historic trading relationships – and its assessment of the suppliers' compliance conflicts with that of Minerva in some instances.¹⁹² One of Marfrig's historic trading relationships similarly appears to violate its sourcing policy,¹⁹³ despite the company's assertions about compliance. Marfrig has not indicated that it intends to review these trade relationships more closely.

As for JBS, presented with the summary findings of this report, the company confirmed to an industry journal that for the moment it has no intention to exclude suppliers – tier-one or third-party – that violate its policies. Instead, the emphasis is on getting Amazon suppliers onto a monitoring platform by 2025:

'Right now, we're not going to block them [noncompliant suppliers], we're going to try to help them solve the issue. Sometimes it's paperwork, sometimes



they need to put together a conservation plan, sometimes they need to reforest part of their property. We are going to help them and we're hiring people to help these suppliers.'

*'We think excluding the property and the supplier is a negative approach. It won't solve the problem because they'll go to the next meat packer and try and sell it. We don't want that because it won't address the issue.'*¹⁹⁴

Such an accommodating approach sits uneasily with JBS's claimed 'zero tolerance' to deforestation and certainly fails to send a clear message to the sector that violations come with consequences – they seem to come with bonuses.

Beyond the Amazon, JBS reverts to a simple checklist of official legal findings¹⁹⁵ in a country where the government is systematically dismantling environment agencies and undermining law enforcement (see 'High-risk regimes – how the Bolsonaro government has fanned the flames' above).¹⁹⁶

Disturbingly, the meat processors provided no indication of having imposed meaningful due diligence requirements on their Pantanal suppliers in light of 2020's federal and state bans on deliberate use of fire,¹⁹⁷ or of any intention to do so despite the summary findings provided of supply to approved ranches from problematic ones. Further, they evidently fail to scrutinise the legal compliance or the environmental impact of their tier-one suppliers across their operations – not just the approved ranches from which they are directly supplied – as part of their screening procedures. Summary findings presented by Greenpeace of legal or policy violations in other operations owned or controlled by tier-one or third-party suppliers¹⁹⁸ was dismissed or ignored by the meat processors, including details of movement of cattle between those operations and an approved ranch.¹⁹⁹ In one case this evidence included public reports of investigations of potential deliberate use of fire.²⁰⁰

Among other issues, the consciously blinkered terms of the meat processors' current approach to supply chain screening in the Pantanal – which focus on the direct supply ranch and not the rancher – enable both ranchers and meat processors to act with impunity when it comes to indirect cattle supplies. Such a lax approach to due diligence enables the most transparent form of cattle laundering – the potential for ranchers to supply cattle from operations that violate law or company policy by passing them through approved intermediary ranches they also own before sending them to slaughter.

While this may serve to boost the cattle trade, it

comes at the expense of due diligence on environmental and legal compliance.

The profound deficiencies in the meat processors' policies and screening procedures for their Pantanal supply base help explain the sector's failure to end its links to environmental destruction or to close the market to dirty suppliers. These include:

- **Failure to effectively and comprehensively ban and monitor for the deliberate use of fire, legal or otherwise.**
- **Failure to effectively and comprehensively ban and monitor for all new land clearance, not just illegal deforestation and not just within iconic regions such as the Amazon.**²⁰¹
- **Failure to require, as a condition of trade, that ranchers comply with the law and zero deforestation policies across their operations.**
- **Continued failure to proactively identify and monitor their entire supply base (including indirect supply and third-party suppliers), despite a 2009 agreement to achieve this in the Amazon by 2011.**²⁰²
- **Failure to make supply chain transparency a condition of trade (ie requiring ranchers to disclose the suppliers and origins of their cattle) and a model for responsible business (ie ensuring the public availability of data on all ranchers in the company's supply chain, including the locations of their operations, in order to enable independent scrutiny of their impact).**

These failures, underpinned by lack of transparency and traceability, both expose and contribute to the industrial meat sector's continued role as a leading global driver of land-use emissions, biodiversity loss and social injustice. Of particular concern is the potential for cattle linked to deliberate or illegal use of fire to find their way into the international market.

Given such structural failings, it is untenable for international consumer goods companies, supermarkets and fast food companies that claim to have zero deforestation policies to continue to trade with the meat processors named in this report. Further, if trade blocs such as the European Union and the United Kingdom are to end their consumption of products linked to environmental destruction²⁰³ and illegal deforestation,²⁰⁴ then products from these groups should find no place in these markets.

LACK OF TRANSPARENCY PROVIDES IMPUNITY FOR THE CATTLE SECTOR

In terms of civil society's ability to hold the industrial meat sector to account, lack of transparency is particularly problematic in two areas in Brazil: land tenure and cattle movement.

If companies do not know who is producing the commodities they use or trade, or where those producers operate, they cannot know whether the producers are operating responsibly or destroying forests or other ecosystems. If civil society has no oversight, there is no public accountability. The environmental stakes are too high for such ignorance.

Brazil does not have a universal national system to track individual cattle. A large proportion of cattle in Brazil move between ranches over the course of their lives, meaning that indirect supplies (cattle not originating on the ranch from which the slaughterhouse ultimately purchases them) are a significant feature of slaughterhouses' supply chains.²⁰⁵ There are multiple stages in the standard four-year production cycle of Brazilian beef, from birth to slaughter, as a result of which cattle often spend time on two or more properties before arrival at the slaughterhouse.²⁰⁶ It is estimated that as many as 95% of ranches buy from other properties²⁰⁷ – although they may have the same owner. This movement of cattle from ranch to ranch, coupled with a lack of transparency, provides the

opportunity to 'launder' animals from ranches where illegal or destructive practices have occurred through ranches not associated with such practices.

In 2020, Brazil's largest beef processors announced several new initiatives and technological developments to support their commitments in the Amazon and beyond. These include the use blockchain (JBS),²⁰⁸ various satellite-based deforestation monitoring platforms and supply chain monitoring tools for the Brazilian cattle sector.²⁰⁹

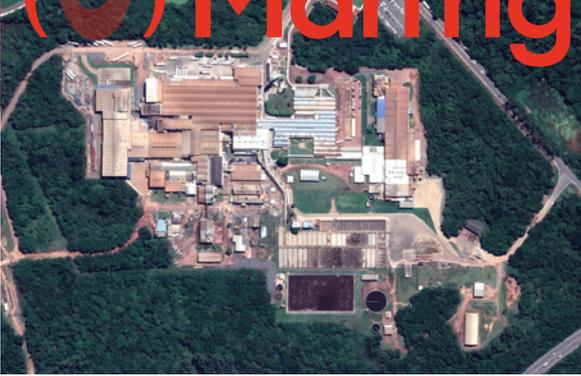
The main barriers to clean supply chains and forest protection are not technological. While these services may improve corporate intelligence, they are set to undermine public scrutiny and corporate accountability. Visipeç, for instance, used by both Marfrig and Minerva,²¹⁰ specifically states that its monitoring tool is 'not openly available' and was 'designed specifically for use by meatpackers (and service providers) ... using Visipeç will not give NGOs any new information on potential non-compliance issues'.²¹¹

Transparency – public access to high-quality information – is vital to ensuring that commodities sectors can be held to account for their externalised environmental and social costs, and is thus a precondition for any meaningful efforts to address the social injustices and environmental challenges the world faces.

Mince Meat

MARFRIG VARZEA GRANDE: SIF 2015

Marfrig



Map data: Google Earth / Image © Maxar technologies



Pão de Açúcar

© Greenpeace

JBS CAMPO GRANDE: SIF 4400

JBS



Map data: Google Earth / Image © Maxar technologies

January 2019 - February 2021: Beef from JBS slaughterhouses linked to the Pantanal fires in supermarkets belonging to the French groups Carrefour and Casino, as well as an Iscaeli chain.



Carrefour

© Greenpeace

MARFRIG PONTES E LACERDA: SIF 1900

Marfrig



Map data: Google Earth / Image © Maxar technologies

JBS BARRA DO GARCAS: SIF 42

JBS



© Greenpeace

JBS PEDRA PRETA: SIF 2019

JBS

Map data: Google Earth / Image © Maxar technologies



Carrefour

© Greenpeace

JBS ARAPUTANGA: SIF 2979

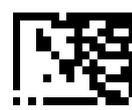
JBS



Map data: Google Earth / Image © Maxar technologies

MAKING MINCEMEAT OF THE PANTANAL

PRIME LOCATION



- WHERE JBS AND ITS COMPETITORS MAKE MINCEMEAT OF THE PANTANAL

JBS ANASTACIO: SIF 615

JBS

Map data: Google Earth / Image © Maxar technologies



שוֹפְרָסוֹל

In the capital of Mato Grosso do Sul, Campo Grande, JBS has a leather processing facility and two slaughterhouses and meat processing facilities. One of these meat processing facilities (SIF 1662²¹²) has the capacity to slaughter approximately 1,900 cattle a day;²¹³ the other facility (SIF 4400) manufactures hamburgers and has onsite capacity to slaughter 480–960 cattle a day.²¹⁴ Greenpeace Brazil and Repórter Brasil investigations documented significant movement of refrigerated trucks between the two facilities,²¹⁵ which suggests that the supply chains may converge. However, JBS refused to confirm trade between the facilities, noting that they are ‘independently registered for inspection purposes [and] they are also in completely different locations miles apart’.²¹⁶

This report links four cattle farmers whose ranches in the Pantanal burned in 2020 to one or both of these Campo Grande facilities. One of them, Ivanildo da Cunha Miranda, is reportedly under police investigation for deliberate use of fire on the ranch in question;²¹⁷ IBAMA has imposed fines and embargoes on two of his other properties as a result of past illegal activities (see below).²¹⁸

JBS’s 2019 Annual and Sustainability Report mentions ongoing partnerships with McDonald’s and Burger King and cites a premium brand initiative

developed with Pão de Açúcar (part of the Casino Group) as ‘a high point for the brand this year’.²¹⁹ One of the Campo Grande facilities reportedly supplies meat to all of these big names²²⁰ – workers and drivers at the SIF 4400 facility confirmed to investigators in October 2020 that it supplies McDonald’s,²²¹ and Greenpeace Brazil has also documented beef from the SIF 4400 facility on sale in Pão de Açúcar and Carrefour supermarkets.

But JBS is not the only beef giant with its eyes on the Pantanal. Two of its main competitors and G4 Agreement co-signatories, Marfrig (one of the other processors whose links to deforestation and slavery were exposed in *Slaughtering the Amazon*) and Minerva, are also supplied by ranchers in the Pantanal, including several whose properties burned in 2020.

Marfrig’s Várzea Grande facility in Mato Grosso (SIF 2015) is reportedly also a supplier of hamburgers to McDonald’s in Brazil,²²² and beef from that establishment has been documented in a Pão de Açúcar supermarket in São Paulo.²²³ This is one of the many processing facilities the present investigation found to be supplied directly or indirectly with cattle from ranches where satellite data show fires destroyed swathes of the Pantanal in 2020 (see below).

In addition to supplying some of the big names in Brazil, JBS’s Campo Grande operations export

significant quantities of beef and leather. According to shipping data, between 1 January 2019 and 31 October 2020 JBS exported a total of 95,701 tonnes of beef products and 39,690 tonnes of leather from Campo Grande, with beef products going to 49 countries and territories. The data show that around 34% of the beef exports went to Hong Kong, 8% to the EU-27 (including France, Germany, Greece, Italy, the Netherlands, Portugal, Spain and Sweden) and the UK, and 4% to the USA, with most of the remainder going to Arab countries.²²⁴ Leather from the Campo Grande tannery was reportedly exported to 16 countries; the biggest purchasers were China (59%), Italy (17%), India (8%) and Mexico (6%), while the USA, Spain and Portugal accounted for about 1% each.²²⁵ Nearly all the exports to Mexico and the USA appear to have gone to GST,²²⁶ an international supplier of leather for automobiles that claims its customers include Audi, BMW, Cadillac, Chevrolet, Citroen, Ford, Genesis, GMC, Honda, Human Horizons, Hyundai, KIA, Lexus, Mercedes-Benz, Mini, Nissan, Peugeot, Opel, Porsche, RAM, Toyota and Volkswagen.²²⁷

Of course, Campo Grande is not the only location from which JBS and other meat processors are exporting leather or beef from the Pantanal to the world. Greenpeace has identified a total of 14 meat processing facilities and three tanneries²²⁸ owned by JBS, Marfrig or Minerva and one live-animal export station owned by Minerva that trade globally and have recently been directly or indirectly supplied by 15 ranchers linked to fires in the Pantanal, environmental violations and/or property registration irregularities.

According to shipping data, between the beginning of President Bolsonaro's term on 1 January 2019 and 31 October 2020 these facilities collectively exported a total of 531,101 tonnes of beef and beef products, worth nearly US\$3 billion. The data show

that around 85% of the exports were frozen beef products, with fresh beef and offal accounting for much of the remainder. Key markets for the exports include Hong Kong (22.4%), China (21.4%) and the EU-27 and the UK (8.2%, representing 11.4% by value). Exports from JBS's Pantanal-linked facilities alone reportedly accounted for almost US\$2 billion over the period, with the EU-27 and the UK representing 9% of the export volume and over 13% of the value.²²⁹

Exports are a primary source of revenue for the Brazilian operations of JBS, Marfrig and Minerva, accounting for 46% of JBS Brazil's sales,²³⁰ 53% of the revenue from Marfrig's South American operations²³¹ and 66% of Minerva's gross revenue in 2019.²³² Despite the chaos and economic upheaval caused by the global Covid-19 pandemic, Brazil's beef exports set a new all-time high in 2020, with volumes reported to have reached 2 million tonnes and revenues some US\$8.4 billion – up 11% over 2019.²³³ The main global revenue source for JBS SA (as for Marfrig²³⁴), however, lies in its North American business units, with the United States alone accounting for around half of the company's global revenue in the third quarter of 2020.²³⁵

Note: In January 2019 Marfrig and Minerva agreed to a swap of facilities in Paranatinga and Várzea Grande, with Marfrig taking over Minerva's Várzea Grande (SIF 2015) operations and Minerva taking control of Marfrig's Paranatinga (SIF 2500) facility.²³⁶ Marfrig Várzea Grande became fully operational on 1 April 2019.²³⁷ Minerva Paranatinga opened on 28 February 2019.²³⁸ The SIF numbers of the facilities remained the same when ownership was transferred.





CASE STUDIES

Sources for case study analyses see Annex 3.

- 1 IVANILDO DA CUNHA MIRANDA
- 2 JOÃO FELIX PEREIRA NETO
- 3 ADEVAIR DE OLIVEIRA
- 4 RAUL AMARAL CAMPOS
- 5 JOSE DALBEM
- 6 ÁRIO BARNABE NETO
- 7 LUIZ CARLOS ZILIANI
- 8 DANIEL MARTINS FILHO
- 9 RAYMUNDO VICTOR DA COSTA RAMOS SHARP
- 10 FRANCISCA EVANGELISTA TEODORO DA SILVA
- 11 EDUARDO MARIANI BITTENCOURT
- 12 ELIANA MARIA LEMOS MONTEIRO CONCEIÇÃO
- 13 CELSO MIURA
- 14 FABIO DE OLIVEIRA LUCHESI
- 15 SERGIO JACINTO COSTA

CASE STUDY 1

IVANILDO DA CUNHA MIRANDA

TRADE TO SLAUGHTERHOUSES 2018-2019

JBS Campo Grande (SIF 1662)

IRREGULARITIES/ EMBARGOES/ FINES

- + Involvement in bribery
- + Reported police investigation for deliberate burning
- + Two embargoes
- + R\$900,000 (US\$420,000) fines

CASE STUDY FAZENDA

Bonsucesso

SICAR

MS-5003207-0EFCFC9C1C8
949E4BAB3A867AF21257A

CAR STATUS

Active

FAZENDA AREA

32,148 ha

BURNED AREA

17,228 ha

FIRST FIRE

1 July 2020

BONSUCESSO

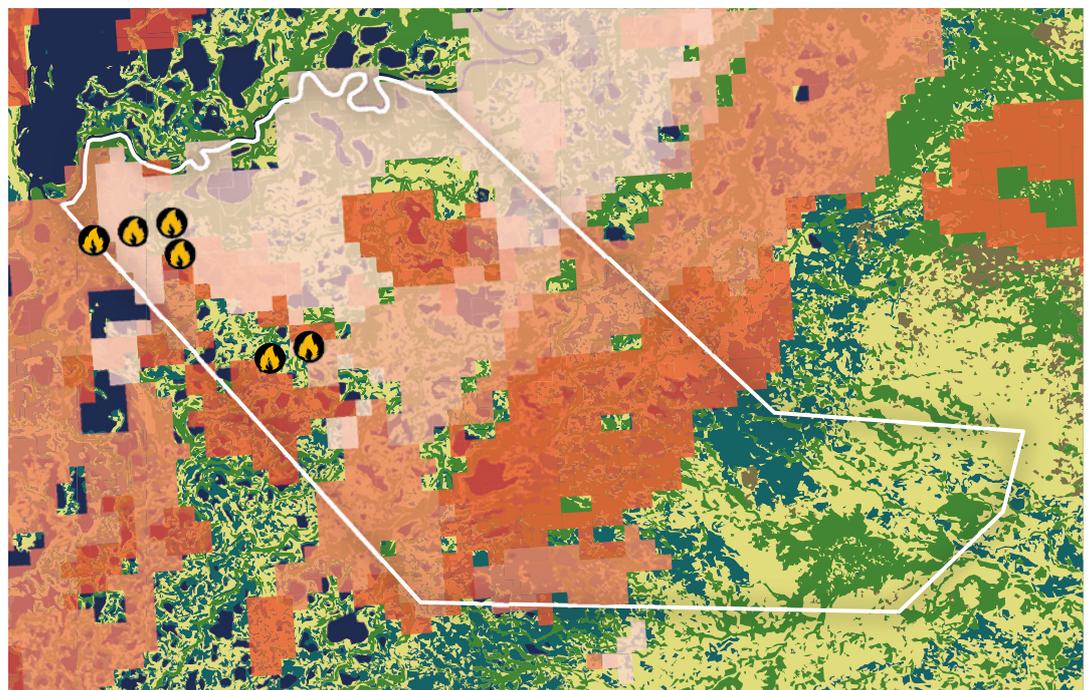
CHAIN-OF-CUSTODY



PANTANAL / BON SUCESSO



- Forest
- Grassland
- Wetland
- Pasture
- Water
- Fazenda
- Burnscar July 2020
- Burnscar Aug 2020
- Burnscar Sept 2020
- Burnscar Oct 2020
- Fire hotspots (day one)



Ivanildo da Cunha Miranda controls the 32,147 ha Fazenda Bonsucesso (also known as Bom Sucesso) – see Figure 1.1,²³⁹ which borders the Pantanal Matogrossense National Park in Corumbá, Mato Grosso do Sul. He was implicated in a bribery scandal several years ago involving JBS and a former governor of Mato Grosso do Sul, in which he acted as an intermediary.²⁴⁰ IBAMA lists two outstanding embargoes for clearance of native vegetation in Legal Reserves against properties owned by Ivanildo da Cunha Miranda, and he was fined over R\$900,000 (US\$420,000²⁴¹) by IBAMA in 2013 (see Figure 1.3).²⁴² Fazenda Bonsucesso is one of several farms in the area reportedly investigated by federal police in September 2020 for deliberate use of fire, with Ivanildo da Cunha Miranda named by media as its owner;²⁴³ maps shared on public news outlets correspond with the CAR boundaries for Fazenda Bonsucesso.²⁴⁴ NASA satellite imagery²⁴⁵ shows fire hotspots within the ranch's boundaries in every previous month of 2020, with a dramatic escalation from July despite

the use of fire being prohibited by a presidential decree that came into force on 16 July 2020 for a period of 120 days.²⁴⁶ Between 1 July and 27 October 2020 some 17,228 ha burned within the boundaries of the ranch,²⁴⁷ with the first fire hotspot on the property detected on 1 July 2020.²⁴⁸

In 2018 and 2019 cattle from ranches owned or controlled by Ivanildo da Cunha Miranda were supplied to a number of other ranchers, one of whom in turn supplied JBS Campo Grande (SIF 1662).²⁴⁹ Ivanildo da Cunha Miranda was thus a third-party supplier to JBS, and trade from Fazenda Bonsucesso to this facility was indirect.

JBS CAMPO GRANDE (SIF 1662): On or soon after 23 October 2018 Ivanildo da Cunha Miranda made multiple shipments of cattle from Fazenda Bom Sucesso to Fazenda Boa Vista do Taboco – Araras e Araras I (owned by him). Potentially, up to 200 cattle were transferred. Between 26 October 2018 and



On Sunday 20 September 2020, Rede Globo, the largest commercial television station in Latin America and the second largest in the world, aired its Fantástico Sunday news programme, the most viewed Sunday programme in Brazil. The opening nine-minute news item was on Operation 'Matáá' (fire), a police investigation into the outbreak of fires within Pantanal ranches in Mato Grosso do Sul. Satellite images show the path the fires had taken and the federal police reportedly suspected 'criminal action by cattle ranchers in the region'. According to the presenters, 'One of the four farms being investigated by the Federal Police is called "Bonsucesso". Fire was still burning within the property boundary and documented by the police flyover in August 2020. The owner is cattle rancher Ivanildo Miranda. [...] He is convicted in a process of corruption involving politicians and businessmen. His lawyer said his client did not use or mandated anyone to use fire in his property.' Source: Fantástico 'in the Pantanal, images show the fire path and federal police suspect criminal action on farms' <https://globoplay.globo.com/v/8872066/>

15 February 2019, or soon after, Ivanildo da Cunha Miranda made multiple shipments totalling hundreds of cattle from Fazenda Boa Vista do Taboco – Araras e Araras I to Fazenda Água Branca in Camapuã, Mato Grosso do Sul (owned by Assed Bittar Filho and others – a ranch certified for beef exports to the EU²⁵⁰). Between 14 December 2018 and 30 July 2019, or soon after, Assed Bittar Filho made multiple shipments of cattle from Fazenda Água Branca to JBS Campo Grande (SIF 1662).²⁵¹ During this period, Fazenda Água Branca appears to have supplied this facility exclusively. Potentially, up to 970 cattle were transferred. On 30 July 2019 JBS Campo Grande (SIF 1662) slaughtered cattle from a Fazenda Água Branca located in Camapuã, Mato Grosso do Sul (see Figure 1.2).²⁵²

MEAT PROCESSOR RESPONSE

- **JBS:** 'In regard to Água Branca Farm, the property is compliant with the Company's Responsible Procurement Policy. In the case of the properties of Ivanildo da Cunha, [Greenpeace] accuses him, based on media articles from September of last year found on the internet, of being one of those responsible for the fires in the Pantanal. Those articles make reference to a Federal Police investigation which, according to more recent stories also found on the internet, has not yet been concluded. Bonsucesso Farm and Ivanildo's other properties are not on the JBS active suppliers base.'²⁵³

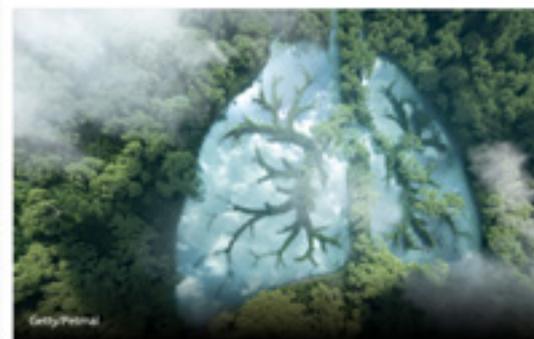
GREENPEACE OBSERVATIONS

- **JBS** gives no meaningful indication that it has proactively reviewed its entire supply base – including in the Pantanal – for deliberate or illegal use of fire.
- **JBS** gives no indication that it proactively identified and monitored the legal status or environmental impact of its indirect supplies or third-party suppliers in the Pantanal.

JBS doubles down on deforestation as Greenpeace denounces 'five more years of inaction'

By Oliver Morrison O

12 Feb 2021 | Last updated on 10 Feb 2021 at 09:00 GMT



RELATED TAGS [Deforestation](#)

A dispute between the meat giant and the NGO over deforestation committed by rogue farmers in the Amazon illustrates the challenge faced by big businesses in

Greenpeace revealed in the exchange that one accusation against JBS was based on a Google search which found reports of complaints against a farm in Corumbá. JBS denies any direct connection with this property. Not only do such accusations 'defy logic as they refer to complaints sometime after the transaction was alleged to have taken place', it said, they illustrate the challenge it faces in identifying malpractice in deep and complex supply chains where traceability data is confidential to the two parties on each transit permit and not publicly available.

JBS said this particular accusation was "based on confidential data of livestock farmers obtained by Greenpeace, to which we do not have access, this property had supplied a second farm which, in turn, had sold to a third farm, the latter being a JBS cattle supplier."

The purchases from this property, it said, complied with the Responsible Procurement Policy, respecting at all times the protocols defined by the Federal Prosecutor's Office. "Even if JBS had the means of identifying the suppliers of its suppliers' suppliers, the company could not have foreseen that, more than one year later, according to the press, this farmer, as indicated by Greenpeace, would be investigated for fires in the Pantanal."

CASE STUDY 2

JOÃO FELIX PEREIRA NETO

ATOLEDAL

CHAIN-OF-CUSTODY



João Felix Pereira Neto owns the 8,712 ha²⁵⁴ Fazenda Atoledal in Água Boa, Mato Grosso. IBAMA lists five embargoes against ranches owned by João Felix Pereira Neto – one of which covers the entirety of Fazenda Atoledal – as well as fines totalling more than R\$1.65 million (US\$640,000) for unlicensed deforestation in various of his ranches (see Figures 2.1 and 2.2).²⁵⁵ Despite the embargo on Fazenda Atoledal, plans have been announced to build a private 5-million-tonne grain terminal within its boundaries on the Paraguay River.²⁵⁶ Between 1 July 2020 and 27 October 2020 at least 4,864 ha burned within the boundaries of the ranch (which falls partially outside the limits of the Pantanal assessed for burn scar by LASA), with the first fire hotspots on the property detected on 1 September 2020.

In 2018 and 2019 cattle from ranches owned by João Felix Pereira Neto were supplied directly to the JBS Diamantino (SIF 3000) and Marfrig Pontes e Lacerda (SIF 1900) facilities, as well as indirectly to JBS Água Boa (SIF 4121) and JBS Barra do Garças (SIF 42).²⁵⁷ João Felix Pereira Neto was thus both a tier-one and a third-party supplier to JBS and a tier-one supplier to Marfrig; trade from Fazenda Atoledal was indirect to three of the named facilities.

JBS ÁGUA BOA (SIF 4121): Between 20 December 2018 and 20 March 2019, or soon after, João Felix Pereira Neto made multiple shipments of cattle from Fazenda Atoledal to Fazenda Sete de Setembro in Água Boa, Mato Grosso (owned by Darce Ramalho dos Santos, though trade is apparently managed by Samoel Alexandroni Santos; while it is currently listed as active in the federal CAR registry with the date of the last revision given as 5 August 2018,²⁵⁸ the Mato Grosso state registry lists this ranch's property registration as suspended as of 29 June 2020²⁵⁹) – see Figures 2.4 and 2.5. Potentially, up to 1,120 cattle were transferred. Between 3 January 2019 and 25 November 2019, or soon after, Samoel Alexandroni Santos made multiple shipments of cattle from

TRADE TO SLAUGHTERHOUSES 2018–2019

JBS Diamantino (SIF 3000)
Marfrig Pontes e Lacerda (SIF 1900)
JBS Água Boa (SIF 4121)
JBS Barra do Garças (SIF 42)

RANCHER IRREGULARITIES/ EMBARGOES/ FINES

- + Five embargoes
- + More than R\$1.65 million (US\$640,000) fines
- + Plans announced to build a private 5-million-tonne grain terminal in Fazenda Atoledal, despite an embargo covering the entirety of the fazenda

CASE STUDY FAZENDA

Atoledal
SICAR #
MT-5102504-622E591250F
B4100012827853D7351B7
CAR STATUS
Active
FAZENDA AREA
8,712 ha
BURNED AREA
4,864 ha
FIRST FIRE
1 September 2020

Fazenda Sete de Setembro to JBS Água Boa. Potentially, up to 1,170 cattle were transferred. On 25 November 2019 JBS Água Boa slaughtered cattle from a Fazenda Sete de Setembro, located in Água Boa, Mato Grosso.²⁶⁰

JBS BARRA DO GARÇAS (SIF 42): Between 20 December 2018 and 20 March 2019, or soon after, João Felix Pereira Neto made multiple shipments of cattle from Fazenda Atoledal to Fazenda Sete de Setembro (see bullet above). Potentially, up to 1,120 cattle were transferred. Between 17 October 2019 and 30 October 2019, or soon after, Samoel Alexandroni Santos made multiple shipments of cattle from Fazenda Sete de Setembro to JBS Barra do Garças. On 18 October 2018 and 19 October 2018, JBS Barra do Garças slaughtered cattle from a Fazenda Sete de Setembro located in Água Boa, Mato Grosso (see Figure 2.3).²⁶¹

MARFRIG PONTES E LACERDA (SIF 1900): Between 6 November 2018 and 7 May 2019, or soon after, João Felix Pereira Neto made multiple shipments of cattle from Fazenda Atoledal to Fazenda Pederneiras in Cáceres, Mato Grosso (Fazenda Pederneiras Novas is also owned by João Felix Pereira Neto; though currently listed as active in the Mato Grosso state registry²⁶² the federal CAR website lists the ranch's property registration status as 'cancelled' with the date of analysis given as 17 July 2019 and the date of the last revision given as 23 October 2019²⁶³) – see Figures 2.6 and 2.7. Potentially, up to 1,425 cattle were transferred. Between 12 November 2018 and 21 May 2019, or soon after, João Felix Pereira Neto made multiple shipments of cattle from Fazenda Pederneiras to Marfrig Pontes e Lacerda. Potentially, up to 850 cattle were transferred. On 14 November 2018 and 23 and 24 May 2019, Marfrig Pontes e Lacerda slaughtered cattle from João Felix Pereira Neto's Fazenda Pederneiras.²⁶⁴

Friboi

MINISTÉRIO DA AGRICULTURA
BRASIL
 INSPECIONADO
42
S.I.F.

Leia esse QR Code utilizando seu Smartphone e saiba mais sobre a origem da carne que você está comprando.

CARNE RESFRIADA DE BOVINO SEM OSSO
MAMINHA DA ALCATRA

REGISTRO NO MINISTÉRIO DA AGRICULTURA, SUJEITO AO Nº 12442
 ANEXO 3, ITEM 1, BASTREABILIDADE 0022-08/08/19 - 00 - 0
 Data de Produção (DTE) (Data de Validade) (Mantença Resfriado)
 09/08/2019 08/10/2019 0°C A 7°C

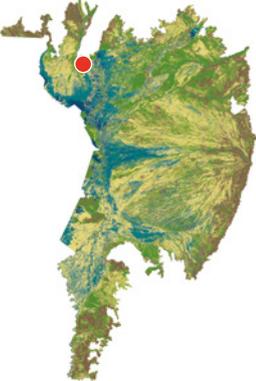
ABATEDOURO FRIORRIBO, S.A. - FANTARRA 2550 - FANTARRA - MATO GROSSO DO SUL
 (CNPJ) 02.916.265/0001-00

INDÚSTRIA FANTARRA S.A. - FANTARRA 2550 - FANTARRA - MATO GROSSO DO SUL
 (CNPJ) 02.916.265/0001-00

INFORMAÇÃO NUTRICIONAL: PORÇÃO DE 100g (1 BIFE MÉDIO)
 Valor energético 104 kcal = 437 kJ (SVD); Carboidratos 0 g (VDV); Proteínas 21 g (2VDV); Gorduras Totais 2,2 g (4VD); Gorduras Saturadas 0,9 g (4VD); Gorduras Trans 0 g (VDV) não estabelecido; Fibras 0 g (VDV); Sódio 74 mg (3VD).
 *Valores Diários com base em uma dieta de 2.000 kcal. Os valores podem ser maiores ou menores dependendo de suas necessidades energéticas.

(/images/sif.png)

PANTANAL / ATOLEDAL



- Forest
- Grassland
- Wetland
- Pasture
- Water
- Outside Pantanal
- Fazenda
- Burnscar Aug 2020
- Burnscar Sept 2020
- Fire hotspots (day one)
- ◆ Embargo violation

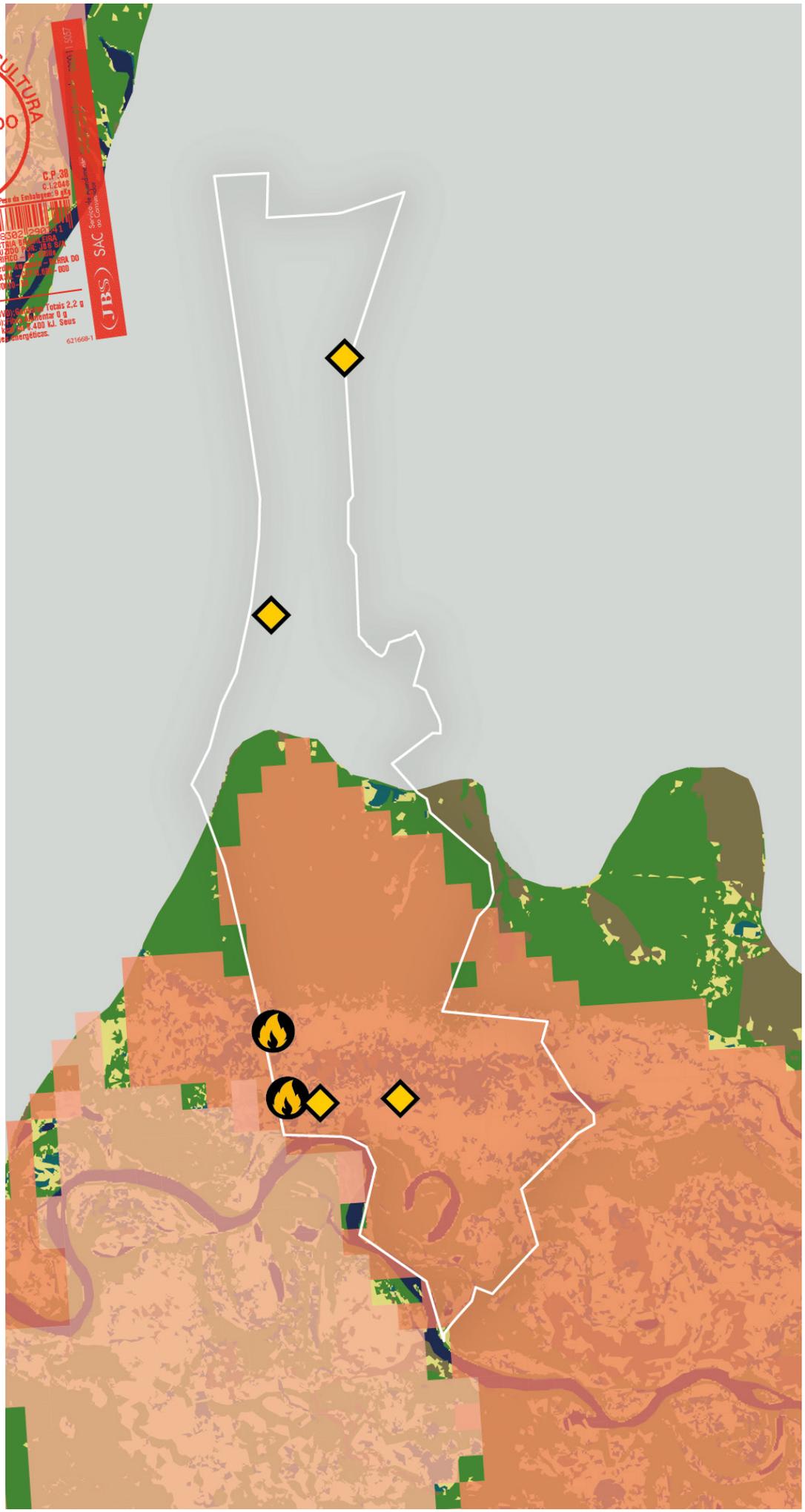


Figure 2.1: IBAMA embargoes



Figure 2.2: IBAMA fines



MEAT PROCESSOR RESPONSE

- **JBS:** 'JBS is using SICAR, the federal record, to check the status of the supplier's CAR. Sete de Setembro Farm, besides complying with the Company's Responsible Procurement Policy, has the ACTIVE status registered on this platform and, therefore, is able to commercialize raw materials with us. Atoledal Farm is not part of our active supplier base.'²⁶⁵
- **MARFRIG:** 'The (State or Federal) CAR status is checked in slaughter previews; if it is not active, the slaughter is not carried out until it is active. On the slaughter date, the state CAR status of Fazenda Pederneiras [sic] Novas was "active". ... Fazenda Pederneiras Novas was not subject to an embargo by IBAMA on the slaughter date. The last slaughter from Fazenda Pederneiras Novas was on July 7, 2020. Fazenda Atoledal is not included in Marfrig's supplier list.'²⁶⁶

GREENPEACE OBSERVATIONS

- **JBS'S** assertion that its direct supply ranch Fazenda Sete de Setembro is compliant with its procurement policy is controversial.
- **MARFRIG'S** assertion that its direct supply ranch Fazenda

Figure 2.3: JBS/ Friboi 'Garantia de origem' website



Pederneiras Novas was compliant with its procurement policy on the last slaughter date is controversial.

- Both **JBS** and **MARFRIG** appear to take as sufficient indication of a ranch's compliance with policy the listing of an active status on either the federal or the state CAR website, even where the listings differ.
- **JBS** failed to confirm the current or historic status of the direct trade relationship between João Felix Pereira Neto and JBS Diamantino (SIF 3000) – identified trade to this facility was direct from Fazenda Pederneiras Novas in April 2018.
- **MARFRIG** failed to confirm the current status of the operations of João Felix Pereira Neto, a 2018–2020 tier-one supplier to its facilities.
- Neither **JBS** nor **MARFRIG** gives any meaningful indication that it has proactively reviewed its entire supply base – including in the Pantanal – for deliberate or illegal use of fire.
- Neither **JBS** nor **MARFRIG** gives any indication that it proactively identified and monitored the legal status or environmental impact of these indirect supplies or third-party suppliers in the Pantanal.

Figures 2.4 and 2.5: State and Federal CAR information for Sete de Setembro

SEMA GOVERNO DE MATO GROSSO

Demonstrativo de Informações no CAR

Dados Gerais

Nº CAR Estadual: MT69179207 | Situação: Suspensão | Data de Cadastro: 07/12/2017 | Data da Situação: 29/08/2020

Dados da Propriedade

UF: MT | Município: Água Boa

Proprietários

Dante Ramalho dos Santos

Áreas da Propriedade

Descrição	Área (ha)
Área Total da Propriedade - ATP	3.191,8883
Área de Imóvel Rural - AIR	3.191,8882
Área de Vegetação Nativa - AVN	518,4253
Área de Reserva Legal - ARL	518,4253
Área de Preservação Permanente - APP	236,9188
Área de Uso Consolidado	2.838,7900
Área de Uso Restrito - AUR	0,0000
Área de Uso Antecipado do Solo - AUS	0,0000
Área de Altimetria 1000	0,0000
Área de Declividade	0,0000
Área Pastagem	0,0000
Área Topo de Morro	0,0000
Área de Borda de Chapada	0,0000
Área de Interesse Social	0,0000
Área de Utilidade Pública	0,0000

GOVERNO FEDERAL

Demonstrativo da Situação das Informações Declaradas no CAR

Registro no CAR: MT-5102504-4A4408CD2A7D4345B3206B169E5B01AF | Data de Cadastro: 23/10/2014 | Data da última verificação: 23/10/2019

Dados do Imóvel

Área do Imóvel: 3,213,17 ha | Módulos Fiscais: 55,36

Coordenada Central: Latitude: 16°11'27,8" S | Longitude: 53°51'36,7" O

Unidade da Federação: MT | Data da análise do CAR: 17/07/2019 09:48

Cobertura do Solo

Descrição	Área (ha)
Área total de Remanescentes de Vegetação Nativa	518,4253
Área total de Uso Consolidado	464,9140
Área total de Terras Administrativas	0,0000

Reserva Legal

Situação da reserva legal: Não Análiseada

Descrição	Área (ha)
Área de Reserva Legal Aprovada autorizada	0,0000
Área de Reserva Legal Aprovada não autorizada autorizada	0,0000
Área de Reserva Legal Proposta autorizada	0,0000
Total de Reserva Legal declarada pelo proprietário	464,9140

Figures 2.6 and 2.7: Federal and State CAR information for Pederneiras Novas



Consultar demonstrativo do CAR:

Informe o número de registro no CAR (ou número de protocolo):

MT-5102504-4A4408CD2A7D4345B3206B169E5B01AF Consultar

Demonstrativo

Situação cadastral: **Cancelado**

Registro no CAR: MT-5102504

Condição cadastral: Ativo

Adere ao Programa de Regularização Ambiental: Não

Dados do Imóvel

Área do Imóvel: 3,213,17 ha | Módulos Fiscais: 55,36 | Município / UF: Cáceres / MT

Data de registro no SICAR: 23/10/2014 | Data da análise do CAR: 17/07/2019 | Data da última verificação: 23/10/2019

September 2020, Hong Kong: Beef from JBS Barra do Garças (SIF 42) in a KaiBo Food Supermarket. © Greenpeace

SEMA GOVERNO DE MATO GROSSO

Demonstrativo de Informações no CAR

Dados Gerais

Nº CAR Estadual	Situação Estadual	Data de Cadastro	Data da Situação
MT699899/2017	Ativo	25/08/2020	28/08/2020

Dados da Propriedade

UF	Município
MT	Cáceres

Proprietários

Nome	Área (ha)
JOÃO FELIX PEREIRA NETO	1.197,9633
	1.197,9633
	570,6463
	464,9140

Áreas da Propriedade

Descrição	Área (ha)
Área Total da Propriedade - ATP	3.191,8883
Área de Vegetação Nativa - AVN	518,4253
Área de Reserva Legal - ARL	518,4253

CASE STUDY 3

ADEVAIR DE OLIVEIRA



TRADE TO SLAUGHTERHOUSES 2018–2019

JBS Araputanga (SIF 2979)
 JBS Pontes e Lacerda (SIF 51)
 Marfrig Pontes e Lacerda (SIF 1900)
 Marfrig Várzea Grande (SIF 2015)
 Minerva Mirassol d'Oeste (SIF 2911)
 Minerva Várzea Grande (SIF 2015)

RANCHER IRREGULARITIES/ EMBARGOES/ FINES

+ Embargo
 + Multiple deforestation violations
 + Suspended CAR registration

CASE STUDY FAZENDA

Recreio

SICAR

MT-5102504-89CAE072B3
 EE459E8856CB4BB71C29E1

CAR STATUS

Pending (Federal) as of 4 August 2018
 Active (Mato Grosso state) as of
 9 November 2020

FAZENDA AREA

14,428 ha

BURNED AREA

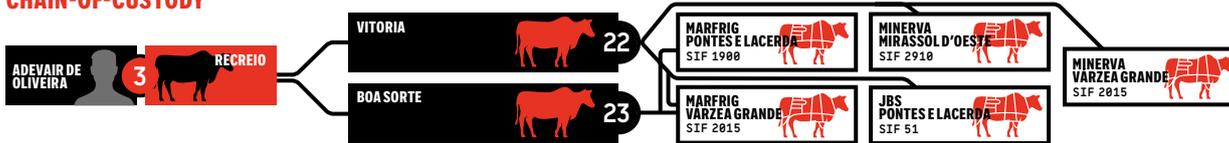
2,990 ha

FIRST FIRE

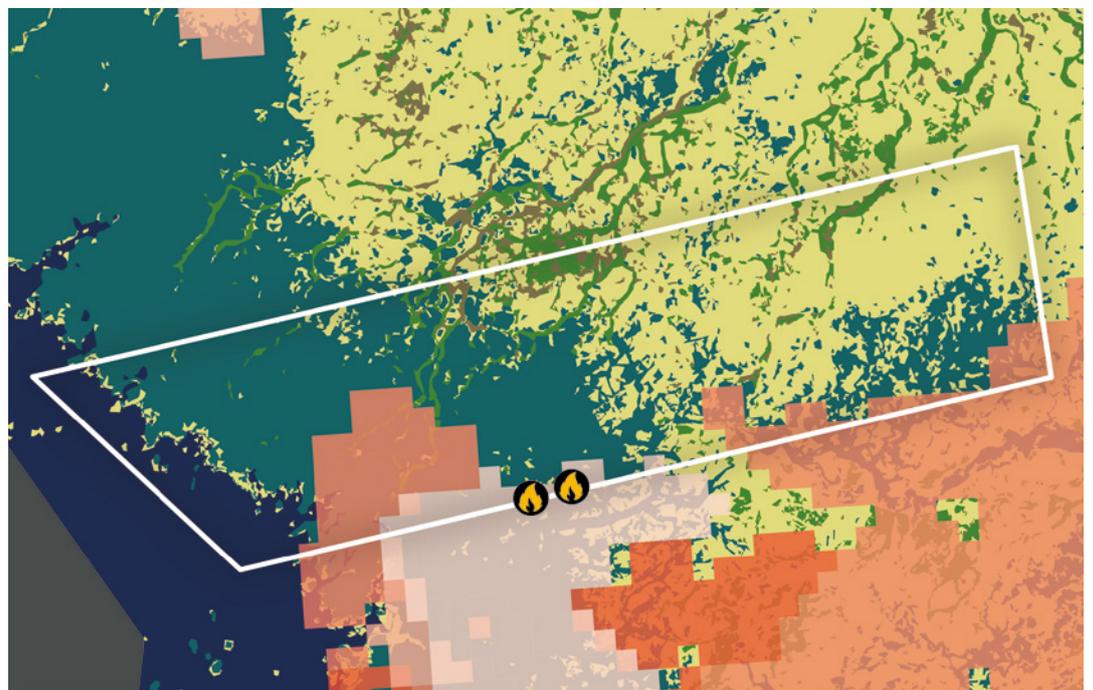
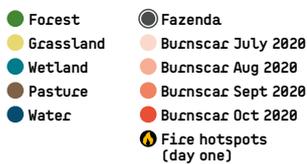
26 July 2020

RECREIO

CHAIN-OF-CUSTODY



PANTANAL / RECREIO



Adevair de Oliveira owns the 14,428 ha Fazenda Recreio in Cáceres, Mato Grosso. The Mato Grosso State environment agency lists seven deforestation violations between 2017 and 2020 against another ranch owned by Adevair de Oliveira, with a total embargoed area of about 428 ha.²⁶⁷ The federal CAR website lists Fazenda Recreio's property registration status as 'pending', with the date of analysis given as 28 January 2016 and the date of the last revision given as 4 August 2018 (see Figure 3.3);²⁶⁸ according to the site, this status indicates an incorrect declaration, overlap with Indigenous lands or conservation units, or other irregularities.²⁶⁹ The Mato Grosso state registry lists the registration as active as of 4 February 2021, based on maps of the same date.²⁷⁰ Between 1 July 2020 and 27 October 2020 some 2,990 ha burned within the boundaries of the ranch, with the first fire hotspots on the property detected on 26 July 2020.

In 2018 and 2019, cattle from ranches owned by Adevair de Oliveira were supplied to the JBS Araputanga (SIF 2979), JBS Pontes e Lacerda (SIF 51), Marfrig Pontes e Lacerda (SIF 1900),

Marfrig Várzea Grande (SIF 2015), Minerva Mirassol d'Oeste (SIF 2911) and Minerva Várzea Grande (SIF 2015) facilities.²⁷¹ No direct trade was authorised from Fazenda Recreio to these facilities – which is perhaps unsurprising given the status of the property claim – but Greenpeace identified extensive movement between Fazenda Recreio and other ranches owned by Adevair de Oliveira, including Fazenda Boa Sorte (Cáceres, Mato Grosso), Fazenda Vitória (Cáceres, Mato Grosso) and Fazenda São Benedito das Lajes (Cáceres, Mato Grosso). These in turn have all supplied Fazenda Jaraguá (Porto Esperidião, Mato Grosso), which appears to be the main ranch from which Adevair de Oliveira trades cattle to all the big slaughterhouses, and which is certified for beef exports to the EU.²⁷² Thus, cattle from Fazenda Recreio may ultimately have made their way to all the facilities supplied by this operation. The identified trade links show that Adevair de Oliveira was a tier-one supplier to all three meat processors, and trade from Fazenda Recreio was indirect to all the named facilities.

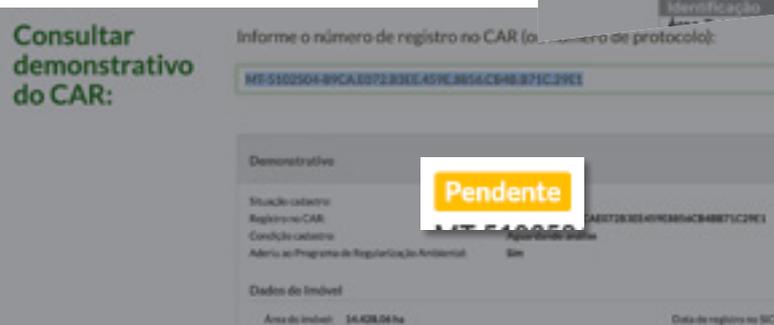
Figure 3.1: State CAR information for Recreio



Figure 3.2 State CAR information for Boa Sorte



Figure 3.3: Federal CAR information for Recreio



February 2021, Brazil: Beef from JBS Pontes e Lacerda (SIF 51) on sale in French group Carrefour supermarket. © Greenpeace



Figure 3.4: Marfrig 'Conheça a origem da nossa carne' website

Saiba mais sobre o Marfrig Club clicando aqui

Data de Produção:

10/01/2019

Sif de Origem:

1900

Lista de Fazendas

A Marfrig não compra gado de fazendas que praticam Trabalho Escravo ou tem problemas com o Sema. Trabalhamos muito para o Meio Ambiente e nos preocupando com o direito do trabalhador.

Nome da Fazenda	Inscrição Estadual	Município
FAZENDA ANGOLO	132549543	Pontes e Lacerda
FAZENDA BOA SORTE	132713962	Cáceres
FAZENDA DO PRETO	132561121	Salto do Céu
FAZENDA SANTO REIS	132605708	Pontes e Lacerda

Novos Parques

JBS PONTES E LACERDA (SIF 51): On or soon after 15 January 2018 Adevaire de Oliveira made multiple shipments of cattle from Fazenda Recreio to Fazenda Vitória (also owned by him). On or soon after 19 January 2018 Adevaire de Oliveira made multiple shipments of cattle from Fazenda Vitória to JBS Pontes e Lacerda. On 22 January 2018 JBS Pontes e Lacerda slaughtered cattle from a Fazenda Vitória located in Cáceres, Mato Grosso.²⁷³

MARFRIG PONTES E LACERDA (SIF 1900): Between 15 January 2018 and 3 September 2018, or soon after, Adevaire de Oliveira made multiple shipments of cattle from Fazenda Recreio to Fazenda Boa Sorte (also owned by him; the Mato Grosso state environment agency lists the property registration as suspended as of 4 February 2021 based on maps of the same date²⁷⁴ and the federal CAR website lists the ranch's status as 'cancelled' with the date of analysis given as 29 October 2020 and the date of the last revision given as 30 June 2020²⁷⁵). Potentially, up to 1,450 cattle were transferred. On or soon after 8 January 2019 Adevaire de Oliveira made multiple shipments of cattle from Fazenda Boa Sorte to Marfrig Pontes e Lacerda. Potentially, up to 100 cattle were transferred. On 10 January 2019 Marfrig Pontes e Lacerda slaughtered cattle from Adevaire de Oliveira's Fazenda Boa Sorte.²⁷⁶

MARFRIG VÁRZEA GRANDE (SIF 2015): Between 15 January 2018 and 15 March 2019, or soon after, Adevaire de Oliveira made multiple shipments of cattle from Fazenda Recreio to Fazenda Boa Sorte (also owned by him; see bullet above). Potentially, up to 2,880 cattle were transferred. Between 24 May 2019 and 27 June 2019, or soon after, Adevaire de Oliveira made multiple shipments of cattle from Fazenda Boa Sorte to Marfrig Várzea Grande. Potentially, up to 240 cattle were transferred. On 27 May 2019 and 1 July 2019, Marfrig Várzea Grande slaughtered cattle from Adevaire de Oliveira's Fazenda Boa Sorte; the Marfrig 'Conheça a origem da nossa carne' website also state that cattle from Adevaire de Oliveira's Fazenda Boa Sorte were slaughtered on 29 July 2019.²⁷⁷ Between 15 January 2018 and 28 June 2019, or soon after, Adevaire de Oliveira made multiple shipments of cattle from Fazenda Recreio to Fazenda Vitória (also owned by him). Potentially, up to 2,890 cattle were transferred. Between 9 May 2019 and 26 July 2019, or soon after, Adevaire de Oliveira made multiple small shipments of cattle from Fazenda Vitória to Marfrig Várzea Grande. On 13 May 2019 and 29 July 2019, Marfrig Várzea Grande slaughtered cattle from Adevaire de Oliveira's Fazenda Vitória.²⁷⁸

MINERVA VÁRZEA GRANDE (SIF 2015): Between 15 January 2018 and 29 November 2018, or soon after, Adevaire de Oliveira made multiple shipments of cattle from Fazenda Recreio to Fazenda Vitória (also owned by him). Potentially, up to 1,650 cattle were

transferred. Between 8 June 2018 and 30 November 2018, or soon after, Adevaire de Oliveira made multiple shipments of cattle for slaughter from Fazenda Vitória to Minerva Várzea Grande. Potentially, up to 730 cattle were transferred.

MINERVA MIRASSOL D'OESTE (SIF 2911): Between 15 January 2018 and 3 August 2018, or soon after, Adevaire de Oliveira made multiple shipments of cattle from Fazenda Recreio to Fazenda Vitória (also owned by him). Potentially, up to 1,510 cattle were transferred. Between 7 February 2018 and 3 August 2018, or soon after, Adevaire de Oliveira made multiple shipments of cattle for slaughter from Fazenda Vitória to Minerva Mirassol d'Oeste. Potentially, up to 300 cattle were transferred.

MEAT PROCESSOR RESPONSE

- **JBS:** '[Greenpeace] alleges that Adevaire de Oliveira has violations for deforestation on another property. However, this was not the case of the Vitória Farm at the time of the purchase by JBS, and it continues to comply with the Company's Responsible Procurement Policy. In regard to Recreio Farm, it is not part of our active supplier base. ... Boa Sorte Farm, besides complying with the Company's Responsible Procurement Policy, has the ACTIVE status registered on the State SICAR and, therefore, is able to commercialize raw materials with us.'²⁷⁹
- **MARFRIG:** 'On the slaughter date, the state CAR status of Fazenda Boa Sorte was "active". The Individual Taxpayer's ID (CPF) of the supplier is also checked in the list of Embargoed Areas of the Secretariat of Environment of Mato Grosso (SEMA-MT). If there is a restriction and the farm is the reason for the embargo, the slaughter is not carried out. On this date, Fazenda Boa Sorte was cleared at the Secretariat of Environment of Mato Grosso (SEMA-MT). The last slaughter from Fazenda Boa Sorte [at SIF 1900] was on January 10, 2019. Fazenda Recreio is not included in Marfrig's supplier list. ... The last slaughter from Fazenda Boa Sorte [at SIF 2015] was on February 27, 2020. ... On the slaughter date, Fazenda Vitória was in compliance with all the criteria of the company's public commitments. The last slaughter [at SIF 2015] was on July 7, 2020.'²⁸⁰
- **MINERVA:** '[Fazenda Vitória] is listed in Minerva's database and is eligible for commercialization. In addition, the Company would like to underline that a CAR in pending status is not a criterion for restriction. This status is a result of some administrative delay between the supplier and the Secretary of the Environment. The analysis that has already been carried out contemplates the verification of environmental restrictions such as deforestation, overlapping protected areas, and state and federal embargoes. Regarding the designation of another property embargoed by



October 2020, Brazil: Beef from Marfrig Várzea Grande (SIF 2015) on sale in French group Casino Pão de Açúcar supermarket. © Greenpeace

the producer, we are unaware of such information as we do not have the ranch registered in our database. ... [Fazenda Recreio] is not registered in Minerva's database.²⁸¹

GREENPEACE OBSERVATIONS

- **JBS'S** assertion that Fazenda Boa Sorte is compliant with its procurement policy is controversial. Its assertion that the ranch has an active listing on the Mato Grosso state registry is not supported by documentation held by Greenpeace.
- **MINERVA'S** claim that a 'pending' CAR status is not a criterion for restriction is controversial.
- **JBS'S** response confirms that Adevaire de Oliveira remains a current tier-one supplier.
- **MARFRIG** failed to confirm the current status of the operations of Adevaire de Oliveira, a 2019–2020 tier-one supplier to its facilities.
- **MINERVA'S** response confirms that Adevaire de Oliveira remains a current tier-one supplier.
- **NONE OF THE MEAT PROCESSORS** gives any meaningful indication that it has proactively reviewed its entire supply base – including in the Pantanal – for deliberate or illegal use of fire.
- **NONE OF THE MEAT PROCESSORS** gives any indication that it proactively identified and monitored the legal status or environmental impact of these indirect supplies or third-party suppliers in the Pantanal.

CASE STUDY 4

RAUL AMARAL CAMPOS

TRADE TO SLAUGHTERHOUSES 2018-2019

JBS Pedra Preta (SIF 2019)
 Marfrig Paranatinga (SIF 2500)
 Marfrig Várzea Grande (SIF 2015)
 Minerva Várzea Grande (SIF 2015)

RANCHER IRREGULARITIES/ EMBARGOES/ FINES

+ 14 embargoes
 + R\$11 million (US\$6.6 million) fine

CASE STUDY FAZENDAS

Esperança Retiro II
 Esperança

SICAR

MT-5101605-58DD3A8922D54E288AEB44B2818E7C80
 and
 MT-5107800-AB91ED61AA704077986A8B8DA89BDBB7

CAR STATUS

Active

FAZENDA AREAS

Esperança Retiro II: 2,499.99 ha
 Esperança: 9,330 ha

BURNED AREAS

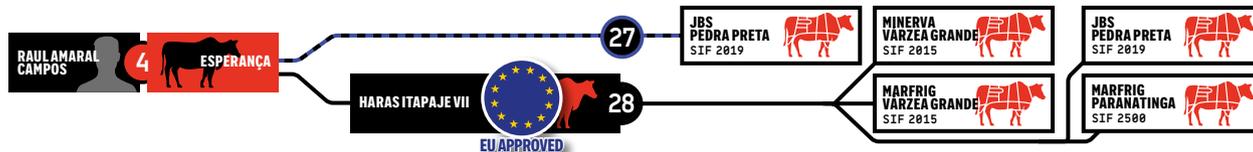
Esperança Retiro II: 1,337 ha and Esperança: 1,352 ha

FIRST FIRES

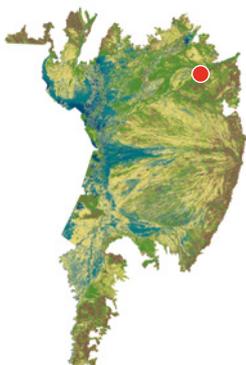
7 September 2020 and 11 September 2020

ESPERANÇA AND ESPERANÇA RETIRO II

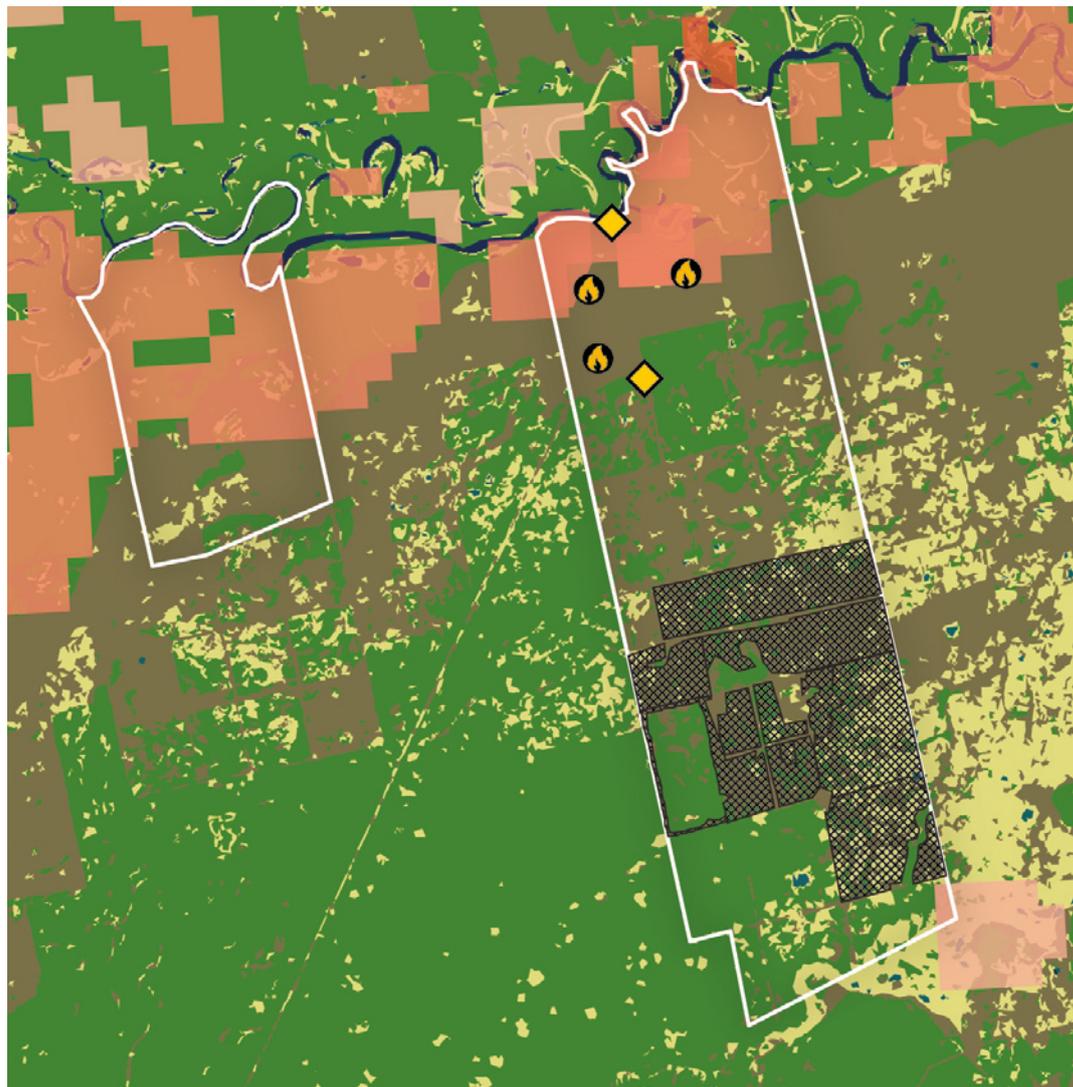
CHAIN-OF-CUSTODY



PANTANAL / ESPERANÇA



- Forest
- Grassland
- Wetland
- Pasture
- Water
- Embargo
- ◆ Embargo violation
- Fazenda
- Burnscar July 2020
- Burnscar Aug 2020
- Burnscar Sept 2020
- Burnscar Oct 2020
- Fire hotspots (day one)



Raul Amaral Campos is the owner of the 2,500 ha Fazenda Esperança Retiro II and the 9,330 ha Fazenda Esperança (held jointly with Dora Nougues Amaral Campos via Agropecuária Itapajé LTDA and in close proximity to the other ranch) in Santo Antônio do Leverger, Mato Grosso. In 2011, IBAMA issued him with a R\$11 million (US\$6.6 million) fine (see Figure 4.2)²⁸² for the unlicensed destruction of 2,206 ha of vegetation in an area covered by special Pantanal protection on Fazenda Esperança,²⁸³ and the ranch has 14 embargo listings between 2013 and 2016 covering about 2,478 ha.²⁸⁴ Between 1 July 2020 and 27 October 2020 some 1,337 ha burned within the boundaries of Fazenda Esperança Retiro II, with fire hotspots detected on the property from 7 September 2020; 1,352 ha also burned within the boundaries of Fazenda Esperança, with fire hotspots detected in the property from 11 September 2020.

In 2018 and 2019 cattle from ranches owned or part-owned by Raul Amaral Campos were supplied to the JBS Pedra Preta (SIF 2019), Marfrig Paranatinga (SIF 2500), Marfrig Várzea Grande (SIF 2015) and Minerva Várzea Grande (SIF 2015) facilities.²⁸⁵ No authorised trade from Fazenda Esperança Retiro II has been identified, but Fazenda Esperança supplied JBS Pedra Preta (SIF 2019) directly and all four facilities indirectly, via another ranch owned by a company whose partners include Raul Amaral Campos (Haras Fazenda Itapajé VII, located in Rondonópolis, Mato Grosso).²⁸⁶ Raul Amaral Campos, who manages the trade of cattle from Fazenda Esperança and Haras Fazenda Itapajé VII, is also named as a (or the) rancher associated with four ranches certified for beef exports to the EU, including Haras Fazenda Itapajé VII.²⁸⁷ Raul Amaral Campos was thus a tier-one supplier to all three meat processors; trade from Fazenda Esperança was both direct and indirect to JBS and was indirect to Marfrig and Minerva.

JBS PEDRA PRETA (SIF 2019): Between 22 January 2018 and 5 February 2019, or soon after, Raul Amaral Campos made multiple direct shipments of cattle for slaughter from Fazenda Esperança to JBS Pedra Preta (see Figure 4.1). Potentially, up to 600 cattle were transferred. JBS Pedra Preta slaughtered cattle from a Fazenda Esperança located in Santo Antônio do Leverger, Mato Grosso on 24 January 2018 and 7 February 2019.²⁸⁸ Between

4 January 2018 and 22 July 2019, or soon after, Raul Amaral Campos made multiple shipments of cattle from Fazenda Esperança to Haras Fazenda Itapajé VII. Potentially, up to 480 cattle were transferred. Between 26 January 2018 and 26 November 2019, or soon after, Raul Amaral Campos made multiple shipments of cattle from Haras Fazenda Itapajé VII to JBS Pedra Preta. Potentially, up to 2,100 cattle were transferred. JBS Pedra Preta slaughtered cattle from a Haras Fazenda Itapajé VII located in Rondonópolis, Mato Grosso, on 30 January 2018 and 28 November 2019.²⁸⁹

MARFRIG PARANATINGA (SIF 2500): On or soon after 4 January 2018 Raul Amaral Campos made a small shipment of cattle from Fazenda Esperança to Haras Fazenda Itapajé VII. On or soon after 8 May 2018 Raul Amaral Campos made multiple shipments of cattle from Haras Fazenda Itapajé VII to Marfrig Paranatinga. Potentially, up to 170 cattle were transferred. Marfrig Paranatinga slaughtered cattle from Haras Fazenda Itapajé VII on 10 May 2018.²⁹⁰

MARFRIG VÁRZEA GRANDE (SIF 2015): Between 4 January 2018 and 22 July 2019, or soon after, Raul Amaral Campos made multiple shipments of cattle from Fazenda Esperança to Haras Fazenda Itapajé VII. Potentially, up to 480 cattle were transferred. Between 24 June 2019 and 14 August 2019, or soon after, Raul Amaral Campos made multiple shipments of cattle from Haras Fazenda Itapajé VII to Marfrig Várzea Grande. Potentially, up to 680 cattle were transferred. Marfrig Várzea Grande slaughtered cattle from Haras Fazenda Itapajé VII on 16 August 2019.²⁹¹

MINERVA VÁRZEA GRANDE (SIF 2015): On or soon after 4 January 2018 Raul Amaral Campos made a small shipment of cattle from Fazenda Esperança to Haras Fazenda Itapajé VII. On or soon after 15 June 2018 Raul Amaral Campos made multiple shipments of cattle for slaughter from Haras Fazenda Itapajé VII to Minerva Várzea Grande. Potentially, up to 150 cattle were transferred.

MEAT PROCESSOR RESPONSE

- **JBS:** ‘At the time of purchase, Esperança Farm was compliant with the Company’s Responsible Procurement Policy. The embargo to which [Greenpeace] refers is associated with another property. ... At the time of purchase, Fazenda Haras Itapaje VII was compliant with the Company’s Responsible Procurement Policy.’²⁹²
- **MARFRIG:** ‘The last slaughter [of cattle from Haras Fazenda Itapajé VII at SIF 2500] was on May 10, 2018. ... The last slaughter [of cattle from Haras Fazenda Itapajé VII at SIF 2015] was on September 9, 2020. Fazenda Esperança is not included in Marfrig’s supplier list.’²⁹³
- **MINERVA:** ‘[Haras Fazenda Itapajé VII] is listed in Minerva’s database and is eligible for commercialization. Fazenda Esperança, identified in the report, is located 103.75 km away from the property under analysis, thereby not constituting the same production unit. It is worth mentioning that it has an overlap with SEMA MT’s environmental liabilities, registered on behalf of AGROPECUARIA ITAPAJE LTDA, under the CNPJ: 25,309,068/0001-88, with embargo term No. 0017GT and infraction notice No. 0017GT, which does not correspond to the information of the supplier RAUL AMARAL CAMPOS. ... [Fazenda Esperança] is not registered in Minerva’s database.’²⁹⁴

GREENPEACE OBSERVATIONS

- **JBS’S** assertion that Fazenda Esperança was compliant with its procurement policy at the time of purchase is controversial. Its claims that the embargoes (several were imposed between 2013 and 2016) relate to another ranch are not supported by documentation held by Greenpeace, or indeed the conclusions reached by Minerva.
- **MINERVA**, unlike JBS, has correctly identified Fazenda Esperança and the embargoes on the ranch. However, given that Fazenda Esperança has supplied Haras Fazenda Itapajé VII [sic], confirmed by Minerva as a current direct supply ranch, it is clear that the company’s due diligence does not extend beyond the first point of contact. It is unclear what conclusion Minerva intends to be drawn from its comment about ownership, given that both Fazenda Esperança and Minerva’s direct supply ranch Haras Fazenda Itapajé VII are owned by Agropecuária Itapajé LTDA (a holding company whose partners include Raul Amaral Campos) and that Raul Amaral Campos is named on fines from IBAMA linked to Fazenda Esperança as well as on Haras Fazenda Itapajé VII’s certificate for EU beef exports.²⁹⁵
- **JBS’S** response failed to confirm the current status of Raul Amaral Campos as a tier-one supplier, through either Fazenda Esperança or Haras Fazenda Itapajé VII.
- **MARFRIG** failed to confirm the current status of the operations of Raul Amaral Campos, a 2018–2020 tier-one supplier to its facilities.
- **MINERVA’S** response confirms that Raul Amaral Campos remains a current tier-one supplier.
- **NONE OF THE MEAT PROCESSORS** gives any meaningful indication that it has proactively reviewed its entire supply base – including in the Pantanal – for deliberate or illegal use of fire.
- **NONE OF THE MEAT PROCESSORS** gives any indication that it proactively identified and monitored the legal status or environmental impact of these indirect supplies or third-party suppliers in the Pantanal.

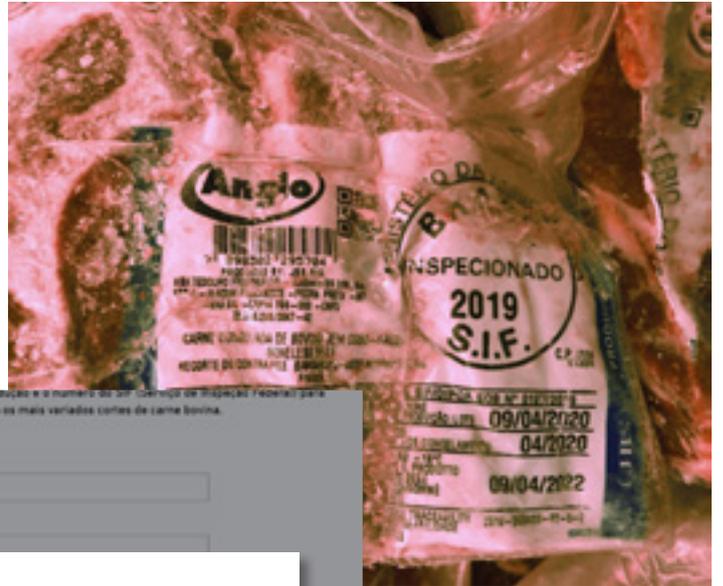


Figure 4.1: JBS/ Friboi 'Garantia de origem' website

JBS

Rastreabilidade de produtos

Confira abaixo o resultado da pesquisa:

DATA DO ABATE	LOTE	FAZENDA	MUNICÍPIO - UF	LOCALIZAR MUNICÍPIO
24/01/2018	1	FAZENDA NOSSA SENHORA D'ABACAXI	PEDRA PRETA - MT	HTTPS://WWW.GOOGLE.COM/MAPS/SEARCH?q=PEDRA PRETA - MT
24/01/2018	2	FAZENDA CRUZ ALTA I	PRIMAVERA DO LESTE - MT	HTTPS://WWW.GOOGLE.COM/MAPS/SEARCH?q=PRIMAVERA DO LESTE - MT
24/01/2018	3	FAZENDA AGUA LIMPA	ITQUIRA - MT	HTTPS://WWW.GOOGLE.COM/MAPS/SEARCH?q=ITQUIRA - MT
24/01/2018	4	FAZENDA SANTO ANTONIO DO LEVERGER	SANTO ANTONIO DO LEVERGER - MT	HTTPS://WWW.GOOGLE.COM/MAPS/SEARCH?q=SANTO ANTONIO DO LEVERGER - MT
24/01/2018	5	FAZENDA ESPERANCA		HTTPS://WWW.GOOGLE.COM/MAPS/SEARCH?q=SANTO ANTONIO DO LEVERGER - MT

Bem Estar Animal

Em todas as suas fábricas, a Friboi adota políticas rigorosas no que diz respeito ao bem-estar animal.

Essa política está baseada no respeito dos animais.

September 2020, Hong Kong: Beef from JBS Pedra Preta (SIF 2019) in a KaiBo Food Supermarket. © Greenpeace

Figure 4.2: IBAMA fines



MINISTÉRIO DO MEIO AMBIENTE - MMA
 INSTITUTO BRASILEIRO DO MEIO AMBIENTE E DOS RECURSOS NATURAIS RENOVÁVEIS - IBAMA
 DIRETORIA DE PROTEÇÃO AMBIENTAL



Relatório de Autuações Ambientais

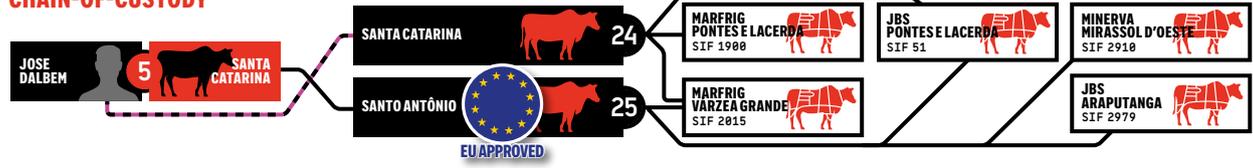
Nº	Inscrição	Data Inscrição	Estado	Município	Nome Autuado	Valor Multa	Processo	Status Dito	Sanções Aplicadas
1	Faria	21/07/2011	MATO GROSSO	BARRIO DE MELHADO	RAUL AMARAL CAMPOS	11.030.000,00	0741/2010	Apurado	2º INV 50 Decreto 8514/2008, 7º 72-81/9 Lei. 9005/98

CASE STUDY 5

JOSE DALBEM

SANTA CATARINA

CHAIN-OF-CUSTODY



TRADE TO SLAUGHTERHOUSES 2018-2019

- JBS Araputanga (SIF 2979)
- JBS Pontes e Lacerda (SIF 51)
- Marfrig Pontes e Lacerda (SIF 1900)
- Marfrig Varzea Grande (SIF 2015)
- Minerva Micassol d'Oeste (SIF 2911)
- Minerva Abaetetuba (live exports)

RANCHER IRREGULARITIES/ EMBARGOES/ FINES

+ R\$30,000 (US\$10,000) fine

CASE STUDY FAZENDA

Santa Catarina
SICAR #
 MT-5102504-F9E45B7D3C7
 14407847AFED14F910181

CAR STATUS

Active

FAZENDA AREA

9,135 ha

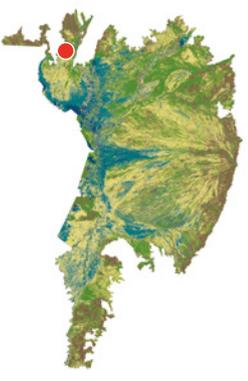
BURNED AREA

2,888 ha

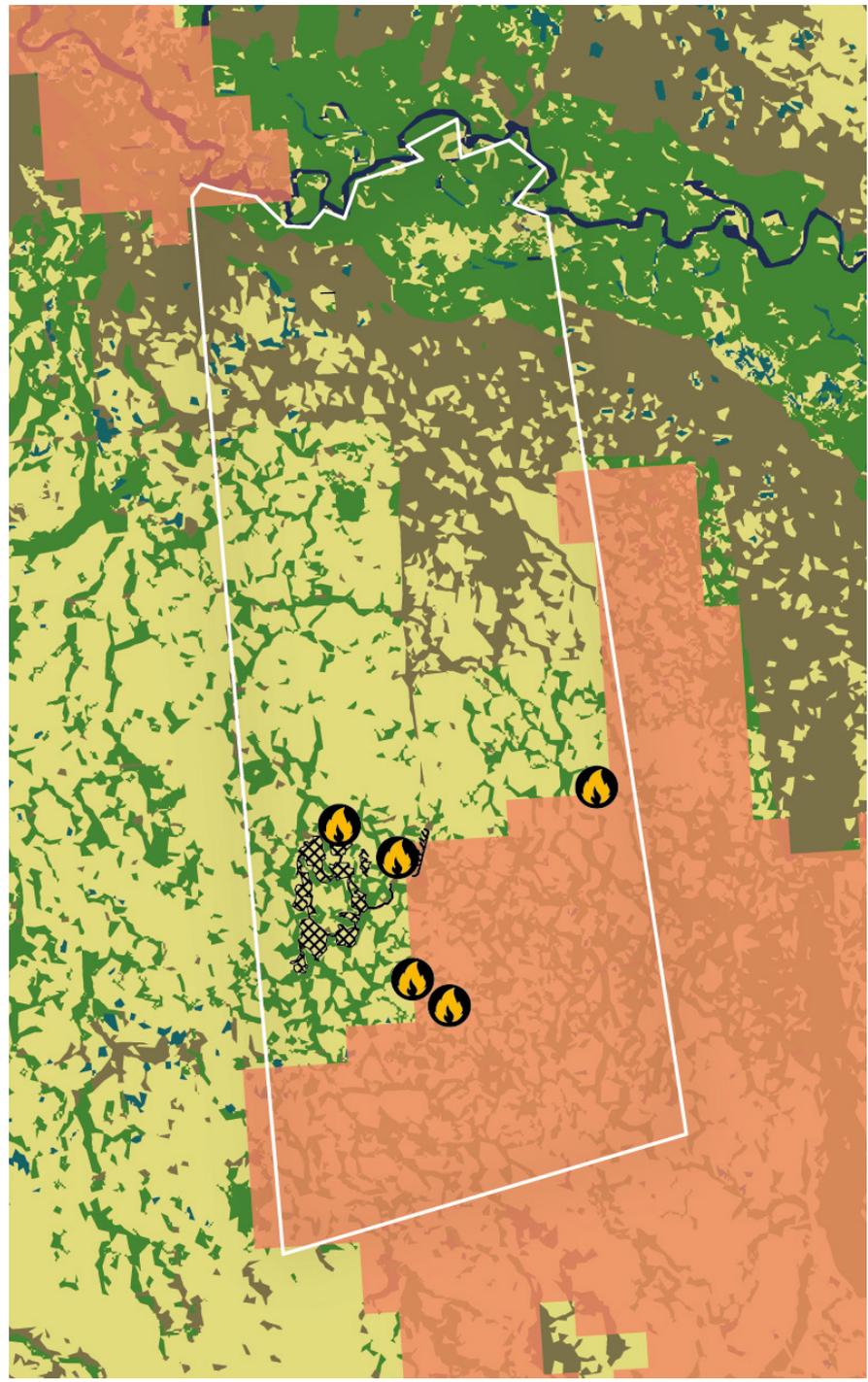
FIRST FIRE

4 September 2020

PANTANAL / SANTA CATARINA



- Forest
- Grassland
- Wetland
- Pasture
- Water
- Fazenda
- Burnscar Sept 2020
- Embargo
- Fire hotspots (day one)
- Embargo violations



Jose Dalbem owns the 9,135 ha Fazenda Santa Catarina in Cáceres, Mato Grosso. He was fined R\$30,000 (US\$10,000) by IBAMA in 2003²⁹⁶ for clearance of 300 ha of 'primary cerrado'.²⁹⁷ Fazenda Santa Catarina has seven embargo listings between 2019 and 2020 covering about 90 ha.²⁹⁸ Between 1 July 2020 and 27 October 2020 some 2,888 ha burned within the boundaries of this ranch, with fire hotspots detected on the property from 4 September 2020.

In 2018 and 2019 cattle from ranches owned by Jose Dalbem were supplied to the JBS Araputanga (SIF 2979), JBS Pontes e Lacerda (SIF 51), Marfrig Pontes e Lacerda (SIF 1900), Marfrig Várzea Grande (SIF 2015), Minerva Abaetetuba (a 'pre-shipment station and office for export of live cattle'²⁹⁹) and Minerva Mirassol d'Oeste (SIF 2911) facilities.³⁰⁰ Jose Dalbem was thus a tier-one supplier to all three meat processors, and trade from Fazenda Santa Catarina to the named facilities was both direct and indirect.

JBS ARAPUTANGA (SIF 2979): Between 3 April 2018 and 29 August 2018, or soon after, Jose Dalbem made multiple shipments of cattle from Fazenda Santa Catarina to Fazenda Santo Antônio (also located in Cáceres and owned by Jose Dalbem, and certified for beef exports to the EU³⁰¹). Potentially, up to 1,730 cattle were transferred. On or soon after 31 August 2018 Jose Dalbem made one shipment of a total of some 50 cattle from Fazenda Santo Antônio to JBS Araputanga. On 3 September 2018 JBS Araputanga slaughtered cattle from a Fazenda Antônio, located in Cáceres, Mato Grosso.³⁰²

JBS PONTES E LACERDA (SIF 51): Between 6 March 2018 and 12 April 2018, or soon after, Jose Dalbem made multiple small direct shipments of cattle from Fazenda Santa Catarina to JBS Pontes e Lacerda. On 9 March 2018 and 18 April 2018 JBS Pontes e Lacerda slaughtered cattle from a Fazenda Santa Catarina located in Cáceres, Mato Grosso.³⁰³

MARFRIG PONTES E LACERDA (SIF 1900): On or soon after 25 March 2019 Jose Dalbem made two direct shipments of a total of some 40 cattle from Fazenda Santa Catarina to Marfrig Pontes e Lacerda. On 26 March Marfrig Pontes e Lacerda slaughtered cattle from Jose Dalbem's Fazenda Santa Catarina.³⁰⁴ Between 3 April 2018 and 21 February 2019, or soon after, Jose Dalbem made multiple shipments of cattle from Fazenda Santa Catarina to Fazenda Santo Antônio (also owned by him). Potentially, up to 2,440 cattle were transferred. On or soon after 15 March 2019 Jose Dalbem made multiple small shipments of cattle from Fazenda Santo Antônio to Marfrig Pontes e Lacerda. Marfrig Pontes e Lacerda slaughtered cattle from Jose Dalbem's Fazenda Santo Antônio on 19 March 2019.³⁰⁵

MARFRIG VÁRZEA GRANDE (SIF 2015): On or soon after 17 June 2019 Jose Dalbem made one direct shipment of more than 30 cattle from Fazenda Santa Catarina to Marfrig Várzea Grande. Marfrig Várzea Grande slaughtered cattle from Jose Dalbem's Fazenda Santa Catarina on 19 June 2019.³⁰⁶ Between 3 April 2018 and 9 July 2019, or soon after, Jose Dalbem made multiple shipments of cattle from Fazenda Santa Catarina to Fazenda Santo Antônio (also owned by him). Potentially, up to 2,700 cattle were transferred. Between 9 April 2019 and 25 November 2019, or soon after, Jose Dalbem made multiple shipments of cattle from Fazenda Santo Antônio to Marfrig Várzea Grande. Potentially, up to 450 cattle were transferred. Marfrig Várzea Grande slaughtered cattle from Jose Dalbem's Fazenda Santo Antonio on 11 April 2019 and 26 November 2019.³⁰⁷

MINERVA MIRASSOL D'OESTE (SIF 2911): Between 3 April 2018 and 22 October 2018, or soon after, Jose Dalbem made multiple shipments of cattle from Fazenda Santa Catarina to Fazenda Santo Antônio (also owned by him).

September 2020, Hong Kong:
Beef from Pontes e Lacerda
(SIF 1900) in a KaiBo Food
Supermarket. © Greenpeace



Figure 5.1: JBS/ Friboi 'Garantia de origem' website

DATA DO ABATE	LOTE	FAZENDA	MUNICÍPIO - UF	IDEALIZAR MUNICÍPIO
18/04/2018	1	ESTANÇÃ LADDA BRILHANTE	NOVA LACERDA - MT	NOVA LACERDA - MT
18/04/2018	2	FAZENDA GALERINHA	VILA BELA DA SANTOSIMA TRINDADE - MT	VILA BELA DA SANTOSIMA TRINDADE - MT
18/04/2018	3	FAZENDA BARRA MARSA	NOVA LACERDA - MT	NOVA LACERDA - MT
18/04/2018	4	FAZENDA SANTA HELENA	PONTES E LACERDA - MT	PONTES E LACERDA - MT
18/04/2018	5	VILA BELA DA SANTOSIMA TRINDADE	VILA BELA DA SANTOSIMA TRINDADE - MT	VILA BELA DA SANTOSIMA TRINDADE - MT
18/04/2018	6	SITIO NOSSA SENHORA APARECIDA	COMODORO - MT	COMODORO - MT
18/04/2018	7	SITIO NOSSA SENHORA APARECIDA	COMODORO - MT	COMODORO - MT
18/04/2018	8	SITIO SONHO MEU	NOVA LACERDA - MT	NOVA LACERDA - MT
18/04/2018	9	SITIO SONHO MEU	NOVA LACERDA - MT	NOVA LACERDA - MT
18/04/2018	10	ESTANÇÃ SILVA	PONTES E LACERDA - MT	PONTES E LACERDA - MT
18/04/2018	11	RANCHO	VILA BELA DA SANTOSIMA TRINDADE - MT	VILA BELA DA SANTOSIMA TRINDADE - MT
18/04/2018	13	FAZENDA SANTA CATARINA	PONTES E LACERDA - MT	PONTES E LACERDA - MT
18/04/2018	14	FAZENDA SANTA CATARINA	ACARÉS - MT	ACARÉS - MT
18/04/2018	15	FAZENDA ELIHO LINA	SANTOSIMA TRINDADE - MT	VILA BELA DA SANTOSIMA TRINDADE - MT
18/04/2018	16	SITIO...	CONQUISTA D...	CONQUISTA D...



February 2021, Brazil: Beef from JBS Acaputanga (SIF 2979) on sale in French group Carrefour supermarket. © Greenpeace

Potentially, up to 2,220 cattle were transferred. Between 24 April 2018 and 25 January 2019, or soon after, Jose Dalbem made multiple shipments of cattle for slaughter from Fazenda Santo Antônio to Minerva Mirassol d'Oeste. Potentially, up to 670 cattle were transferred.

MEAT PROCESSOR RESPONSE

- **JBS:** 'Santo Antonio Farm is compliant with the Company's Responsible Procurement Policy. In regard to Santa Catarina Farm, JBS reiterates ... that its policy blocks properties embargoed by IBAMA for environmental irregularities at the time of purchase, not based on fines of almost two decades ago that have already been sorted out with the environmental body, a criterion established by Greenpeace itself.'³⁰⁸
- **MARFRIG:** 'Farms that are not included in our supplier list and have not had any business relationship with Marfrig: ... Santa Catarina'.³⁰⁹ 'On the slaughter date, Fazenda Santa Catarina was in compliance with all the criteria of the company's public commitments. ... Fazenda Santa Catarina was not subject to an embargo by IBAMA on the slaughter date. The last slaughter [of cattle from Fazenda Santa Catarina at SIF 1900] was on March 26, 2019. ... The last slaughter [of cattle from Fazenda Santa Catarina at SIF 2015] was on June 19, 2019. ... Fazenda Santo Antônio was not subject to an embargo by IBAMA on the slaughter date. The last slaughter [of cattle from Fazenda Santo Antônio at SIF 1900] was on March 19, 2019. ... The last slaughter [of cattle from Fazenda Santo Antônio at SIF 2015] was on November 26, 2019.'³¹⁰
- **MINERVA:** '[Fazenda Santo Antônio] is listed in Minerva's database and is eligible for commercialization. The property has an initial analysis carried out in 2016 and has no overlapping with the embargo polygon of IBAMA and no social restriction linked to the CPF of the supplier. The [Santa Catarina] ranch cited as an indirect [supplier] is listed in Minerva's database and was blocked for commercialization on July 26, 2020, when the area was included within SEMA-MT's embargo base. The perimeter of the property overlaps the polygon of the areas embargoed Semas MT, as JOSE DALBEM. ... The last purchase occurred on July 25, 2020 and there has not been any commercialization with the property after the date of the embargo.'³¹¹

GREENPEACE OBSERVATIONS

- **JBS** failed to make clear the compliance status of its direct supply ranch Fazenda Santa Catarina, but the tone suggests that JBS may be unaware of the embargoes imposed by the Mato Grosso Environment Agency.
- **MARFRIG'S** statement that it has not had any business relationship with Fazenda Santa Catarina is confusing given that it acknowledges slaughtering cattle from the ranch at both identified facilities.
- **MINERVA**, unlike the other two processors, has confirmed that it has checked the legal status of Fazenda Santa Catarina and has blocked it as a direct supplier as a result. However, it is clear that the company's due diligence does not extend beyond the first point of contact. Given the evidence that Fazenda Santa Catarina has previously supplied Fazenda Santo Antônio, confirmed by Minerva as a current direct supply ranch, the company has not indicated that it intends to investigate whether the trade continues, or whether it will block trade from Jose Dalbem's operations as a precautionary measure.
- **JBS'S** response confirms that Jose Dalbem remains a current tier-one supplier.
- **MARFRIG** failed to confirm the current status of the operations of Jose Dalbem, a 2019 tier-one supplier to its facilities.
- **MINERVA'S** response confirms that Jose Dalbem remains a current tier-one supplier.
- **NONE OF THE MEAT PROCESSORS** gives any meaningful indication that it has proactively reviewed its entire supply base – including in the Pantanal – for deliberate or illegal use of fire.
- **NONE OF THE MEAT PROCESSORS** gives any indication that it proactively identified and monitored the legal status or environmental impact of these indirect supplies or third-party suppliers in the Pantanal.

CASE STUDY 6

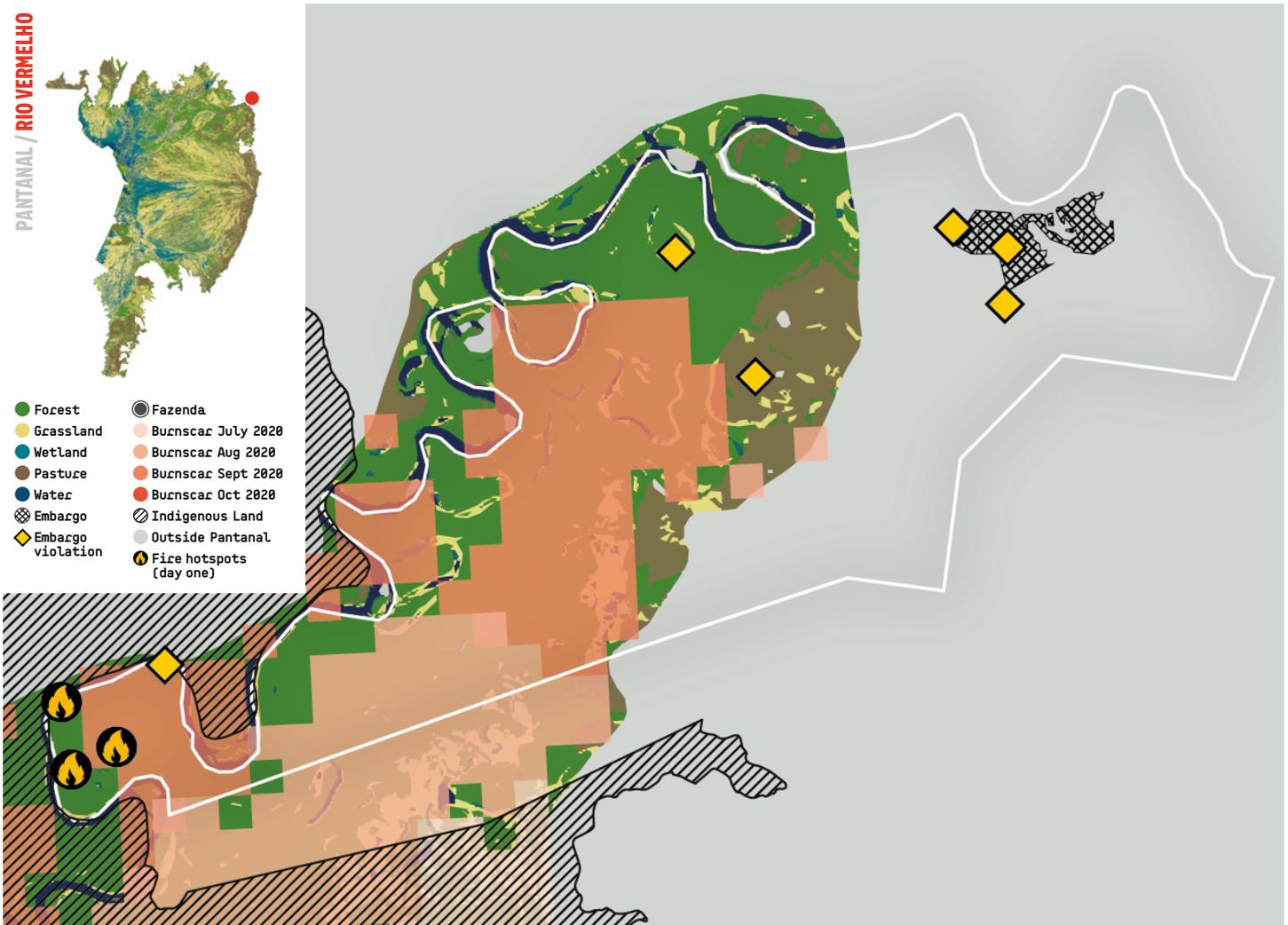
ÁRIO BARNABE NETO

TRADE TO SLAUGHTERHOUSES 2018-2019
 JBS Pedra Preta (SIF 2019)
RANCHER IRREGULARITIES/ EMBARGOES/ FINES
 + Two embargoes
 + R\$1.44 million (US\$470,000) fines

CASE STUDY FAZENDA
 Rio Vermelho
SICAR #
 MT-5107602-7A0476ACF27
 0424CA3F41E12D9920277
CAR STATUS
 Active
FAZENDA AREA
 8,741 ha
BURNED AREA
 2,870 ha
FIRST FIRE
 5 September 2020

RIO VERMELHO

CHAIN-OF-CUSTODY



Ário Barnabe Neto and Maria Regina Scallet Barnabe own the 8,741 ha Fazenda Rio Vermelho in Rondonópolis, Mato Grosso. IBAMA lists two embargoes against the ranch for clearance of native vegetation in 2014 and 2018³¹² and fines for Ário Barnabe Neto totalling R\$1.44 million (US\$470,000) – see Figures 6.1 and 6.2).³¹³ Between 1 July 2020 and 27 October 2020 at least 2,870 ha burned within the boundaries of Fazenda Rio Vermelho (which falls partially outside the limits of the Pantanal assessed for burn scar by LASA), with the first fire hotspots on the property detected on

5 September 2020.

In 2018 and 2019, cattle from Fazenda Rio Vermelho were supplied to two other ranches owned by Ário Barnabe Neto – Fazenda Aldeia de Itaúna and Fazenda Mata Alta, both in Pedra Preta, Mato Grosso.³¹⁴ In 2018, these ranches supplied JBS Pedra Preta (SIF 2019).³¹⁵ Ário Barnabe Neto was thus a tier-one supplier to JBS.

JBS PEDRA PRETA (SIF 2019): Between 9 March 2018 and 10 July 2018, or soon after, Ário Barnabe Neto made multiple

Figure 6.1: IBAMA fines

Nº Infração	Data Infração	Estado	Município	CNPJ/CPF	Nome Autuado	Ambiente	Valor Multa	Nº Processo	Status Débito	Sanções Aplicadas
2	29/03/2018	MATO GROSSO	RONDONÓPOLIS	[REDACTED]	ÁRIO BARNABE NETO		220.000,00	001.000000-0	Pena	01/10/18 La. 00008, 03/10/18 Decret. 014/2008
1	29/03/2018	MATO GROSSO	RONDONÓPOLIS	[REDACTED]	ÁRIO BARNABE NETO		525.642,00	001.000000-0	Atenuação de Responsabilidade	01/10/18 La. 00008, 03/10/18 Decret. 014/2008

Figure 6.2: IBAMA embargoes

Nome ou razão Social	CFF/CNPJ	Nº TAD	Série	Data	Área (ha)	UF	Município	Localização do Imóvel
ÁRIO BARNABE NETO	[REDACTED]	030272	E	04/04/2017	130,2	MT	Rondonópolis	FAZENDA RIO VERMELHO, ZONA RURAL DE RONDONÓPOLIS MATO GROSSO.
ÁRIO BARNABE NETO	[REDACTED]	030286	E	04/04/2017		MT	Rondonópolis	FAZENDA RIO VERMELHO, ZONA RURAL DE RONDONÓPOLIS - MT.

Figure 6.3: JBS/ Frilboi 'Garantia de origem' website

DATA DO ABATE	LOTE	FAZENDA	MUNICÍPIO - UF	LOCALIZAR MUNICÍPIO
11/07/2018	1	FAZENDA SANTO ANTONIO	ALTO ARAUÁRIA - MT	[LINK]
11/07/2018	2	FAZENDA RIBEIRÃO	ITAGUARA - MT	[LINK]
11/07/2018	3	FAZENDA NOVA SENHORA APARECIDA	ALTO ARAUÁRIA - MT	[LINK]
11/07/2018	5	FAZENDA ALDEIA DE ITAUNA	PEDRA PRETA - MT	[LINK]

shipments of a cattle from Fazenda Aldeia de Itaúna to JBS Pedra Petra. On 14 March 2018 and 11 July 2018 JBS Pedra Preta slaughtered cattle from a Fazenda Aldeia de Itaúna located in Pedra Preta, Mato Grosso (see Figure 6.3).³¹⁶ Between 29 March 2018 and 14 August 2018, or soon after, Ário Barnabe Neto made multiple shipments of cattle from Fazenda Mata Alta to JBS Pedra Petra. The JBS 'Garantia de Origem' website does not list Fazenda Mata Alta as the origin of any of the cattle that were slaughtered on or soon after 29 March 2018 or 14 August 2018 at JBS Pedra Preta; however, it does list a Fazenda Aldeia de Itaúna, located in Pedra Preta, Mato Grosso, as the origin of cattle slaughtered on 4 April 2018 as well as 14 and 16 August 2018.³¹⁷

IBAMA embargo is associated with another property. In regard to Rio Vermelho Farm, it is not part of our active supplier base.³¹⁸

GREENPEACE OBSERVATIONS

- **JBS'S** response confirms that Ário Barnabe Neto remains a current tier-one supplier. In this case, it appears JBS has used some ranch names associated with this owner interchangeably on its 'Garantia de origem' website.
- **JBS** gives no meaningful indication that it has proactively reviewed its entire supply base for deliberate or illegal use of fire.
- **JBS** gives no indication that it proactively identified and monitored the legal status or environmental impact of these indirect supplies or third-party suppliers in the Pantanal.

MEAT PROCESSOR RESPONSE

- **JBS:** 'Aldeia de Itaúna Farm [sic] is compliant with the Company's Responsible Procurement Policy, since the

CASE STUDY 7

LUIZ CARLOS ZILIANI

TRADE TO SLAUGHTERHOUSES 2018-2019

JBS Pontes e Lacerda (SIF 51)
 Marfrig Pontes e Lacerda (SIF 1900)
 Marfrig Varzea Grande (SIF 2015)
 Minerva Mirassol d'Oeste (SIF 2911)

CASE STUDY FAZENDA

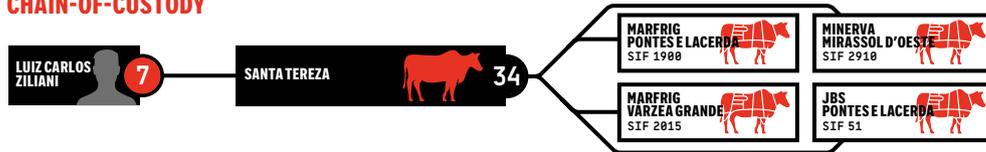
Santa Tereza
SICAR #
 MT-5106828-C488DC83E5
 1B4436B221ACFBB0586505
CAR STATUS
 Pending (Federal)
 Suspended (Mato Grosso state)
FAZENDA AREA
 996 ha

RANCHER IRREGULARITIES/ EMBARGOES/ FINES

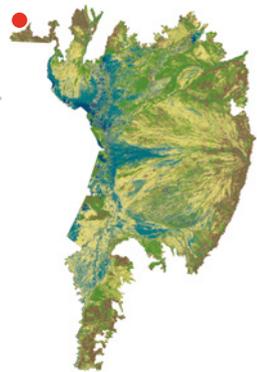
+ Suspended CAR registrations

SANTA TEREZA

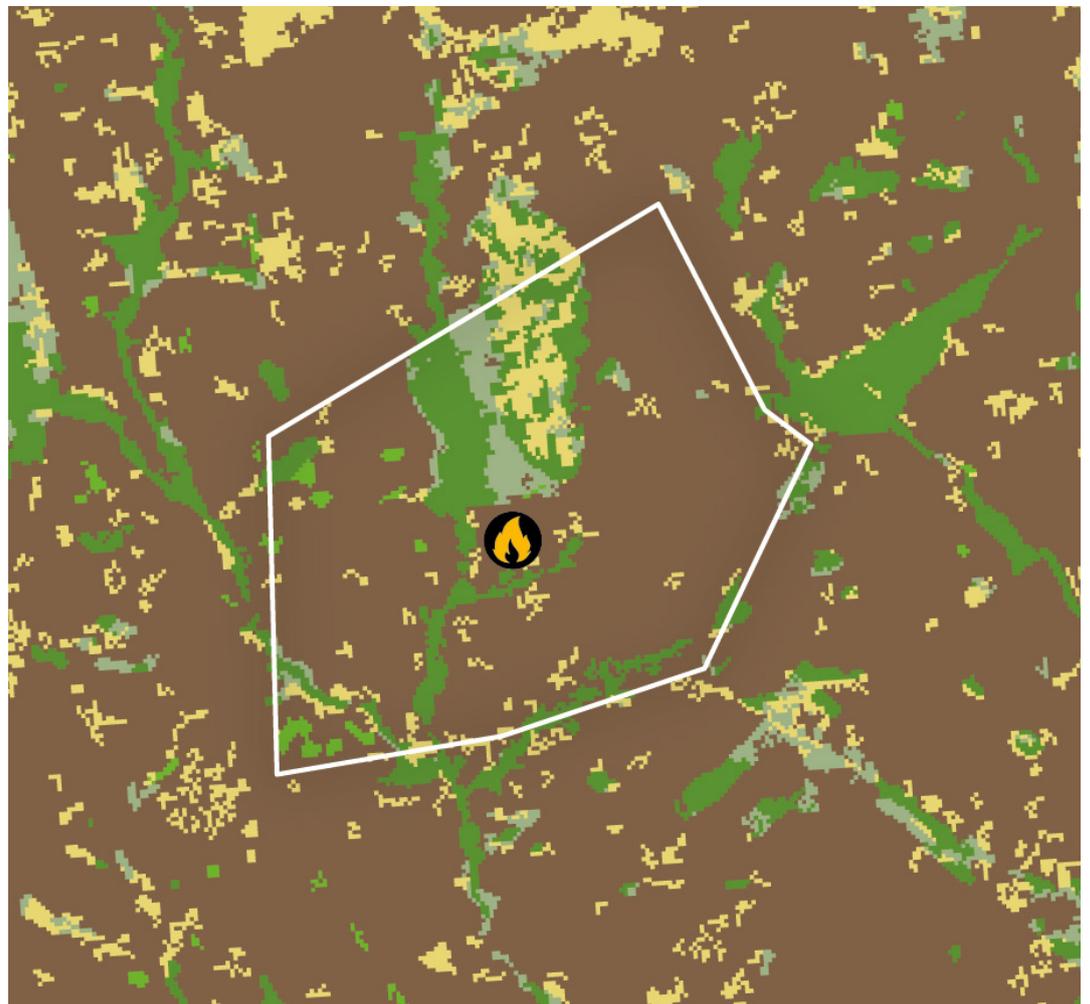
CHAIN-OF-CUSTODY



PANTANAL / SANTA TEREZA



- Forest
- Grassland
- Pasture
- 🔥 Fire hotspots (day one)
- Fazenda
- Savannah
- Crops



Luiz Carlos Ziliani is the owner of the 996 ha Fazenda Santa Tereza in Porto Esperidião, Mato Grosso. The federal CAR website lists the ranch's property registration status as 'cancelled' (with the date of analysis given as 18 September 2020 and the date of the last revision given as 12 November 2019) – see Figures 7.1 and 7.2;³¹⁹ the registration status of its sister ranch Fazenda Santa Tereza II is also listed as 'cancelled' with the date of analysis given as 4 November 2020 and the date of the last revision given as 4 December

2018.³²⁰ The Mato Grosso state registry listed the registration of Fazenda Santa Tereza as suspended as of 18 September 2020 but now lists it as active (as of 28 January 2021 see Figures 7.3 and 7.4); it lists Fazenda Santa Tereza II's registration as suspended as of 4 November 2020.³²¹ Fazenda Santa Tereza lies within the Pantanal on official large-scale government maps of Brazil's biomes, but it falls outside the area assessed for burn scar by LASA. As such, the analysis on which this report is based does not assess the area that may

Figures 7.1 and 7.2: Federal CAR information for Santa Tereza

Demonstrativo da Situação das Informações Declaradas

Registro no CAR: MT-5100820-CARDCR05110400221ACT00066005

Data de Cadastro: 02/10/2014 08:27

Data da última modificação: 02/10/2014 08:27

Dados do Imóvel

Área do Imóvel: 995,7971 ha	Módulos Fiscais: 12,45
Coordenadas Centrais: Latitude: 15°56'33,76" S	Longitude: 50°53'43,00" W
Município: Porto Esperidião	Unidade da Federação: MT
Administrativa	Data da análise do CAR:

Situacao: Cancelado

Cobertura do Solo

Áreas de Preservação Permanente (APP)

Áreas de Uso Restrito

CAR - Cadastro Ambiental Rural

Consultar demonstrativo do CAR:

Informe o número de registro no CAR (ou número de protocolo):

Cancelado

MT 510/2008

Demonstrativo gerado em: 07/02/2021 15:05



17/07/2018 12 FAZENDA SANTA TEREZA

Figures 7.3 and 7.4: State CAR information for Santa Tereza

Dados Gerais

REGIÃO: Centro-Oeste | Situação: Suspensa | Data da Situação: 18/09/2020

MT26773/2017

Propriedade

FAZENDA SANTA TEREZA

Nome

Luiz Carlos Ziliani

Área Total da Propriedade - ATP	995,7971
Área do Imóvel Rural - AIR	995,7971
Área de Vegetação Nativa - AVN	320,0822
Área de Reserva Legal - ARL	320,0822
Área de Preservação Permanente - APP	53,5911
Área de Uso Consolidado	995,8826
Área de Uso Restrito - AUR	0,0000
Área de Uso Antecipado do Solo - AUAS	0,0000
Área de Altitude 1800	0,0000
Área de Declividade	0,0000
Área Pantaneira	0,0000
Área Topo de Morro	0,0000
Área de Borda de Floresta	0,0000

Dados Gerais

REGIÃO: Centro-Oeste | Situação: Ativo | Data da Situação: 28/01/2021

MT26773/2017

Propriedade

FAZENDA SANTA TEREZA

Nome

Luiz Carlos Ziliani

Área Total da Propriedade - ATP	995,8000
Área do Imóvel Rural - AIR	995,8000
Área de Vegetação Nativa - AVN	320,7887
Área de Reserva Legal - ARL	320,7887
Área de Preservação Permanente - APP	53,2345
Área de Uso Consolidado	871,9673
Área de Uso Restrito - AUR	0,0000
Área de Uso Antecipado do Solo - AUAS	0,0000
Área de Altitude 1800	0,0000
Área de Declividade	0,0000
Área Pantaneira	0,0000
Área Topo de Morro	0,0000
Área de Borda de Floresta	0,0000

have burned within the ranch; a fire hotspot was detected in May 2020, which precedes the announcement of state or federal bans.

In 2018 and 2019 cattle from Fazenda Santa Tereza were supplied directly to the JBS Pontes e Lacerda (SIF 51), Marfrig Pontes e Lacerda (SIF 1900), Marfrig Várzea Grande (SIF 2015) and Minerva Mirassol d'Oeste (SIF 2911) facilities.³²² Luiz Carlos Ziliani was thus a tier-one supplier to all three meat processors; trade from Fazenda Santa Tereza to JBS, Marfrig and Minerva was direct.

JBS PONTES E LACERDA (SIF 51): Between 23 April 2018 and 12 July 2018, or soon after, Luiz Carlos Ziliani made multiple direct shipments of cattle from Fazenda Santa Tereza to JBS Pontes e Lacerda. Potentially, up to 500 cattle were transferred. On 26 April 2018 and 17 July 2018, JBS Pontes e Lacerda slaughtered cattle from a Fazenda Santa Tereza located in Porto Esperidião, Mato Grosso (see Figure 7.5).³²³

MARFRIG PONTES E LACERDA (SIF 1900): On or soon after 16 August 2019 Luiz Carlos Ziliani made three direct shipments of a total of 51 cattle from Fazenda Santa Tereza to Marfrig Pontes e Lacerda. On 21 August 2019 Marfrig Pontes e Lacerda slaughtered cattle from Luiz Carlos Ziliani's Fazenda Santa Tereza.³²⁴

MARFRIG VÁRZEA GRANDE (SIF 2015): On or soon after 6 June 2019 Luiz Carlos Ziliani made three direct shipments of a total of 101 cattle from Fazenda Santa Tereza to Marfrig Várzea Grande. On 10 March 2019 Marfrig Várzea Grande slaughtered cattle from Luiz Carlos Ziliani's Fazenda Santa Tereza.³²⁵

MINERVA MIRASSOL D'OESTE (SIF 2911): Between 26 January 2018 and 23 November 2018, or soon after, Luiz Carlos Ziliani made multiple direct shipments of cattle for slaughter from Fazenda Santa Tereza to Minerva Mirassol d'Oeste. Potentially, up to 550 cattle were transferred.

MEAT PROCESSOR RESPONSE

- **JBS:** '[Greenpeace] references irregularities in the CAR of the property. However, the owner has a State SICAR with ACTIVE status, which qualifies him for commercial transactions with JBS. In addition, the property is compliant with the Company's Responsible Procurement Policy.'³²⁶
- **MARFRIG:** 'On the slaughter date, the state or federal

CAR status of Fazenda Santa Tereza was 'active'. The last slaughter [at SIF 2015] was on July 2, 2019. ... The last slaughter [at SIF 1900] was on July 2, 2019.'³²⁷

- **MINERVA:** '[Fazenda Santa Tereza] is listed in Minerva's database and has been blocked for commercialization due to the suspension of its CAR in September/2020. We would like to point out that during the period in which commercialization took place with the Company, the CAR was active and the property was eligible, as per the certificate below.'³²⁸

GREENPEACE OBSERVATIONS

- **JBS'S** assertion that Fazenda Santa Tereza is compliant with its procurement policy is controversial. Given that the company's reply is dated 14 January 2021, its claims that the Mato Grosso SICAR website listed the ranch's registration as active at the time of its check are puzzling as documentation held by Greenpeace shows the ranch's registration status as active as of January 2021 based on submission of a map on 25 January 2021. Checks made by Greenpeace on 27 November 2020 found the status listed as suspended, as of 18 September 2020. Furthermore, checks by Greenpeace on 25 November 2020 and 5 February 2021 showed the ranch's status on the federal CAR website listed as 'pending' and 'cancelled', respectively.
- **JBS** and **MARFRIG** appear to take as sufficient indication of a ranch's compliance with policy the listing of an active status on either the federal or the state CAR website, even where the listings differ.
- **MINERVA**, unlike the other two processors, has confirmed that it has checked the legal status of Fazenda Santa Tereza and has blocked direct supply from this ranch.
- **JBS'S** response confirms that Luiz Carlos Ziliani remains a current tier-one supplier. JBS does not confirm whether supply from his operations has ever been blocked.
- **MARFRIG** failed to confirm the current status of the operations of Luiz Carlos Ziliani, a 2019 tier-one supplier to its facilities.
- **NONE OF THE MEAT PROCESSORS** gives any meaningful indication that it has proactively reviewed its entire supply base – including in the Pantanal – for deliberate or illegal use of fire.

October 2020, Brazil: Beef from Marfrig Várzea Grande (SIF 2015) on sale in French group Casino Pão de Açúcar supermarket. © Greenpeace



Cliente mais
CANHA BOVINA ARGENTINA FRIAR
PEÇA VÁCUO RESFRIADA KG

FILE MIGNON
EXTRA LIMPO BASSI
PEÇA A VÁCUO RESFRIADO KG

PREÇO REGULAR R\$ 79,90
66,90 KG

IDADE CLIENTE MAIS

MINISTÉRIO DA AGRICULTURA
RASCÃO
INSPECIONADO 2015
S.I.F.

Casino

CASE STUDY 8

DANIEL MARTINS FILHO

TRADE TO SLAUGHTERHOUSES 2018-2019

JBS Campo Grande (SIF 4400)
 Marfrig Bataguassu (SIF 4238)

RANCHER IRREGULARITIES/ EMBARGOES/ FINES
 + R\$2 million fine

CASE STUDY FAZENDA

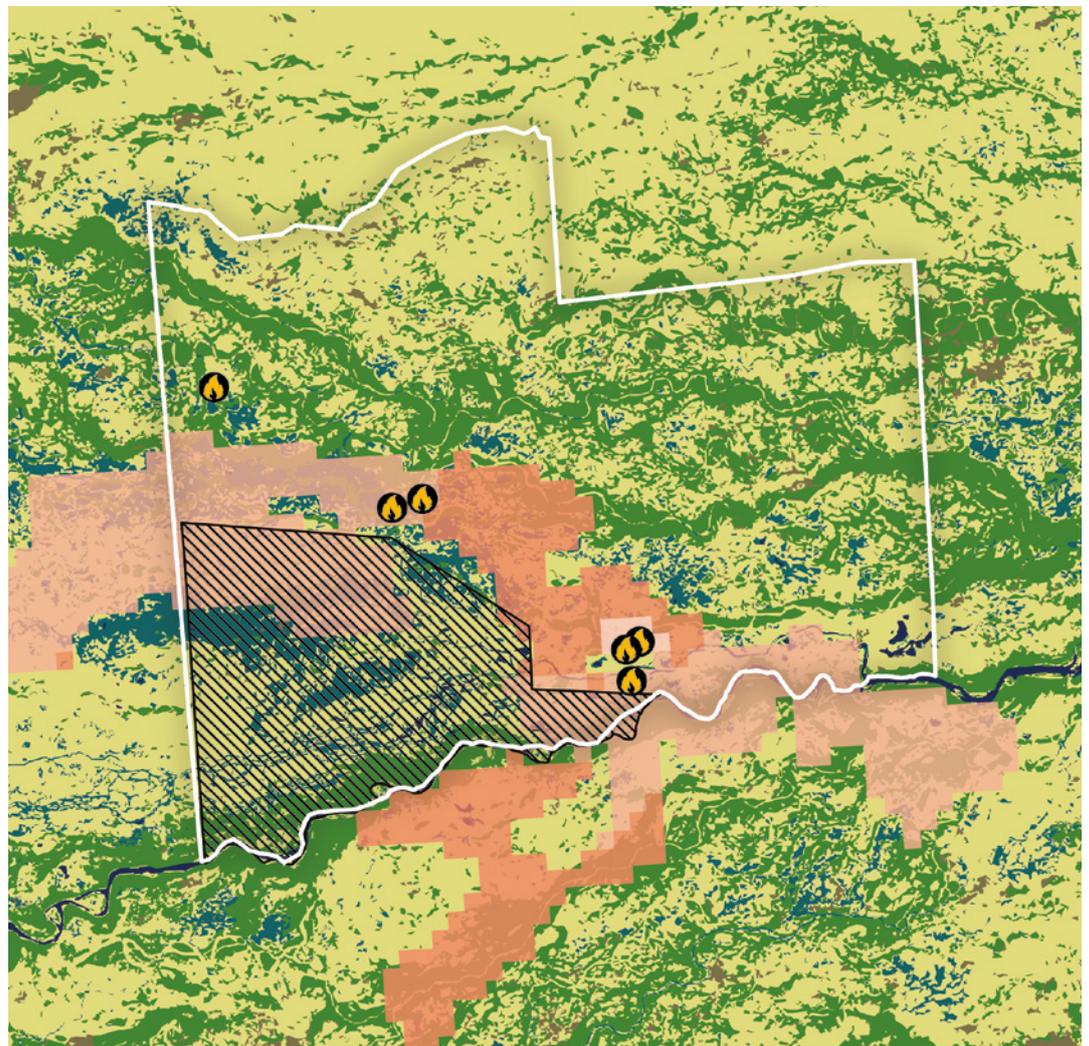
Santa Cecília II
SICAR #
 MS-5003207-AA00.DDD1.A06C.4911.A431.E369.925E.D110
CAR STATUS
 Active
FAZENDA AREA
 37,701 ha
BURNED AREA
 9,100 ha
FIRST FIRE
 14 July 2020

SANTA CECÍLIA II

CHAIN-OF-CUSTODY



- Forest
- Grassland
- Wetland
- Pasture
- Water
- ⊗ Conservation Area
- Fazenda
- Burnscar July 2020
- Burnscar Aug 2020
- Burnscar Sept 2020
- Burnscar Oct 2020
- Fire hotspots (day one)



Daniel Martins Filho owns the 37,700 ha Fazenda Santa Cecília II in Corumbá, Mato Grosso do Sul. In 2013, he was fined R\$2 million (US\$930,000) by IBAMA³²⁹ for illegally constructing levees along the river beside the ranch without a permit (see Figure 8.1).³³⁰ Between 1 July 2020 and 27 October 2020 some 9,100 ha burned within the limits of Fazenda Santa Cecília II, with the first fire hotspots detected on the property on 14 July 2020.

In 2018 and 2019 cattle from ranches owned by Daniel

Martins Filho were supplied to the JBS Campo Grande (SIF 4400) and Marfrig Bataguassu (SIF 4238) facilities.³³¹ Daniel Martins Filho was thus a tier-one supplier to JBS and Marfrig, but trade from Fazenda Santa Cecília II to these facilities was indirect.

JBS CAMPO GRANDE (SIF 4400): On or soon after 4 June 2018 Daniel Martins Filho made one shipment of 740 cattle from Fazenda Santa Cecília II to Fazenda São Bento in Rio Verde

Figure 8.1: IBAMA fines

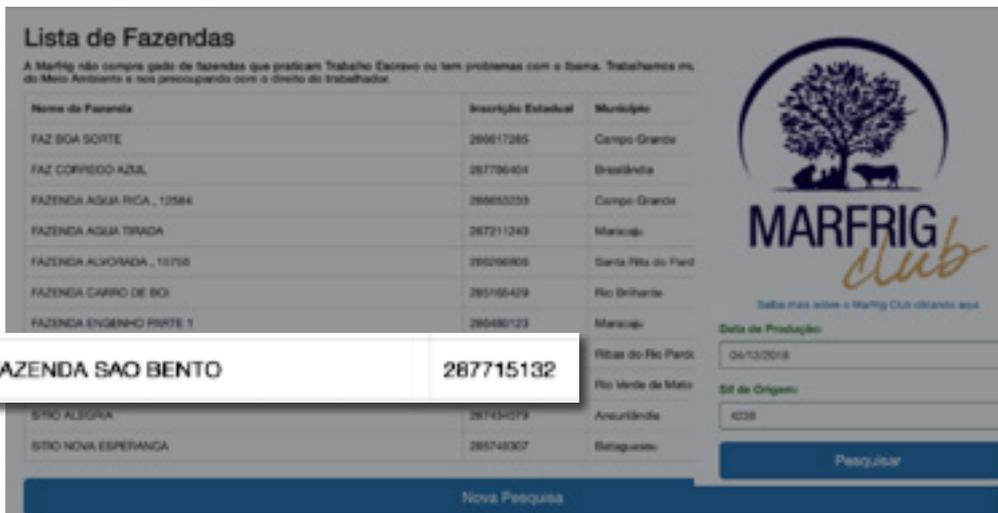


MINISTÉRIO DO MEIO AMBIENTE - MMA
 INSTITUTO BRASILEIRO DO MEIO AMBIENTE E DOS RECURSOS NATURAIS RENOVÁVEIS - IBAMA
 DIRETORIA DE PROTEÇÃO AMBIENTAL

Relatório de Autuações Ambientais

Nº	Inscrição	Data Inscrição	Estado	Município	Nome Autuado	Valor Multa	Nº Processo	Status Débito	Sanções Aplicadas
1	Control ambiental	09/03/2013	MATO GROSSO DO SUL	CORUMBÁ	DANIEL MARTINS FILHO	2.000.000,00	02014.00011500-13	Análise aduaneira do imposto de importação	Fó 72 21/LA 9005/08, 2º FIM Decido, 45143008

Figure 8.2: Marfrig ‘Conheça a origem da nossa carne’ website



Lista de Fazendas

A Marfrig não compra gado de fazendas que praticam Trabalho Escravo ou tem problemas com o tema. Trabalhamos em do Meio Ambiente e nos preocupamos com o direito do trabalhador.

Nome da Fazenda	Inscrição Estadual	Município
FAZ BOA SORTE	269617285	Campo Grande
FAZ CORREGO AZUL	267796404	Brasilândia
FAZENDA AGUA RICA, 12584	268653255	Campo Grande
FAZENDA AGUA TIRACA	267211243	Maringá
FAZENDA ALFORADA, 16758	269296805	Santa Rita do Parad
FAZENDA CARRO DE BOI	267195429	Rio Branco
FAZENDA ENGENHO PRATE 1	269480123	Maringá
FAZENDA SAO BENTO	287715132	Ribas do Rio Para
ESTRO ALBERTA	267434279	Anaurilândia
ESTRO NOVA ESPERANCA	265749307	Bataguassu

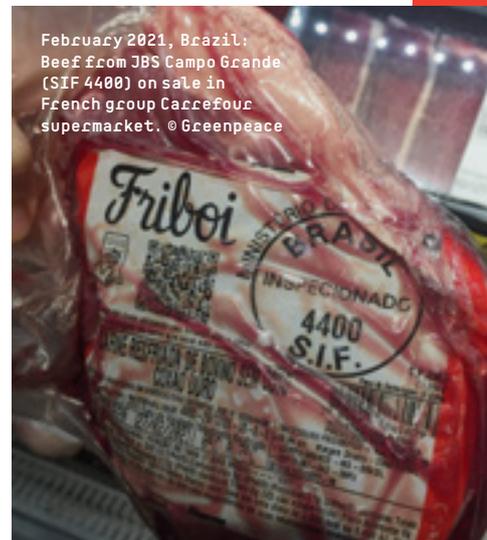
MARFRIG club

Seja mais ativo e Marfrig Club ainda mais!

Data de Produção: 04/12/2018

SIF de Origem: 4238

Pesquisar



de Mato Grosso, Mato Grosso do Sul (also owned by him). Between 18 January 2019 and 12 February 2019, or soon after, Daniel Martins Filho made multiple shipments of cattle from Fazenda São Bento to JBS Campo Grande (SIF 4400). Potentially, up to 120 cattle were transferred. On 12 February 2019 and 15 February 2019, JBS Campo Grande (SIF 4400) slaughtered cattle from a Fazenda São Bento located in Rio Verde de Mato Grosso, Mato Grosso do Sul.³³²

MARFRIG BATAGUASSU (SIF 4238): Between 4 June 2018 and 9 April 2019, or soon after, Daniel Martins Filho made two shipments of a total of 751 cattle from Fazenda Santa Cecília II to Fazenda São Bento (also owned by him). Between 30 November 2018 and 18 April 2019, or soon after, Daniel Martins Filho made multiple shipments of cattle from Fazenda São Bento to Marfrig Bataguassu. Potentially, up to 60 cattle were transferred. Marfrig Bataguassu slaughtered cattle from Daniel Martins Filho’s Fazenda São Bento on 4 December 2018 and on 23 April 2019.³³³

MEAT PROCESSOR RESPONSE

- JBS:** ‘São Bento Farm is compliant with the JBS Responsible Procurement Policy. In the case of Santa Cecília II Farm, it is not on the Company’s active supplier base. [Greenpeace] informs that Daniel Martins Filho, owner of both farms, had been fined by IBAMA, however, there are not embargos of the environmental body associated with the

properties. JBS reiterates that its policy blocks farms that are embargoed by IBAMA for environmental irregularities at the time of purchase, not based on situations under discussion with the environmental body.³³⁴

- MARFRIG:** ‘On the slaughter date, Fazenda São Bento was in compliance with all the company’s criteria for this biome. The last slaughter was on April 25, 2019. Fazenda Santa Cecília II is included in Marfrig’s supplier list, but there is no history of slaughtering.’³³⁵

GREENPEACE OBSERVATIONS

- JBS’S** response confirms that Daniel Martins Filho remains a current tier-one supplier.
- MARFRIG** failed to confirm the current status of the operations of Daniel Martins Filho, a 2018–2019 tier-one supplier to its facilities.
- Neither **JBS** nor **MARFRIG** gives any meaningful indication that it has proactively reviewed its entire supply base – including in the Pantanal – for deliberate or illegal use of fire.
- Neither **JBS** nor **MARFRIG** gives any indication that it proactively identified and monitored the legal status or environmental impact of these indirect supplies or third-party suppliers in the Pantanal.

CASE STUDY 9

RAYMUNDO VICTOR DA COSTA RAMOS SHARP

TRADE TO SLAUGHTERHOUSES 2018-2019

JBS Araputanga (SIF 2979)
Minerva Mirassol d'Oeste (SIF 2911)

RANCHER IRREGULARITIES/ EMBARGOES/ FINES

+ Suspended CAR registration
+ R\$36,000 (US\$12,000) fines

CASE STUDY FAZENDA

São Carlos e Santa Monica

SICAR

MT-5102504-6295DE76EB
4D439C94DB3662F0A8CB6E

CAR STATUS

Suspended

FAZENDA AREA

22,931 ha

BURNED AREA

16,012 ha

FIRST FIRE

15 August 2020

SÃO CARLOS E SANTA MONICA

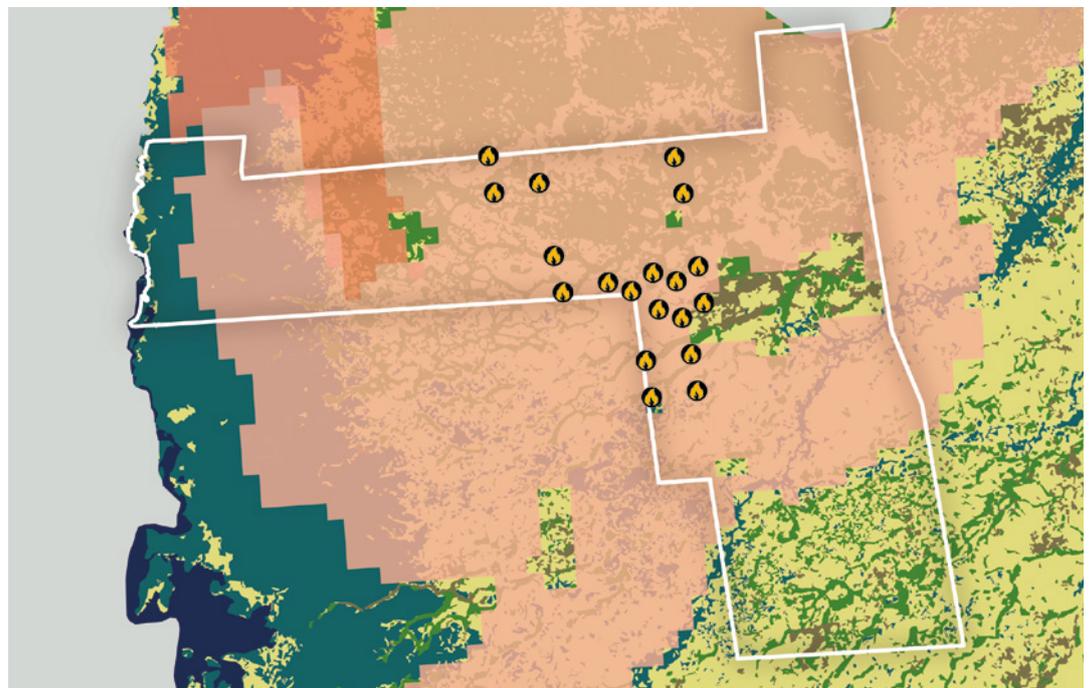
CHAIN-OF-CUSTODY



PANTANAL / SÃO CARLOS



- Forest
- Grassland
- Wetland
- Pasture
- Water
- Fazenda
- Buznscar July 2020
- Buznscar Aug 2020
- Buznscar Sept 2020
- Buznscar Oct 2020
- Fire hotspots (day one)



Raymundo Victor da Costa Ramos Sharp is the owner of the 22,931 ha Fazenda São Carlos e Santa Monica³³⁶ in Cáceres, Mato Grosso. The Mato Grosso state environment agency lists the ranch's property registration as suspended as of 23 September 2019,³³⁷ though the federal CAR registry lists it as active as of the same date (see Figures 9.1 and 9.2).³³⁸ In 2003, Raymundo Victor da Costa Ramos Sharp was fined a total of R\$36,000 (US\$12,000) by IBAMA.³³⁹ Between 1 July 2020 and 27 October 2020 some 16,012 ha burned within the boundaries of Fazenda São Carlos e Santa Monica, with the first fire hotspots on the property detected on 15 August 2020.

In 2018 and 2019 Raymundo Victor da Costa Ramos Sharp supplied cattle from this ranch to another rancher, who in turn supplied the JBS Araputanga (SIF 2979) and Minerva Mirassol d'Oeste (SIF 2911) facilities.³⁴⁰ Raymundo Victor da Costa Ramos Sharp was thus a third-party supplier to JBS and Minerva, and trade from Fazenda São Carlos e Santa Monica to these facilities was indirect.

JBS ARAPUTANGA (SIF 2979):

On or soon after 23 January 2019 Raymundo Victor da Costa Ramos Sharp made four shipments of a total of 80 cattle from Fazenda São Carlos to Fazenda Estrela da Fronteira in Cáceres, Mato Grosso (owned by Sebastião Sabino Filho and Maria Antonieta de Carvalho Sabino). Between 23 January 2019 and 26 November 2019, or soon after, Sebastião Sabino Filho made multiple shipments of cattle from Fazenda Estrela da Fronteira to JBS Araputanga. Potentially, up to 200 cattle were transferred. On 25 January 2019 and 2 December 2019, JBS Araputanga slaughtered cattle from a Fazenda Estrela da Fronteira, located in Cáceres, Mato Grosso.³⁴¹

MINERVA MIRASSOL D'OESTE (SIF 2911):

Between 23 January 2019 and 19 June 2019, or soon after, Raymundo Victor da Costa Ramos Sharp made multiple shipments of cattle from Fazenda São Carlos to Fazenda Estrela da Fronteira

February 2021, Brazil: Beef from JBS Araputanga (SIF 2979) on sale in French group Carrefour supermarket. © Greenpeace

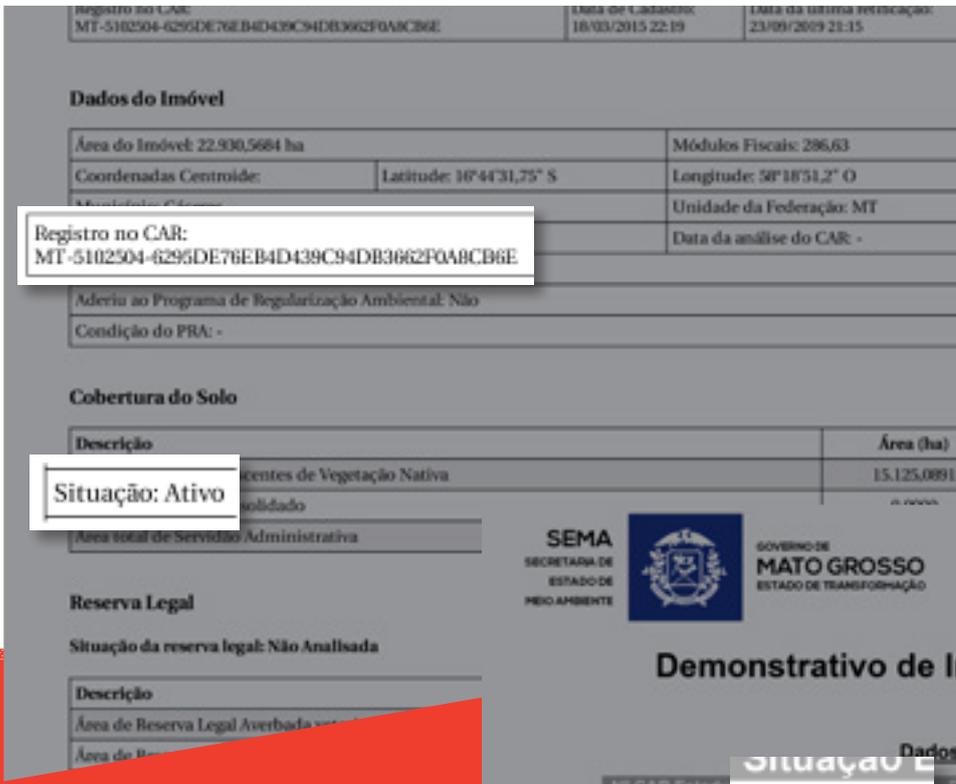


Figure 9.1: Federal CAR information for São Carlos e Santa Monica

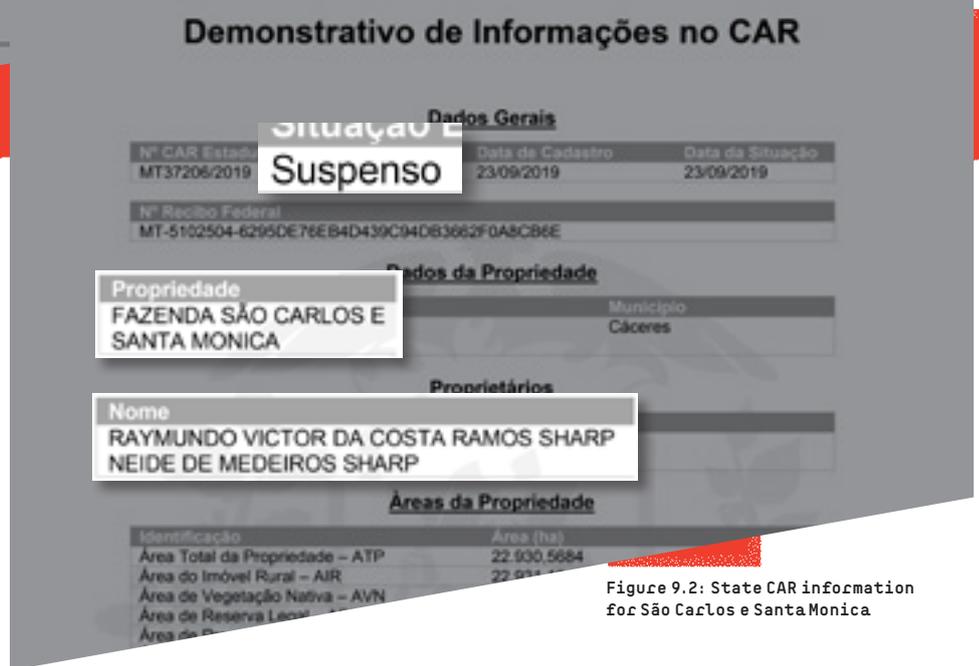


Figure 9.2: State CAR information for São Carlos e Santa Monica

(owned by Sebastião Sabino Filho and Maria Antonieta de Carvalho Sabino). Potentially, up to 225 cattle were transferred. Between 8 February 2019 and 16 August 2019, or soon after, Sebastião Sabino Filho made multiple shipments of cattle for slaughter from Fazenda Estrela da Fronteira to Minerva Mirassol d’Oeste. Potentially, up to 750 cattle were transferred.

Minerva’s database and is eligible for commercialization.¹³⁴³

MEAT PROCESSOR RESPONSE

- **JBS:** ‘Estrela da Fronteira Farm is compliant with the Company’s Responsible Procurement Policy. In regard to the properties São Carlos and Santa Monica, they are not part of our active supplier base. Even so, a search in a public base reveals that both of them have a CAR with ACTIVE status on the Federal SICAR.’¹³⁴²
- **MINERVA:** ‘[Fazenda Estrela da Fronteira] is listed in

GREENPEACE OBSERVATIONS

- **JBS** appears to take as sufficient indication of a ranch’s compliance with policy the listing of an active status on either the federal or the state CAR website, even where the listings differ.
- Neither **JBS** nor **MINERVA** gives any meaningful indication that it has proactively reviewed its entire supply base – including in the Pantanal – for deliberate or illegal use of fire.
- Neither **JBS** nor **MINERVA** gives any indication that it proactively identified and monitored the legal status or environmental impact of these indirect supplies or third-party suppliers in the Pantanal.

CASE STUDY 10

FRANCISCA EVANGELISTA TEODORO DA SILVA

TRADE TO SLAUGHTERHOUSES 2018-2019

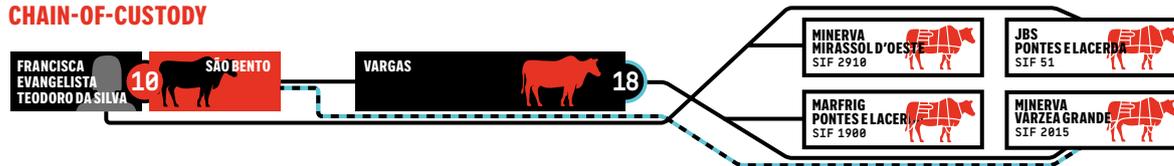
JBS Pontes e Lacerda (SIF 51)
 Marfrig Pontes e Lacerda (SIF 1900)
 Minerva Mirassol d'Oeste (SIF 2911)
 Minerva Várzea Grande (SIF 2015)

CASE STUDY FAZENDA

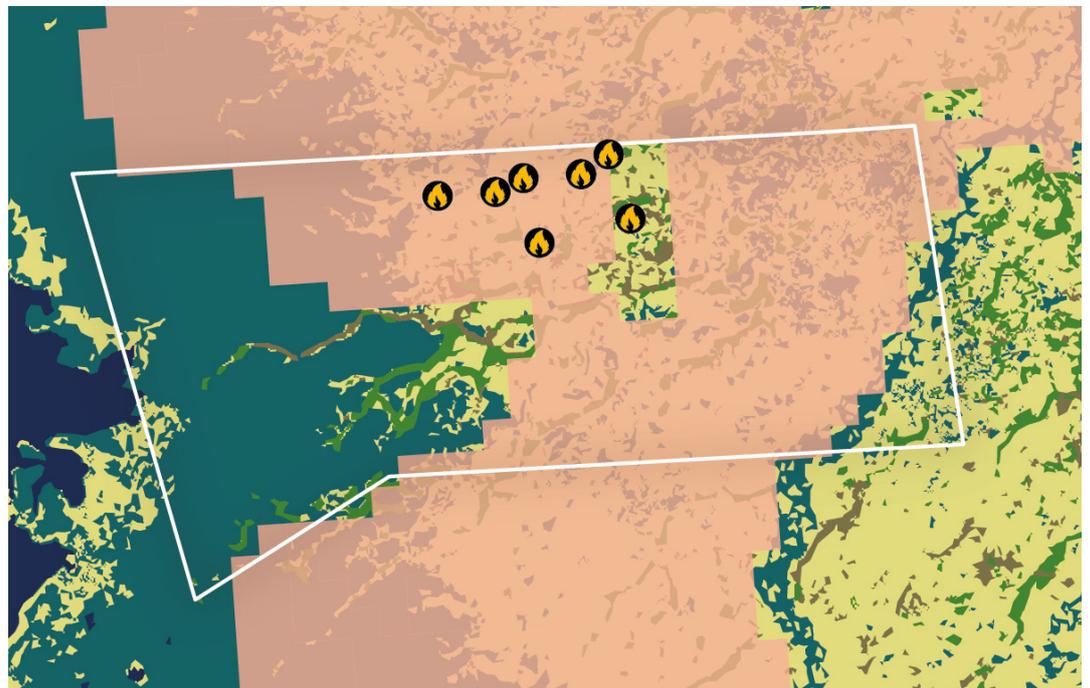
São Bento
SICAR #
 MT-5102504-0117E45CD7
 744A3A9F2C8FBA6CED21B
CAR STATUS
 Active
FAZENDA AREA
 12,581 ha
BURNED AREA
 5,230 ha
FIRST FIRE
 25 August 2020

SÃO BENTO

CHAIN-OF-CUSTODY



PANTANAL / SÃO BENTO



Francisca Evangelista Teodoro da Silva owns the 12,581 ha Fazenda São Bento in Cáceres, Mato Grosso. Between 1 July 2020 and 27 October 2020 some 5,230 ha burned within the ranch's boundaries, with the first fire hotspot on the property detected on 25 August 2020.

In 2018 and 2019 cattle from ranches owned by Francisca Evangelista Teodoro da Silva were supplied to the JBS Pontes e Lacerda (SIF 51), Marfrig Pontes e Lacerda (SIF 1900), Minerva Mirassol d'Oeste (SIF 2911) and Minerva Várzea Grande (SIF 2015) facilities.³⁴⁴ Francisca Evangelista Teodoro da Silva was thus a tier-one supplier to JBS, Marfrig and Minerva; trade from Fazenda São Bento was indirect to Marfrig Pontes e Lacerda (SIF 1900) and both direct and indirect to Minerva Várzea Grande (SIF 2015).

MARFRIG PONTES E LACERDA (SIF 1900): Between 6 February 2019 and 18 February 2019, or soon after, Francisca Evangelista Teodoro da Silva made multiple shipments of cattle from Fazenda São Bento to Fazenda Vargas in Pontes

e Lacerda, Mato Grosso (part of the estate of Henrique Coelho da Paula, with Francisca Evangelista Teodoro da Silva acting as estate executor³⁴⁵). Potentially, up to 330 cattle were transferred. On or soon after 8 April 2019 Francisca Evangelista Teodoro da Silva made two shipments of a total of 40 cattle from Fazenda Vargas to Marfrig Pontes e Lacerda. Marfrig Pontes e Lacerda slaughtered cattle from Francisca Evangelista Teodoro da Silva's Fazenda Vargas on 10 April 2019.³⁴⁶

MINERVA VÁRZEA GRANDE (SIF 2015): On or soon after 13 February 2019 Francisca Evangelista Teodoro da Silva made one direct shipment of 20 cattle for slaughter from Fazenda São Bento to Minerva Várzea Grande. Between 6 February 2019 and 18 February 2019, or soon after, Francisca Evangelista Teodoro da Silva made multiple shipments of cattle from Fazenda São Bento to Fazenda Vargas (see bullet above). Potentially, up to 330 cattle were transferred. Between 8



Reveja a Origem da nossa Carne

Lista de Fazendas

A Marfrig não compra gado de fazendas que praticam Trabalho Escravo ou tem problemas com o Ibama. Trabalhamos muito para ser do Meio Ambiente e nos preocupando com o direito do trabalhador.

Nome da Fazenda	Inscrição Estadual	Município
FAZ PARQUE DO VAQUEIRO I	133382729	Porto Esperidião
FAZENDA CASTANHEIRA	132959640	Pontes e Lacerda
FAZENDA FORTALEZA	132796627	Vila Bela da Santíssima Trindade
FAZENDA J A	132516721	Porto Esperidião
FAZENDA PARQUE DO VAQUEIRO III	133382729	Porto Esperidião
FAZENDA SANTA INEZ	132594498	Pontes e Lacerda
FAZENDA SANTA RITA	132658267	Vila Bela da Santíssima Trindade
FAZENDA SANTA RITA	132666430	Vila Bela da Santíssima Trindade
FAZENDA TALISMA	132522519	Glória D'Oeste
FAZENDA TRES IRMAS	133413381	Nova Lacerda
FAZENDA VANESSA	132506572	Vila Bela da Santíssima Trindade
FAZENDA VARGAS	134544412	Pontes e Lacerda
SITIO DOIS IRMAOS	133250440	Vale de São Domingos
SITIO NOSSA SENHORA APARECIDA	136715702	Porto Esperidião
SITIO RECANTO DOS APAIXONADOS	136455344	Glória D'Oeste
SITIO SOL NASCENTE	135332966	Pontes e Lacerda

Reveja a Origem da nossa Carne



Saber mais sobre o Marfrig Club clicando aqui

Data de Produção:

Sif de Origem:



October 2020, Brazil: Beef from Marfrig Várzea Grande (SIF 2015) on sale in French group Casino Pão de Açúcar supermarket. © Greenpeace



February 2019 and 7 March 2019, or soon after, Francisca Evangelista Teodoro da Silva made multiple shipments of cattle for slaughter from Fazenda Vargas to Minerva Várzea Grande (see Figure 10.1). Potentially, up to 80 cattle were transferred.

Teodoro da Silva and JBS Pontes e Lacerda (SIF 51) – Greenpeace has identified direct trade to this facility from Fazenda São José do Amparo (also apparently controlled by Francisca Evangelista Teodoro da Silva) in April 2019.

MEAT PROCESSOR RESPONSE

- **MARFRIG:** 'Fazenda São Bento is not included in Marfrig's supplier list. In the period reported, Fazenda Vargas was in compliance with all the criteria for analyzing our public commitments. The last slaughter from Fazenda Vargas in the Pontes e Lacerda plant was on December 29, 2020.'³⁴⁷
- **MINERVA:** '[Fazenda Vargas] is listed in the database and is eligible for commercialization. ... [Fazenda São Bento] is not registered in Minerva's database.'³⁴⁸

- **MARFRIG** failed to confirm the current status of the operations of Francisca Evangelista Teodoro da Silva, a 2019–2020 tier-one supplier to its facilities.
- **MINERVA'S** response confirms that Francisca Evangelista Teodoro da Silva remains a current tier-one supplier.
- **NONE OF THE MEAT PROCESSORS** gives any meaningful indication that it has proactively reviewed its entire supply base – including in the Pantanal – for deliberate or illegal use of fire.

GREENPEACE OBSERVATIONS

- **JBS** failed to confirm the current or historic status of the direct trade relationship between Francisca Evangelista

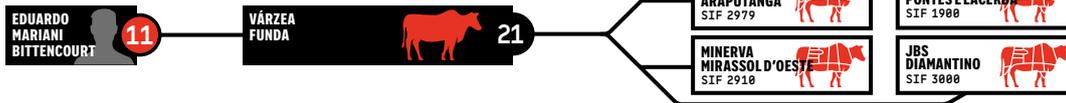
- **NONE OF THE MEAT PROCESSORS** gives any indication that it proactively identified and monitored the legal status or environmental impact of these indirect supplies or third-party suppliers in the Pantanal.

CASE STUDY 11

EDUARDO MARIANI BITTENCOURT

VÁRZEA FUNDA

CHAIN-OF-CUSTODY



TRADE TO SLAUGHTERHOUSES 2018–2019

JBS Acaputanga (SIF 2979)
 JBS Diamantino (SIF 3000)
 Marfrig Pontes e Lacerda (SIF 1900)
 Marfrig Várzea Grande (SIF 2015)
 Minerva Mirassol d'Oeste (SIF 2911)

CASE STUDY FAZENDA

Várzea Funda

SICAR

MT-5102504-9D66BF7AE21
 04440A7DFE4C9B517FF19

CAR STATUS

Active

FAZENDA AREA

8,750 ha

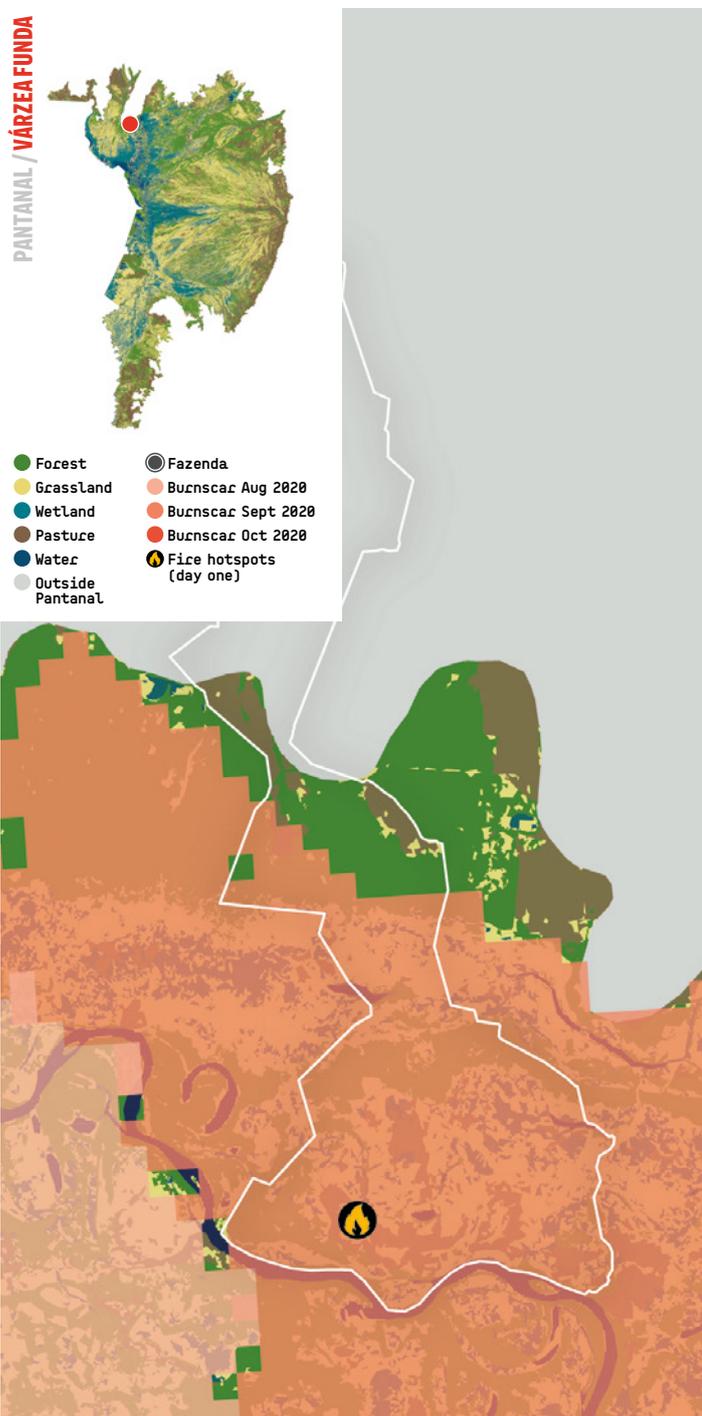
BURNED AREA

4,431 ha

FIRST FIRE

7 September 2020

PANTANAL / VÁRZEA FUNDA



Sharing a border in Cáceres, Mato Grosso, with Fazenda Atoledal is the 8,750 ha Fazenda Várzea Funda, owned by Pin Agropecuária Ltda, whose shareholders include Eduardo Mariani Bittencourt.³⁴⁹ Between 1 July 2020 and 27 October 2020 at least 4,431 ha burned within the boundaries of Fazenda Várzea Funda (which falls partially outside the limits of the Pantanal assessed for burn scar by LASA), with the first fire hotspots on the property detected on 7 September 2020.

In 2018 and 2019 cattle from this ranch were supplied to the JBS Araputanga (SIF 2979), JBS Diamantino (SIF 3000), Marfrig Pontes e Lacerda (SIF 1900), Marfrig Várzea Grande (SIF 2015) and Minerva Mirassol D'Oeste (SIF 2911) facilities.³⁵⁰ Eduardo Mariani Bittencourt was thus a tier-one supplier to all three meat processors, and trade from Fazenda Várzea Funda was direct to all named facilities.

JBS ARAPUTANGA (SIF 2979):

Between 25 January 2018 and 9 February 2018, or soon after, Eduardo Mariani Bittencourt made multiple direct shipments of cattle from Fazenda Várzea Funda to JBS Araputanga. Potentially, up to 230 cattle were transferred. On 14 February 2018 JBS Araputanga slaughtered cattle from a Fazenda Várzea Funda located in Cáceres, Mato Grosso.³⁵¹

JBS DIAMANTINO (SIF 3000):

Between 10 April 2018 and 26 April 2018, or soon after, Eduardo Mariani Bittencourt made multiple direct shipments of cattle from Fazenda Várzea Funda to JBS Diamantino. Potentially, up to 100 cattle were transferred. On 30 April 2018 JBS Diamantino slaughtered cattle from a Fazenda Várzea Funda located in Cáceres, Mato Grosso (see Figure 11.1).³⁵²

MARFRIG PONTES E LACERDA (SIF 1900):

Between 28 January 2019 and 25 February 2019, or soon after, Eduardo Mariani Bittencourt made multiple direct shipments of cattle from Fazenda Várzea Funda to Marfrig Pontes e Lacerda. Potentially, up to 130 cattle were transferred. On 27 February 2019 Marfrig Pontes e Lacerda slaughtered cattle from Eduardo Mariani Bittencourt's Fazenda Várzea Funda.³⁵³

MARFRIG VÁRZEA GRANDE (SIF 2015): Between 1 April 2019 and 26 April 2019, or soon after, Eduardo Mariani Bittencourt made multiple direct shipments of cattle from Fazenda Várzea Funda to Marfrig Várzea Grande. Potentially, up to 100 cattle were transferred. On 11 April 2019 and 29 April 2019 Marfrig Pontes e Lacerda slaughtered cattle from Eduardo Mariani Bittencourt’s Fazenda Várzea Funda.³⁵⁴

MINERVA MIRASSOL D’OESTE (SIF 2911): Between 11 July 2018 and 6 August 2018, or soon after, Eduardo Mariani Bittencourt made multiple direct shipments of cattle for slaughter from Fazenda Várzea Funda to Minerva Mirassol D’Oeste. Potentially, up to 300 cattle were transferred.

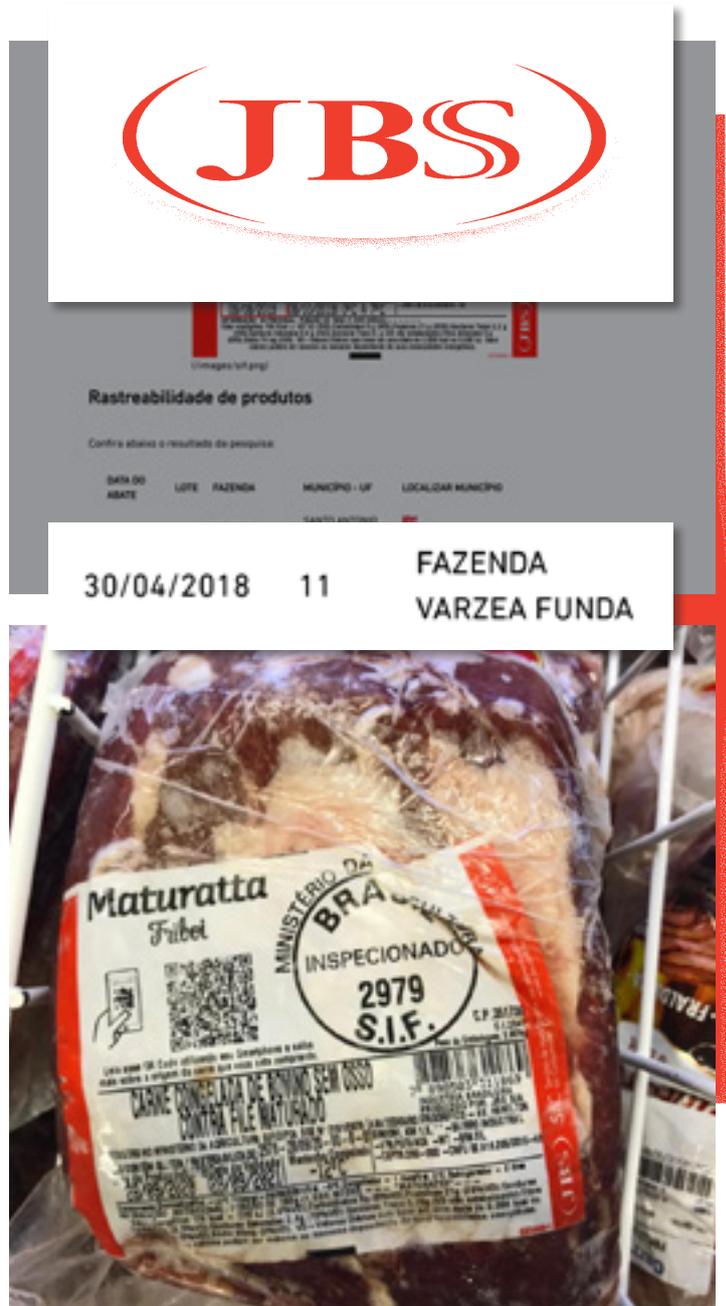
MEAT PROCESSOR RESPONSE

- **JBS:** ‘[Greenpeace] did not inform what the suspected irregularity of this producer and/or his property was. At any rate, JBS informs that Várzea Funda Farm is not on the Company’s active supplier base.’³⁵⁵
- **MARFRIG:** ‘On the slaughter date, Fazenda Várzea Funda was in compliance with all the criteria of the company’s public commitments. The last slaughter [at SIF 1900] was on February 27, 2019. ... The last slaughter [at SIF 2015] was on November 13, 2019.’³⁵⁶
- **MINERVA:** ‘[Fazenda Vargea (sic) Funda] is listed in Minerva’s database and is eligible for commercialization.’³⁵⁷

GREENPEACE OBSERVATIONS

- **JBS** failed to confirm the historic direct trade relationship of Eduardo Mariani Bittencourt with JBS Araputanga (SIF 2979) or JBS Diamantino (SIF 3000).
- **MARFRIG** failed to confirm the current status of the operations of Eduardo Mariani Bittencourt, a 2019 tier-one supplier to its facilities.
- **MINERVA’S** response confirms that Eduardo Mariani Bittencourt remains a current tier-one supplier.
- **NONE OF THE MEAT PROCESSORS** gives any meaningful indication that it has proactively reviewed its entire supply base – including in the Pantanal – for deliberate or illegal use of fire.
- **NONE OF THE MEAT PROCESSORS** gives any indication that it proactively identified and monitored the legal status or environmental impact of these indirect supplies or third-party suppliers in the Pantanal.

Figure 11.1: JBS/ Fciboi ‘Garantia de origem’ website



February 2021, Brazil: Beef from JBS Acaputanga (SIF 2979) on sale in French group Carrefour supermarket. © Greenpeace

CASE STUDY ¹²

ELIANA MARIA LEMOS MONTEIRO CONCEIÇÃO

TRADE TO SLAUGHTERHOUSES 2018-2019

JBS Anastácio (SIF 615)
 JBS Campo Grande (SIF 1662)
 JBS Campo Grande (SIF 4400)

CASE STUDY FAZENDA
 Olhos D' Água

SICAR

MS-5001102-
 83F9.6B94.4DA9.4670.9A71.
 D421.3D6B.0381

CAR STATUS

Active

FAZENDA AREA

10,328 ha

BURNED AREA

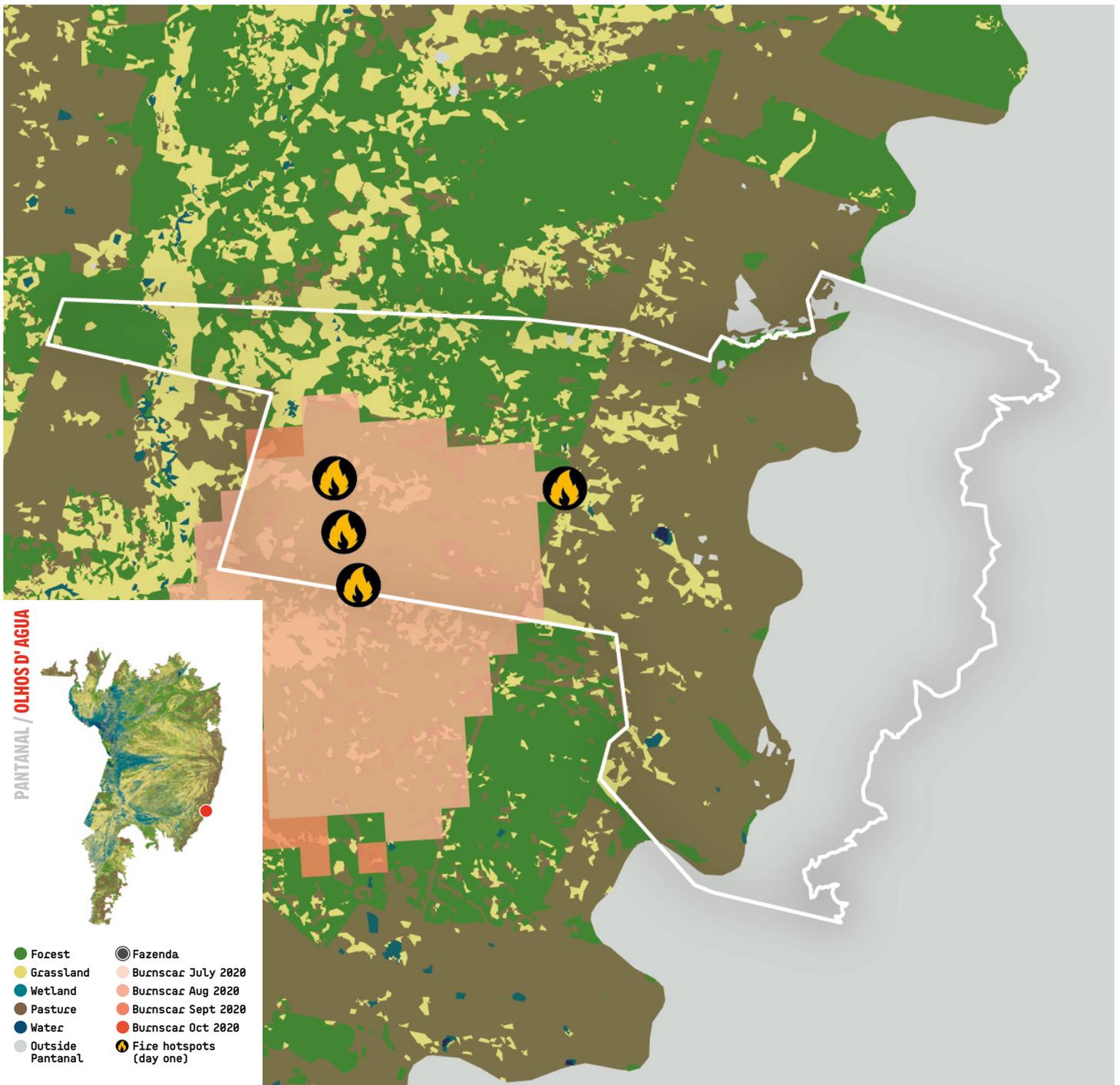
1,770 ha

FIRST FIRE

29 August 2020

OLHOS D' ÁGUA

CHAIN-OF-CUSTODY



Eliana Maria Lemos Monteiro Conceição is the primary owner of the 10,328 ha Fazenda Olhos d'Água in Aquidauana, Mato Grosso do Sul, which is certified for beef exports to the EU.³⁵⁸ Between 1 July 2020 and 27 October 2020 at least 1,770 ha burned within the boundaries of this ranch (which falls partially outside the limits of the Pantanal assessed for burn scar by LASA), with fire hotspots detected on the property from 29 August 2020.

Cattle from Fazenda Olhos d'Água were supplied directly to JBS Anastácio (SIF 615) in 2018 and to two JBS Campo Grande facilities (SIF 1662 and SIF 4400) in 2018 and 2019.³⁵⁹ Eliana Maria Lemos Monteiro Conceição was thus a tier-one supplier to JBS, and trade from Fazenda Olhos d'Água was direct.

JBS ANASTÁCIO (SIF 615): On or soon after 26 March 2018 Eliana Maria Lemos Monteiro Conceição made multiple direct shipments of a total of 88 cattle from Fazenda Olhos d'Água to JBS Anastácio. On 27 March 2018 JBS Anastácio slaughtered cattle from a Fazenda Olhos d'Água located in Aquidauana, Mato Grosso.³⁶⁰

JBS CAMPO GRANDE (SIF 1662): Between 27 February 2018 and 7 June 2019, or soon after, Eliana Maria Lemos Monteiro Conceição made multiple direct shipments of cattle from Fazenda Olhos d'Água to JBS Campo Grande (SIF 1662). Potentially, up to 720 cattle were transferred. On 1 March 2018 and 11 June 2019, JBS Campo Grande (SIF 1662) slaughtered cattle from a Fazenda Olhos d'Água located in Aquidauana, Mato Grosso (see Figure 12.1).³⁶¹

JBS CAMPO GRANDE (SIF 4400): Between 26 February 2018 and 26 July 2019, or soon after, Eliana Maria Lemos Monteiro Conceição made multiple direct shipments of cattle from Fazenda Olhos d'Água to JBS Campo Grande (SIF 4400). Potentially, up to 620 cattle were transferred. On 28 February 2018 and 30 July 2019 JBS Campo Grande (SIF 4400) slaughtered cattle from a Fazenda Olhos d'Água located in Aquidauana, Mato Grosso.³⁶²

MEAT PROCESSOR RESPONSE

- **JBS:** [Greenpeace] did not inform the suspected irregularity of this producer and/or of her property, which is registered in compliance with the Company's Responsible Procurement Policy.³⁶³

GREENPEACE OBSERVATIONS

- **JBS'S** response confirms that Eliana Maria Lemos Monteiro Conceição remains a current tier-one supplier.
- **JBS** gives no meaningful indication that it has proactively reviewed its entire supply base for deliberate or illegal use of



CASE STUDY 13

CELSO MIURA

TRADE TO SLAUGHTERHOUSES 2018-2019

JBS Araputanga (SIF 2979)
 Marfrig Várzea Grande (SIF 2015)
 Minerva Mirassol d'Oeste (SIF 2911)
 Minerva Várzea Grande (SIF 2015)

CASE STUDY FAZENDA

Mestiça
SICAR #
 MT-5102504-392561AEA3
 5346C9AE7804A415C8C5A6
CAR STATUS
 Active
FAZENDA AREA
 7,891 ha
BURNED AREA
 1,338 ha
FIRST FIRE
 14 September 2020

MESTIÇA

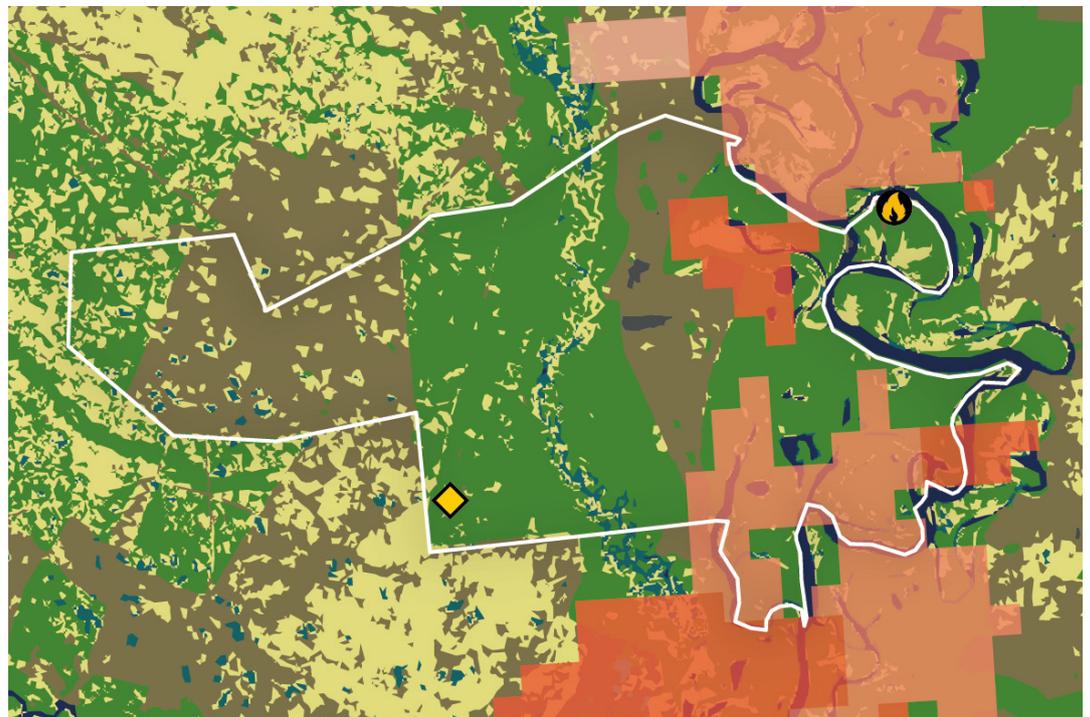
CHAIN-OF-CUSTODY



PANTANAL / MESTIÇA



- Forest
- Grassland
- WetLand
- Pasture
- Water
- ◆ Embargo violation
- Fazenda
- Burnscar July 2020
- Burnscar Aug 2020
- Burnscar Sept 2020
- Burnscar Oct 2020
- Fire hotspots (day one)



Celso Miura is the owner of the 7,891 ha Fazenda Mestiça in Cáceres, Mato Grosso. Between 1 July 2020 and 27 October 2020 some 1,338 ha burned within the boundaries of this ranch, with the first fire hotspots on the property detected on 14 September 2020.

In 2018, cattle from Fazenda Mestiça were supplied directly to JBS Araputanga (SIF 2979); there is also evidence of indirect trade from this ranch to Marfrig Várzea Grande (SIF 2015), Minerva Mirassol d'Oeste (SIF 2911) and Minerva Várzea Grande (SIF 2015) in 2018 and 2019.³⁶⁴ Celso Miura was thus a tier-one supplier to JBS and a third-party supplier to all three meat processors, with trade both direct and indirect from Fazenda Mestiça to JBS and indirect to Marfrig and Minerva.

JBS ARAPUTANGA (SIF 2979):

On or soon after 21 June 2018 Celso Miura made two direct shipments of a total of some 40 cattle for slaughter from Fazenda Mestiça to JBS Araputanga. On 26 June 2019 JBS Araputanga slaughtered cattle from a

Fazenda Mestiça located in Cáceres, Mato Grosso (see Figure 13.1).³⁶⁵ Between 8 May 2018 and 3 June 2019, or soon after, Celso Miura made multiple shipments of cattle from Fazenda Mestiça to Fazenda Lagoa Verde in Cáceres, Mato Grosso (owned by Paulo Cezar Pinto de Arruda, one of two of his ranches that are certified for beef exports to the EU³⁶⁶). Potentially, up to 690 cattle were transferred. Between 6 March 2019 and 17 September 2019, or soon after, Paulo Cezar Pinto de Arruda made multiple shipments of cattle from Fazenda Lagoa Verde to JBS Araputanga. Potentially, up to 880 cattle were transferred. On 7 March 2019 and 21 September 2019 JBS Araputanga slaughtered cattle from a Fazenda Lagoa Verde located in Cáceres, Mato Grosso.³⁶⁷

MARFRIG VÁRZEA GRANDE (SIF 2015):

Between 8 May 2018 and 9 January 2019, or soon after, Celso Miura made multiple shipments of cattle from Fazenda Mestiça to Fazenda Lagoa



Figure 13.1: JBS/ Frilboi 'Garantia de origem' website



Verde (owned by Paulo Cezar Pinto de Arruda). Potentially, up to 690 cattle were transferred. Between 8 April 2019 and 5 November 2019, or soon after, Paulo Cezar Pinto de Arruda made multiple shipments of cattle from Fazenda Lagoa Verde to Marfrig Várzea Grande. Potentially, up to 600 cattle were transferred. On 10 April 2018 and 7 November 2019, Marfrig Várzea Grande slaughtered cattle from Paulo Cezar Pinto de Arruda's Fazenda Lagoa Verde.³⁶⁸

MINERVA MIRASSOL D'OESTE (SIF 2911): Between 8 May 2018 and 3 June 2019, or soon after, Celso Miura made multiple shipments of cattle from Fazenda Mestiça to Fazenda Lagoa Verde (owned by Paulo Cezar Pinto de Arruda). Potentially, up to 690 cattle were transferred. Between 10 May 2018 and 29 October 2019, or soon after, Paulo Cezar Pinto de Arruda made multiple shipments of cattle for slaughter from Fazenda Lagoa Verde to Minerva Mirassol d'Oeste. Potentially, up to 7,400 cattle were transferred.

MINERVA VÁRZEA GRANDE (SIF 2015): Between 8 May 2018 and 9 January, or soon after, Celso Miura made multiple shipments of cattle from Fazenda Mestiça to Fazenda Lagoa Verde (owned by Paulo Cezar Pinto de Arruda). Potentially, up to 530 cattle were transferred. Between 31 July 2018 and 21 January 2019, or soon after, Paulo Cezar Pinto de Arruda made multiple shipments of cattle for slaughter from Fazenda Lagoa Verde to Minerva Várzea Grande. Potentially, up to 730 cattle were transferred.

MEAT PROCESSOR RESPONSE

- **JBS:** '[Greenpeace] did not inform what the suspected irregularity of this producer and/or his property was. At any

rate, JBS informs that Mestiça Farm is not on its active supplier base. ... Lagoa Verde Farm is compliant with the Company's Responsible Procurement Policy.'³⁶⁹

- **MARFRIG:** 'On the slaughter date, Fazenda Lagoa Verde was in compliance with all the criteria of the company's public commitments. The last slaughter was on April 23, 2020. Fazenda Mestiça is not included in Marfrig's supplier list.'³⁷⁰
- **MINERVA:** '[Fazenda Lagoa Verde] is listed in Minerva's database and is eligible for commercialization. ... The [Mestiça] ranch cited as an indirect [supplier] is listed in Minerva's database and is eligible for commercialization.'³⁷¹

GREENPEACE OBSERVATIONS

- **JBS** failed to confirm the historic status of the direct trade relationship between Celso Miura and JBS Araputanga (SIF 2979).
- **MINERVA'S** response appears to confirm Celso Miura as a current tier-one supplier, with Fazenda Mestiça eligible for commercialisation.
- **NONE OF THE MEAT PROCESSORS** gives any meaningful indication that it has proactively reviewed its entire supply base – including in the Pantanal – for deliberate or illegal use of fire.
- **NONE OF THE MEAT PROCESSORS** gives any indication that it proactively identified and monitored the legal status or environmental impact of these indirect supplies or third-party suppliers in the Pantanal.

CASE STUDY ¹⁴

FABIO DE OLIVEIRA LUCHESI

TRADE TO SLAUGHTERHOUSES 2018-2019:

Minerva Mirassol d'Oeste (SIF 2911)
 Minerva Varzea Grande (SIF 2015)

RANCHER IRREGULARITIES/ EMBARGOES/ FINES

+ Suspended CAR registration

CASE STUDY FAZENDA

Santa Helena I

SICAR

MT-5102504-70F370ADCE
 1F4298A8512C7106CCA57D

CAR STATUS

Active

UNTIL 17 NOVEMBER 2020

Pending (Federal)
 Suspended (Mato Grosso state)

FAZENDA AREA

10,191 ha

BURNED AREA

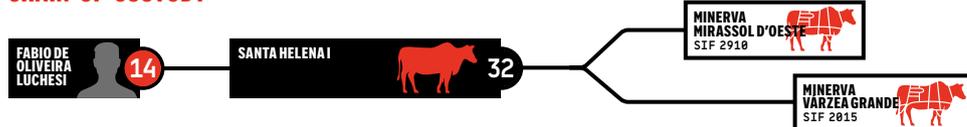
1,029 ha

FIRST FIRE

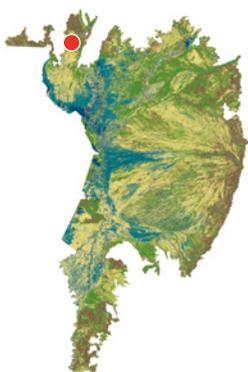
4 September 2020

SANTA HELENA I

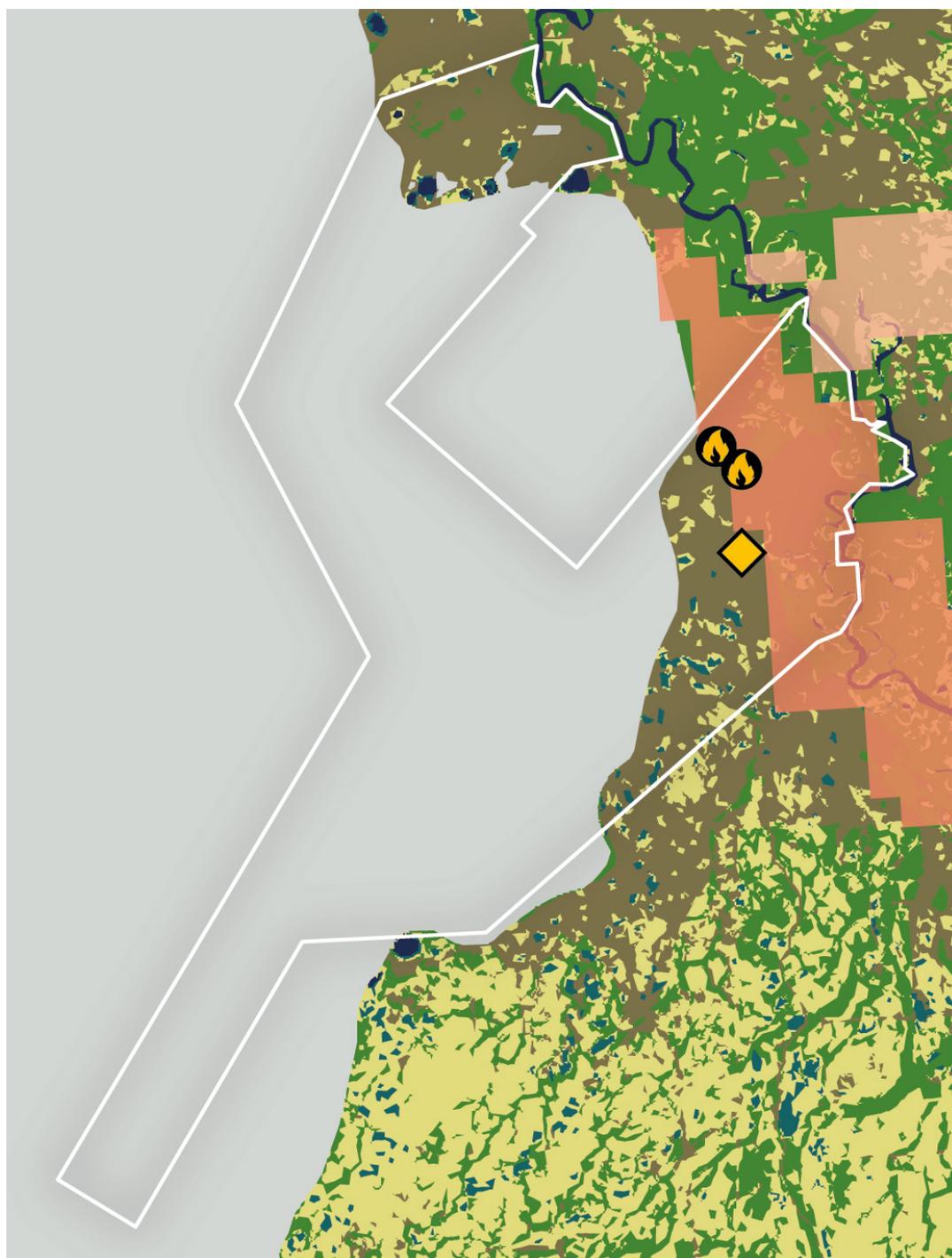
CHAIN-OF-CUSTODY



PANTANAL / SANTA HELENA I



- Forest
- Grassland
- Wetland
- Pasture
- Water
- Outside Pantanal
- Fazenda
- Burnscar Aug 2020
- Burnscar Sept 2020
- Fire hotspots (day one)
- Embargo violation



Fabio de Oliveira Luchesi is the owner of the 10,191 ha Fazenda Santa Helena I in Cáceres, Mato Grosso. Though currently listed as active, until 17 November 2020 the federal CAR website listed the ranch's property registration status as 'pending', indicating an incorrect declaration, overlap with Indigenous lands or conservation units, or other irregularities,³⁷² and the Mato Grosso state environment agency listed it as suspended (see Figures 14.1 and 14.2).³⁷³ Between 1 July 2020 and 27 October 2020 at least 1,029 ha burned within the boundaries of Fazenda Santa Helena I (which falls partially outside the limits of the Pantanal assessed for burn scar by LASA), with the first fire hotspots detected on the property on 4 September 2020.

In 2018 and 2019 cattle from Fazenda Santa Helena I were supplied directly to Minerva Mirassol d'Oeste (SIF 2911) and Minerva Várzea Grande (SIF 2015).³⁷⁴ Fabio de Oliveira Luchesi was thus a tier-one supplier to Minerva, and trade from Fazenda Santa Helena I was direct.

MINERVA MIRASSOL D'OESTE (SIF 2911): Between 9 July 2018 and 27 November 2019, or soon after, Fabio de Oliveira Luchesi made multiple direct shipments of cattle for slaughter from Fazenda Santa Helena I to Minerva Mirassol d'Oeste. Potentially, up to 750 cattle were transferred.

MINERVA VÁRZEA GRANDE (SIF 2015): On or soon after 20 July 2018 Fabio de Oliveira Luchesi made multiple direct shipments of cattle for slaughter from Fazenda Santa Helena I to Minerva Várzea Grande. Potentially, up to 180 cattle were transferred.

MEAT PROCESSOR RESPONSE

- **MINERVA:** '[Fazenda Santa Helena] is listed in Minerva's database and is eligible for commercialization. In addition, the Company would like to emphasize that a CAR in pending status is not a criterion for restriction. This status is a result of some administrative delay between the supplier and the Secretary of the Environment. The analysis that has already been carried out contemplates the verification of environmental restrictions such as deforestation, overlapping protected areas, and state and federal embargoes. It is important to mention that the CAR was active during the period in which commercialization with the ranch took place.'³⁷⁵

GREENPEACE OBSERVATIONS

- **MINERVA'S** claim that a 'pending' CAR status is not a criterion for restriction is controversial.
- **MINERVA'S** response confirms that Fabio de Oliveira Luchesi remains a current tier-one supplier.
- **MINERVA** gives no meaningful indication that it has proactively reviewed its entire supply base for deliberate or illegal use of fire.

Figure 14.1: State CAR information for Santa Helena 1



Figure 14.2: Federal CAR information for Santa Helena 1



CASE STUDY 15

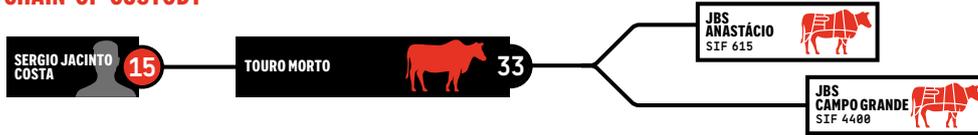
SERGIO JACINTO COSTA

TRADE TO SLAUGHTERHOUSES 2018-2019
 JBS Anastácio (SIF 615)
 JBS Campo Grande (SIF 4400)
CASE STUDY FAZENDA
 Touro Morto
SICAR #
 MS-5003207-B28618A7322
 846BFAA0B988E6944F02A

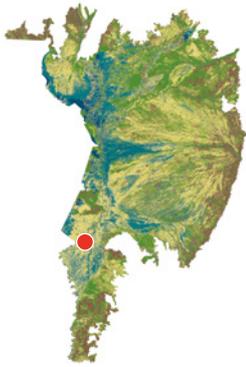
CAR STATUS
 Active
FAZENDA AREA
 5,002 ha
BURNED AREA
 630 ha
FIRST FIRE
 12 September 2020

TOURO MORTO

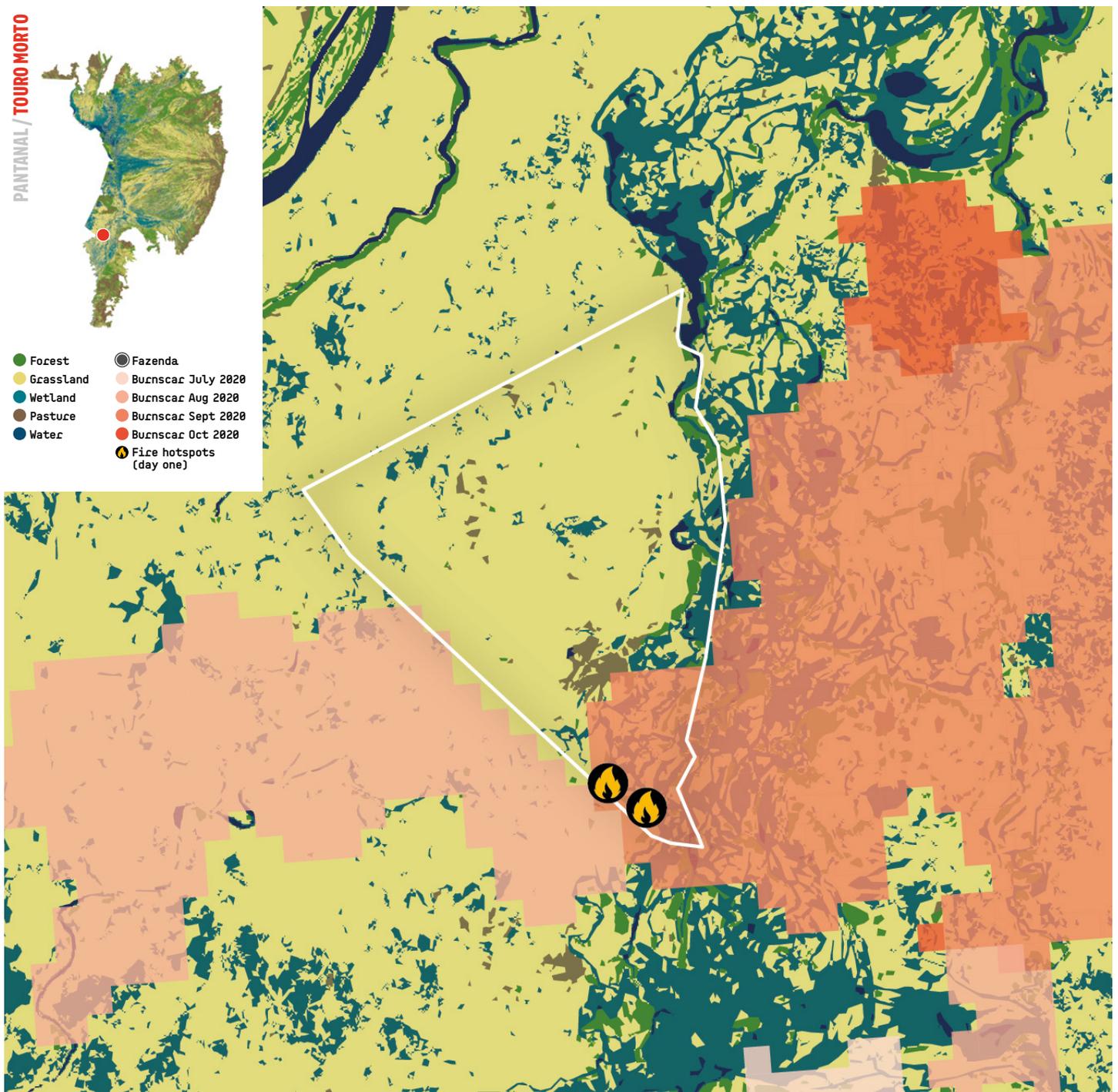
CHAIN-OF-CUSTODY



PANTANAL / TOURO MORTO



- Forest
- Grassland
- Wetland
- Pasture
- Water
- Fazenda
- Burnscar July 2020
- Burnscar Aug 2020
- Burnscar Sept 2020
- Burnscar Oct 2020
- Fire hotspots (day one)





x 23 January 2019, Israel: Beef from JBS Anastácio (SIF 615) on sale in Shufersal supermarket. © Greenpeace

Sergio Jacinto Costa is the owner of the 5,002 ha Fazenda Touro Morto in Corumbá, Mato Grosso do Sul. Between 1 July 2020 and 27 October 2020 some 630 ha burned within the boundaries of the ranch, with fire hotspots detected from 12 September 2020.

In 2018 and 2019 cattle from Fazenda Touro Morto were supplied directly to JBS Anastácio (SIF 615) and JBS Campo Grande (SIF 4400).³⁷⁶ Sergio Jacinto Costa was thus a tier-one supplier to JBS, and trade from Fazenda Touro Morto was direct.

JBS ANASTÁCIO (SIF 615): Between 1 March 2019 and 27 May 2019, or soon after, Sergio Jacinto Costa made multiple direct shipments of cattle from Fazenda Touro Morto to JBS Anastácio. Potentially, up to 850 cattle were transferred. On 5 March 2019 and 30 May 2019 JBS Anastácio slaughtered cattle from a Fazenda Touro Morto located in Corumbá, Mato Grosso.³⁷⁷

JBS CAMPO GRANDE (SIF 4400): On or soon after 23 February 2018 Sergio Jacinto Costa made multiple direct shipments of cattle from Fazenda Touro Morto to JBS Campo Grande (SIF 4400). Potentially, up to 440 cattle were transferred. On 28 February 2018 Campo Grande (SIF 4400) slaughtered cattle from a Fazenda Touro Morto located in Corumbá, Mato Grosso.³⁷⁸

MEAT PROCESSOR RESPONSE

- **JBS:** '[Greenpeace] did not inform the suspected irregularity of this producer and/or of his property, which is registered in compliance with the Company's Responsible Procurement Policy.'³⁷⁹

GREENPEACE OBSERVATIONS

- **JBS'S** response confirms that Sergio Jacinto Costa remains a current tier-one supplier.
- **JBS** gives no meaningful indication that it has proactively reviewed its entire supply base – including in the Pantanal – for deliberate or illegal use of fire.

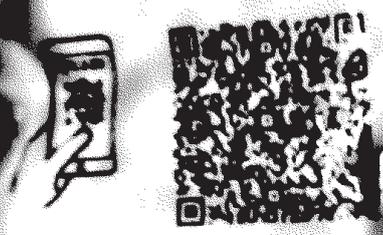
February 2021, Brazil: Beef from JBS Campo Grande (SIF 4400) on sale in French group Casino Pão de Açúcar supermarket. © Greenpeace





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FIRE SALES – FURTHER TRADE LINKS TO THE PANTANAL BLAZES

Further links between fires in the Pantanal and ranchers supplying Brazil's largest beef processors were made in Repórter Brasil's September 2020 investigation.³⁸⁰ Their analysis focused on five rural properties in the state of Mato Grosso where the Instituto Centro de Vida identified ignition points for fires in this part of the Pantanal in 2020 (see 'Under fire' above).³⁸¹ It revealed that two of the cattle ranches on these properties have trading links to Brazil's largest beef processing companies – JBS, Marfrig and Minerva.³⁸² According to Repórter Brasil, Raimundo Cardoso Costa – owner of Fazenda Comitiva, where fires began (accidentally, according to Costa) that ultimately destroyed 25,188 ha – is also listed by the Mato Grosso State Secretariat of Finance as the owner of an adjacent property, Fazenda Recanto das Onças.³⁸³ The investigation identified this ranch as having sold cattle to the Bom Futuro group, which reportedly supplies all three processing companies. Repórter Brasil also investigated Fazenda Espírito Santo, which it identified as the ignition point for fires that led to the destruction of 14,292 ha. Its owner, José Sebastião Gomes da Silva, reportedly owns another ranch, Fazenda Formosa, that supplies

cattle both to Amaggi Pecuária – part of the Amaggi group, which has 10 ranches in Mato Grosso and also reportedly supplies all three leading meat processors – and to Fazenda Rio Bonito, which supplies JBS and Marfrig.³⁸⁴

Some of the facilities discussed above have also recently been linked to environmental destruction in other biomes. For example, an earlier Repórter Brasil investigation found that JBS's Diamantino (SIF 3000) facility was supplied by two ranches allegedly engaged in illegal deforestation in the Cerrado, including one that the INPE monitoring system reportedly showed had cleared 835 ha without authorisation in 2015 and 2016. According to Repórter Brasil, the owner of the other ranch had been accused by the Public Ministry of the State of Mato Grosso (Ministério Público do Estado do Mato Grosso) of having illegally cleared 616 ha of native vegetation between 2011 and 2016 in this property, located in an area of high biodiversity in a transition region between the Cerrado and the Amazon and close to Indigenous lands. The investigation also determined that this ranch had supplied cattle to Marfrig Paranatinga (SIF 2500) and indirectly to two other Marfrig processing facilities in Mato Grosso.³⁸⁵

THE WORLD ON A KNIFE EDGE

'The same human activities that drive climate change and biodiversity loss also drive pandemic risk through their impacts on our environment. Changes in the way we use land; the expansion and intensification of agriculture; and unsustainable trade, production and consumption disrupt nature and increase contact between wildlife, livestock, pathogens and people. This is the path to pandemics.'³⁸⁶

Dr Peter Daszak, Chair of the IPBES workshop on the Links between degradation of nature and increasing pandemic risks, 29 October 2020





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© Shutterstock



© Shutterstock



9 June 2020, Alto Rio Negro Indigenous Land, Amazonas: Greenpeace Brazil supporting provision of protective equipment to a primary health care unit.
© Christian Braga / Greenpeace



In late October 2020, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) issued a report warning that 'Future pandemics will emerge more often, spread more rapidly, do more damage to the world economy and kill more people than Covid-19 unless there is ... a seismic shift in approach from reaction to prevention.'³⁸⁷ Critically, the report's authors found that pandemic risk is fuelled by the same global environmental changes that drive biodiversity loss and climate change – the actions of humankind, as our ever-increasing consumption encourages more and more ecosystem conversion and habitat destruction. Due to its links to deforestation and habitat degradation, industrial meat production contributes to the increased risk of zoonoses – diseases such as Covid-19 that are originally found in non-human animals but jump the species barrier and begin to infect humans.³⁸⁸ Dealing with the ultimate economic fallout of climate change, ecosystem collapse and pandemics will prove incalculably more expensive than acting now to mitigate these risks.

Urgent action to transform the global food system is critical to address these multiple challenges. In November 2020, *Science* published a report finding that even if greenhouse gas (GHG) emissions from the burning of fossil fuels were halted immediately, rising emissions from global food production alone might take the global temperature rise this century over the 1.5° and 2°C targets set by the Paris Agreement.³⁸⁹ Meeting either target, the report's authors cautioned, would require rapid, 'extensive and unprecedented' changes to the global food system, including adopting plant-rich diets, cutting food waste and increasing yield, for instance through agro-ecological production practices.³⁹⁰

The window for action is short. Earlier in 2020, scientists reported that the Amazon is approaching a climatic tipping point beyond which much of its vegetation would change, perhaps irreversibly, from rainforest to savannah.³⁹¹ Such a transformation could wipe out a significant part of the world's biodiversity,³⁹² as well as releasing huge amounts of stored carbon and reducing rainfall

across a continent that is already suffering from severe droughts³⁹³ as a result of climate change and regional disruption of rainfall patterns due to Amazon deforestation.³⁹⁴

2019 saw an unprecedented number of fires in Brazil, more than half of them in the Amazon³⁹⁵ – but that is not the region's only vulnerable ecosystem. 2020 was yet another disastrous year for South America's forests and other ecosystems, as fires raged in the Amazon (Bolivia and Brazil),³⁹⁶ the Cerrado (Brazil),³⁹⁷ the Gran Chaco (primarily Argentina, Bolivia and Paraguay),³⁹⁸ the Pantanal (Bolivia, Brazil and Paraguay)³⁹⁹ and the Paraná Delta (Argentina).⁴⁰⁰ It is widely recognised that most of the blazes did not originate naturally, but were caused by the actions of humans – including intentional burning for the purposes of clearance or land management by the ever-expanding beef and soya sectors. In the case of Brazil, the flames of the fires lit by farmers have been fanned by the government's systematic undermining of federal institutions intended to protect the environment.⁴⁰¹

The bitter reality is that 2020 may prove to have been the point of no return for numerous critical ecosystems. According to Swiss Re, one of the world's largest reinsurance companies, when viewed from the standpoint of biodiversity and the provision of ecosystem services such as climate regulation, maintenance of air and water quality and soil fertility, pollination and erosion control, in one in five countries worldwide terrestrial ecosystems in at least 30% of the country are in a fragile state – posing the risk that further degradation may accelerate their decline or even lead to abrupt ecosystem collapse.⁴⁰²

With the fate of the natural world as we know it now balancing on a knife-edge, this hard reality must underpin the decisions governments, corporations and financiers take in their relations with the agricultural commodity sector. This is especially the case in high-risk regions such as Brazil and other Mercosur countries, particularly in the context of trade negotiations.

TAKING THE BULL BY THE HORNS

- TIME FOR SUPPLY CHAIN ACTION

'All economic partners of Brazil should share the blame for indirectly promoting deforestation and GHG emissions by not barring imports and consuming agricultural products contaminated with deforestation, illegal or not.'⁴⁰³

Raoni Rajão et al., *Science*, July 2020

'Food system changes that reduce GHG emissions may offer additional benefits, including progress toward targets set in the United Nations' Sustainable Development Goals, such as decreased nutrient pollution, reduced water pollution and scarcity, decreased land-use change, improved biodiversity outcomes, and, if dietary composition and caloric consumption are improved, reduced prevalence of obesity, diabetes, heart disease, and premature mortality.'

Time is of the essence in addressing GHG emissions. Any delays will necessitate more ambitious and expeditious implementation of emissions reduction strategies if global temperature targets are to be met. We show that there are many opportunities to keep emissions from food systems and other activities within the global emissions limits for the 1.5° and 2°C targets.'⁴⁰⁴

Michael A Clark et al., *Science*, November 2020

'To secure a thriving food system for the future, the food industry as a whole has an opportunity – and responsibility – to help mitigate the impacts of climate change and find more sustainable ways to feed people. At McDonald's, our responsible sourcing strategy includes a climate action target to reduce greenhouse gas emissions intensity in our supply chain by 2030, as well as a commitment to eliminate deforestation from our global supply chains by 2030, prioritising by end of 2020 the raw materials we buy in the greatest volume: beef, chicken (including soy in feed), palm oil, coffee and the fibre used in guest packaging. ... We work closely with our biggest suppliers in the product categories in which we can have the greatest impact and actively encourage these suppliers to set targets, measure and report emissions and take action to make reductions. We know we cannot drive industry-wide change alone, and we encourage all companies to work collaboratively on solutions.'⁴⁰⁵

McDonald's spokesperson, quoted in *Food Navigator*, 12 November 2020





Rapid and systemic transformation of the industrial meat sector will be critical to addressing the present triple threat of climate change, biodiversity loss and vulnerability to novel diseases.⁴⁰⁶ Governments, financial institutions and the private sector alike need to swap empty rhetoric for action and assume their responsibility for tackling these crises. Radical action is needed from governments, the finance sector, supermarkets and fast food companies to ensure that policy, finance and trade drive – rather than undermine – the urgently needed shift to resilient food economies that permit the restoration and regeneration of natural ecosystems, ensure the preservation of biodiversity, rein in GHG emissions and uphold the rights of communities and workers.

Financial institutions must recognise that JBS does not represent a responsible investment and withhold their support from its proposed NYSE listing. More broadly, they must ensure much tougher environmental scrutiny of all companies producing or trading in so-called forest and ecosystem risk commodities (FERCs), withholding investment and financial services from those that cannot show their supply chains are free from ecosystem destruction.

Food sector companies must similarly increase environmental scrutiny of all their FERC suppliers and exclude non-compliant companies, including JBS and its subsidiaries. In the longer term they must aim to phase out sales of industrially produced meat from all sources, recognising that even those parts of the sector (such as intensive chicken production) that are not major direct drivers of deforestation are heavily dependent on the highly destructive feed industry.⁴⁰⁷

The example of JBS also highlights the need for all governments – be they FERC-producing countries such as Brazil or importing blocs such as the EU – to have in place zero deforestation laws and regulations requiring producers and processors of FERCs as well as operators placing FERCs and derived products on consumer markets to meet strictly defined sustainability criteria and to ensure full supply chain traceability and transparency. This means that, in all markets where FERCs are produced or consumed, efforts to end links to deforestation should be underpinned by due diligence legislation to ensure that commodities and products are not linked to deforestation, ecosystem destruction and abuses of human rights. Such legislation should include measures for financial institutions that invest in or lend to companies producing or trading in FERCs.





WHO NEEDS TO DO WHAT

The steps that food industry, financial institutions and governments take in the immediate future in relation to JBS, Marfrig and Minerva – some of the world’s largest meat processors – and the global meat industry as a whole will be a decisive test of their priorities. Governments and companies must align the economy with biodiversity and climate protection, along with social justice. They must ensure that private and public finance, trade policy and overseas cooperation do not drive further deforestation, but do support nature restoration and a transition to a green, just and resilient economy. This includes:

CLOSE THE MARKET TO FOREST DESTROYERS:

DROPPING FOREST AND ECOSYSTEM DESTROYERS:

End finance for or trade with groups such as JBS whose direct or indirect suppliers are linked to deforestation and alleged human rights violations – this includes ending trade with subsidiaries such as JBS-owned Pilgrim’s Pride, which owns Moy Park and Tulip (recently renamed Pilgrim’s Pride Ltd).

DROPPING COMMODITIES linked to forest and ecosystem destruction: Including through the adoption of a law on forest and ecosystem risk commodities (FERCs) and derived products, to ensure that commodities and products linked to deforestation, ecosystem destruction and abuses of human rights are not placed on the market. The legislation should include measures to cover the financial sector, ensure full supply chain traceability and transparency and rules on due diligence.

ENSURING TRADE POLICY ALIGNS WITH CLIMATE, BIODIVERSITY AND SOCIAL JUSTICE GOALS: This includes refusing to ratify trade deals such as the EU–Mercosur agreement. Trade agreements of this kind are based on an extractive model that commodifies people and nature and is inherently incompatible with forest protection – governments should instead protect forests and other natural ecosystems by adopting policies to decrease meat production and consumption, and addressing their external forest and ecosystems footprint by means of product and supply chain regulations.

TRANSFORM THE FOOD SYSTEM:

PHASING OUT INDUSTRIAL MEAT: Immediately begin the phase-out of all finance for or trade in industrial meat, with the aim of reducing overall meat and dairy production and sales by at least 50% by 2025 and 70% by 2030 in countries with high levels of meat consumption.⁴⁰⁸

MAKING FULL TRANSPARENCY A CONDITION OF TRADE: Make full transparency of group operations and the supply chain a condition of finance or trade, requiring open and comprehensive monitoring and reporting systems to be in place.

PRIORITISING HUMAN AND ENVIRONMENTAL HEALTH: Introduce targets, legislation and fiscal measures to decrease production and consumption of meat and dairy products in countries with high levels of consumption and support a fundamental shift towards ecological farming and healthy plant-rich diets in order to reduce pressure on natural ecosystems.





ANNEX 1: REPORTED EXPORTS FROM LINKED FACILITIES, JANUARY 2019–OCTOBER 2020

PROCESSOR SIF LOCATION	EXPORT VOLUME (TONNES) EXPORT VALUE (US\$)	KEY EXPORT DESTINATION BY COUNTRY AND KEY REGION	TONNES	VALUE (US\$)	VOLUME (%)	RANCHER / CASE STUDY SUPPLY LINKS			
JBS BARRA DO GARÇAS (SIF 42)	82,909 442,125,000	China	71,807	383,635,900	86.61%	JOÃO FELIX PEREIRA NETO / ATOLEDAL			
		Hong Kong	8,138	43,085,600	9.82%				
		Philippines	845	4,519,600	1.02%				
		Italy	537	2,917,800	0.65%				
		Netherlands	503	2,981,700	0.61%				
		Germany	242	1,316,300	0.29%				
		Spain	131	767,700	0.16%				
		Israel	26	123,000	0.03%				
		Sweden	25	142,000	0.03%				
		United Kingdom	25	123,000	0.03%				
		KEY REGIONS							
		EU 27 +UK	1,438	8,106,500	1.73%				
		JBS PONTES E LACERDA (SIF 51)	40,814 223,320,540	Hong Kong	10,922		57,495,400	26.76%	ADEVAIR DE OLIVEIRA / RECREIO JOSE DALBEM / SANTA CATARINA LUIZ CARLOS ZILIANI / SANTA TEREZA FRANCISCA EVANGELISTA TEODORO DA SILVA
				Italy	1,822		10,206,300	4.46%	
Netherlands	1,386			8,231,600	3.40%				
Spain	1,211			8,144,600	2.97%				
Germany	304			2,015,200	0.75%				
Turkey	201			1,087,000	0.49%				
United Kingdom	177			1,000,000	0.43%				
Portugal	52			326,900	0.13%				
Greece	27			210,000	0.07%				
Chile	25			123,000	0.06%				
KEY REGIONS									
EU27+UK	4,979			30,134,600	12.20%				
Middle East	22,878			124,953,340	56.05%				
JBS ANASTÁCIO (SIF 615)	21,997 117,276,171			Israel	9,668	49,880,671	43.95%	ELIANA MARIA LEMOS MONTEIRO CONCEIÇÃO / OLHOS D' AGUA SERGIO JACINTO COSTA / TOURO MORTO	
		Hong Kong	4,942	25,911,900	22.47%				
		Turkey	432	2,314,000	1.96%				
		Netherlands	28	156,000	0.13%				
		Chile	24	186,000	0.11%				
		KEY REGIONS							
		Middle East	15,235	81,473,371	69.26%				
Asia	4,942	25,911,900	22.47%						
JBS CAMPO GRANDE (SIF 1662)	44,759 240,803,444	Hong Kong	11,287	59,200,700	25.22%	IVANILDO DA CUNHA MIRANDA / BONSUCESSO ELIANA MARIA LEMOS MONTEIRO CONCEIÇÃO / OLHOS D' AGUA			
		Philippines	4,642	24,120,000	10.37%				
		Italy	1,174	6,333,200	2.62%				
		Spain	846	4,680,900	1.89%				
		Germany	810	5,345,700	1.81%				
		Netherlands	689	3,977,194	1.54%				
		Turkey	632	3,564,000	1.41%				
		South Africa	409	594,400	0.91%				
		Chile	197	998,000	0.44%				
		Sweden	62	475,800	0.14%				
		United States	39	218,000	0.09%				
		Portugal	26	134,800	0.06%				
		United Kingdom	13	61,300	0.03%				
		KEY REGIONS							
EU27+UK	3,619	21,008,894	8.08%						
Asia	15,929	83,320,700	35.59%						
Middle East	19,302	106,280,950	43.13%						
JBS PEDRA PRETA (SIF 2019)	14,661 81,980,600	Hong Kong	4,826	25,651,800	32.92%	ÁRIO BARNABE NETO / RIO VERMELHO RAUL AMARAL CAMPOS / ESPERANÇA			
		Philippines	1,433	7,511,000	9.78%				
		Italy	828	4,561,000	5.65%				
		Netherlands	584	3,534,200	3.98%				
		Spain	402	2,531,600	2.74%				
		Germany	362	2,204,900	2.47%				
		Israel	196	1,380,700	2.00%				
		Turkey	184	1,030,000	1.25%				
		Chile	75	367,000	0.51%				
		Portugal	40	218,700	0.27%				
		Greece	29	161,000	0.20%				
		KEY REGIONS							
		EU27+UK	2,246	13,211,400	15.32%				
		Middle East	5,133	30,216,200	35.01%				
Asia	6,260	33,162,800	42.70%						

PROCESSOR SIF LOCATION	EXPORT VOLUME (TONNES) EXPORT VALUE (US\$)	KEY EXPORT DESTINATION BY COUNTRY AND KEY REGION	TONNES	VALUE (US\$)	VOLUME (%)	RANCHER / CASE STUDY SUPPLY LINKS		
JBS ARAPUTANG (SIF 2979)	44,119 236,922,800	Hong Kong	11,381	59,607,800	25.80%	RAYMUNDO VICTOR DA COSTARAMOS SHARP / SÃO CARLOS E SANTA MONICA EDUARDO MARIANI BITTENCOURT / VÁRZEA FUNDA JOSE DALBEM / SANTA CATARINA CELSO MIURA / MESTIÇA ADEVAIR DE OLIVEIRA		
		Philippines	8,035	42,324,800	18.21%			
		Italy	3,070	18,582,600	6.96%			
		Netherlands	1,508	8,040,600	3.42%			
		Spain	969	5,670,100	2.20%			
		Germany	734	4,311,700	1.66%			
		Chile	221	1,173,000	0.50%			
		United Kingdom	175	970,200	0.40%			
		Portugal	103	531,000	0.23%			
		South Africa	85	482,000	0.19%			
		Lebanon	54	335,000	0.12%			
		Greece	26	148,300	0.06%			
		KEY REGIONS						
		EU27+UK	6,584	38,262,500	14.92%			
		Middle East	12,479	67,968,700	28.29%			
Asia	19,416	101,932,600	44.01%					
JBS DIAMANTINO (SIF 3000)	38,837 208,392,700	Hong Kong	8,025	42,375,700	20.66%	EDUARDO MARIANI BITTENCOURT / VÁRZEA FUNDA JOÃO FELIX PEREIRA NETO		
		Netherlands	1,907	11,452,500	4.91%			
		Lebanon	888	3,464,100	2.29%			
		Italy	860	4,494,000	2.22%			
		United Kingdom	521	3,622,200	1.34%			
		Chile	497	2,572,000	1.28%			
		Germany	375	2,576,600	0.97%			
		Spain	373	1,936,900	0.96%			
		South Africa	344	1,935,000	0.88%			
		Turkey	79	383,000	0.20%			
		Portugal	78	416,700	0.20%			
		Greece	76	409,700	0.20%			
		KEY REGIONS						
		EU27+UK	4,191	24,908,600	10.79%			
		Middle East	22,665	121,292,700	58.36%			
Asia	8,025	42,375,700	20.66%					
JBS ÁGUA BOA (SIF 4121)	11,913 66,159,200	Hong Kong	3,655	19,322,400	30.69%	JOÃO FELIX PEREIRA NETO / ATOLEDAL		
		Italy	1,826	10,434,500	15.33%			
		Spain	1,706	11,991,400	14.32%			
		Turkey	375	2,129,000	3.15%			
		Netherlands	364	1,991,000	3.06%			
		Israel	13	73,300	2.73%			
		South Africa	204	153,300	1.72%			
		Lebanon	131	640,000	1.10%			
		United Kingdom	76	427,000	0.64%			
		Germany	51	268,000	0.43%			
		KEY REGIONS						
		EU27+UK	4,023	25,111,900	33.77%			
		Middle East	2,435	12,952,600	20.44%			
		Asia	3,655	19,322,400	30.69%			
		JBS CAMPO GRANDE (SIF 4400)	50,942 369,691,390	Hong Kong	21,463		128,814,500	42.13%
United States	3,725			18,003,000	7.31%			
Lebanon	2,131			14,236,900	4.18%			
Italy	1,396			7,554,000	2.74%			
Netherlands	931			19,711,400	1.83%			
Spain	701			3,791,800	1.38%			
Turkey	436			2,401,000	0.86%			
Germany	424			2,379,200	0.83%			
South Africa	357			692,500	0.70%			
Sweden	319			2,346,500	0.63%			
Chile	268			1,526,000	0.53%			
United Kingdom	106			27,794,600	0.21%			
Portugal	51			309,200	0.10%			
Greece	50			287,200	0.10%			
France	31			36,919,200	0.06%			
KEY REGIONS								
EU27+UK	4,009	101,093,100	7.87%					
Middle East	16,350	95,366,700	32.10%					
Asia	21,463	128,814,500	42.13%					

PROCESSOR SIF LOCATION	EXPORT VOLUME (TONNES) EXPORT VALUE (US\$)	KEY EXPORT DESTINATION BY COUNTRY AND KEY REGION	TONNES	VALUE (US\$)	VOLUME (%)	RANCHER / CASE STUDY SUPPLY LINKS			
MARFRIG CAMPO GRANDE (SIF1900)	16,323 85,450,200	China	8,529	41,978,000	52.25%	FRANCISCA EVANGELISTA TEODORO DA SILVA / SÃO BENTO JOÃO FELIX PEREIRA NETO / ATOLEDAL EDUARDO MARIANI BITTENCOURT / VÁRZEA FUNDA ADEVAIR DE OLIVEIRA / RECREIO JOSE DALBEM / SANTA CATARINA LUIZ CARLOS ZILIANI / SANTA TEREZA			
		Hong Kong	4,768	26,220,600	29.21%				
		Turkey	113	635,000	0.69%				
		KEY REGIONS							
		Middle East	2,631	15,525,600	16.12%				
		Asia	13,297	68,198,600	81.46%				
		MARFRIG VÁRZEA GRANDE (SIF 292 AND 2015)	62,039 323,085,300	China	33,484		172,623,000	53.97%	EDUARDO MARIANI BITTENCOURT / VÁRZEA FUNDA ADEVAIR DE OLIVEIRA / RECREIO JOSE DALBEM / SANTA CATARINA RAUL AMARAL CAMPOS / ESPERANÇA CELSO MIURA / MESTIÇA LUIZ CARLOS ZILIANI / SANTA TEREZA
				Hong Kong	9,755		50,576,900	15.72%	
				Netherlands	1,217		7,927,800	1.96%	
				Italy	1,210		6,547,000	1.95%	
Lebanon	727			4,519,900	1.17%				
United Kingdom	137			775,600	0.22%				
Germany	130			775,100	0.21%				
Spain	120			688,100	0.19%				
Thailand	112			435,000	0.18%				
Portugal	12			68,500	0.02%				
KEY REGIONS									
EU27+UK	2,827			16,782,100	4.56%				
Middle East	7,199			38,300,600	11.60%				
Asia	44,545			229,683,300	71.80%				
MARFRIG PARANATINGA (SIF 2500)	4,257 24,224,300			Hong Kong	1,152	6,233,200	27.07%	RAUL AMARAL CAMPOS / ESPERANÇA	
		Lebanon	342	2,486,700	8.04%				
		Italy	196	1,097,400	4.61%				
		Netherlands	161	1,106,800	3.79%				
		Spain	34	214,100	0.88%				
		KEY REGIONS							
		EU27+UK	392	2,418,300	9.20%				
		Middle East	2,524	14,503,800	59.29%				
		Asia	1,260	6,842,200	29.60%				
		MARFRIG BATAGUASSU (SIF 4238)	46,443 253,745,400	Hong Kong	11,659	61,473,500	25.10%		DANIEL MARTINS FILHO / SANTA CECÍLIA II
United States	2,896			14,074,000	6.23%				
Netherlands	1,735			11,398,600	3.74%				
Italy	1,652			8,056,100	3.56%				
Lebanon	1,628			11,069,800	3.51%				
Spain	516			3,085,500	1.11%				
Germany	320			2,050,500	0.69%				
South Africa	135			765,000	0.29%				
Sweden	107			706,500	0.23%				
China	84			414,000	0.18%				
Portugal	67			377,200	0.14%				
United Kingdom	51			299,200	0.11%				
KEY REGIONS									
EU27+UK	4,448			25,973,600	9.58%				
Middle East	23,399			131,857,400	50.38%				
Asia	14,055	74,042,200	30.26%						
MINERVA VÁRZEA GRANDE (SIF 2015)	9,394 54,532,650	Turkey	1,163	6,561,000	12.38%	FRANCISCA EVANGELISTA TEODORO DA SILVA / SÃO BENTO FABIO DE OLIVEIRA LUCHESI / SANTA HELENA I CELSO MIURA / MESTIÇA RAUL AMARAL CAMPOS / ESPERANÇA ADEVAIR DE OLIVEIRA / RECREIO			
		Hong Kong	991	5,289,800	10.54%				
		Italy	461	2,604,150	4.91%				
		Argentina	440	2,481,000	4.68%				
		Netherlands	280	1,763,300	2.98%				
		Germany	200	1,395,700	2.13%				
		South Africa	141	793,000	1.50%				
		Spain	70	421,500	0.75%				
		United Kingdom	70	440,200	0.74%				
		Russia	29	137,000	0.31%				
		Portugal	26	145,000	0.27%				
		Sweden	19	105,000	0.20%				
		Norway	12	66,900	0.13%				
		Denmark	9	51,100	0.10%				
		KEY REGIONS							
		EU27+UK	1,147	6,992,850	12.21%				
		Middle East	4,052	23,260,900	43.13%				
		Asia	1,278	6,916,800	13.60%				

PROCESSOR SIF LOCATION	EXPORT VOLUME (TONNES) EXPORT VALUE (US\$)	KEY EXPORT DESTINATION BY COUNTRY AND KEY REGION				RANCHER / CASE STUDY SUPPLY LINKS	
			TONNES	VALUE (US\$)	VOLUME (%)		
MINERVA MIRASSOL D'OEST (SIF 2911)	41,864	Hong Kong	5,860	30,918,700	14.00%	RAYMUNDO VICTOR DA COSTA RAMOS SHARP - SÃO CARLOS E SANTA MONICA EDUARDO MARIANI BITTENCOURT - VÁRZEA FUNDA ADEVAIR DE OLIVEIRA - RECREIO JOSE DALBEM - SANTA CATARINA CELSO MIURA - MESTIÇA FABIO DE OLIVEIRA LUCHESI - SANTA HELENA I LUIZ CARLOS ZILIANI - SANTA TEREZA FRANCISCA EVANGELISTA TEODORO DA SILVA	
	230,630,820	Italy	2,474	13,350,800	5.91%		
		Indonesia	1,239	6,853,000	2.96%		
		Turkey	1,223	6,840,800	2.92%		
		Netherlands	1,064	6,901,700	2.54%		
		Israel	854	4,681,000	2.04%		
		Lebanon	660	3,912,300	1.58%		
		Germany	473	3,360,800	1.13%		
		Spain	240	1,371,100	0.57%		
		United Kingdom	161	989,600	0.39%		
		Greece	28	158,000	0.07%		
		Portugal	25	115,000	0.06%		
		Denmark	7	40,200	0.02%		
		KEY REGIONS					
		EU27+UK	4,472	26,287,200	10.68%		
	Middle East	13,348	69,639,032	31.89%			
	Asia	9,574	50,807,000	22.87%			

REPORTED LIVE ANIMAL EXPORTS JANUARY 2019–OCTOBER 2020

PROCESSOR LOCATION	KEY EXPORT DESTINATIONS	EXPORT VOLUME (TONNES)	TONNES	VOLUME (%)
MINERVA		59,988		
ABAETETUBA	Turkey		21,165	35.28%
	Saudi Arabia		19,700	32.84%
	Lebanon		17,000	28.34%
	Jordan		2,123	3.54%

REPORTED EXPORTS BY TANNERIES JANUARY 2019–OCTOBER 2020

PROCESSOR LOCATION	KEY EXPORT DESTINATIONS	EXPORT VOLUME (TONNES)	TONNES	VOLUME (%)
JBS	China	39,690	23,543	59.32
CAMPO GRANDE	Italy		6,847	17.25
	India		3,315	8.35
	Mexico		2,359	5.94
	United States		408	1.03
	Spain		396	1
	Portugal		302	0.76
	South Africa		39	0.1
	Japan		19	0.05
	Netherlands		18	0.05
	KEY REGIONS			
	EU27+UK		7,563	19.06
	Asia		29,222	73.63
	North America		2,767	6.97
MARFRIG BATAGUASSU	Italy	168	168	100
MINERVA MIRASSOL D'OESTE	China	2,822	2,307	81.77
	Italy		410	14.54
	Russia		64	2.28
	India		40	1.41



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ANNEX 2: OPPORTUNITY TO COMMENT

Within the context of the 2020 Pantanal fires – many reportedly thought to have been deliberately and illegally lit by ranchers in defiance of regional and federal bans – Greenpeace provided the meat processors and, where possible, ranchers named in this report with the opportunity to comment prior to publication on the historic trade links it had established between ranchers with operations in the Pantanal and specific slaughterhouses, as well as any legal/policy irregularities (eg embargoes, irregular CAR status) it had identified in those ranchers' operations. The aim was to help ensure the accuracy of all findings.

Specifically, meat processors were asked to:

- 1. Confirm the historic trade information linking them to the named ranchers and confirm and explain any identified legal/policy irregularities associated with the named ranchers**
- 2. Provide the most recent date on which they had sourced cattle from the named ranchers**
- 3. Identify the steps they had taken to review the compliance of their current suppliers, given the extent of the fires in the Pantanal in 2020 and federal and state bans on deliberate use of fire**
- 4. Verify whether – following review – the decision had been taken to exclude any of the named ranchers from their supply chains**

Letters from the meat processors are reproduced below. Copies of the full responses from the meat processors are available [here](#).



São Paulo, January 14, 2021

c/o Savio Carvalho, Greenpeace International

In response to the letter sent to us, questioning our commitment to sustainable development and environmental preservation, we would like to highlight that as the world's second-largest food industry JBS takes its responsibility to feed the world and produce the highest quality-sustainably sourced products very seriously. By way of example, in 2019 alone we invested R\$ 1.9 billion in concrete environmental actions across the entire value chain. This is because we understand that protecting the planet is humanity's most important mission in the XXI century - a not-so-simple task that demands time, dedication and, above all, collaboration between key industry players to establish efficiencies and continuously improve processes.

In line with its historical commitment to environmental sustainability, ten years ago, JBS developed one of the world's largest supplier monitoring systems that uses satellite imagery to monitor an area larger than Germany. This tool ensures that the Company only purchases from producers who fully comply with its socioenvironmental criteria – this means, those that do not have areas embargoed by IBAMA, are not found on the "blacklist" of slave labor, and zero tolerance towards illegal deforestation in strict compliance with the Brazilian Forest Code. To date, JBS has blocked more than 9,000 farms because of non-compliance with its criteria. The cattle procurement operations of JBS are independently monitored on an annual basis, with the audit results published on the Company's site, guaranteeing transparency of the entire process. It is also worth pointing out that the company is co-developer of the **Supplier Monitoring Protocol of the Federal Prosecutor's Office (MPF)** (www.beefontrack.org).

JBS recognizes the importance of ensuring the same level of compliance is followed by the suppliers of its own suppliers, a challenge for the entire industry. With this in mind, the Company announced in September of last year the launch of the **JBS Green Platform**. The tool uses blockchain technology to extend to the other links in our production chain the socioenvironmental monitoring the Company applies to its suppliers. All data is stored securely and reliably and the platform is supported by engagement with and education of the producers throughout the supply chain. As outlined when we launched the Platform, we are on schedule to implement as planned and we will also make the Platform available to other companies in our sector. This program will also make available, through **Green Offices**, legal, environmental and livestock husbandry advisory services to assist cattle producers in improving stewardship on their properties, promote reforestation of degraded areas and encourage an increase in sustainable productivity – which reduces carbon emissions and improves local biodiversity.

The company has also constituted the **JBS Fund for The Amazon**, dedicated to financing actions and projects to expand conservation of the forest and the sustainable development of the communities that inhabit it. JBS will contribute R\$ 250 million in the first five years, and the target is to raise the fund's resources to a total of R\$ 1 billion by 2030, with the participation of partners whose contributions will be matched by the Company in the same proportion.



In 2020, JBS entered into a partnership with the **Liga do Araguaia (Araguaia League)**, consisting of around 60 livestock farmers in the region of the Middle Araguaia River Valley located in the state of Mato Grosso. The aim is to foster development of sustainable livestock farming in the region with the support of local producers. We believe that the combination of monitoring and development is what will lead to an efficient and sustainable production chain.

Furthermore, JBS has developed the **Fazenda Nota 10 (10-out-of-10 Farm)** program that offers high-performance management training to maximize the efficiency of beef cattle farms in Brazil and consequently reduce carbon emissions. Developed by JBS in partnership with the Inttegra Institute, the program is intended for livestock farmers throughout Brazil. This type of initiative is a solid step towards the future of sustainable food production as we cater to a growing global population, producing more with less, decreasing the sector's environmental footprint.

There are numerous other initiatives that could be listed here, such as the production of 265 million liters of biodiesel from used cooking oil and the beef tallow from our plants in Brazil, the use of renewable energy, which accounts for 90% of total consumption at our production units and the fact that 1 million tons of waste generated by our operations around the world were recycled in 2019. Further information about each of these initiatives and many others is available on our site.

Also in 2020, JBS became a member of the Tropical Forest Alliance (TFA), an initiative linked to the World Economic Forum that encourages and promotes actions aimed at ending deforestation around the world. The Company is also a member of the Sustainable Livestock Farming Working Group (GTPS) and the Global Roundtable for Sustainable Beef (GRSB), initiatives that encourage the elimination of deforestation and contribute to improving sustainability throughout the value chain.

We have also received recognition that we are on the right path. Today, we are the best-placed Brazilian company in our sector in the respected CDP sustainability ranking. The **Collier FAIRR Protein Producer Index**, which evaluates 60 global listed companies involved in the production of food based on beef, fish and dairy products, listed JBS among the top 10 in the ranking and, among the Brazilian companies, JBS produced the best performance, jumping eight positions from one year to the next.

Having said this, in regard to the work done by Greenpeace and with the certainty that we share the same mission of feeding the world sustainably, JBS respectfully wishes to clarify that:

1. In regard to the cases listed by the NGO in its letter, the suspicions raised are based on errors in the methodology used to conduct the analysis and on criteria that are not only not part of Brazilian legislation, or included in the industry procurement protocols approved by the Federal Prosecutor's Office. This type of superficial analysis can lead to errors and misleading conclusions.
2. In one of these cases, for example, the line of reasoning of Greenpeace defies logic: the NGO lists purchases by JBS in 2018 and 2019, prior to the fires in the Pantanal that would only take place one year later, in 2020. In addition, Greenpeace accuses a farmer, who is not a JBS supplier, of being one of those responsible for the fires, based solely on an "online search", as the NGO itself puts it.
3. In the case of the purchases pointed out by Greenpeace, we undertook an individual analysis of the properties listed and we can assure you that 100% of the farms that sold raw materials to the Company were compliant with all the prerequisites of the JBS Responsible Procurement Policy.



at the time of purchase. We present the detailed results of our analysis in the attached spreadsheet in which we also show the shortcomings in the assumptions made by Greenpeace, which also contradict criteria publicly defended by the NGO. It is also worth pointing out that in 6 of the 18 cases listed, the alleged irregularity observed was not even presented, even after we questioned this.

4. Among the cases analyzed, there are farms that did not sell to JBS, that is, they are not in our active base of suppliers. In their regard, the Company is in no position to draw conclusions, since it does not have access to the evidence of the transit of animals referred to by Greenpeace. When questioned by the Company, Greenpeace did not share the information it alleges it has. As is public knowledge, no animal protein processing company has access to the animal transportations records (GTAs, Guia de Tránsito Animal) of all the links in its chain, which could indicate who are the suppliers of their suppliers. This information is protected by legal secrecy, which prevents us from accessing these document bases without the supplier's proper authorization.
5. When questioned by JBS, Greenpeace refused to produce the alleged evidence it has in relation to upstream links in our production chain, which would enable the Company to enhance its due diligence process, not only of its suppliers, which it does very successfully, but also of their suppliers. The NGO would make a much more significant contribution to society and to protecting the environment if it used the information to which it alleges having had access to, presumably legally, to prevent purchases from producers that do not meet socioenvironmental criteria.
6. As already explained, JBS is taking on the industry-wide challenge of making it possible to monitor all the links of its production chain, as it already does with its suppliers, using the JBS Green Platform.
7. All data on the areas deforested through the use of fire or other means, which appear on the PRODES (Satellite Deforestation Monitoring Project) system of the INPE (National Space Research Institute), are used by the JBS monitoring system to identify and block properties involved in deforestation. This same system will be used by the JBS Green Platform to monitor the other links in the chain.
8. In the first paragraph of its letter, Greenpeace links facts of 2020 to JBS purchases in 2018 and 2019. As already mentioned, besides not making any sense, this is an irresponsible insinuation and does not take into consideration the advances demonstrated by the Company. We detail below the reasons:
 - a. Greenpeace indicated that a single property – Bonsucesso Farm – allegedly investigated by the Federal Police for fires in the Pantanal in September 2020 and which, according to the NGO, was in some way related to JBS. Based on confidential data of livestock farmers obtained by Greenpeace, to which we do not have access, this property had supplied a second farm which, in turn, had sold to a third farm, the latter being a JBS cattle supplier. The purchases from this last property all complied with the Responsible Procurement Policy, respecting at all times the protocols defined by the Federal Prosecutor's Office (MPF). Even if JBS had the means of identifying the suppliers of its suppliers' suppliers, the Company could not have foreseen that, more than one year later, according to the press, this farmer, as indicated by Greenpeace, would be investigated for fires in the Pantanal.



- b. We condemn all types of aggression against and disrespect for the environment. Bearing in mind that Bonsucesso is not a supplier of JBS, that the Company's purchases from another farm mentioned occurred one year before the fires, and that the suspicion surrounding the farm owner is based on an on-going investigation, it is evident that any attempt to link JBS to the very serious fires in the Pantanal, based on the information currently available, would be ill-judged and irresponsible.
 - c. Nevertheless, it should be pointed out that in a clarification sent to JBS, Greenpeace admits that its "accusation" against the Bonsucesso Farm is based on an "internet search".
9. In regard to the Company's units in Campo Grande (SIF 1662 and SIF 4400), it is totally incorrect to treat them as a single unit. Not only are they independently registered for inspection purposes, but they are also in completely different locations miles apart. Also in this case, JBS requested access to the "evidence" that Greenpeace says it has and, once again, the NGO refused to provide this, demonstrating once again the lack of transparency that would be required to properly clarify the issue.
 10. Given the commercial confidentiality agreements signed with our customers, we are not in a position to provide data regarding the products we supply customers from specific units. At any rate, we wish to clarify that JBS has dozens of units in Brazil certified to supply the customers mentioned and that it strictly complies with the sustainability and production policies of each of them.

We are absolutely committed to the development of the industry in Brazil, and sustainability is an indissociable part of our business strategy. Thus, it is incumbent to reiterate that the implementation of sustainability policies in complex production chains like that of the beef sector in Brazil is a huge challenge, which can only be fully overcome through joint effort and commitment of all stakeholders.

Best regards,

Márcio Nappo
Director of Corporate Sustainability – JBS Brazil



São Paulo, January, 14th, 2021

To: Savio Carvalho [REDACTED]

Re: Reply from Marfrig

Dear Savio and Daniela,

We at Marfrig appreciate the opportunity to comment on the 17 cases presented by Greenpeace that you are considering for publication in your report. We hope that the explanations and evidence presented will reinforce our commitment for promoting solutions and transparency.

We would also like to highlight that Marfrig's purchase process is audited on a yearly basis by DNV-GL (inspection report is attached to this email). In addition, we are in the process of selecting and hiring a new auditing firm that will provide additional control and transparency on our monitoring processes.

We analyzed in detail all the available data in our files regarding the 17 cases presented. The information can be aggregated in **4 clusters** as follows:

- 1. Farms that are not included in our supplier list and have not had any business relationship with Marfrig:** Fazenda São Bento (case 1), Atolédal (case 2), Recreio (cases 4, 9, and 10), Santa Catarina (cases 6 and 12), Mestiça (case 13) and Esperança (cases 14 and 16).
- 2. Farms that are indirect suppliers and compliance is already addressed by UP(MPF) and Marfrig Verde+ protocol:** Fazenda Vargas (case 1), Lagoa Verde (case 13), Haras Itapaje VII (cases 14 and 16) and São Bento (case 17), the purchase processes are already in compliance with the new Unified Protocol of the Federal Public Prosecutor's Office, which has specific criteria for mitigating the risk of cattle laundering through metrics and industry analyzes, as the productivity index. This index indicates a maximum animal productivity per farm, which indicates whether this farm could have received animals from another farm. Crossing this index, the producer must explain what happens. Otherwise, the supply of cattle to Marfrig remains blocked. In addition, the Marfrig Verde+ Plan, launched in 2020, has approaches and tools to monitor indirect suppliers, such as: Risk Map, Conecta and Visipac, which will be discussed in more detail below.
- 3. Farms with "active" CAR (Rural Environmental Registry):** Pedermes Novas (case 2), Boa Sorte (case 4), Santa Tereza (case 7), Boa Sorte (case 9) and Santa Tereza (case 15), presented an "active" CAR status on the date of slaughter (see evidence attached), therefore in compliance with the legislation.



- 4. Farms not on IBAMA embargoed list:** Santa Catarina (cases 5 and 11), Fazenda Santo Antonio (cases 6 and 12) and Vitória (case 10) were not included in the IBAMA list of embargoed areas on the slaughter date (see evidence attached). It is worth mentioning that any farm on IBAMA embargoed list is blocked in our purchase system. The Unified Protocol, developed with the Federal Public Prosecutor's Office and implemented since 2020 provides additional safety guarantees.

We would like to reaffirm that all Marfrig direct suppliers met the company's criteria at the time of the respective cattle purchases. Attached you will find all the evidence of the cases analyzed.

At Marfrig the supplier registration process follows strict criteria. An evaluation is carried out the first time a supplier is included in our supplier list and it is repeated for each new slaughter operation.

These criteria – include deforestation, overlapping with indigenous lands, protected areas, embargoed areas and slave labor – encompass social and environmental factors that seek to preserve the environment and the communities where we operate and where our raw material is originated. Even for farmers outside the Amazon biome and not yet covered by private commitments, Marfrig checks criteria such as embargoed areas and slave labor in order to guarantee a transparent operation and mitigate risks.

When a non-compliance is identified for a supplier – either one of those included in the list or any of the 15,000 farmers whose cattle we slaughter yearly – the supplier is immediately blocked and new purchases are not made. This procedure is a fundamental and non-negotiable practice in our operation.

It is also important to highlight that, in order to reduce the risk of acquiring animals from areas affected by fires in the Amazon, Marfrig has monitored in real time the fire outbreaks in the region since August 2019. Whenever any overlapping of farms and fire outbreaks is identified, an alert is triggered and the purchase is reevaluated until the situation is fully clarified. This comprehensive control is possible thanks to the satellite supplier monitoring platform. The alert causes our teams to contact the suppliers involved to check on any occurrences and take mitigation actions.

The Marfrig Commitment and Verde + Plan

As mentioned before, we recognize the important role that Greenpeace fulfill securing a standing Amazon Rainforest. We are aware of the environmental and social system gaps that can still present risks to the value chain, especially those related to indirect suppliers.

To address those risks and further ensure a supply chain with no deforestation, in July 2020, we launched the **Marfrig Commitment** and the **Marfrig Verde+ Plan**, which reflects our public commitment to **Zero**



Deforestation, Traceability, Inclusion, and Transparency. The Marfrig Commitment is not restricted to the Amazon, it extends to the Cerrado biome as well.

This plan is structured under three pillars – **development of innovative financial mechanisms, technical assistance, and technification and mechanisms for monitoring and traceability.** It is quite robust and has very clear goals, which aim at preserving biodiversity in Brazil, especially in the Amazon and the Cerrado, and seek to develop low-carbon livestock. There are 18 actions distributed over five years. All the initiatives laid out in the plan for the year 2020 have been implemented and are the basis for achieving the steps planned for the coming years, namely:

Development of a Risk Mitigation Map for Indirect Suppliers in collaboration with a renowned territorial intelligence company, Agroicone.

This new tool will encompass areas of highly dense native vegetation, livestock areas (including those of indirect suppliers) and grazing lands. This information will allow Marfrig to identify and mitigate risks related to deforestation and indirect suppliers in the company's supply chain.

A blockchain-based traceability platform (Conecta)

The Conecta tool is a blockchain-based approach developed in partnership with Safe Trace, CPQD, TNC, and Amigos da Terra to provide more security and transparency to traceability throughout the supply chain. The tool application test will be carried out in the first quarter of 2021.

Visipecc

Visipecc is a complete traceability tool that works with the monitoring systems already used by Brazilian slaughterhouses to improve the visibility of the cattle supply chain and to establish more efficient deforestation monitoring. The MoU for the development of the partnership is currently being signed, and the tool will be implemented in the first quarter of 2021.

Expansion of georeferencing to the Cerrado

As the National Institute for Space Research (INPE) has started to regularly release deforestation maps for the Cerrado, Marfrig is working to expand its georeferencing system. This biome has its environmental and social specificities, and the work will involve the improvement and adjustment of tools already applied to meet this important challenge.

Partnership with financial institutions: an integration model (with a financial and business approach) ready to be applied. It aims to develop new financial mechanisms that reach small livestock farmers, especially those involved in breeding, which are more susceptible to the risk of deforestation.



Partnership between Marfrig and Embrapa: development of the Carbon-Neutral Meat (Carne Carbono Neutro) protocol, launched in 2020, and Low-Carbon Meat (Carne Baixo Carbono), which is scheduled to be launched in 2021.

Program for Sustainable Calf Production: A co-funding agreement between Marfrig and IDH that defines terms of cooperation for the Program for Sustainable Calf Production. This program was launched by Marfrig in 2018 in partnership with IDH and Carrefour. It focuses on "breeding", the first step of livestock production, which is why it has to do with indirect suppliers. The program is located in the Vale do Rio Juruena region, in the north of the state of Mato Grosso (in the Amazon Biome), and it comprises about 150 small farmers. The mission of the program is to provide these farmers with technical and financial conditions to make the necessary social and environmental adjustments to their farms. Marfrig will expand this program to the largest scale of production.

Attached are MARFRIG'S COMMITMENT and the VERDE+ PROGRAM.

With these actions, we are sure that the adoption of these tools and approaches developed individually by Marfrig or in partnership with other players will soon make it possible to eliminate illegal practices throughout the livestock chain.

We are committed to ending deforestation and tackling the climate crisis. The implementation of our commitment requires the engagement of the academia, civil society, the private sector, and particularly the livestock industry. The involvement of farmers in this process is crucial and we are putting a lot of emphasis on this dialogue. Greenpeace can continue to count on our commitment, transparency, and willingness to further our dialogue throughout this process.

During the first quarter of 2021 Marfrig will host an event to share with our stakeholders in academia, private sector and civil society, the implementation status of our Verde + Plan. We would like to take this opportunity to invite Greenpeace to join us on our event and eventually provide your comments or suggestions for improvement of our Marfrig Verde+ Plan.

Sincerely,


Paulo Pianez
Sustainability Director, Marfrig

Minerva Foods

January 14, 2021.

Sustainability statement

To: Greenpeace UK

Canonbury Villas, London, N1 2PN,
United Kingdom

Minerva Foods is a leading producer of high-quality beef and the #1 exporter of beef from South America. The company operates in the beef and processed foods segments, selling products to over 100 countries. We have significant presence in Brazil, Argentina, Chile, Colombia, Paraguay and Uruguay, operating some 25 production facilities and 3 food processing plants.

Sustainability represents a core fundamental pillar of how Minerva Foods serves our employees, customers and our communities. Central to this ideal, is our commitment to support sustainable farming practices from ranch to table, while respecting the environment and encouraging the development of all stakeholders in our production chain. At our core, Minerva Foods' objective is to feed the world, conserve the planet and enhance human value. Taking leadership positions involving deforestation, climate change and human rights abuse, are critical and central to our social purpose, thus the company has taken aggressive actions to address and mitigate these risks since 2009.

As global leader in the beef industry, we have purposely assumed a pioneering position regarding Sustainability, Corporate Social Responsibility and Corporate Governance. Minerva Foods operates in accordance with the International Finance Corporation Performance Standards which guides and monitors sustainability actions among all supply chain and industrial processes. We are the only Latin American beef company to obtain this investment from the IFC, aiming to continually perform and comply with their sustainability and value generation guidelines for our entire production chain.

Minerva Foods is signatory of important agreements for supply chain management and human rights in South America, e.g., [Amazon beef moratorium](#)¹, [Public Prosecutor's Office Agreement](#) for illegal deforestation² and [Brazilian National Pact](#)³ for the eradication of slave labor.

¹ <https://www.greenpeace.org/usa/wp-content/uploads/2010/11/minimum-criteria-for-a.pdf>

² Despite Greenpeace having stepped out of the Moratorium in 2017, Minerva continues monitoring its supply chain ensuring that the same rules are followed as if the Moratorium was still in force, including publishing a yearly third-party audit report.

³ <https://www.mpt.org.br/pa/sale-de-imprensa/noticias-pa/sustentabilidade-empresarial-empresario-acao-de-controlar-de-origem-de-carne-sua-pais>

⁴ <http://inspcto.org.br/>

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Our facilities in Brazil are located in 6 States overlapping 3 different regions: Mata Atlântica, Cerrado and Amazon. 100% of procurements, in the Cerrado, in the Amazon and in the Mata Atlântica, are preceded by consultations for environmental compliance – under Environmental Ministry embargoed areas list verification⁵, labor compliance – under Labor Ministry forced labor list verification⁶, and land tenure compliance – under verification of the environmental land register (CAR - *Cadastro Ambiental Rural*)⁷.

This means NO illegal deforestation, NO slave and child labor and NO environmental embargoes are verified in Minerva Foods direct supply chain in all Brazilian regions, considering official and available data to verify direct cattle suppliers.

Moreover, Minerva Foods privately monitors more than 9,000 producers in the Amazon region, using geographic information systems, comprising a total area of over 9 million hectares, an area equal of Portugal territory. More than 2,400 producers are blacklisted for non-compliance with deforestation in the Amazon, encroachment on indigenous lands and environmental protection areas, environmental embargoed areas and forced/child labor.

Minerva's purchases come from zero-deforestation areas in the Amazon biome. Overlapping our direct suppliers' map with deforestation polygons, Indigenous Lands and Environmental Protection Areas, Sustainability department blocks any direct supplier that are not compliant with any of the criteria, which effectively means that Minerva can't buy any animals coming from these suppliers.

Minerva's supply chain management system is yearly audited by a third-party company since 2015, and all reports are publicly available on our [website](#). Recently, the external audit BDO Brasil attested for the seventh consecutive year that the Company complies with sustainable criteria for supply chain management.

⁵ <https://servicos-ibama.gov.br/ctf/publicos/arquivos/ComunidadePublicaAreasEmbargadas.pdf>

⁶ http://trabalho.gov.br/arquivos/Documentos/SIT/CADASTRO_DE_EMPREGADORES_2019_7_29.pdf

⁷ <http://www.csa.gov.br/>

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Minerva has the best results on the Public Prosecutor's Office audit among major players with 100% of compliance in 2017⁸ and 99,7% of compliance in 2018⁹ (table 1).

The Public Prosecutor's Office audit is done under supervision of the public authority and the data base is provided by the government, inputting a very restrictive audit procedure that mostly represents the commitment of the enrolled companies. Brazilian NGO Amigos da Terra ('Friends of the Earth') recently published a study crossing results from the PPO audit¹⁰, as seen on table 1. Minerva's results represent our commitment with tackling deforestation and climate change.

Table 1. Study regarding the Public Prosecutor Office audit in the Amazon done by Brazilian NGO Amigos da Terra ('Friends of the Earth').

TAC results in the 2017 and 2018 audits

	2017				2018			
	Number of animals	Audited	Imp.	% Imp.	Number of animals	Audited	Imp.	% Imp.
JBS SIG	610,269	610,269	118,459	19.3%	541,454	301,207	24,907	8.3%
Mercado 03	381,772	381,772	1,328	0.3%	558,226	506,416	1,128	0.2%
Minerva	181,008	181,008	—	0%	304,361	297,000	776	0.3%
Marinho	164,280	164,280	518	0.3%	177,318	155,693	0	0.0%
Xinguará	163,573	163,573	—	0%	177,070	152,064	85	0.1%
Frigal	160,791	160,791	27,969	17.4%	271,591	271,591	50,830	18.7%
Master-bol	127,837	127,837	39,684	31%	147,885	147,885	5,308	3.7%
Rio Maria	123,864	123,864	—	0%	127,780	93,571	19	0.0%
Agropecuária	96,614	96,614	—	0%	95,490	88,369	—	0.0%
Fertibiga	74,056	74,056	4,222	5.7%	122,370	122,370	18,687	15.3%
Totals	2,884,864	2,884,864	194,180	6.7%	2,591,523	2,133,108	105,940	4.1%

● Geo Company ● Agropastor ● Misplaced ●

Source: Data collected from surveys of audits by the Amigos da Terra - Amazônia Brasileira Technical Team (2019).

2017 Audit was done with 100% sample for all cattle procurement in Pará state and Minerva was 100% in compliance. It is possible to highlight that player #1 (biggest beef company in Brazil) had 118,459 animals bought with non-compliance – representing 65% of Minerva's total purchase of the audited year (181,008 animals). Player #4 (4th biggest beef company in Brazil) had a total of 28,000

⁸ <http://www.mpf.mp.br/ps/subs-de-imprensa/documentos/2018/divulga-principais-resultados-auditoria-tac-pecuaria-pa>
⁹ <http://www.mpf.mp.br/ps/subs-de-imprensa/documentos/2019/resultados-auditoria-tac-pecuaria-pa-compra-2017-divulgacao-2019.pdf>
¹⁰ <http://www.mpf.mp.br/ps/subs-de-imprensa/documentos/2019/operacao-resultados-auditoria-tac-pecuaria-pa-compra-2017-divulgacao-2019.pdf>
¹¹ <http://amigosdatterra.org.br/wp-content/uploads/2020/08/ADI-tac-composicao-EN.pdf>

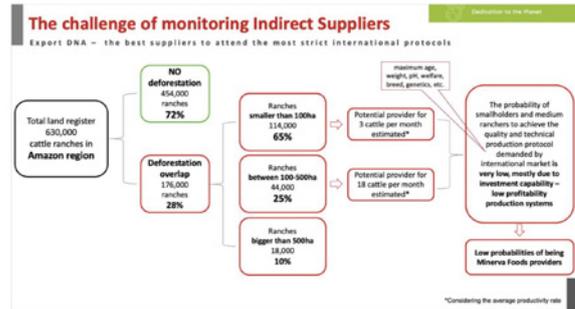
non-compliant animals bought in the audited year. Player #2 (2nd biggest beef company in Brazil) does not engage with Brazilian Public Prosecutor's Office audit, showing nothing less than lack of transparency and actions on their commitment regarding deforestation in the cattle supply chain, even though recently flagging of overpromising future solutions were disclosed.

Minerva's result is not comparable with peers.

In 2018 audit, PPO brought the possibility of auditing 55% of the total cattle procured in the year – 50% would be mandatory to audit big cattle suppliers and 5% distributed aleatory on small-medium suppliers. Minerva Foods decided to apply a more strict rule auditing 97,6% of the procurements (297,000 audited out of the total 304,361 animals procured). Once again, we reinforce our confidence in our supply management and our commitment.

In 2018 audit, whilst Minerva had 0,26% non-compliant animals on a 97,6% audited sample, player #1 had 8,3% non-compliant animals on a 55% audited sample. This means much more than 24,900 animals were still related with deforestation. Player #4 had more than 50,000 non-compliant cattle bought in the audited year. An important highlight is that only 0,05% of Minerva's audited cattle had deforestation non-compliance, as shown on the [PPO public report](#)¹¹, and the quoted ranch is now blacklisted.

Moreover, afterwards, PPO recognized about the 55% audit rule being not appropriate due to most of deforestation polygons occur in small ranches. Minerva did an independent evaluation, in partnership with [Niceplanet Geotechnology](#), overlapping deforestation occurrences over more than 630,000 land registers (CAR) in the legal Amazon region with the following findings:



¹¹ <http://www.mpf.mp.br/ps/subs-de-imprensa/documentos/2019/resultados-auditoria-tac-pecuaria-pa-compra-2017-divulgacao-2019.pdf>

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This means that deforestation in the Amazon region is 90% linked with small-medium ranches – which diluted the risks for player #1 using the 55% sampling rule. The methodology does not consider continuous land registers but can give a good scenario on the localization of deforestations occurrences.

It is important to reinforce that Minerva Foods is an export driven Company with an average of 70% of the gross revenue breakdown related to export market. We are internationally recognized for providing premium and quality beef to over 100 countries that demands the highest standards on traceability, food safety, animal welfare and full environmental and labor compliance on their mandatory export protocols.

In order to fulfill these different export protocols of countries on the E.U., U.S., Asia and other, it is indispensable that our cattle providers invest on traceability, genetics and breeding, animal handling and welfare, pasture management and legal compliance on environmental and labor issues (very restrictive commercial demands to be fulfilled by smallholders with low profitability). Ranchers that deliver those attributes have extremely high standards for cattle ranching to be profitable and usually they are not small-medium landowners. There is no space to be immature in the beef business, either you are profitable, or you leave the business and lease your land to professionals. **Those are Minerva Foods' providers. Professionals ranchers that invest to be exporters and do not benefit from fire outbreaks, illegal deforestation or non-compliance with the law.**

Indirect Supplier

At this time, there does not appear to be any reliable data that can provide full cattle traceability in order to accurately determine the number of indirect suppliers in Brazil. To this date, any initiative to monitor the indirect suppliers within Brazil, does not find itself within the MRV certification processes, thereby it is understood that this information is not being monitored, reported or certified.

The legal documentation for the transport of animals is the *Guia de Trânsito Animal* (GTA), administered by the Ministry of Agriculture (MAPA) through the Federal Inspection Service (SIF), which is present in all of Minerva's meat packing facilities through a representative. Minerva, like any other industry that is inspected by SIF, does not have full access to these GTAs, thereby limited in its means of verifying and tracking the indirect suppliers through the use of the GTAs in the system.

With these challenges in mind, **Minerva Foods has been pioneering the monitoring of its indirect suppliers through a partnership with the National Wildlife Federation and Wisconsin-Madison University. Minerva is the first company to test a novel indirect supplier assessment tool called VISIPEC.** This software developed by Wisconsin-Madison University will help to develop and guide workable action plans in order to tackle the risks of deforestation within the indirect suppliers of Minerva.

Recently, the Company collected preliminary tests results in 3 of our industries, nearby the Amazon biome, located in the states of Mato Grosso and Roraima. **The preliminary results are very positive, attesting compliance for 99.9% of the 3,314 ranches evaluated and identified as**

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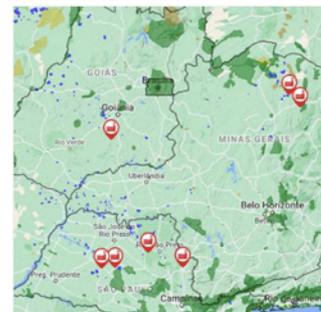
potential indirect suppliers, in line with the criteria established by the [Indirect Supplier Joint Working Group](#). This data is fully available on our [2020 earnings release](#) disclosed on [IR website](#).

This is indeed a true and verifiable fact of action on behalf of Minerva, not just simply a statement.

Furthermore, as of 2015 Minerva Foods has been part of the Indirect Suppliers Working Group - GTFI. The purpose of this multi stakeholder initiative is to improve the risk management of indirect suppliers in Brazil. This action is led by the following NGOs: The National Wildlife Federation - NWF and *Amigos da Terra* - AdT (Friends of the Earth), funded by Gordon and Betty Moore foundation and the Norwegian Agency for Development Cooperation - Norad.

Supply Chain Management in Cerrado

Minerva Foods is the first company in the sector with a geographical monitoring tool of its direct suppliers in the Cerrado region with 100% of 2020 suppliers monitored for overlap on indigenous lands and overlap on environmental protection areas, in addition to Environmental Ministry embargoed areas list verification¹⁾ and Labor Ministry forced labor list verification²⁾.



■ Minerva's direct suppliers maps
■ Environmental Protection Areas
■ Indigenous Lands

¹⁾<https://servico.ibama.gov.br/ctf/publico/areasemborgadas/ConsultaPublicaAreasEmborgadas.php>

²⁾http://trabalho.gov.br/images/Documentos/STC-CADASTRO_DE_EMPREGADORES_2019_7_29.pdf

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Supply Chain Management in Paraguayan Gran Chaco

Minerva Foods, through its subsidiary Athena Foods, is pioneering geospatial monitoring of the Gran Chaco region, in Paraguay. Geospatial monitoring via satellite images is carried out on the properties of suppliers that are located in the Chaco region to detect the existence of illegal deforestation, overlaps with indigenous lands and environmental protection areas. Suppliers in conflict with any of the requirements adopted by the Company are inserted in a blocking list, rendering them ineligible for commercialization until the situation is corrected. The monitoring system contains more than 600 cattle ranches which have been monitored with the established criteria.

The supply chain management system for Athena Foods has been audited by a third-party company since 2019 and reports are publicly available on <https://portal.minervafoods.com/en/sustainability>. The external audit BDO Brazil has confirmed that Athena Foods is in compliance with all criteria for sustainable supply chain management in Paraguay. According to the third-party audit report, 289 properties were registered and analyzed in 2018 and 270 more properties were registered and analyzed in 2019, corresponding to an area of more than 669 thousand ha monitored in the region.

Regarding Greenpeace report

In response to the claims brought forth by the Greenpeace concerning the purchases of cattle by Minerva Foods from 14 properties located within the Amazon region, the Company performed a detailed, pixel by pixel, analysis of each 14 quoted ranches and found **no procurements with non-compliances** alleged by Greenpeace, using the official information publicly available for its direct suppliers.

Our analysis shows that, regarding the alleged 14 ranches:

- 9 (nine) ranches are direct suppliers registered at Minerva's data base.
 - 8 (eight) ranches are eligible for Minerva Foods sustainable procurement criteria, as described previously in this letter.
 - 1 (one) ranch is blocked for commercialization due to the suspension of its land register (CAR) and no procurements occurred after blacklisting.
- 5 (five) ranches are indirect suppliers
 - 3 (three) ranches are not registered at Minerva's data base and unfortunately the Company does not have any information to establish a monitoring procedure for those quoted ranches. As mentioned in this letter, Minerva Foods is pioneering tests with the indirect supplier monitoring tool Visispec, with positive preliminary results. The Company expects to integrate Visispec as monitoring tool in its day-to-day operation during 2021.

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- 1 (one) ranch quoted as indirect suppliers is registered at Minerva's data base and is eligible for Minerva Foods sustainable procurement criteria.
- 1 (one) ranch quoted as indirect suppliers is registered at Minerva's data base and is blocked for environmental embargo, no procurements occurred after blacklisting.

As referred on this statement, Minerva Foods is confident on its geographical monitoring tool, confirmed by the best results on the Public Prosecutor's Office audit – a result that cannot be compared to its peer's performance.

Furthermore, Minerva Foods is the only company addressing material actions regarding indirect suppliers by testing the monitoring tool Visispec. Preliminary results show 99,9% of compliance regarding indirect suppliers for 3 facilities in the Amazon region. Minerva Foods is also pioneering geographical monitoring of its supply chain in Brazilian Cerrado and Paraguayan Chaco – another material action and not simply overpromising statements of future actions.

Please find detailed information on the 14 quoted ranches on appendix I.

Finally, regarding Várzea Grande SIF 2015 industrial facility, Minerva Foods and Marfrig signed an agreement for the exchange of assets for this industrial facility. The agreement for the exchange of assets was signed in January 21st 2019 and [communicated to the market](#) on January 24th 2019. Brazilian antitrust authority approved the operation in February 20th 2019 and [Marfrig took possession of Várzea Grande SIF 2015](#) industrial facility operation in April 1st 2019.

With the possession of Marfrig over Várzea Grande SIF 2015 industrial facility on April 1st 2019, all GTA authorizations alleged by Greenpeace after this date are not related to Minerva Foods operations, as quoted for "6 February 2019 – 18 April 2019, 7 shipments of a total of 379 cattle for fattening from indirect supply ranch/ owner, São Bento – Francisco Evangelista Teodoro da Silva".

Minerva Foods remains committed to transparency

Learn more about our operation on Minerva's website and Sustainability Report, yearly published. Find out at <https://portal.minervafoods.com/en/sustainability>, and access our independent audit reports for Amazon and Chaco regions, Public Prosecutor's Office audit report, GHG inventories, animal welfare program and other relevant information.

Sincerely,



Taciano Custodio
Head of Sustainability

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ANNEX 3: MAPPING AND DATA REFERENCES

LAND COVER:

MapBiomias produces annual statistics and high-resolution maps of land use change for Brazil, including the Pantanal,⁴⁰⁹ covering 1985 to the present. The 30-metre-resolution maps use automatic classification through machine learning based on Landsat imagery.

Source: MapBiomias Project – Collection 5 of the Annual Series of Coverage and Land Use Maps in Brazil, accessed October 2020 through the link: <https://plataforma.mapbiomas.org/>

LIMITATIONS

2019 is the latest year for which data are readily available. Detailed satellite analysis or a delay would be required to identify 2020 land cover prior to fires. Given the indicative nature of the analysis, this is not a profound limitation.

FIRE HOTSPOTS AND BURNED AREAS (BURN SCAR):

Fire hotspot data were downloaded from **INPE's Programa Queimadas**⁴¹⁰ and include data from all confidence levels for the INPE reference satellite, MODIS Aqua.⁴¹¹

The burn scar dataset, covering 1 July to 27 October 2020, was provided to Greenpeace Brazil as a KML file by **LASA**, part of a joint initiative between the Universidade Federal do Rio de Janeiro in Brazil and the Instituto Dom Luiz at the University of Lisbon, Portugal.

The model uses NASA VIIRS observations to produce near-real-time (NRT) analysis of burned areas at 500m resolution.

LIMITATIONS

Fire hotspots are thermal anomalies (ie unusually hot areas) detected by satellites. It is important to distinguish hotspots from actual fires – they could represent fires or they could be hot tin roofs, although the occurrence of false positives is relatively low. Within forest areas, accuracy depends on the size of the fire, the density of the canopy and proximity to built-up areas.

Fires may have occurred undetected by the systems used for this analysis because of data capturing intervals, because of clouds or haze or tree cover obstructing detection, or because the fire was too cool at the surface to be detected. Combining the alert data from different satellites such as MODIS Aqua and VIIRS, which pass over at different times during the day or have different resolutions, increases the chances of capturing fires within affected areas. Conversely, it will inevitably lead to the inclusion of some false positives. There is no single perfect fire detection system available at present.

NRT burn scar mapping is recent technology, so making comparisons with previous years, for instance to assess the extent of the burned area, is not always feasible. In December 2020, MapBiomias launched an initiative to provide consolidated information on the area burned each year from 2000 to 2019.⁴¹²

Unfortunately, due to methodological differences, the data are not comparable with the LASA maps.

LASA estimates that its burned area maps have a 20% margin of error,⁴¹³ meaning the resulting analysis should be considered indicative only. They represent the best current available information.

THE LOCATION AND BOUNDARIES OF THE PANTANAL BIOME, INDIGENOUS LANDS AND PROTECTED AREAS:

In 2019, **IBGE** published at a scale of 1:250,000 a revision to its 1:5,000,000 map of the Pantanal and other biomes.

Source: *Biomass_250mil.zip*, available under Downloads > vetores at <https://www.ibge.gov.br/geociencias/informacoes-ambientais/15842-biomass.html>

FUNAI publishes maps showing the locations of Indigenous lands and what stage in the demarcation procedure they have reached.

Source: http://www.funai.gov.br/arquivos/conteudo/cggeo/pdf/terra_indigena.pdf

Conservation units (*unidades de conservação, UCs*) are protected areas on public land within which economic activities are forbidden or highly controlled. There are several types of conservation unit in Brazil, including fully protected units (*unidades de proteção integral*), such as national or state parks or biological reserves, and private reserves (Reserva Particular do Patrimônio Natural, RPPN), which allow 'sustainable use'. The dataset used in this analysis is a compilation of several datasets from several sources.

ICMBio: The Instituto Chico Mendes de Conservação da Biodiversidade (Chico Mendes Institute for Biodiversity Conservation) is the branch of the Ministry of the Environment charged with managing Brazil's federal conservation units and protecting its natural heritage and biodiversity. Through its Sistema Informatizado de Monitoria de RPPN (SIMRPPN), it makes available maps of some RPPN conservation units.

Source: <https://sistemas.icmbio.gov.br/simrppn/publico/>

IHP: The Instituto Homem Pantaneiro is an NGO working for the preservation of the Pantanal biome

and culture, which provides detailed maps of certain RPPNs.

Source: <https://www.institutohomempantaneiro.org.br/relatorios> → Relatório RPCSA 2019 p17 illustrates the boundaries of RPPN Acurizal, RPPN Fazenda and RPPN Rumo ao Oeste (direct download <https://drive.google.com/file/d/1EVAJxx6Jo2XcPY8Fw7cF28hzGamrx7Lq/view?usp=sharing>)

INCRA: The Instituto Nacional de Colonização e Reforma Agrária (National Institute for Settlement and Agrarian Reform) is the federal agency responsible for the administration of land reform issues, including demarcating land for new farming settlements, registering certified properties and maintaining a georeferenced database of such properties. Brazilian law mandates that every rural property must be professionally surveyed and registered with INCRA by 2025. INCRA makes available maps of properties with rural property certificates (Certificação de Imóveis Rurais). Information in the INCRA database allows localisation of RPPNs for which no official geographical information is available.

Source: https://certificacao.incra.gov.br/csv_shp/export_shp.py

INTERMAT: The Instituto de Terras do Mato Grosso is the land institute for the state of Mato Grosso and is responsible for implementing the state policy on the disposal of public lands. It makes available digital maps of all state conservation units in Mato Grosso.

Source: <http://www.intermat.mt.gov.br/-/11303036-bases-cartograficas>

MMA: The Ministério do Meio Ambiente (Brazilian Ministry of the Environment) makes available shapefiles of established federal conservation units (both fully protected and areas of sustainable use).

Source: <http://mapas.mma.gov.br/i3geo/datadownload.htm>; also available from INPE TerraBrasilis at http://terrabrasilis.dpi.inpe.br/download/dataset/pantanal-aux/vector/conservation_units_pantanal_biome.zip

SICAR: The Sistema Nacional de Cadastro Ambiental Rural (Federal Rural Environmental Registry), which is under the Serviço Florestal Brasileiro (Brazilian Forest Service), a branch of the Ministério da Agricultura, Pecuária e Abastecimento (Ministry of Agriculture, Livestock, and Food Supply), makes

available the self-reported boundaries of rural properties. Information in the SICAR database allows localisation of RPPNs for which no official geographical information is available.

Source: <https://www.car.gov.br/publico/municipios/downloads>

LIMITATIONS

Although Brazil's Constitution guarantees Indigenous land rights on ancestral lands, the government has delayed the process of land demarcation for decades. New policies pave the way for land claims made within Indigenous territories to gain official recognition.⁴¹⁴ Equally, conservation units, particularly at state level, are extensively overlapped by CAR registrations. In brief, the legal status and enforcement of legal standing of these areas is not guaranteed. This is less an issue of data deficiency than an issue of public policy.

THE LOCATIONS OF CATTLE RANCHES:

Under Brazil's **Forest Code**, rural property holders are required to provide information on their properties to the Rural Environmental Registry (Cadastro Ambiental Rural, **CAR**), including the property owner and georeferenced property boundaries. Official data on these georeferenced property boundaries are publicly available from federal and state-level sources.

Sources:

Federal CAR data: <https://www.car.gov.br/#/consultar>
Mato Grosso CAR data: <https://monitoramento.sema.mt.gov.br/simcar/tecnico.app/publico/car>
Mato Grosso do Sul CAR data: <https://www.imasul.ms.gov.br/cadastro-ambiental-rural-car-ms/> and <https://www.pinms.ms.gov.br/portal/home/webmap/viewer.html?webmap=3b0c2ba8c1a34c46ba6167d35d2c14ce>

LIMITATIONS

Registration with the CAR is mandatory in Brazil under the Forest Code, and CAR registrations are frequently used to stake and secure land claims through evidence of agricultural use, even though they do not constitute legally binding land title.⁴¹⁵ The original deadline for registration of rural properties was May 2016, but this has been extended several times as not all property owners have complied. Additionally, much of the self-reported information has not yet been verified, meaning that land claims may overlap with public, protected or Indigenous

lands. Further, the self-declared property boundaries **may be revised to avoid liability for violations** of the Forest Code, which specifies the minimum proportion of natural vegetation that must be maintained within a property.⁴¹⁶ Other challenges with the dataset include growing gaps in the embedded attributes, making the linking of a rancher with a specific CAR registration and thence other data difficult. Different ranches may have the same name, certain surnames are extremely common and the official owner of a ranch may not be the named individual managing trade.

Despite its limitations, the CAR database is the main reference used by companies, civil society and federal inspectors to monitor properties for policy or legal violations.

THE LOCATION OF CATTLE SECTOR INFRASTRUCTURE:

The image processing laboratory at the Universidade Federal de Goiás (Laboratório de Processamento de Imagens e Geoprocessamento, **Lapig**) makes available a number of data layers including point locations for grain silos, soya crushing facilities and slaughterhouses.

Source: <https://www.lapig.iesa.ufg.br/lapig/index.php/produtos/dados-geograficos>

The **Ministry of Agriculture, Livestock, and Food Supply** provides public information on SIF-registered beef processing facilities.

Sources:

SIF consultation portal: http://bi.agricultura.gov.br/reports/rwservlet?sigisif_cons&estabelecimentos.rdf&p_id_area=1
List of establishments: http://extranet.agricultura.gov.br/sigisif_cons/lap_estabelec_nacional_cons

ENVIRONMENTAL OR HUMAN RIGHTS SANCTIONS LINKED TO RANCHES AND THEIR OWNERS:

Brazil's **Ministry of Labour and Employment** (Ministério do Trabalho e Emprego, MTE) publishes a 'Dirty List' of farms identified as using or having used slave labour or labour analogous to slavery.

Source: https://sit.trabalho.gov.br/portal/images/CADASTRO_DE_EMPREGADORES/CADASTRO_DE_EMPREGADORES.pdf

INFORMATION ON ENVIRONMENTAL VIOLATIONS AND MAPS OF EMBARGOED AREAS:

IBAMA publishes information on **embargoed areas** as well as other infractions and fines, with details on the location, the offence and the offender. Additional information on infractions is embedded in the CAR shapefiles. The Mato Grosso state environment agency also provides maps of embargoed areas and an online consultation website for details of specific cases. ICMBio makes available some information as KMZ files.

Sources:

IBAMA consultation website: <https://servicos.ibama.gov.br/ctf/publico/areasembargadas/ConsultaPublicaAreasEmbargadas.php> and <https://siscom.ibama.gov.br>, Dados Geoespaciais > Camadas > Autos de Infração (shapefiles downloaded 11 November 2020)

Mato Grosso embargo map (SEMA - Navegador Geográfico Unificado): <https://monitoramento.sema.mt.gov.br/simcar/tecnico/app/publico/mapa> (downloaded 13 November 2020)

Mato Grosso consultation website: <http://www.protocolo.sad.mt.gov.br/consulta/cp.php>

ICMBio: <https://www.icmbio.gov.br/portal/geoprocessamentos/51-menu-servicos/4004-downloads-mapa-tematico-e-dados-geoestatisticos-das-uc-s>

LIMITATIONS

Information on environmental violations is not easy to consult – CAR registration numbers or CPJ numbers, for instance, are needed. The information provided also is often piecemeal; fines are not always linked to the relevant CAR number, and a search by CPF/CNPJ number may not reveal all the properties linked to the individual that have been logged for violations. Further, maps of embargo areas are not always readily available, and Mato Grosso do Sul allows only registered users to access its CAR database. As such, review of these data sources provides indicative information only and leaves potential gaps, meaning the failure to find violations cannot be considered a guarantee of full legal compliance.

MEAT PROCESSOR TRACEABILITY WEBSITES:

One of the key pledges the major beef processors made under the 2009 G4 Agreement was to deliver a tracking system enabling monitoring, verification and reporting of the origins of cattle across the entire supply chain.⁴¹⁷ As part of the agreement, they undertook to provide proof of their compliance. To this end, JBS set up a 'Guarantee of origin' website⁴¹⁸ that enabled consumers and civil society organisations to check the farm names, coordinates, ownership and other details of direct suppliers from which individual consignments of beef originated.⁴¹⁹ Marfrig and Minerva have or had similar websites. The three companies have progressively decreased the comprehensiveness and usefulness of the information presented on their websites – indeed, Minerva's website no longer provides any information.⁴²⁰

Sources:

Friboi (JBS): <https://www.friboi.com.br/sustentabilidade/garantia-de-origem>

Marfrig: <https://rastreadabilidade.marfrig.com.br/GadoLegal/>

Minerva: http://ri.minerva.ind.br/minerva2012/web/conteudo_pt.asp?conta=28&id=152483&tipo=41008&idioma=0

TRADE FROM PROCESSING FACILITIES TO THE GLOBAL MARKET AND/OR CONSUMER GOODS AND FAST FOOD COMPANIES:

General international trade data are provided by, for example, the **Trase** supply chain transparency initiative,⁴²¹ which currently shows trade in beef for the period 2015–2017 from municipalities or biomes, through exporter groups (dominated by JBS, Marfrig and Minerva), to importers and countries. Trade data on exports from individual facilities covering the period 1 January 2019 to 31 October 2020 were obtained from Panjiva (based on customs and shipping data). Panjiva provides subscription-based access to import and export data on commercial shipments from selected countries, including Brazil. Other trade links between the beef processors and consumer companies were established through review of annual reports⁴²² and media sources, and through field investigations.

Sources:

Trase: <https://trase.earth/>

GLOSSARY – TERMS AND ACRONYMS

CAR (Cadastro Ambiental Rural/Rural Environmental Registry) – Under Article 29 of Brazil’s Forest Code (see entry below), self-reported registration of rural properties (including identification of property boundaries) with the CAR is mandatory. The aim of this requirement is to establish a georeferenced database of all properties to be used for monitoring and enforcement of compliance with environmental regulations, as well as environmental and economic planning. Registration is one of the prerequisites for rural producers to have access to credit, following the rules of the Forest Code.

Deforestation and land clearance – For the purposes of large-scale or rapid monitoring, land use change classified as loss of native vegetation by satellite-based deforestation alert systems such as DETER and PRODES, along with initiatives like the MapBiomass Project (see entry below) and other sources of high-resolution satellite imagery.

Embargo – IBAMA (see entry below) publishes a list of farms that have breached environmental legislation such as the Forest Code (see entry below) – eg by carrying out illegal deforestation – and that are prohibited (embargoed) from producing in a specified area of their landholding (which may comprise the whole farm or only part of it) until they regularise their situation, for example through payment of a fine and land restoration.

Forest Code – Brazil’s Forest Code is the main legislation regulating conservation on private lands, mandating how and where native vegetation may be cleared. The law establishes two types of conservation area on private land: Legal Reserves and Areas of Permanent Protection (APPs). Legal Reserves are portions of landholdings where the native vegetation must be preserved, with their extent depending on the property’s size and location (within the Legal Amazon 80% of the property if forested, 35% if in the Cerrado and 20% if on grassland must be set aside as Legal Reserves; outside the Legal Amazon only 20% of the property is required to be set aside). APPs are areas such as the borders of waterways or steep slopes that have been identified as critical to essential ecosystem functions, such as preserving hydrological resources or biodiversity, ensuring geological stability, facilitating the movement of fauna and flora and protecting the soil. In areas classified as pantanal

wetlands (*pantanaís*) or flood plains (*planícies pantaneiras*) – which covers about 16% of the Brazilian Pantanal – permits for clearance may only be issued for activities deemed ‘sustainable and ecological’, which includes traditional cattle raising.

FUNAI (Fundação Nacional do Índio/ National Indian Foundation) – The federal agency (under the Brazilian Ministry of Justice) responsible for establishing and implementing policies relating to Indigenous Peoples. FUNAI is charged with mapping out and protecting lands traditionally inhabited and used by Indigenous communities and preventing invasions of their lands.

IBGE (Instituto Brasileiro de Geografia e Estatística/ Brazilian Institute of Geography and Statistics) – The public agency responsible for official collection of data including cartographic and environmental information. Part of the Ministry of the Economy.

IBAMA (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis/Brazilian Institute of the Environment and Renewable Natural Resources) – The Ministry of the Environment’s administrative arm, responsible for monitoring and enforcement activity concerning the use and protection of natural resources. IBAMA analyses applications and issues licences for any project that may harm or degrade the environment, and applies sanctions for breaches of the standards of environmental preservation. It also publishes a list of farms that have breached environmental legislation such as the Forest Code.

ICMBio (Instituto Chico Mendes de Conservação da Biodiversidade/Chico Mendes Institute for Biodiversity Conservation) – The branch of the Ministry of the Environment charged with managing Brazil’s federal conservation units and protecting its natural heritage and biodiversity.

Illegal deforestation or land clearance – According to Article 43 of federal decree 6.514/2008 it is an administrative infraction to ‘destroy or damage forests or other forms of natural vegetation or use them in violation of the protection rules in an area considered to be of permanent preservation, without authorisation from

the competent authority'. Thus, any land clearance that occurs in such an area without authorisation from IBAMA or the relevant state environmental agency is illegal. For monitoring purposes, notable indicators of potential illegal deforestation or land clearance events would be any clearance that occurs inside a Legal Reserve or APP. The use of fire for land management and clearance – however environmentally destructive it may be – is only illegal during times of state or federal ban. In 2020, the use of fire in Brazil was prohibited by a presidential decree that came into force on 16 July for a period of 120 days; regional prohibitions on dry-season burning were also in place in Mato Grosso, from 1 July to 30 September 2020, and Mato Grosso do Sul, extending for 180 days from late July 2020.

INCRA (Instituto Nacional de Colonização e Reforma Agrária/National Institute for Settlement and Agrarian Reform) – The federal agency responsible for the administration of land reform issues, including demarcating land for new farming settlements, registering certified properties and maintaining a georeferenced database of such properties. Brazilian law mandates that every rural property must be professionally surveyed and registered with INCRA by 2025.

INPE (Instituto Nacional de Pesquisas Espaciais/National Institute for Space Research) – A research unit of the Brazilian Ministry of Science and Technology, responsible among other things for satellite monitoring of deforestation and fires in Brazil. President Bolsonaro's administration has signalled its intent to transfer this role, fulfilled by INPE for the past three decades, to Brazil's military – a move critics fear will decrease transparency and weaken enforcement efforts.

LASA (Laboratório de Aplicações de Satélites Ambientais/Laboratory for Environmental Satellite Applications) – Part of the Department of Meteorology at the Federal University of Rio de Janeiro, LASA has developed a satellite-based warning system that tracks the daily evolution of burned area in the Pantanal and Cerrado (a joint initiative with the Instituto Dom Luiz from the University of Lisbon, Portugal). Data from LASA were used in the present analysis to determine the extent of burned areas.

MAPA (Ministério da Agricultura, Pecuária e Abastecimento/Ministry of Agriculture, Livestock, and Food Supply) – Responsible for formulating and implementing policies for agribusiness development. Provides public information on SIF-registered beef processing facilities (see below).

MapBiomás – The MapBiomás Project is an initiative involving universities, NGOs and technology companies (including Google), working together to understand Brazilian territory transformations based on the annual mapping of land cover and land use from 1985 to the present. Data from MapBiomás were used in the present analysis to determine the impact of burned areas on other land types.

MMA (Ministério do Meio Ambiente/Ministry of the Environment) – Responsible for formulating and implementing national environmental policies. Dismantling the MMA was one of Bolsonaro's campaign promises, and while he has stopped short of this goal his administration has transferred many of the ministry's responsibilities to other government agencies. IBAMA and ICMBio (see above) both fall under the MMA and have been significantly weakened since he took office.

MPF (Ministério Público Federal/Federal Public Ministry) – Public agency led by the Attorney General of the Republic. The function of the MPF is to defend the social and individual rights of citizens before the Supreme Federal Court, Superior Court of Justice, federal regional courts and federal judges. The MPF also acts preventively, out of court, through recommendations and public hearings and the negotiation of Terms of Adjustment of Conduct (Termos de Ajuste de Conduta, TACs).

SIF (Serviço de Inspeção Federal/Federal Inspection Service) – Organised by MAPA and overseen by the Department of Inspection of Animal Origin Products (Departamento de Inspeção de Produtos de Origem Animal, DIPOA), the SIF is responsible for 'ensuring the quality of edible and inedible animal products intended for the domestic and foreign markets and the suitability of imported products'. The system operates in approximately 5,000 establishments across the country, each identified by a SIF number. The seal on a facility's products is meant to indicate that they are of safe animal origin and meet the criteria required by legislation; it also enables traceability of those products back to the facility where they originated. SIF-registered facilities are able to trade throughout the country (unlike those registered with the state or municipal inspection services, which can trade only locally) and, if they meet additional criteria, export abroad.

UC (unidade de conservação/conservation unit) – A protected area on public land, within which economic activities are forbidden or highly controlled.



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- 1 Morrison O (2021)
 - 2 Clack MA et al (2020)
 - 3 Fundación Amigos de la Naturaleza (2020) p7, Hezmanson M (2019), Mega ER (2020)
 - 4 Banks V (1991)
 - 5 As of 27 October 2020 (the period covered by the analysis in this report), 28% of the biome had been consumed by fire; by 22 November 2020, 30% - 4.49 million ha - had burned. Source: LASA website 'Burned area - Pantanal 2020'.
 - 6 Estúdio CBN (2020), Vannoni CE (2020)
 - 7 Estúdio CBN (2020), Fantástico (2020)
 - 8 See Carvalho D (2020), Instituto Centro de Vida (2020) p1 and Ionova A (2020).
 - 9 WCS Brazil website 'Jaguar status', citing Paula RC, Desbiez A & Cavalcanti SMC, eds (2011)
 - 10 See eg Alho CJR, Camargo G & Fischer E (2011), IPBES (2018) pp223-225 and Tomas W et al (2011).
 - 11 Based on data from Ministério da Agricultura, Pecuária e Abastecimento, Serviço Florestal Brasileiro (2020) p44. See below in text.
 - 12 Greenpeace Brazil mapping analysis of CAR data shows rural properties cover 124,401 ha of the approximately 443,050 ha within recognised Indigenous lands in the Brazilian Pantanal - two territories are entirely covered.
 - 13 Rural properties cover 256,398 ha of the 446,081 ha in public conservation units - principally one national and three state parks - within the Brazilian Pantanal, with two of the three state parks 80% covered and one almost entirely covered (source: Greenpeace Brazil mapping analysis of CAR data). This figure excludes private reserves, which generally fall entirely within registered rural properties.
 - 14 Seidl AF, de Silva JSV & Moraes AS (2001)
 - 15 In this report, mentions of 'Greenpeace' should be read as references to Greenpeace International unless otherwise indicated.
 - 16 2018-2019 supply chain links between ranchers and meat processing facilities and other analyses were established through Greenpeace investigations, based on the integration of a number of sources of public data and information including:
 - Land cover and land cover change
 - The locations of fire hotspots and burned areas (burn scar)
 - The location and boundaries of the Pantanal biome, Indigenous lands, conservation units and other public lands
 - The locations, boundaries, ownership and CAR registration status of cattle ranches
 - Environmental sanctions linked to ranches and their owners
 - Meat processor traceability websites
 - Trade from processing facilities to the global market and/or consumer goods and fast food companies.
- Documentation is held by Greenpeace. The sources used for each of these types of data and information are listed in the references section at the end of the report.
- Greenpeace provided the meat processors named in this report with the opportunity to comment prior to publication on the historic trade links it had established between ranchers with operations in the Pantanal and specific slaughterhouses, as well as any legal/policy irregularities (eg embargoes, irregular CAR status) it had identified in those ranchers' operations. The comments have been reflected

- at all relevant points. The full text of the replies received from each of the meat processors in response to Greenpeace's opportunity to comment letters can be found in Annex 2.
- 17 The total area of Singapore is 71,900 ha (CIA World Factbook website 'Country comparisons - area'). The Greater London area covers approximately 159,500 ha (LG Inform website 'Size of the geographical area - Extent of the realm measurements in hectares in England').
- 18 Sources include Greenpeace Brazil field investigations conducted in October 2020 and February 2021, Nestlé (2019) p5 and Panjiva Brazil trade data <https://panjiva.com/data/brazil-trade-data>; see also Fregatto E (2018) and JBS (2020a) p129.
- 19 Panjiva Brazil trade data <https://panjiva.com/data/brazil-trade-data>
- 20 JBS (2020b) p14, Marfrig (2020) p8 and Mineerva (2020) p1. See also Chain Reaction Research (2020a) pp2-4.
- 21 Reuters (2021); the reported results were in line with end-of-year projections from the Brazilian Beef Exporters Association (ABIEC (2020)).
- 22 Net revenue from Marfrig's North American operations totalled R\$35.1 billion in 2019; revenue from the company's South American operations totalled R\$14.8 billion. See Marfrig (2020) pp6,8.
- 23 JBS (2020e) p2
- 24 JBS (2020a) pp16,20-21
- 25 JBS's Friboi brand supplies big names including Bob's, Burger King, McDonald's, and Pão de Açúcar (JBS (2020a) p129). Its Seara subsidiary has global accounts with Burger King, KFC, McDonald's and Subway, among others, and holds certifications for customers including Costco, Marks, MRS, Nestlé, Walmart and YUM (JBS (2020a) pp196-198). JBS reportedly also supplies corned beef products to UK and European supermarkets including Asda, Carrefour, Lidl, and Sainsbury's (see Earthsight (2019) and Holmes H (2020)). British subsidiary Moy Park (which JBS sold to another of its subsidiaries, Pilgrim's Pride, in 2017; see Casey S & Freitas T (2017)) supplies Nando's and several supermarkets, including Tesco Ireland and Lidl; see Nando's website 'FAQs: Our food', Moy Park website 'Moy Park chicken' and Moy Park website 'Awards'. Moy Park reportedly also supplies several other fast food chains, including KFC and Pizza Hut, and supermarkets such as Marks & Spencer and Sainsbury's; see eg Belfast Telegraph (2018) and Mulligan J (2017).
- 26 Greenpeace (2009)
- 27 The G4 Agreement's signatories pledged to exclude from their supply chains any 'cruel property which directly supplies cattle for slaughtering (fattening farms) and is engaged in deforestation in the Amazon biome' within six months of signing the commitment. This condition was to be extended to all supplies, including third-party suppliers and supplies from rearing and nursery farms, within two years. See JBS-Friboi, Bertin, Mineerva & Marfrig (2009) p1.
- 28 These ranchers and the companies they supplied were:
 Adevaír de Oliveira - JBS / Marfrig / Mineerva
 Ário Barnabé Neto - JBS
 Celso Miura - JBS
 Daniel Martins Filho - JBS / Marfrig
 Eduardo Mariani Bittencourt - JBS / Marfrig / Mineerva
 Eliana Maria Lemos Monteiro Conceição - JBS
 Fabio de Oliveira Luchesi - Mineerva
 Francisca Evangelista Teodoro da Silva - JBS / Marfrig / Mineerva
 João Felix Pereira Neto - JBS / Marfrig
 Jose Dalbem - JBS / Marfrig / Mineerva
 Luiz Carlos Ziliani - JBS / Marfrig / Mineerva
 Raul Amaral Campos - JBS / Marfrig / Mineerva
 Sergio Jacinto Costa - JBS
- 29 Greenpeace identified 37 supply chain links between the case study properties and the big three meat processors, plus a further three rancher-level links not involving the case study properties. Of these 37 links, 23 were indirect. Of those 23, 17 of the links were through ranches owned by the same individual.
- 30 Based on responses to Greenpeace's opportunity to comment letters; see Annex 2.
 Marfrig did not indicate current compliance. Also, JBS failed to comment on the current status of ranches linked to Celso Miura, Francisca Evangelista Teodoro da Silva or João Felix Pereira Neto, who were identified by Greenpeace as tier-one suppliers during the period studied.
 The following ranchers all had at least one property that was described as either 'compliant with [JBS's] Responsible Procurement Policy', 'able to commercialize raw materials with [JBS]' or 'listed in Mineerva's database and ... eligible for commercialization':
 Adevaír de Oliveira - JBS / Mineerva
 Ário Barnabé Neto - JBS
 Daniel Martins Filho - JBS
 Eduardo Mariani Bittencourt - Mineerva
 Eliana Maria Lemos Monteiro Conceição - JBS
 Fabio de Oliveira Luchesi - Mineerva
 Francisca Evangelista Teodoro da Silva - Mineerva
 Jose Dalbem - JBS / Mineerva
 Luiz Carlos Ziliani - JBS
 Raul Amaral Campos - Mineerva
 Sergio Jacinto Costa - JBS
- 31 Based on responses to Greenpeace's opportunity to comment letters; see Annex 2. The current approved suppliers that appear to violate JBS's policy are:
 Adevaír de Oliveira / Fazenda Boa Sorte
 Luiz Carlos Ziliani / Fazenda Santa Tereza
 Samuel Alexandroni Santos / Fazenda Sete de Setembro (Santos is an intermediary rancher identified in one of the case studies; this ranch's property registration is currently suspended)
 The historic trading relationship that appears to have been in violation of JBS's policy at the time was with Raul Amaral Campos / Fazenda Esperança. JBS failed to confirm the current status of this ranch as a supplier.
 Mineerva drew different conclusions on the compliance of two of these suppliers (Luiz Carlos Ziliani / Fazenda Santa Tereza and Raul Amaral Campos / Fazenda Esperança).
- 32 The historic trading relationship that appears to have been in violation of Marfrig's policy was with João Felix Pereira Neto / Fazenda Pedreiras Novas.
- 33 Morrison O (2021)
- 34 JBS (2019)
- 35 See 'High-risk regimes - how the Bolsonaro government has fanned the flames'. See also eg Observatório do Clima (2021).
- 36 Marfrig's latest zero deforestation commitment extends to the Cerrado, but not the Pantanal. See Marfrig website 'Marfrig Verde+'.
 37 Ranchers (including intermediary ranchers) with identified environmental violations and/or property registration irregularities on one or more of their ranches during the 2018-2019 trade period assessed for this investigation include:
 Adevaír de Oliveira (note, the CAR status of Fazenda Recreio is just one of the multiple issues associated with this rancher's operations; it was recategorised as active as of 9 November 2020 but prior to that had been listed as pending since 4 August 2018)
 Ário Barnabé Neto
 Daniel Martins Filho (note, Filho received a US\$930,000 fine from IBAMA for the illegal construction of levees along the river boundary of Fazenda Santa Cecilia II)
 Fabio de Oliveira Luchesi (the CAR status of Fazenda Santa Helena I was recategorised as active only as of 17 November 2020; prior to that it was listed as pending)
 Ivanildo da Cunha Miranda
 João Felix Pereira Neto
 Jose Dalbem
 Luiz Carlos Ziliani
 Raul Amaral Campos
- 38 See JBS-Friboi, Bertin, Mineerva & Marfrig (2009).
- 39 As promised by the European Commission. See European Commission (2020) and European Parliament (2020).
- 40 As proposed by the UK Government. See Department for Environment, Food & Rural Affairs (2020).
- 41 Compared with 2012 levels. Source: Godfray H CJ et al (2018), reporting on Alexandratos N & Bruinsma J (2012).
- 42 See eg Business Insider India (2020), Feng E (2017), Khaitan R (2017) and Straits Times (2019).
- 43 Greenpeace (2020a)
- 44 JBS (2020a) p38
- 45 JBS (2020a) p16
- 46 JBS (2020c) p3
- 47 Between 2002 and 2013, BNDES released a total of R\$12.8 billion (US\$5.9 billion) for companies controlled by JRF Investimentos, according to the NGO Contas Abertas. Source: Tognolli C (2019). See also Wasley et al (2019).
- 48 JBS website 'Ownership and corporate'
- 49 ExxonMobil, Shell and BP were responsible for 577, 508 and 448 MtCO₂e Scope 1+3 GHG emissions in 2015, respectively (source: Carbon Majors Database (2017) p15).
 In 2016, JBS's Scope 1+3 GHG emissions from processing and production of beef, pork and chicken totalled 280 MtCO₂e, with the vast majority being accounted for by beef production. Scope

- 1 emissions are direct emissions from company-owned facilities, processing plants and machinery. Scope 2 emissions are indirect emissions related to energy consumption. Scope 3 emissions include all other indirect emissions resulting from the production of a commodity, both upstream and downstream (farm emissions from livestock, food production for livestock, land-use change etc). For fossil fuel producers this includes all emissions related to the burning of the products they sell. Source: GRAIN & IATP (2018).
- 50 Soya is the second most significant driver of global deforestation after beef, and about 90% of it is used for animal feed. See European Commission (2013) pp21-22, Henders S, Percsson UM & Kastner T (2015) p6 and Sharma S, IATP & Schlesinger S (2017) p25.
- 51 Greenpeace (2009)
- 52 See JBS-Friboi, Bertin, Minerwa & Macfrig (2009).
- 53 See reporting in Greenpeace (2009) and Greenpeace (2020a).
- 54 Bautzer T, Alves A & Mandl C (2020), Mano A (2020)
- 55 See eg Harris B (2020), Samoca R (2020) and Wasley A & Heal A (2020).
- 56 JBS (2020c) pp3-4 and JBS (2020d)
- 57 Ministry of the Environment (2017) p65
- 58 Trase platform 'Brazil - Beef'
- 59 Critical Ecosystem Partnership Fund (2017) pp147-148, Guerra A et al (2020)
- 60 IPCC (2019), Chapter 4
- 61 According to data from the Brazilian National Institute of Space Research (Instituto Nacional de Pesquisas Espaciais, INPE). See Spring J (2020b).
- 62 A federal moratorium was imposed on the use of burning for agricultural purposes in the Amazon and Pantanal in mid-July, extending for 120 days (see Carvalho D (2020) and Ionova A (2020)). Regional prohibitions on dry-season burning were also put in place in Mato Grosso, from 1 July to 30 September, and Mato Grosso do Sul, extending for 180 days from late July; see Instituto Centro de Vida (2020) p1 and Ionova A (2020).
- 63 The G4 Agreement promised 'zero deforestation in the supply chain'. Its signatories pledged to exclude from their supply chains any 'rural property which directly supplies cattle for slaughtering (fattening farms) and is engaged in deforestation in the Amazon biome' within six months of signing the commitment. This condition was to be extended to all suppliers, including third-party suppliers and suppliers from rearing and nursery farms, within two years. See JBS-Friboi, Bertin, Minerwa & Macfrig (2009) p1.
- 64 JBS (2020c) pp3-4 and JBS (2020d)
- 65 JBS (2020c) p3
- 66 With the exception of Areas of Permanent Protection (Áreas de Preservação Permanente, APPs) and restrictions on the exploitation of wetlands. APPs are areas that have been identified as critical to essential ecosystem functions, such as preserving hydrological resources or biodiversity, ensuring geological stability, facilitating the movement of fauna and flora and protecting the soil. The remaining 20% is classed as Legal Reserve. In areas classified as pantanal wetlands (pantaneais) or flood plains (planícies pantaneiras) - which covers about 16% of the Brazilian Pantanal - permits for clearance may only be issued for activities deemed 'sustainable and ecological', which includes traditional cattle raising. Per Articles 3, 10 and 12 - the full text of the law is available at http://www.planalto.gov.br/ccivil_03/ato2011-2014/2012/Lei/L12651.htm. See also WWF-Brazil (2016) p18.
- 67 The area of the UK is 24.4 million ha. Source: CIA World Factbook website 'Country comparisons - area'.
- 68 Soares-Filho B et al (2014)
- 69 Casey S & Freitas T (2017), Mello G & Mano A (2019), Pilgrim's Pride Ltd website 'Our story'
- 70 For details on Greenpeace's vision 'for a healthier life and planet', see Greenpeace (2018).
- 71 Libonati R et al (2020)
- 72 Estimates of the size of the Pantanal vary widely, depending on the source cited. It is variously described as covering between 14 million ha (Keddy PA et al (2009) p43) and 22 million ha (Fundación Amigos de la Naturaleza (2020) p4).
- 73 Estimates of the percentages of the Pantanal located in each of these countries similarly vary; the largest portion (70-80% of the biome) is in Brazil and the smallest (5-10%) in Paraguay, with the remainder located in Bolivia. See eg Ecosystem Alliance (2014) p7 and New World Encyclopedia 'Pantanal'.
- 74 Banks V (1991)
- 75 Couto EG & de Oliveira VA (2010) pp72-73
- 76 Bao F et al (2017)
- 77 IPBES (2018) p225
- 78 Scherer-Neto P, Guedes NMR & Toledo MCB (2019)
- 79 Alho CJR, Camargo G & Fischer E (2011)
- 80 WCS Brazil website 'Jaguar status', citing Paula RC, Desbiez A & Cavalcanti SMC, eds (2011)
- 81 Tomas W et al (2011)
- 82 The Parque Nacional del Pantanal Matogrossense (<https://rsis.ramsar.org/cis/602>), the SESC Pantanal Private Reserve of Natural Heritage (<https://rsis.ramsar.org/fr/cis/1270>) and the Taiamã Ecological Station (<https://rsis.ramsar.org/cis/2363>).
- 83 <https://rsis.ramsar.org/cis/1089>
- 84 UNESCO website 'Pantanal Conservation Area'
- 85 Biomass_250mil.zip available under Downloads > vetores at IBGE website 'Biomass'.
- 86 See Ministério do Meio Ambiente website 'Pantanal' and Ministério do Meio Ambiente (2019).
- 87 Greenpeace Brazil analysis based on maps of Indigenous land from FUNAI (http://www.funai.gov.br/arquivos/conteudo/cggeo/pdf/terca_indigena.pdf) and Brazilian Pantanal biome maps from IBGE (<https://www.ibge.gov.br/geociencias/informacoes-ambientais/15842-biomass.html>).
- 88 Banks V (1991)
- 89 BBC (2013)
- 90 Ecosystem Alliance (2014), Guerra A et al (2020)
- 91 Ionova A (2020)
- 92 Ecosystem Alliance (2014), Embrapa website 'Impactos ambientais e socioeconômicos no Pantanal', Ivory SJ et al (2019), Tomas W et al (2019) pp9-11
- 93 Ecosystem Alliance (2014) pp5,13-15,37-39
- 94 Bergier I et al (2018), Marengo JA, Alves LM & Torres RR (2015), Thielen D et al (2020)
- 95 Ministério da Agricultura, Pecuária e Abastecimento, Serviço Florestal Brasileiro (2020) p44. Article 29 of Brazil's Forest Code (full text available at http://www.planalto.gov.br/ccivil_03/ato2011-2014/2012/Lei/L12651.htm) requires self-reported registration of all rural properties (including identification of property boundaries), with the aim of georeferencing all the properties and establishing a database to be used for monitoring and enforcement of compliance with environmental regulations, environmental and economic planning, and to combat illegal deforestation. The original deadline for registration was May 2016, but this has been extended several times as not all property owners have complied. Additionally, the self-reported information is not legally verified, meaning that land claims may overlap with public, protected or Indigenous lands.
- 96 Klingler M & Mack P (2020)
- 97 Based on data from Ministério da Agricultura, Pecuária e Abastecimento, Serviço Florestal Brasileiro (2020) p44. See below in text.
- 98 Seidl AF, de Silva JSV & Moraes AS (2001)
- 99 Chain Reaction Research (2020b)
- 100 IBGE SIDRA website 'Pesquisa da pecuária municipal: Tabela 3939 - Efetivo dos rebanhos, por tipo de rebanho'
- 101 The total area of the individual CAR registrations is about 13.9 million ha, but this includes 1.2 million ha of overlap.
- 102 Rural properties cover 256,398 ha of the 446,081 ha in public conservation units - principally one national and three state parks - within the Brazilian Pantanal, with two of the three state parks 80% covered and one almost entirely covered (source: Greenpeace Brazil mapping analysis of CAR data). This figure excludes private reserves, which generally fall entirely within registered rural properties.
- 103 Greenpeace Brazil mapping analysis of CAR data shows rural properties cover 124,401 ha of the approximately 443,050 ha within recognised Indigenous lands in the Brazilian Pantanal - two territories are entirely covered.
- 104 Laboratório de Processamento de Imagens e Geoprocessamento (Lapig) website 'Lapig Maps'
- 105 JBS describes itself as 'the worldwide leader in poultry and beef processing and the second largest in pork and lamb'. See JBS website 'Our business'.
- 106 Defined by Article 3 of the code, the function of these areas is preserving hydrological resources or biodiversity, ensuring geological stability, facilitating the movement of fauna and flora or protecting the soil.
- 107 Some 2.34 million ha of the total land area of 15.1 million ha were cleared for pasture, out of 2.37 million ha cleared for all purposes. Source: MapBiomass Project 'Collection 5.0 of the annual coverage and land use maps series of Brazil'.
- 108 MapBiomass 'Pantanal: Land use and land cover annual evolution (1985-2019)'
- 109 MapBiomass Project 'Collection 5.0 of the annual coverage and land use maps series of Brazil'

- 110 de Campos MM et al (2020)
- 111 Ecosystem Alliance (2014) p15
- 112 Ivory SJ et al (2019)
- 113 Instituto SOS Pantanal, WWF-Brasil & Embrapa Pantanal (2013) p7
- 114 Ministry of the Environment (2017) p65
- 115 Critical Ecosystem Partnership Fund (2017) pp51-52, Gibbs HK et al (2015), Spring J (2018)
- 116 Embrapa website 'Impactos ambientais e socioeconômicos no Pantanal', Ivory SJ et al (2019)
- 117 Embrapa website 'Impactos ambientais e socioeconômicos no Pantanal'
- 118 Of the total land area of 21.76 million ha, 13.16 million ha (60.5%) were cleared, with 9.73 million ha of this (71%) for pasture and a further 2.48 million ha (19%) for agriculture. The natural vegetation of some 783,000 ha – a further 4% of the total land area – had been altered but not entirely converted by human activity. Source: Instituto SOS Pantanal & WWF-Brasil (2015) p54.
- 119 Ecosystem Alliance (2014) p5, European Commission (2016) p9
- 120 Statista website 'Area planted with soybean in Brazil from crop year 2010/11 to 2019/20'
- 121 Ecosystem Alliance (2014) pp11-12
- 122 Schandert S (2020)
- 123 Ecosystem Alliance (2014) pp5,13-15,37-39
- 124 Embrapa website 'Impactos ambientais e socioeconômicos no Pantanal'
- 125 Bergier I et al (2018)
- 126 Nobre AD (2014) pp12-19, Webb J (nd)
- 127 Batista F & Gilbert J (2020). See also Rocha J (2014).
- 128 Against the 1961-1990 baseline. See Marengo JA, Alves LM & Torres RR (2015).
- 129 Thielen D et al (2020)
- 130 Guerra A et al (2020) p7
- 131 See eg Fantástico (2020), Ionova A (2020) and Mega ER (2020).
- 132 Mega ER (2020), Kohagura TC (2020)
- 133 Mega ER (2020), Miettinen J et al (2015)
- 134 Fundación Amigos de la Naturaleza (2020) p7, Hermanson M (2019)
- 135 Mega ER (2020)
- 136 A widespread practice in the region – see eg Fantástico (2020).
- 137 Ionova A (2020)
- 138 Einhorn C et al (2020)
- 139 The federal ban covered the Amazon and the Pantanal; see Carvalho D (2020) and Ionova A (2020).
- 140 Instituto Centro de Vida (2020) p1
- 141 Ionova A (2020)
- 142 LASA website 'Burned area – Pantanal 2020'; see also technical note dated 11/17/2020.
- 143 By 4 August, when just 768,000 ha had burned across the entire Pantanal, the area burned in Bolivia had reached 147,000 ha (19% of the total burned area) and that in Paraguay 86,000 ha (11% of the total burned area). Source: Fundación Amigos de la Naturaleza (2020) p5.
- 144 UOL (2020)
- 145 Einhorn C et al (2020)
- 146 Muniz B, Fonseca B & Ribeiro R (2020)
- 147 Estúdio CBN (2020), Vannoni CE (2020)
- 148 Ribeiro E (2020). Other causes identified reportedly included burning trees to acquire honey, an automobile accident, an accidental fire caused by agricultural equipment and sparks from high voltage electrical wiring.
- 149 Federal Police of Mato Grosso do Sul (2020)
- 150 Greenpeace (2020a)
- 151 Castro A (2020)
- 152 Instituto Centro de Vida (2020) pp7-9
- 153 Camargos D & Campos A (2020)
- 154 Data from LASA (available at LASA website 'Burned area – Pantanal 2020') and MapBiomas (MapBiomas Project 'Collection 5.0 of the annual coverage and land use maps series of Brazil').
- 155 According to MapBiomas, as of 2019 roughly 36.7% of the Brazilian Pantanal was covered by grassland, 19.6% by forest, 15.7% by wetland, 15.4% by pasture, 9.2% by savannah, 3.1% by water and 0.2% by arable agriculture (see <https://mapbiomas-br-site.s3.amazonaws.com/Infograficos/Coletao5/MBI-Infografico-pantanal-5.0-EN.jpg>). Some 37.4% of the burn scar was located in areas classified as grassland, 32.8% in forest and savannah and 22.6% in wetland (much of which would have been severely dried out by the drought).
- 156 Estúdio CBN (2020), Ribeiro E (2020), Vannoni CE (2020)
- 157 Escravo, Nem Pensar! (2020)
- 158 Spring J (2020a)
- 159 See eg Fischer L (2020), Pfeifer H (2020).
- 160 INPE website 'Monitoramento dos focos ativos por bioma'. Fire hotspots are thermal anomalies (ie unusually hot areas) detected by satellites. It is important to distinguish hotspots from actual fires – they could represent fires or they could be hot tin roofs, although the occurrence of false positives is relatively low. Within forest areas, accuracy depends on the size of the fire, the density of the canopy and proximity to built-up areas.
- 161 Shalders A (2020)
- 162 Since 2012, when incoming President Dilma Roussef imposed a hiring freeze on the agency, staffing levels have reportedly dropped from a peak of more than 1,300 to about 600. Source: Savarese M (2020).
- 163 Shalders A (2020)
- 164 Gonzales J (2020a). See also Savarese M (2020). The Chico Mendes Institute for Biodiversity Conservation (Instituto Chico Mendes de Conservação da Biodiversidade, ICMBio) is the branch of the Ministry of the Environment charged with managing Brazil's federal conservation units and protecting its natural heritage and biodiversity. The National Indian Foundation (Fundação Nacional do Índio, FUNAI) is the federal agency responsible for establishing and carrying out policies relating to Indigenous Peoples.
- 165 Gonzales J (2020a)
- 166 Gonzales J (2020a), Savarese M (2020)
- 167 Muniz B, Fonseca B & Ribeiro R (2020)
- 168 Basso G (2020)
- 169 Raoni Rajão, coordinator of laboratory for the study of environmental services management at the Federal University of Minas Gerais, quoted in Goñi U, Cowie S & Costa W (2020).
- 170 Shalders A (2020)
- 171 Boadle A (2020), Soares I (2020)
- 172 Einhorn C et al (2020)
- 173 Fernandes A (2020), Machado R (2020)
- 174 See eg Fantástico (2020), Ionova A (2020) and Vannoni CE (2020).
- 175 Inesc (2020)
- 176 Observatório do Clima (2021)
- 177 Piloto Policial (2020)
- 178 European Commission website 'EU-Mercosur trade agreement'
- 179 Kehoe L et al (2020)
- 180 Gonzales J (2020b), Greenpeace European Unit (2020)
- 181 According to a leaked copy of the negotiation text, published by Greenpeace Germany (see Greenpeace European Unit (2020)).
- 182 Angelo M (2020), Gerretsen I (2020)
- 183 See eg Greenpeace International (2009, 2020a).
- 184 Estúdio CBN (2020), Ribeiro E (2020), Vannoni CE (2020)
- 185 2018-2019 supply chain links between ranchers and meat processing facilities and other analyses were established through Greenpeace investigations, based on the integration of a number of sources of public data and information including:
- Land cover and land cover change
 - The locations of fire hotspots and burned areas (burn scar)
 - The location and boundaries of the Pantanal biome, Indigenous lands, conservation units and other public lands
 - The locations, boundaries, ownership and CAR registration status of cattle ranches
 - Environmental sanctions linked to ranches and their owners
 - Meat processor traceability websites
 - Trade from processing facilities to the global market and/or consumer goods and fast food companies.
- Documentation is held by Greenpeace. The sources used for each of these types of data and information are listed in the references section at the end of the report.
- Greenpeace provided the meat processors named in this report with the opportunity to comment prior to publication on the historic trade links it had established between ranchers with operations in the Pantanal and specific slaughterhouses, as well as any legal/policy irregularities (eg embargoes, irregular CAR status) it had identified in those ranchers' operations. The comments have been reflected at all relevant points. The full text of the replies received from each of the meat processors in response to Greenpeace's opportunity to comment letters can be found in Annex 2.

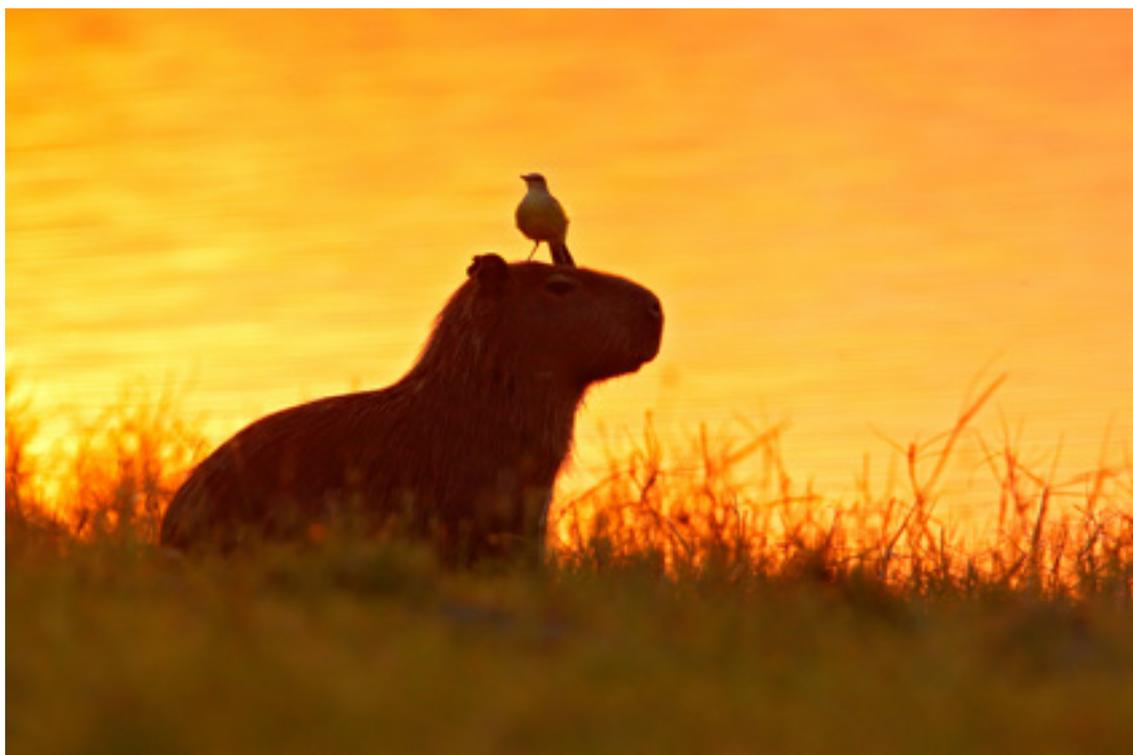
- 186 See Carvalho D (2020), Instituto Centro de Vida (2020) p1 and Ionova A (2020).
- 187 The total area of Singapore is 71,900 ha (CIA World Factbook website 'Country comparisons - area'). The Greater London area covers approximately 159,500 ha (LG Inform website 'Size of the geographical area - Extent of the realm measurements in hectares in England').
- 188 These ranchers and the companies they supplied were:
 Adevaír de Oliveira - JBS / Marfrig / Mineerva
 Ácio Barnabé Neto - JBS
 Celso Miura - JBS
 Daniel Martins Filho - JBS / Marfrig
 Eduardo Mariani Bittencourt - JBS / Marfrig / Mineerva
 Eliana Maria Lemos Monteiro Conceição - JBS
 Fabio de Oliveira Luchesi - Mineerva
 Francisca Evangelista Teodoro da Silva - JBS / Marfrig / Mineerva
 João Felix Peceira Neto - JBS / Marfrig
 Jose Dalbem - JBS / Marfrig / Mineerva
 Luiz Carlos Ziliani - JBS / Marfrig / Mineerva
 Raul Amaral Campos - JBS / Marfrig / Mineerva
 Sergio Jacinto Costa - JBS
- 189 Greenpeace identified 37 supply chain links between the case study properties and the big three meat processors, plus a further three rancher-level links not involving the case study properties. Of these 37 links, 23 were indirect. Of those 23, 17 of the links were through ranches owned by the same individual.
- 190 The full text of the replies received from each of the meat processors in response to Greenpeace's opportunity to comment letters can be found in Annex 2.
- 191 Based on responses to Greenpeace's opportunity to comment letters; see Annex 2. Marfrig did not indicate current compliance. Also, JBS failed to comment on the current status of ranches linked to Celso Miura, Francisca Evangelista Teodoro da Silva or João Felix Peceira Neto, identified by Greenpeace as tier-one suppliers during the period studied.
- The following ranchers all had at least one property that was described as either 'compliant with [JBS's] Responsible Procurement Policy', 'able to commercialize raw materials with [JBS]' or 'listed in Mineerva's database and ... eligible for commercialization':
 Adevaír de Oliveira - JBS / Mineerva
 Ácio Barnabé Neto - JBS
 Daniel Martins Filho - JBS
 Eduardo Mariani Bittencourt - Mineerva
 Eliana Maria Lemos Monteiro Conceição - JBS
 Fabio de Oliveira Luchesi - Mineerva
 Francisca Evangelista Teodoro da Silva - Mineerva
 Jose Dalbem - JBS / Mineerva
 Luiz Carlos Ziliani - JBS
 Raul Amaral Campos - Mineerva
 Sergio Jacinto Costa - JBS
- 192 Based on responses to Greenpeace's opportunity to comment letters; see Annex 2. The current approved suppliers that appear to violate JBS's policy are:
 Adevaír de Oliveira / Fazenda Boa Sorte
 Luiz Carlos Ziliani / Fazenda Santa Tereza
 Samoel Alexandroni Santos / Fazenda Sete de Setembro (Santos is an intermediary rancher identified in one of the case studies; this ranch's property registration is currently suspended)
- The historic trading relationship that appears to have been in violation of JBS's policy at the time was with Raul Amaral Campos / Fazenda Esperança. JBS failed to confirm the current status of this ranch as a supplier.
- Mineerva drew different conclusions on the status of two of these suppliers (Luiz Carlos Ziliani / Fazenda Santa Tereza and Raul Amaral Campos / Fazenda Esperança).
- 193 The historic trading relationship that appears to have been in violation of Marfrig's policy was with João Felix Peceira Neto / Fazenda Pedreiras Novas.
- 194 Morrison O (2021)
- 195 JBS (2019)
- 196 See also eg Observatório do Clima (2021).
- 197 See Carvalho D (2020), Instituto Centro de Vida (2020) p1 and Ionova A (2020).
- 198 Ranchers (including intermediary ranchers) with identified environmental violations and/or property registration irregularities on one or more of their ranches during the trade period assessed for this investigation include:
 Adevaír de Oliveira (note, the CAR status of Fazenda Recreio is just one of the multiple issues associated with this rancher's operations; it was recategorised as active as of 9 November 2020 but prior to that had been listed as pending since 4 August 2018)
 Ácio Barnabé Neto
 Daniel Martins Filho (note, Filho received a US\$930,000 fine from IBAMA for the illegal construction of levees along the river boundary of Fazenda Santa Cecília II)
 Fabio de Oliveira Luchesi (the CAR status of Fazenda Santa Helena I was recategorised as active only as of 17 November 2020; prior to that it was listed as pending)
 Ivanildo da Cunha Miranda
 João Felix Peceira Neto
 Jose Dalbem
 Luiz Carlos Ziliani
 Raul Amaral Campos
- 199 The full text of the replies received from each of the meat processors in response to Greenpeace's opportunity to comment letters can be found in Annex 2.
- 200 See the case study below on Ivanildo da Cunha Miranda.
- 201 Marfrig's latest zero deforestation commitment extends to the Cerrado, but not the Pantanal. See Marfrig website 'Marfrig Verde+'.
 202 See JBS-Friboi, Bertin, Mineerva & Marfrig (2009).
 203 As promised by the European Commission. See European Parliament (2020).
 204 As proposed by the UK Government. See Department for Environment, Food & Rural Affairs (2020).
 205 Gibbs HK et al (2015b) p39
 206 Gibbs HK et al (2015b)
 207 Email from Dr. Holly Gibbs, Associate Professor at University of Wisconsin-Madison, to Amnesty International, 29 June 2020. Copy on file with Amnesty International. Cited by Amnesty International (2020) p13.
 208 JBS website 'JBS Green Platform'
 209 See eg Visipec website 'Home'.
 210 See Marfrig (2021b) and Mineerva (2021)
 211 Visipec (nd) p2
 212 The Brazilian Federal Inspection Service (Serviço de Inspeção Federal, SIF), organised by the Ministry of Agriculture, Livestock and Food Supply and overseen by the Department of Inspection of Animal Origin Products (Departamento de Inspeção de Produtos de Origem Animal, DIPOA), is responsible for 'ensuring the quality of edible and inedible animal products intended for the domestic and foreign markets and the suitability of imported products' (Federal Government of Brazil (2017)). The system operates in approximately 5,000 establishments across the country, each identified by a SIF number. The seal on a facility's products is meant to indicate that they are of safe animal origin and meet the criteria required by legislation; it also enables traceability of those products back to the facility where they originated. SIF-registered facilities are able to trade throughout the country (unlike those registered with the state or municipal inspection services, which can trade only locally) and, if they meet additional criteria, export abroad. See eg Alves G (2020).
 213 Ministério da Agricultura, Pecuária e Abastecimento website 'Consulta de estabelecimento nacional: Dados do estabelecimento nacional'; details can be found by searching for the SIF number.
 214 Ministério da Agricultura, Pecuária e Abastecimento website 'Consulta de estabelecimento nacional: Dados do estabelecimento nacional'; details can be found by searching for the SIF number.
 215 Greenpeace Brazil and Repórter Brasil field investigations, October 2020
 216 JBS (2021b)
 217 Fantástico (2020), Miranda E (2020)
 218 IBAMA lists two outstanding embargoes for clearance of native vegetation in Legal Reserves against properties owned by Ivanildo da Cunha Miranda, and he was fined over R\$900,000 (US\$420,000) by IBAMA in 2013. Source: IBAMA website 'Consulta de autuações ambientais e embargos'; details can be found by searching for his name.
 219 JBS (2020a) p129
 220 See eg Fregatto E (2018).
 221 Greenpeace Brazil and Repórter Brasil field investigations, October 2020
 222 Mendes L (2020)
 223 Greenpeace Brazil and Repórter Brasil field investigations, October 2020.
 224 Panjiva Brazil trade data <https://panjiva>.

- com/data/brazil-trade-data
- 225 Panjiva Brazil trade data <https://panjiva.com/data/brazil-trade-data>
- 226 Panjiva Brazil trade data show that GST accounted for 2,323 tonnes of the 2,359 tonnes of leather exported to Mexico from JBS's Campo Grande facilities during this period, and all 408 tonnes exported to the USA.
- 227 GST AutoLeather website 'OEM customers'
- 228 JBS Campo Grande (see main text), Marfrig Bataguassu and Minerva Mirassol d'Oeste. Between 1 January 2019 and 31 October 2020 the Marfrig facility exported 168 tonnes of leather, all of it to Italy; the Minerva facility exported a total of 2,822 tonnes to China (82%), Italy (15%), Russia (2%) and India (1%).
- 229 Panjiva Brazil trade data <https://panjiva.com/data/brazil-trade-data>
- 230 JBS (2020b) p14
- 231 Marfrig (2020) p8
- 232 Minerva (2020) p1
- 233 Reuters (2021); the reported results were in line with end-of-year projections from the Brazilian Beef Exporters Association (ABIEC (2020)).
- 234 Net revenue from Marfrig's North American operations totalled R\$35.1 billion in 2019; revenue from the company's South American operations totalled R\$14.8 billion. See Marfrig (2020) pp6,8.
- 235 JBS (2020c) p2
- 236 Minerva (2019). The deal included Marfrig paying R\$100 million (US\$27 million) to BRF, which has an investor agreement with Minerva covering several operations and which previously controlled the facility in Várzea Grande; see BRF S.A. (2020) p44.
- 237 Mato Grosso Econômico (2019)
- 238 Receita Federal website 'Emissão de comprovante de inscrição e de situação cadastral'; details can be found by searching for the CNPJ 67620377008018.
- 239 Ownership and sizes of properties were established based on data from official sources (CAR website 'Consultar demonstrativo do CAR', IBAMA website 'Consulta de atuações ambientais e embargos', Secretário de Estado de Meio Ambiente de Mato Grosso website 'SIMCAR portal público' and Secretaria Estadual de Meio Ambiente, Desenvolvimento Econômico, Produção e Agricultura Familiar (SEMAGRO) Portal de Informações e Geoposicionamento de Mato Grosso do Sul (PIN MS) website 'Mapa consulta SICAR'). Fazenda Bonsucesso is listed on the Mato Grosso do Sul SICAR website as belonging to the estate of Florêncio da Costa Lima, with Mauri da Costa Lima acting as appointed legal representative - results found using the CAR number MS-5003207-0EFCFC9C1C8949E4BAB3A867AF21257A as the property code ('código do imóvel'). Mato Grosso do Sul state tax registration (Inscrição Estadual, IE) documents show Fazenda Bom Sucesso, a cattle breeding business with an active CAR registration, as registered to Ivanildo da Cunha Miranda (source: Secretaria de Estado de Fazenda de Mato Grosso do Sul website 'Consulta Pública do Cadastro Fiscal e Emissão do Comprovante de Inscrição Estadual', IE number 287096750); the business is described as being located on the edge of the São Lourenço river in Corumbá, which matches the location of Fazenda Bonsucesso. News reports (eg Fantástico (2020), Ribeiro Jr A (2020)) refer to 'Fazenda Bonsucesso' as one of the sites being investigated by police for possible improper use of fire to clear pasture, with Ivanildo da Cunha Miranda named as the cattle rancher who owns the property. It is assumed the two names refer to the same ranch and that Ivanildo da Cunha Miranda owns, leases or otherwise controls management of that ranch.
- 240 See Ministério Público Federal, Procuradoria da República no Estado de Mato Grosso do Sul (2018), Miranda E (2020) and UOL (2020).
- 241 USD equivalents given in this report are approximate amounts, based on the average exchange rates in the years during which the fines were imposed.
- 242 Ownership and sizes of properties were established based on data from official sources (CAR website 'Consultar demonstrativo do CAR', IBAMA website 'Consulta de atuações ambientais e embargos', Secretaria de Estado de Meio Ambiente de Mato Grosso website 'SIMCAR portal público' and Secretaria Estadual de Meio Ambiente, Desenvolvimento Econômico, Produção e Agricultura Familiar (SEMAGRO) Portal de Informações e Geoposicionamento de Mato Grosso do Sul (PIN MS) website 'Mapa consulta SICAR').
- 243 Fantástico (2020), Ribeiro Jr A (2020)
- 244 Fantástico (2020)
- 245 Data from USGS EarthExplorer (<https://earthexplorer.usgs.gov/>), Sentinel Hub EO Browser (<https://apps.sentinel-hub.com/eo-browser/>) and Planet (<https://www.planet.com/>).
- 246 Carvalho D (2020). Regional prohibitions on dry-season burning were also in place in Mato Grosso, from 1 July to 30 September 2020, and Mato Grosso do Sul, extending for 180 days from late July. See Instituto Centro de Vida (2020) p1 and Ionova A (2020).
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- 248 Fire hotspot data is from INPE (data from MODIS AQUA_M-T, downloaded from INPE website 'Banco de dados de queimadas').
- 249 Documentation held by Greenpeace.
- 250 IE 287109038. Source: Ministério da Agricultura, Pecuária e Abastecimento, SDA, CSR (nd) p51, accessed 10 February 2021.
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- 252 Friboi website 'Garantia de origem'
- 253 JBS (2021a)
- 254 The Mato Grosso state registry lists the size of the property as 10,330 ha (see Secretário de Estado de Meio Ambiente de Mato Grosso website 'SIMCAR portal público', CAR number MT70390/2018). For consistency, all figures reported in the text are from the federal registry (CAR website 'Consultar demonstrativo do CAR').
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- 268 CAR website 'Consultar demonstrativo do CAR', accessed 5 February 2021; details can be found by searching for the CAR number MT-5102504-89CAE072B3EE459E8856CB48B71C29E1.
- 269 CAR website 'Consultar demonstrativo do CAR'
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- 274 Secretário de Estado de Meio Ambiente de Mato Grosso website 'SIMCAR portal público', accessed 5 February 2021; details can be found by searching for the CAR number MT101053/2017. A previous check on 25 November 2020 had shown the status as suspended as of 29 October 2020.
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- 281 Minerva (2021)
- 282 IBAMA website 'Consulta de atuações ambientais e embargos'; details can be found by searching for 'Atuações Ambientais' in his name during this year.
- 283 IBAMA data embedded in shapefiles from <https://siscom.ibama.gov.br>, Dados Geoespaciais > Camadas > Autos de Infração.
- 284 The embargoes are against Agropecuária Itapajé,

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- 285 Documentation held by Greenpeace.
- 286 The company's partners are Raul Amaral Campos Filho, Dora Nougues Amaral Campos, Paula Nougues Amaral Campos Pacheco, Raul Amaral Campos, Helena Nougues Amaral Campos Perozzo and Roberta Amaral Campos. Source: Receita Federal website 'Emissão de comprovante de inscrição e de situação cadastral' (details can be found by searching for the CNPJ 25309068000188).
- 287 IE 132212579. Other listed ranches linked to Raul Amaral Campos are Fazenda Fucninha (IE 132212560), Fazenda Gaiivota (IE 132217490) and Fazenda Santa Terezinha (IE 132212560). Source: Ministério da Agricultura, Pecuária e Abastecimento, SDA, CSR (nd) pp75,80,82,85, accessed 10 February 2021.
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- 292 JBS (2021a)
- 293 Marfrig (2021a)
- 294 Minerva (2021)
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- 296 IBAMA website 'Consulta de autuações ambientais e embargos'; details can be found by searching for 'Autuações Ambientais' in his name during this year.
- 297 IBAMA data embedded in shapefiles from <https://siscom.ibama.gov.br>, Dados Geoespaciais > Camadas > Autos de Infração.
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- 300 Documentation held by Greenpeace.
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- 308 JBS (2021a)
- 309 Marfrig (2021b)
- 310 Marfrig (2021a)
- 311 Minerva (2021)
- 312 IBAMA website 'Consulta de autuações ambientais e embargos'; details can be found by searching for his name.
- 313 IBAMA website 'Consulta de autuações ambientais e embargos'; details can be found by searching for 'Autuações Ambientais' in his name during the years 2014 and 2018.
- 314 Between 12 September 2018 and 23 July 2019, or soon after, Ácio Barnabe Neto made multiple shipments of cattle from Fazenda Rio Vermelho to Fazenda Aldeia de Itaúna (also owned by him). On 23 October 2018, Ácio Barnabe Neto made two shipments of a total of 242 cattle from Fazenda Rio Vermelho to Fazenda Mata Alta. Subsequent trade to JBS slaughterhouses has not been identified.
- 315 Documentation held by Greenpeace.
- 316 Friboi website 'Garantia de origem'
- 317 Friboi website 'Garantia de origem'
- 318 JBS (2021a)
- 319 CAR website 'Consultar demonstrativo do CAR', accessed 5 February 2021; details can be found by searching for the CAR number MT-5106828-C488DC83E51B4436B221ACFB0586505. A previous check on 25 November 2020 showed a status of 'pending'.
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- 335 Marfrig (2021a)
- 336 Listed as Fazenda São Carlos e Santa Monica on the Secretário de Estado de Meio Ambiente de Mato Grosso website 'SIMCAR portal público'; other official documents held by Greenpeace refer to São Carlos only, but the associated property boundaries are the same.
- 337 Secretário de Estado de Meio Ambiente de Mato Grosso website 'SIMCAR portal público', accessed 5 February 2021; details can be found by searching for the CAR number MT37206/2019.
- 338 CAR website 'Consultar demonstrativo do CAR', accessed 5 February 2021; details can be found by searching for the CAR number MT-5102504-6295DE76EB4D439C94DB3662F0A8CB6E.
- 339 IBAMA website 'Consulta de autuações ambientais e embargos'; details can be found by searching for 'Autuações Ambientais' in the name of Raymundo Victor Costa Ramos Sharp within this date range.
- 340 Documentation held by Greenpeace.
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- 345 See Jusbrasil website 'Processo nº 0000352-19.2012.8.11.0013'.
- 346 Link to Francisca Evangelista Teodoro da Silva confirmed by IE number 134544412. Source: Marfrig website 'Conheça a origem da nossa carne'.
- 347 Marfrig (2021a)
- 348 Minerva (2021)
- 349 Receita Federal website 'Emissão de comprovante de inscrição e de situação cadastral'; details can be found by searching for the CNPJ 16.489.312/0001-40.
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- 354 Link to Eduardo Mariani Bittencourt confirmed by IE number 133298264. Source: Marfrig website 'Conheça a origem da nossa carne'.
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- 362 Friboi website 'Garantia de origem'
- 363 JBS (2021a)
- 364 Documentation held by Greenpeace
- 365 Friboi website 'Garantia de origem'
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- 368 There are two listings for Fazenda Lagoa Verde on this date. Link to Paulo Cezar Pinto de Arruda and business partners confirmed by IE numbers 132877287 and 134072030. Sources: Marfrig website 'Conheça a origem da nossa carne' and Ministério da Agricultura, Pecuária e Abastecimento, SDA, CSR (nd) p69 accessed 10 February 2021.
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- 371 Mineerva (2021)
- 372 CAR website 'Consultar demonstrativo do CAR'; details can be found by searching for the CAR number MT-5102504-70F370ADCE1F4298A8512C7106CCA57D.
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- 384 Camargos D & Campos A (2020)
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- 387 IPBES (2020)
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- 406 Due to its links to deforestation and habitat degradation, industrial meat production contributes to the increased risk of zoonoses – diseases such as Covid-19 that are originally found in non-human animals but jump the species barrier and begin to infect humans. For more information, see EcoHealth Alliance (2019), IPBES (2020), United Nations Environment Programme & International Livestock Research Institute (2020) and World Health Organization website 'Zoonoses'.
- 407 Soya is the second most significant driver of global deforestation after beef, and about 90% of it is used for animal feed. See European Commission (2013) pp21-22, Henders S, Persson UM & Kastner T (2015) p6 and Sharma S, IATP & Schlesinger S (2017) p25. For more on this topic, see eg Greenpeace (2020b).
- 408 For details on Greenpeace's vision 'for a healthier life and planet', see Greenpeace (2018).
- 409 For details on classification in the Pantanal biome see MapBiomas (2020).
- 410 INPE website 'Banco de dados de queimadas'
- 411 See 'Getting started > What is the detection confidence?' at Earthdata website 'FIRMS FAQ' for a discussion of confidence values. For MODIS these range from 0% to 100%. For different applications – or indeed different regions – different ranges (so-called 'fire classes') may be more appropriate. The higher the setting the fewer the specific false alarms, but the more true fires are missed.
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- 414 See eg Jordan L & Athayde AT (2020) and Ministério da Justiça e Segurança Pública/Fundação Nacional do Índio (2020).
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- 420 Several attempts to access traceability information on the Mineerva website over the course of this investigation were unsuccessful. A calendar page meant to identify the ranch origins for cattle supplied on a given day (Mineerva website 'Originação Pará') was available until early January, but contained no information for any month consulted; it currently returns a 'no results found' error page. Attempts to access the company's traceability tool consistently result in a server error (see Mineerva website 'Rastreabilidade', last accessed 2 March 2021).
- 421 See Trase website 'Home'.
- 422 Eg JBS (2020a).
- 423 Panjiva website 'Manifest confidentiality – Opt-out'

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A capybara in the Pantanal. Weighing up to 65kg, the capybara (*Hydrochoerus hydrochaeris*) is the largest rodent in the world.

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