GREENPEACE

How JBS is still Slaughtering the Amazon

In response to a July 2020 letter from Greenpeace UK, Burger King and Tesco confirmed that they were supplied by JBS subsidiaries (Burger King: Moy Park; Tesco: both Moy Park and Tulip). In September 2019, in response to a letter from Greenpeace UK, Aldi and Waitrose both confirmed JBS-linked supplies (Aldi: Moy Park and Tulip; Waitrose: Moy Park). In its FAQs, under 'Who supplies you with chicken?', Nando's names Moy Park as one of its suppliers; Waitrose also lists Moy Park as a long-term poultry supplier on its website under 'About our chicken'. In January 2020, a Bloomberg database chain-of-custody search identified trade between JBS subsidiary Pilgrim's Pride (the parent company of both Moy Park and Tulip) and the following: Burger King, McDonald's, Sainsbury's, Tesco and YUM! (YUM! is the parent company of a number of fast food chains, including KFC.) Reports of direct links between JBS subsidiaries and KFC include specialist trade media (eg Ridler J (2018), Mulligan J (2017) and Lucas A (2020)). Additionally, factory codes UK 3005 EC and UK 3011 EC, documented in August 2019 on the labels of chickens in Sainsbury's stores, link to Moy Park facilities.

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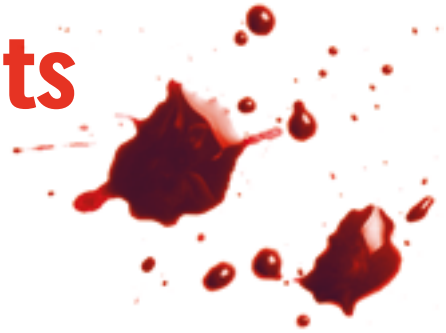

Executive summary

Above from top left:

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Screengrab from https://www.youtube.com/watch?v=WFrogcS7y4A&t=325s

8 August 2008, Fazenda Estancia Bahia, Mato Grosso, Brazil: Cattle farm. ©Greenpeace/Daniel Beltrá

23 May 2019, Formosa do Rio Preto, Brazil: Cargill soya silo in the Cerrado region. ©Marizilda Cruppe/ Greenpeace

9 July 2020, Alta Floresta, Mato Grosso, Brazil, 11°50'18.5259" S 57°16'33.3421" W: Deforestation and fire monitoring in the Amazon. ©Christian Braga/ Greenpeace

High stakes – how industrial meat is taking us to the tipping point

The global system of industrial agriculture fuels the climate emergency and destroys biodiversity. It erodes public health and denies the human rights of workers and communities.

The industrial meat economy – including the production of animal feed as well as the rearing and processing of livestock – is particularly to blame. By 2030, the livestock sector is expected to have spewed out almost half (49%) of the total quantity of greenhouse gases that human activity worldwide can emit from now on if global warming is to be restricted to the ambitious 1.5°C target recognised as the safe maximum by the Paris Agreement.[1]

The unrelenting expansion of commodity production into the forests of South America – notably of cattle and soya linked to the global meat industry – is a key driver of the climate, nature and health crises we are facing. Forest destruction is not only wiping out habitats and species but increasing the risk of reaching a catastrophic climate tipping point: scientists warn that by failing to reverse deforestation we are 'playing an environmental Russian roulette'.[2] In the Amazon such a tipping point may be reached in less than 20 years, permanently changing regional weather patterns, turning the surviving rainforest into dry savannah and releasing billions of tonnes of carbon into the atmosphere.[3]

The global meat industry is also gambling with our health: an ever-increasing number of scientific reports confirm a connection between emerging infectious diseases and environmental destruction, pointing to its potential to let loose a huge reservoir of pathogens. The majority of emerging infectious diseases originated in animals – primarily wild species – and our continuing destruction of ecosystems and habitats is increasing our exposure to these diseases and encouraging their spread.[4]

Brazil is one of the world's largest producers of beef and soya. But the country's agribusiness agenda – which serves the global meat industry – exacts a heavy toll of human misery. Indigenous and other Amazon communities have long borne the brunt as their lands are expropriated and the forest cleared for agriculture. Even as deforestation goes on increasing, the government of President Jair Bolsonaro appears to see the current chaos of the global pandemic as an opportunity to further strip away these communities' rights and such protection as the forest has.[5] Moreover, Amazon 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.[6]

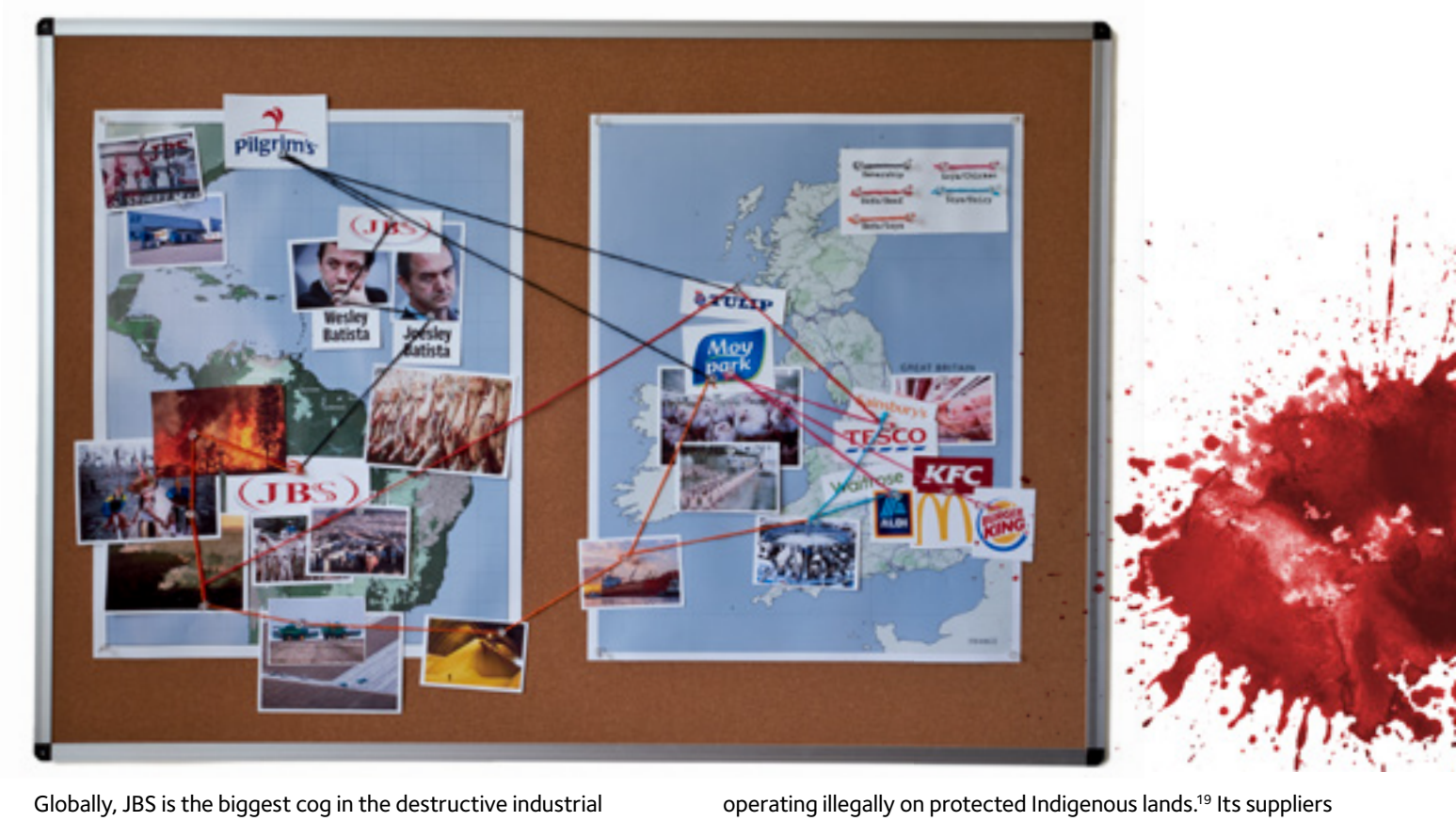
Others who suffer at the hands of the country's agribusiness model include the forced labourers on cattle ranches[7] and the migrant and temporary workers who live in cramped communal housing and work in crowded conditions in meat processing facilities.[8] Indeed, the outbreaks of Covid-19 at meat processing plants around the world have made the meat industry a global health liability, with one industry expert stating that workers are treated as being 'as expendable as the things they're slaughtering'.[9]

But this is not just about Brazilian beef. Industrial meat production swallows up the overwhelming majority of the vast amounts of soya exported from South America each year, whose production is a leading driver of ecosystem conversion.[10] A report published in *Science* in July 2020 revealed that about one-fifth of soya exports to the EU from the Brazilian Amazon and the Cerrado biome were likely contaminated with illegal deforestation.[11]

The global meat industry not only fuels the destruction of the Amazon and other natural ecosystems with its demand for feed and grazing, but – as this report outlines – pollutes our air and water, threatens public health through its reckless overuse of antibiotics, exploits and endangers its workforce (particularly those in meat processing plants) and drives small farmers out of business, undermining rural communities. Moreover, the meat-heavy diets that the sector promotes and on which it depends for its existence also imperil health, being associated with increased risk of heart disease, stroke, diabetes and colorectal cancer.[12]

Even those that lack direct links with cattle supplies from the Amazon may be trading with corporate groups who are directly linked. The sheer demand for industrial meat and the feed used to rear the animals drives the sector's environmental and social impacts. It is therefore critical that importing countries use their trade might and purchasing power in the public interest. The global meat industry is not only sacrificing people's lives today, but also sacrificing our future.

Taking stock – JBS, the world's largest meat producer, is still slaughtering the Amazon



Globally, JBS is the biggest cog in the destructive industrial meat sector.[13] So big is it that its operations have been estimated to produce around half the annual carbon emissions of fossil fuel giants such as ExxonMobil, Shell or BP.[14]

The scale of JBS's environmental and social destruction became a global scandal in 2009, when Greenpeace International published *Slaughtering the Amazon*.[15] The investigation that report laid out exposed how the biggest names in the Brazilian cattle industry – including JBS, then accounting for 10% of global beef production – were linked to hundreds of ranches operating in the Amazon, including some associated with recent and illegal deforestation and modern-day slavery. The report revealed how 'criminal or "dirty" supplies of cattle are "laundered" through the supply chain to an unwitting global market.'[16] In the months following its publication, JBS and the three other major processors in the Brazilian cattle sector signed the G4 Cattle Agreement, an undertaking to end the purchase of cattle whose production is linked to Amazon deforestation, slave labour or the illegal occupation of Indigenous lands based on the demands made in the report. The agreement included a commitment to ensure fully transparent monitoring, verification and reporting of the companies' entire supply chains (including indirect suppliers) within two years.[17]

Eleven years on, JBS is still slaughtering the Amazon. It and its network of subsidiaries have been repeatedly linked to suppliers found to be engaging in illegal deforestation in the region[18] and operating illegally on protected Indigenous lands.[19] Its suppliers have also been implicated in modern-day slavery[20] and its slaughterhouses linked to unacceptable working conditions,[21] mass outbreaks of Covid-19[22] and salmonella-tainted chicken exports.[23] JBS and members of the Batista family – the company's principal shareholders (via holding company J&F Investimentos) and senior executives – are notorious for their historic systematic bribing of Brazilian politicians and public servants.[24]

Despite its public claims of openness – and its decade-old commitment through the G4 Cattle Agreement – JBS is backsliding on transparency measures for its cattle supply chains.[25] Moreover, a recent investigation reports that JBS is not merely turning a blind eye to its suppliers' violations but has been directly implicated in transporting deforestation-linked cattle to one of its own direct suppliers.[26]

It is clear that JBS's business model is incompatible with the environmental emergency we are facing. According to Trase data, as of 2017 (the most recent year for which data are readily available), approximately 30% of its beef exports from Brazil came from the Amazon.[27] Yet despite JBS's ongoing failure to map out its supply chain with all the risks that entails, and continued reports of its links to deforestation and human rights abuses, the company's global exports from Brazil are booming – JBS saw an increase in trade volume from Brazil of 40% between 2017 and 2019[28] and was responsible for around a third of Brazil's beef exports in 2019.[29]

Supporting destruction – supermarkets and fast food companies are bankrolling environmental collapse

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22 May 2019, London: Fast food consumption in the UK. ©Chris J Ratcliffe/Greenpeace

17 October 2017, Rondônia, Brazil: The Karipuna territory has one of the highest rates of deforestation of all Indigenous areas in the Amazon. ©Tommaso Protti/Greenpeace

In spite of the multiple harms for which it is responsible worldwide, the industrial meat sector is propped up by supermarkets and fast food companies. Though they have long-standing commitments to remove deforestation from their supply chains,[30] Western food retailers are still buying meat reared on South American soya.[31] In fact, soya has been identified as the number one contributor to the EU's deforestation footprint[32] and is a leading component in the UK's land-use footprint linked to meat production and consumption.[33] Furthermore, most of the major UK supermarket chains and many fast food companies source UK-produced meat from JBS's UK subsidiaries[34] Moy Park[35] and Tulip,[36] which have about 30% of the UK market share for chicken and pork respectively.[37] Moy Park reportedly also supplies Burger King, KFC, McDonald's, Nando's and Pizza Hut,[38] while Tulip received a supplier award from McDonald's in 2017.[39] Moy Park itself has been fined for a range of infractions, including animal cruelty,[40] underpayment of staff[41] and unsafe processing plant working conditions.[42] Whether or not these companies have any supply chain links to Amazon beef or soya, Moy Park and Tulip are owned by JBS, whose continued trade with suppliers linked to deforestation and human rights abuses is jeopardising the Amazon.

The globalised industrial meat economy is beyond reform – most of its environmental and social impacts are intrinsic to the way it operates and is organised. Thus, it is futile to hope that simply switching to a better industrial supplier will help the problem to go away. That is why Greenpeace International is calling on supermarkets and fast food chains to join with government and civil society in a concerted effort to move our society beyond its dependence on industrial meat and towards a revolution in food production and diet that will improve individual health outcomes while securing the future of the planet – its climate, its wildlife and its people.

Such fundamental change will not happen overnight, but food companies can take a step in the right direction by showing suppliers they will not support such destructive practices – starting by dropping all suppliers owned by JBS, the largest meat company in the world, which is still slaughtering the Amazon. Beyond that, the transition to a resilient food economy in a high-consumption country such as the UK must aim at rapid reductions in per capita meat and dairy intake.

From top:

10 April 2017: Meat in German supermarket. ©Bodo Marks/Greenpeace

March 2012, Tangara da Serra, Mato Grosso, Brazil: Harvesting soya bean crop. ©Pulsar Imagens/Alamy Stock Photo

30 March 2009, Tangará da Serra, Mato Grosso, Brazil: Cattle at Fazenda Santa Amália. ©Ricardo Funari/ Lineair/Greenpeace

'All economic partners of Brazil should share the blame for indirectly promoting deforestation and GHGemissions by not barring imports and consuming agricultural products contaminated with deforestation, illegal or not.'[43]

Raoni Rajão et al, Science, July 2020

Taking the bull by the horns – time for urgent action to transform the global food economy

Rapid and systemic transformation of the industrial meat economy will be critical to addressing the triple emergency of climate change, biodiversity loss and vulnerability to novel diseases. Governments and the private sector alike need to recognise their role in creating these crises and assume their responsibility for tackling them. Radical action is needed from supermarkets, fast food companies and governments to ensure that policy, trade and finance 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 greenhouse gas (GHG) emissions and uphold the rights of communities and workers.

Governments must:

- **Align the economy with biodiversity and climate protection, along with social justice:** Ensure that 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 products linked to deforestation, ecosystem destruction and abuses of human rights, in particular the rights of Indigenous Peoples, by introducing and enforcing legislation to stop such products being sold and to prohibit financiers from contributing directly or indirectly, through their investments or the financial support they provide, to deforestation, ecosystem destruction and/or abuses of human rights, in particular of Indigenous Peoples.
  - In the case of EU governments, refusing to ratify the EU–Mercosur agreement. The agreement threatens to undermine any attempt to protect forests through new supply chain laws and also undermines attempts to decrease Europe's external forest footprint through positive initiatives to decrease meat production and consumption.
- **Transform the food system:** Introduce legislation and prioritise policy to decrease production and consumption of meat and dairy products in countries with high levels of consumption and support a fundamental switch towards ecological farming and healthy plant-rich diets.

Food companies must:

- **Drop Amazon destroyers:** End trade with groups such as JBS that trade with suppliers that are linked to deforestation and human rights violations – this includes ending trade with subsidiaries such as JBS-owned Moy Park and Tulip regardless of whether their supply chains link to the Amazon.
- **Drastically reduce their trade in meat:** Immediately begin the phase-out of all 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.
- **Defend Indigenous rights:** Support Indigenous Peoples in securing recognition and protection of their lands and customary rights.
- **Stand for transparency:** Honour zero-deforestation commitments and make full supply chain transparency a condition of trade with suppliers, requiring them to have open and comprehensive monitoring systems in place by no later than 1 January 2021.

Endnotes

1 Harwatt H (2019), Harwatt H et al (2019). See also United Nations Climate Change website 'The Paris Agreement'.

2 Paulo Brando, tropical ecologist at the University of California, Irvine, quoted in Amigo I (2020).

3 Amigo I (2020)

4 Scientists estimate that between 60–70% of emerging infectious diseases are zoonotic. See eg Jones KE et al (2008), Karesh WB et al (2012) and Wang L-F & Crameri G (2014).

5 Spring J (2020)

6 See eg Fischer L (2020), Pfeifer H (2020).

7 See eg Darlington S (2017), Global Slavery Index website 'Country studies: Brazil', ILO (2009) and Repórter Brasil (2019).

8 See eg McConnell BM (2019), van der Zee B, Levitt T & McSweeney E (2020) and Wozniacka G (2020).

9 Kinniburgh C (2020)

10 See European Commission (2013) pp21–22, Henders S, Persson UM & Kastner T (2015) p6 and Sharma S, IATP & Schlesinger S (2017) p25.

11 Rajão R et al (2020)

12 Willett W et al (2019) p455

13 JBS (2020) p16

14 ExxonMobil, Shell and BP were responsible for 577, 508 and 448 $MtCO_2e$ 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 $MtCO_2e$, 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 & ITAP (2018).

15 Greenpeace International (2009)

16 Greenpeace International (2009) part 1 piii

17 JBS-Friboi, Bertin, Minerva & Marfrig (2009); see also Mongabay (2009).

18 See Boadle A (2017), Greenpeace Brazil (2020a), Locatelli P & Aranha A (2017) and Wasley A et al (2019c).

19 Amnesty International UK (2020), Earthsight (2019)

20 Gross AS & Aranha A (2017), Wasley A et al (2019b) and Zocchio G (2013)

21 Santini D & Wrobleski S (2014)

22 Mano A (2020)

23 Wasley A et al (2019a)

24 Wasley A et al (2019b)

25 Wenzel F (2019a)

26 Wasley A, Heal A & Campos A (2020)

27 Trase platform 'Bulk downloads, Brazil – Beef (all years)'

28 Including exports from JBS subsidiary Seara, JBS exported around 480,287 tonnes of beef products from Brazil in 2017 and 674,801 tonnes in 2019 – an increase of 194,514 tonnes. Source: Panjiva database (https://panjiva.com/data/braziltrade-data), consulted 17 July 2020.

29 Panjiva trade data show JBS and its subsidiary Seara exporting 674,801 tonnes of beef products from Brazil in 2019. ComexStat puts total beef exports in 2019 at 2,011,520 million tonnes. Sources: Panjiva database and ComexStat, consulted 20 July 2020.

30 Marks & Spencer, Sainsburys and Tesco are members of the Consumer Goods Forum. For an assessment of different UK retailers' commitments to achieving zero deforestation in their soya supply chains, see WWF (2019).

31 See Greenpeace UK (2020). Approximately 68% of UK soya imports come from South America (source: Efeca (2019) p14).

32 European Commission (2013) pp23–24

33 WWF & RSPB (2020)

34 Both companies are owned by US-based food company Pilgrim's Pride, in which JBS has a controlling stake. See Casey S & Freitas T (2017) and Mello G & Mano A (2019).

35 Wasley A et al (2019b)

36 Tulip website 'Wholesale'

37 Moy Park website 'About', Tulip website 'How we do it'

38 Mulligan J (2017), Nando's website 'FAQs: Our food' and Wasley A et al (2019b)

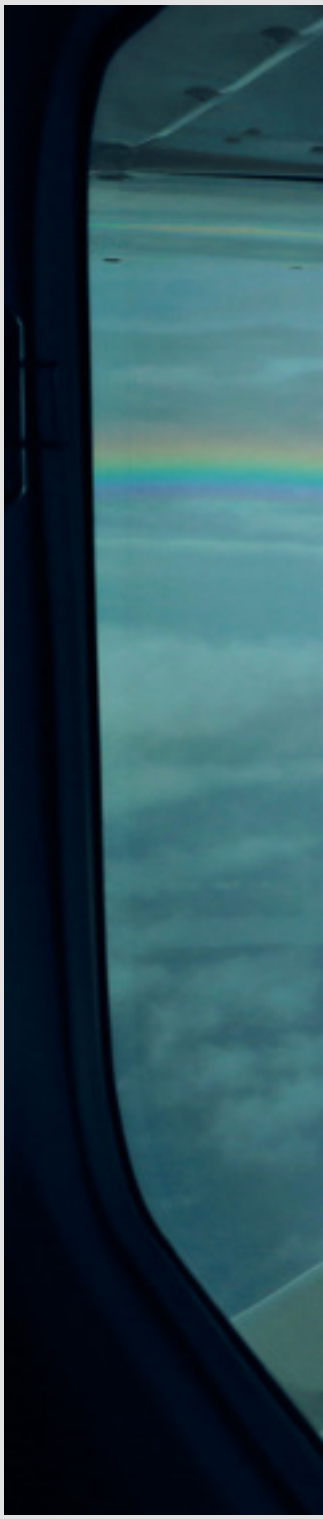
39 Tulip (2017)

40 Wasley A et al (2019b)

41 BBC (2018)

42 Ridler J (2019)

43 Rajão R et al (2020)



26 May 2020, 'Wings of Emergency' Project in the Amazon, Brazil ©Edmar Barros/Greenpeace

9 July 2020, Alta Floresta, Mato Grosso, Brazil, 11°50'19.9091" S 57°16'37.1755" W: Deforestation and fire monitoring in the Amazon. ©Christian Braga/Greenpeace

Part 1: How lack of transparency in the cattle sector drives Amazon destruction

1 April 2009, Brazil: Beef carcasses in a Marfrig slaughterhouse. ©Ricardo Funari/Lineair/Greenpeace

The butcher's block – how lack of transparency and traceability enables forest crime

1 October 2018, Amazonas, Brazil, 3°24'3.6" S 59°24'10.98" W: Deforestation and fire monitoring in the Amazon. ©Daniel Beltrá/Greenpeace

The proliferation of political and corporate commitments to end deforestation have not translated into meaningful change on the ground, and the global commodities trade remains a leading driver of forest destruction. Three interrelated failures, each prevalent at both political and market level, help to explain this:

1. **Data deficiency:**

- Governments of countries where large-scale commodity-driven deforestation is occurring, or that import forest risk commodities in significant quantities, are failing to produce definitive, legally verified maps showing land tenure and identifying ultimate ownership, and/or to set up tracking systems to monitor the flows of commodities.
- Companies that trade, process, use or retail commodities or provide financial support to the sector are failing to identify and record their entire commodity supply chains to the producer level.

2. **Failure of transparency:**

- Where they have produced maps or established tracking systems as described above, governments are failing to provide their citizens and civil society with timely access to such information in formats that are easy to locate, access, understand and evaluate.
- Where they have amassed data on their own commodity supply chains, companies are failing to make that data available to enable independent monitoring and verification of their sustainability claims.

3. **Failure of due diligence:**

- Governments in producer and consumer countries are failing to defend the public interest and uphold the rule of law.
- Companies that have established zero-deforestation and human rights policies with which they require their suppliers to comply are failing to enforce that compliance, in that they have not yet made it a condition of trade or financial support.

These failures undermine accountability and create the conditions in which corruption, human rights abuses and forest crime thrive. Transparency – public access to high-quality information – is vital to ensuring that commodity 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.

Buying blind – the market's no-questions-asked approach to global commodities trade

'Supply chain interventions, which include certification schemes and zero-deforestation commitments that aim to produce environmentally and socially beneficial outcomes, are increasingly common, but evidence on their efficacy is scarce. [...] The agreements could be made more effective by tracking cattle movements between properties and expanding monitoring to include all properties in the supply chains, as well as ensuring that all slaughterhouses monitor."

Jennifer Alix-Garcia and Holly Gibbs, Global Environmental, Change November 2017

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. But the environmental stakes are too high for such ignorance. Given the urgency of the climate and nature crisis, consumer goods companies (including, but not restricted to, those in the food sector) must adopt a zero-tolerance approach to commodity sourcing as part of a root-and-branch transformation of their business model. They must assume high-risk commodities from untraced or undisclosed sources are driving deforestation and ecosystem conversion, and exclude them completely from their supply chains along with goods from identified sources that their scrutiny shows to be involved in such destruction. They must also suspend trade with suppliers that are shown to be in any way involved with deforestation or ecosystem conversion, regardless of whether the specific items they are purchasing are affected.

In early 2019, Greenpeace International issued a multi-commodity transparency challenge. More than 50 traders, retailers, producers and consumer goods companies were asked to make their supply chains

23 March 2019, Formosa do Rio Preto, Brazil, 11°20'59.88" S 46°24'38.76" W: Soya plantation in the Estrondo estate – Greenpeace Brazil documented violence against traditional Cerrado communities within the estate, where Bunge and Cargill both have silos. ©Victor Moriyama/Greenpeace

23rd July 2020

John Sauven
Executive Director
Greenpeace UK
Canonbury Villas
London N1 2PN

Dear John,

Many thanks for your letter of 3rd July.
The current situation in the Amazon is deeply concerning, and we continue to monitor conditions on the ground through our networks, particularly as dry season...
repeat of last year's forest fires would be...
Tesco does...

TESCO

Tesco PLC
Tesco House
Shire Park
Kestrel Way
Welwyn Garden City
AL7 1GA

Below: On 23 July 2020, Dave Lewis informed Greenpeace UK that 100% of the soya in the animal feed used to produce Tesco's poultry and pork was 'certified deforestation free'. Four days later, his company spokesperson clarified that just 1% was from a segregated supply chain while some 69% was 'Book & Claim' – a system of credits with essentially no segregation or monitoring of the product.

for cattle, cocoa, dairy, palm oil, pulp/paper and soya products transparent, including disclosing the names of all the producers to which they had connections, in order to show what progress they had made towards eliminating any links to deforestation.[2]

Not a single one of the companies contacted was able to demonstrate meaningful effort to eradicate deforestation from its supply chain. The majority simply declined to disclose their suppliers, citing reasons of commercial confidentiality.[3] A handful of companies did choose to disclose some or all of their suppliers; however, the information they disclosed revealed significant failings in the implementation of their corporate 'no deforestation' commitments, either showing the continued presence of problematic producers in their supply chains or, where only direct suppliers were disclosed, revealing suppliers with documented links to such producers.

For example, soya is the second most significant driver of global deforestation after beef,[4] and about 90% of it is used for animal feed.[5] Yet not a single company contacted by Greenpeace International was able to demonstrate that it was tracking the full amount of soya consumed as animal feed in its supply chain – including by meat and dairy producers or their business customers – let alone whether the supply of soya-based animal feed embodied in its supply chain was contributing to forest destruction. At best, companies were estimating their consumption of soya for animal feed on the basis of industry averages – and this only when challenged by Greenpeace International. Palm oil and its derivatives are also a growing component of animal feed,[6] yet companies were again unable to calculate the palm oil consumption embodied in their supply chains. A similar exercise carried out by Greenpeace UK in September 2019 yielded comparable results – a challenge to 23 food sector companies to demonstrate that the soya used as animal feed in their meat and dairy supply chains was not driving deforestation revealed that none of them had full knowledge of the amount of soya embodied in their supply chains or were able to trace it to farms that can be independently verified as deforestation-free at the group level.[7]

In other words, when it comes to the use of high-risk commodities in animal feed, downstream companies appear to know neither the volumes they use nor the details of the producer groups from which they source. Although animal feed accounts for a significant share of manufacturers', retailers' and fast food companies' deforestation footprints, it seems such companies have yet to enforce their 'no deforestation' commitments.

At the same time, it must be acknowledged that the failure to expose the scale of industrial meat's contribution to the climate and nature emergency is not the fault of downstream companies alone. Producers themselves are ignoring civil society's demand for transparency, while governments are failing to hold the sector to account by insisting on traceability and effective due diligence, as the following section shows.

Dave Lewis, CEO of Tesco. ©Tesco

'With regards to soy used as a component in our poultry and pig feed, 100% of the soy used in products sold to Tesco is certified deforestation free.'

Dave Lewis, Tesco CEO, 23 July 2020

'I wanted to quickly come back to you on the question regarding certification. Our latest reported progress (2019) covers all our whole animal protein products, which now use Book & Claim Credits and Mass Balance. In line with our zero deforestation soy transition plan, this does not yet include animal protein ingredients (including pork and poultry) which we hope to cover this year.'

Tesco spokesperson, 27 July 2020

Tupungato©shutterstock.com

Where's the beef? – how lack of transparency enables cattle laundering

July 2019: Screenshot of Facebook social media post shows JBS-branded livestock truck reportedly being used to collect cattle from a farm that has been embargoed.

The deforestation impact of the beef industry is felt most severely in South America.[9] The sector is one of the major contributors to deforestation in the wider Amazon region, with cattle ranchers reportedly responsible for 80% of land clearing in every country with Amazon forest cover.[10] The industrial meat sector in South America gets away with the environmental and human rights abuses laid out below because of a lack of governance, due diligence and transparency. Laws and regulations governing the activities of producers are inadequate and poorly enforced, while record-keeping requirements and accessibility of official records are insufficient to enable products (whether meat or feed grains) to be traced to source. These deficiencies are exacerbated by the reluctance of many major meat processors and commodities traders to scrutinise their own supply chains adequately or to publicise the results of such scrutiny. When pressured to act, industry tends to do the bare minimum to satisfy the demands of lawmakers or civil society, while continuing to take advantage of weak governance.

Looking specifically at Brazilian cattle supply chains, the lack of transparency and traceability poses a key obstacle to ending the industry's role in driving the illegality, deforestation and human rights abuses detailed below. This shortfall is particularly problematic in two areas:

1. **Land tenure:** The lack of a comprehensive public national database of legally verified property boundaries (ie a land register) is a profound barrier to civil society efforts to link deforestation, fires or other legal violations to specific properties or owners.

2. **Cattle movement:** A large proportion of cattle in Brazil move between farms over the course of their lives, meaning that indirect suppliers (farms that have supplied cattle, directly or indirectly, to the farm from which the slaughterhouse ultimately purchases them) are a significant feature of slaughterhouses' supply chains.[11] According to Holly Gibbs, Associate Professor of Geography and Environmental Studies at the University of Wisconsin–Madison, 'almost all farms buy from another property. The estimate ranges from 91–95% [of all farms].'[12] 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 multiple properties before arrival at the slaughterhouse.[13] Animals may be bred on one farm and then reared on an intermediary farm before arriving at a final feedlot for fattening.

9 May 2009, Fazenda Espírito Santo, Xinguara, Pará, Brazil. ©Marizilda Cruppe/EVE/Greenpeace

'Cattle often spend time on multiple properties prior to slaughter, and ranchers can raise and fatten cattle on noncompliant ranches without a CAR [see page 18] or with recent deforestation, and then move the animals to a compliant property before sale to the slaughterhouses ("laundering"). Cattle laundering may also happen through "middlemen" who buy cattle from many producers, including those with noncompliant properties, and then sell to slaughterhouses through their own compliant property. During field surveys, ranchers reported that such laundering is a common and accepted practice, and pointed to the fact that it is not prohibited by the agreements. "The cows are not embargoed, only the land" was a common sentiment. Cattle produced on ranches with recent deforestation could also be sold to nearby slaughterhouses that do not have monitoring systems, allowing the deforestation to "leak" into these unregulated supply chains."[8]

Holly Gibbs et al, Conservation Letters, April 2015

However, Brazil does not have a universal national system to track individual cattle – unlike the EU, for example, where individual cattle need to be fitted within 20 days of birth with ear tags bearing a unique identifying number and identifying the animal's herd of origin. Together with 'passports' issued by EU governments, these tags ensure full traceability of individual animals throughout their lives, including all movements, changes of ownership and passages through cattle markets.[14] The nearest Brazil comes to this is the System of Identification and Certification of Bovine and Bubaline Origin (SISBOV), coordinated by the Ministry of Agriculture, Livestock and Supply (Ministério da Agricultura, Pecuária e Abastecimento; MAPA), which certifies fewer than 0.5% of farms with more than 50 head of cattle.[15] SISBOV certification is mandatory for producers supplying beef for export to countries demanding traceability (including the EU) but voluntary for producers dealing with other markets.[16] This system is supposed to guarantee traceability throughout the supply chain:[17] cattle that are born on a SISBOV farm must be registered and ear-tagged by 10 months of age, and cattle purchased from a non-SISBOV farm must be registered and ear-tagged within 30 days of arrival on a SISBOV farm. No cattle may be moved off a SISBOV farm without being registered and ear-tagged.[18] However, the critical flaw in the system is that in the case of animals born on a non-SISBOV farm, no information at all is recorded about their history prior to their arrival at a SISBOV farm. Moreover, the system does not require even the certified farms themselves to refrain from deforestation.[19]

The SISBOV system aside, data recording the movements of cattle in Brazil is fatally compromised by the fact that individual animals are not identified. This, coupled with the fact that the data that is recorded is not readily accessible to the public in a comprehensive and usable format, makes it virtually impossible for third parties to trace animals from their origins to the slaughterhouse. These deficiencies of traceability and transparency create opportunities for animals bred, raised or fattened on farms engaging in illegal or destructive practices to enter the supply chain, with the almost universal – and perfectly legal – movement of cattle from farm to farm, as described above, being used as cover to 'launder' animals into farms not associated with such practices.

'In the case of indirect suppliers, JBS has not yet been successful in implementing traceability processes. As a justification, the Company advised that the traceability of the cattle production chain, from birth to slaughter, is only possible with full access to all Animal Transportation Guide (GTAs) to identify the indirect supply chain.'[20]

DNV GL, JBS-commissioned auditor, 17 July 2019

'Until now, agribusiness and the Brazilian government have claimed that they cannot monitor the entire supply chain, nor distinguish the legal from the illegal deforestation. Not anymore. We used freely available maps and data to reveal the specific farmers and ranchers clearing forests to produce soy and beef ultimately destined for Europe. Now, Brazil has the information it needs to take swift and decisive action against these rule-breakers to ensure that its exports are deforestation-free. Calling the situation hopeless is no longer an excuse.'[21]

Raoni Rajão, Universidade Federal de Minas Gerais (UFMG), July 2020

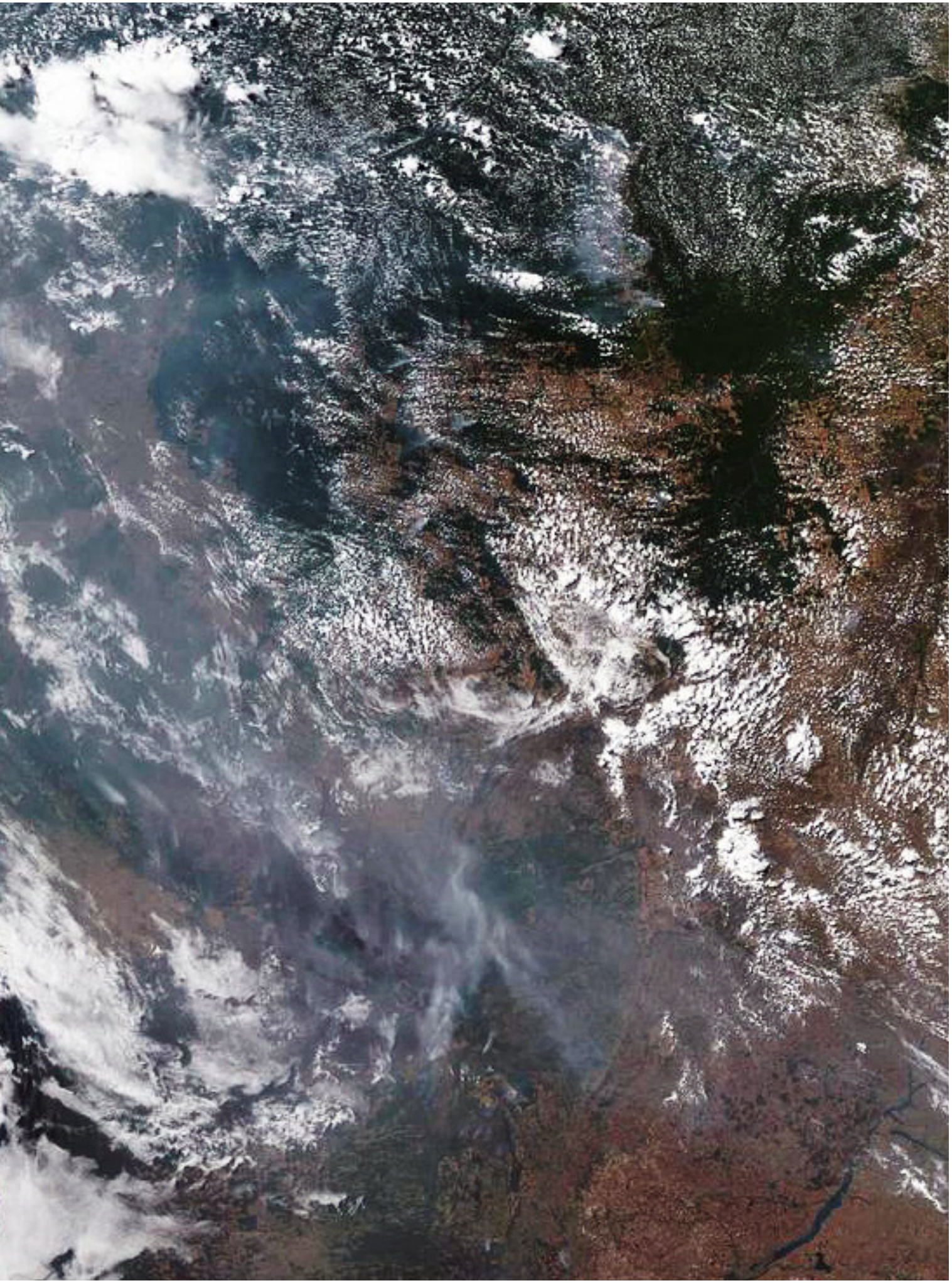
'The data we've accessed and analyzed – from Brazil's own government agencies – set alarm bells ringing. This information should not be hidden from the public eye.'[22]

Richard Pearshouse, Head of Crisis and the Environment at Amnesty International, July 2020

'The current health crisis – resulting from the pandemic and the environmental crisis resulting from rising deforestation – that threatens the Amazon at this moment reflects failures of the political-economic model that has prevailed in the region for decades. Predatory exploitation and weakened enforcement can be reversed with easily implemented proposals that do not depend on the federal government, such as greater transparency and dissemination of environmental data and stricter laws. [...] We have satellites that clearly show problems, the technologies to solve them and the best scientists in the world warning about the imminent dangers and proposing solutions. What we lack is political will.'[23]

Ilona Szabó de Carvalho (Igarapé Institute), Brenda Brito (Imazon) and Daniel Azeredo (federal public prosecutor for Pará), June 2020

20 August 2019: Satellite imagery shows smoke rising from fires in the Brazilian states of Amazonas, Mato Grosso and Rondônia. This natural-colour image was collected by NOAA/NASA's Suomi NPP using VIIRS (the Visible Infrared Imaging Radiometer Suite). ©NOAA



However, notwithstanding the deficiencies in land tenure and cattle movement data collection just identified, there is data that could be used to force greater cattle sector accountability. Public access, in readily usable formats, to two existing (if imperfect) datasets – one covering land tenure on the basis of self-declaration and the other covering transport of livestock – would greatly improve the transparency of Brazil's cattle sector as well as the ability of law enforcement agencies, and of processors and their downstream customers, to monitor cattle supply chains and the impact of the sector, ultimately helping to ensure that meat production ceases to involve deforestation and human rights abuses:

- **The Cadastro Ambiental Rural (CAR), or Rural Land and Environmental Management Registry:** Self-reported registration of all rural properties (including identification of property boundaries) is mandatory in Brazil; however, 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 – as exemplified by the case of the Ituna-Itatá Indigenous lands (reported on by Greenpeace Brazil in 2020), which are covered virtually entirely by 223 CAR claims.[24] Further, the self-declared property boundaries may be revised to avoid liability for violations of the Forest Code (see page 35), which specifies the minimum proportion of natural vegetation that must be maintained within a property.

- **Guias de Trânsito Animal (GTAs), or animal transportation records:** The GTA is a mandatory transport record that must be filed every time a consignment of livestock is moved. It does not track individual animals, but rather individual consignments of cattle. The data the GTA contains is collected exclusively by the state sanitary agencies to enable traceability and so prevent the spread of foot-and-mouth and other animal diseases. A state sanitary agency generates a form with a unique seven-digit code for each consignment of animals (whether moved by truck or boat or by herding). The GTAs are recorded in databases managed by the state sanitary agencies and synchronised with a federal database. All consignments of cattle received by farms or slaughterhouses should be accompanied by a GTA. The data entered on the form includes the following: total number of animals in the consignment, number of animals of either sex and within different age ranges, purpose of transportation (slaughter, breeding, etc), origin and destination municipalities and properties, and vaccination status of the animals.[25]

  However, GTAs do not indicate whether the animals being transported originate from a farm other than the one that dispatched them (ie an indirect supplier), despite the fact that some or all of the cattle in a consignment may have spent part or most of their lives at other locations. Moreover, although GTAs are official documents, the public does not have straightforward and timely access to the entire GTA database. For example, on a case-by-case basis, certain states may eventually release a limited amount of historic data upon formal request, but even public prosecutors in certain Amazon states are unable to effectively access the data.[26] Processors also complain about their lack of comprehensive access to the data. According to the 2019 audit report of JBS, the country's largest cattle processor: 'the Company advised that the traceability of the cattle production chain, from birth to slaughter, is only possible with full access to all animal transportation records to identify the indirect supply chain. [...] JBS and other industry players are already in touch with the MAPA to obtain access to the GTA data base [...] but have had no success.'[27]

The value of full public access to these datasets would be further increased by the possibility of linking them to other already publicly accessible datasets such as the following:

- **Environmental violations by, and embargoes on, farms:** Brazil's Institute of the Environment and Renewable Natural Resources (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis; IBAMA) publishes a list of farms that have breached environmental legislation such as the Forest Code – eg by carrying out illegal deforestation – and that are prohibited (embargoed) from producing in a specified area of their land holding (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.

- **Slave labour:** The 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.[28]

- **Indigenous lands, Conservation Units and other public lands:** Maps of the locations of these areas are in the public domain.

- **Data from deforestation monitoring systems:** There is publicly available data from systems such as DETER (a satellite-based system for real-time detection of deforestation) and PRODES (Programme for the Estimation of Deforestation in the Brazilian Amazon), along with MapBiomas and high-resolution satellite imagery.

- **International trade data:** Trade data is provided by, for example, the Trase supply chain transparency initiative.[29]

Such increased transparency has been called for by Brazil's federal public prosecutors. In November 2015 the Federal Public Ministry (Ministério Público Federal; MPF) recommended that GTA data be made fully publicly available online by state sanitary agencies within 120 days.[30] After repeated formal requests from Greenpeace Brazil, for example, Instituto de Defesa Agropecuária do Estado de Mato Grosso (INDEA) officials in Mato Grosso released the data in 2015 – but this was a one-off event with no new data being made available, and no other state sanitary agencies complied.

In June 2020, the federal public prosecutor for Pará, together with senior staff from Imazon and the Igarapé Institute, proposed similar measures – importantly not requiring the support of the executive branch – in order to improve transparency and governance.[31] The proposal included the relevant authorities making publicly accessible a number of databases, including the CAR dataset, that would allow more detailed monitoring of compliance with environmental law.

In July 2020, a collection of international scientists published findings based on the CAR and GTA data for certain states in order to 'explicitly link illegal deforestation on individual rural properties to their agricultural production and exports to EU countries'.[32] The findings were damning: the scientists estimated that about one-fifth of 2017 beef and soya exports from Brazil to the EU may have been produced on illegally deforested land in the Amazon or the Cerrado. Within the states of Pará and Mato Grosso, in 2017, some 60% of cattle supplied to slaughterhouses came from rural properties suspected of engaging in illegal deforestation: in the case of a fifth of these cattle the direct supplier was suspected of deforestation, while for the remaining four-fifths it was an indirect supplier that was implicated. Mato Grosso is the third largest source of Brazilian beef imported into the EU. This study looked only at illegal deforestation – ie clearance in violation of Brazil's Forest Code – but nevertheless it demonstrated how invaluable the CAR and GTA datasets could be as tools for monitoring the sector. For example, they could be used to identify farms directly involved in, as well as farms and processors linked to, expropriation of Indigenous lands, deforestation (illegal or otherwise), slave labour and use of fire to clear land.

Brazil's constitution supports the principles that access to public information is a fundamental right and that disclosure of public interest information is an administrative duty.[33] Given the clear public interest value of the datasets described above – and the calls from scientists, public prosecutors and even processors like JBS to make them open and accessible – it is imperative that those that have the ability to do so act in the public interest and publish the data.

In terms of the global market, consumer companies and the financial sector need to make full supply chain transparency a condition of trade with or financial support for suppliers, requiring them to have open and comprehensive monitoring systems in place by no later than 1 January 2021. The limited success of the 2009 G4 Cattle Agreement brokered by Greenpeace Brazil underlines how vital such pressure, along with the publication of the official property and transportation data, will be to the goal of bringing transparency and accountability to the Brazilian beef sector in particular.

The G4 Cattle Agreement – commitments a decade overdue

Greenpeace has long recognised that, for Brazil's beef industry as for other commodities sectors, traceability and transparency are key to accountable supply chains and therefore to preventing environmental destruction and human rights abuses. Greenpeace Brazil's investigations into the industry's involvement in deforestation, published in 2009 in the Greenpeace International report *Slaughtering the Amazon*, led to the signing of the G4 Cattle Agreement later that year by the country's four largest beef processors: Bertin (subsequently bought by JBS), JBS, Marfrig and Minerva.[34] Based on the demands made in the report, this agreement was intended to ensure both compliance with fundamental environmental and human rights standards and transparent reporting on that compliance, making these key meat processors themselves the agents of transformation. It involved a range of commitments concerning their sourcing from farms within the Amazon biome, requiring them to ensure, at a minimum:

- **Proof of zero deforestation:** The beef processors were required to prove that they were not buying animals (directly or, within two years, indirectly) from farms that had engaged in any deforestation after the date on which they signed the agreement.

- **Proof of freedom from land invasion:** The companies were required to prove that they were not sourcing cattle from farms that had been accused of invading Indigenous lands or fined for invading protected areas. They also pledged to avoid sourcing cattle from farms that had been embargoed by IBAMA, or from any suppliers – direct or indirect – accused of land grabbing or convicted of involvement in land conflicts.

- **Proof of freedom from slave labour:** The companies were required to avoid buying from farms using slave labour (backed by a requirement to sign and fully comply with Brazil's National Pact for the Eradication of Slave Labour) and to be able to prove that their supply chains were free from slavery.

- **Proof by suppliers of legal land title:** They also pledged not to source cattle from farms – initially direct suppliers, but to be extended to include indirect suppliers within two years – that could not provide maps showing their property boundaries and areas of use and non-use or (after grace periods of six months, two years and five years, respectively) that were not registered, lacked an environmental permit or did not have legal land title.

- **Credible tracking systems:** Suppliers were to be required to formally commit to adopting a reliable and internationally acceptable tracking system enabling monitoring, verification and reporting of the origins of all cattle products and by-products, and an independent auditing system was to be established to ensure the signatory companies' compliance with the terms of the agreement.

While this voluntary private-sector commitment by Brazil's largest beef producers was a breakthrough, a separate agreement – the Terms of Adjustment of

Conduct (TAC) that each company signed with the Federal Public Ministry in relevant states, often prior to the G4 Cattle Agreement – was legally binding, and therefore came with legal consequences.[35] Although the TACs are not able to prohibit legal Amazon deforestation,[36] which is beyond the Federal Public Ministry's remit, their other criteria are similar to those of the G4 Cattle Agreement.

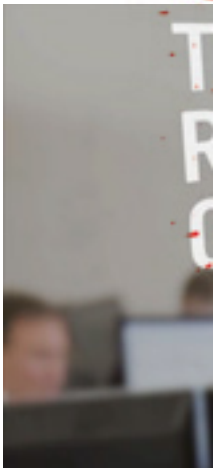
Unfortunately, the beef processors failed to deliver on their commitments to carry out transparent and comprehensive monitoring of their supply chains and of cattle movements. This failing was exacerbated by the prevalence of such movements in the region – the fattening farms from which the big processors buy cattle reportedly have an average of 23 suppliers,[37] and most cattle move more than once during their lifetime from one farm to another for grazing and/or fattening. Another aggravating factor was the inadequacy of the official system for recording such movement via GTAs, along with the refusal of the Ministry of Agriculture to make the GTAs readily publicly available.

The failure to deliver the envisaged monitoring of indirect suppliers and cattle movements allowed deforestation and other breaches by indirect suppliers to continue unchallenged, as well as the laundering of cattle associated with such breaches (itself facilitated by the routine nature of cattle movements and the inadequacy of the records kept). Indeed, the failure to monitor indirect suppliers is thought to result in 85–90% of deforestation in their supply chains being missed.[38] In any case, more than half the Brazilian beef on the market is processed by smaller companies that are not parties to the G4 Cattle Agreement, and a substantial proportion of these have not signed TACs.[39]

In 2017 – after IBAMA announced that it was fining JBS R$24.7 million ($7.7 million) for buying cattle raised on land that had previously been illegally deforested and cleared by burning – Greenpeace Brazil suspended its engagement with JBS until the company could prove that the cattle it traded were free from deforestation, slave labour and land invasion – ie until it met the terms of the G4 Cattle Agreement.[40] Soon after, Greenpeace Brazil suspended all engagement with the G4 signatories concerning implementation of the agreement, in light of their failure to deliver on their commitments and of the continued corruption scandals within the wider Brazilian livestock sector.[41]

Nearly a decade on from the original 2011 implementation deadline for deforestation monitoring of indirect suppliers, the processors continue to postpone the promised delivery of full supply-chain traceability – indeed, in July 2020 Marfrig announced that it would now seek to achieve this for all cattle sourced from the Amazon by 2025 and from the Cerrado by 2030.[42] Though the agreement remains a reference point (albeit purely as a commitment by the companies themselves, with no formal oversight except the audits that they themselves commission), and despite the proliferation of zero-deforestation agreements by global consumer companies and traders, deforestation for beef in Brazil appears to continue apace: a 2019 investigation into that year's shocking levels of land clearance by fire in the Brazilian Amazon revealed that fires were three times as frequent in areas supplying cattle to slaughterhouses as elsewhere in the region.[43] As Greenpeace Brazil and other NGO investigations regularly expose, major beef processors habitually buy animals reared or fattened by third-party producers whose activities and supply chains they fail to scrutinise (see pages 33, 42–43).

Covering its tracks – how leading processor JBS is backsliding on transparency commitments



'JBS closely monitors its suppliers for compliance in all aspects of our Responsible Procurement Policy and has not previously identified issues relating to human rights abuses of Indigenous communities or other protected groups. [...] The traceability of the entire beef supply chain is an industry-wide challenge and a complex task.'

JBS right of reply to Amnesty International, July 2020

The weakness of the Brazilian industrial beef sector's efforts towards due diligence and transparency, and the limitations of the G4 Cattle Agreement's voluntary approach, are exemplified by the country's largest processor, JBS. On the one hand, there is strong evidence that JBS has taken steps to exclude direct cattle suppliers that are required to be excluded under the terms of the agreement, such as those engaging in deforestation or forced labour.[44] The company claims to monitor its direct suppliers for deforestation via satellite imagery,[45] and according to a company-commissioned 2019 audit, as of 31 December 2018, some 7,025 of the approximately 85,000 farms included on its suppliers list were blocked for cattle purchases due to noncompliance.[46]

On the other hand, for all its enforcement action against direct suppliers JBS has been reneging on its key transparency pledge under the G4 Cattle Agreement to deliver a tracking system enabling monitoring, verification and reporting of the origins of the cattle across its entire supply chain. First, it has been reducing the amount of information it provides about its direct suppliers, making it increasingly difficult to independently verify supplier compliance with its environmental and human rights commitments. As part of the agreement, JBS undertook to provide proof of this compliance; to this end, it set up a 'Guarantee of origin' website[47] that enabled consumers and civil society to check the farm names, coordinates, ownership and other details of its direct suppliers from which individual consignments of beef originated.[48] This allowed for cross-referencing with official datasets and satellite imagery to verify whether the suppliers were compliant with its commitments under the agreement – namely, freedom from deforestation, slave labour or operations within embargoed, disputed or protected areas or Indigenous lands.

Yet as civil society organisations have identified more and more cases of deforestation – including of Indigenous lands and Conservation Units – on farms from which JBS has sourced cattle, the company has progressively decreased the comprehensiveness and usefulness of the information presented on this website. First, in 2015, it ceased to display the names and taxpayer identification numbers (Cadastros de Pessoas Físicas; CPFs)[49] of farmers, while continuing to show geographical coordinates for the locations of their farms. Since early 2019, according to research by ((o))eco,[50] it has stopped providing even this information – geographical coordinates are still provided, but prove to be those of the capital of the municipality where a company is registered rather than the farm itself, rendering them useless as a means of verifying the farm of origin and thereby confirming JBS's avoidance of cattle linked to deforestation or other abuses.

16 May 2019: Screenshots from JBS promotional YouTube video 'JBS: a history of success'. Source: https://youtu.be/m3SgMBLWqgY

In summary, the information that JBS makes available to consumers and civil society has never fulfilled the G4 Cattle Agreement's requirement that companies provide verifiable evidence of the origin of cattle and by-products and of their freedom from deforestation, slavery or invasion of Indigenous lands and protected areas.[51] Historically, it did provide some evidence of the immediate origins (direct suppliers) of products that could be collated with other information to determine whether the suppliers were in violation of the agreement, but even that level of accountability appears to have been lost.

However, given that across the sector up to 95% of farms acquire cattle from other farms,[52] the most important compliance enforcement issue involves not direct suppliers but indirect ones – farms that rear or fatten cattle which are then transferred or sold on to farms that supply directly to processors such as JBS. JBS's 2019 auditors state that in the case of indirect suppliers, 'JBS has not yet been successful in implementing traceability processes'.[53] This means that for nearly a decade JBS has been failing to abide by another of the requirements of the G4 Cattle Agreement, which stipulated that it would extend its exclusion of farms engaging in deforestation to indirect suppliers by 2011.[54] Moreover, while one of its competitors, Marfrig, reportedly admits that gaps in its audit trails mean that more than half the cattle it buys may have been bred or raised by indirect suppliers,[55] JBS has failed even to reveal what proportion of the cattle it sources may have such origins.[56] According to the auditors, JBS claims that the traceability problem lies with the failure of the Ministry of Agriculture to make the information that is essential to identifying indirect supply chains (GTAs) publicly available.[57] While the implication that JBS desires supply chain transparency is reassuring, and while the company has stated that it is working with the Brazilian government and the wider beef industry to rectify its inability to monitor indirect suppliers,[58] the bottom line is that JBS is failing to prove that it is not buying cattle from farms linked to forest destruction and human rights abuses. Indeed, the evidence, as laid out below, shows that it has done so and that there is a high risk of it continuing to do so. Add in JBS's history of corruption, and it becomes clear that companies that purchase and resell its products or those of its subsidiaries – including major supermarket and fast food chains – are in turn exposing themselves to a range of reputational risks.

9 July 2020, Alta Floresta, Mato Grosso, Brazil, 11°50'18.5259" S 57°16'33.3421" W: Deforestation and fire monitoring in the Amazon. ©Christian Braga/Greenpeace

Endnotes

1 Alix-Garcia J & Gibbs H (2017)
2 Greenpeace International (2019a)
3 Correspondence between Greenpeace International and companies, January to May 2019. Copies held by Greenpeace International.
4 European Commission (2013) pp21-22, Henders S, Persson M & Kastner T (2015) p6
5 Sharma S, IATP & Schlesinger S (2017) p25
6 Byerlee D et al (2017) p5
7 Greenpeace UK (2020)
8 Gibbs HK et al (2015b)
9 Henders S, Persson UM & Kastner T (2015) p6
10 Wasley A et al (2019c)
11 Gibbs HK et al (2015b) p39
12 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.
13 Gibbs HK et al (2015b)
14 Business Companion (2020)
15 de Mello Brandão Vinholis M, Carrer MJ & de Souza Filho HM (2017)
16 Wasley A et al (2019c)
17 Chain Reaction Research (2018)
18 Ministério da Agricultura, Pecuária e Abastecimento (2018) articles 59 and 60
19 Rausch L, Munger J & Gibbs HK (2020)
20 DNV GL (2019) p7
21 Universidade Federal de Minas Gerais (2020)
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23 de Carvalho IS, Brito B & Azeredo D (2020) – see https://www1.folha.uol.com.br/ilustrissima/2020/06/tres-propostas-para-evitar-uma-tragedia-irreversivel-na-amazonia.shtml
24 Greenpeace Brazil (2020b)
25 Vale P et al (2019) Appendix A p3
26 See eg Procuradoria da República no Pará (2018).
27 DNV GL (2019) p7
28 Inspeção do Trabalho (2020)
29 See Trase website 'Home'.
30 The recommendation states: 'In accordance with active transparency, promote, within 120 days, the appropriate implementation of transparency of environmental information that it manages, through its website on the Internet, ensuring that the data provided in the legislation that deals with its duties and functions is inserted, and updated in real time, including the following items: 1) availability of a content search tool which allows access to information in an objective, transparent, clear and in language of easy understanding (Art. 8, §3, I, of Law 12.527/11) 2) In addition to the information already available on its website, also make available the following information, according to the following degrees of detail: INFORMATION: GTA LEVEL OF DETAIL: GTA number, date of issue, volume transported, origin (CPF/CNPJ, name, establishment, municipality), destination (CPF/CNPJ, name, establishment, municipality), Age, Purpose, sending unit, any additional comments […] in the format of availability of listings (GTA extract) and full document.' Source: Portaria nº 74/2015 signed 13 November 2015; copy held by Greenpeace Brazil.
31 ClimaInfo (2020)
32 Rajão R et al (2020) p247
33 See eg Right2INFO.org (2012).
34 JBS-Friboi, Bertin, Minerva & Marfrig (2009)
35 More than 30 companies operating in the Legal Amazon, including the G4, signed TACs with the MPF as part of its Carne Legal project, launched in 2009 (see Ministério Público Federal (2019)). For an example of a TAC signed by JBS, see Ministério Público Federal (2010).
36 Alix-Garcia J & Gibbs H (2017) pp 204-205, Gibbs HK et al (2015b) p33. Landowners are permitted under the country's Forest Code to clear up to 20% of their land holdings within the Legal Amazon; see WWF-Brazil (2016) p18.
37 The Economist (2020)
38 The Economist (2020)
39 See The Economist (2020), Chain Reaction Research (2018) and Imazon (2017).
40 Locatelli P & Aranha A (2017)
41 Greenpeace International (2017)
42 Lopes F (2020)
43 Wasley A et al (2019c)
44 JBS-Friboi, Bertin, Minerva & Marfrig (2009)
45 The Economist (2020)
46 DNV GL (2019) p3
47 Friboi website 'Garantia de origem'
48 Evidence held by Greenpeace Brazil
49 These documents enable the owner of the property to be identified via their tax number.
50 Wenzel F (2019a)
51 See JBS-Friboi, Bertin, Minerva & Marfrig (2009).
52 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.
53 DNV GL (2019) p7
54 JBS-Friboi, Bertin, Minerva & Marfrig (2009)
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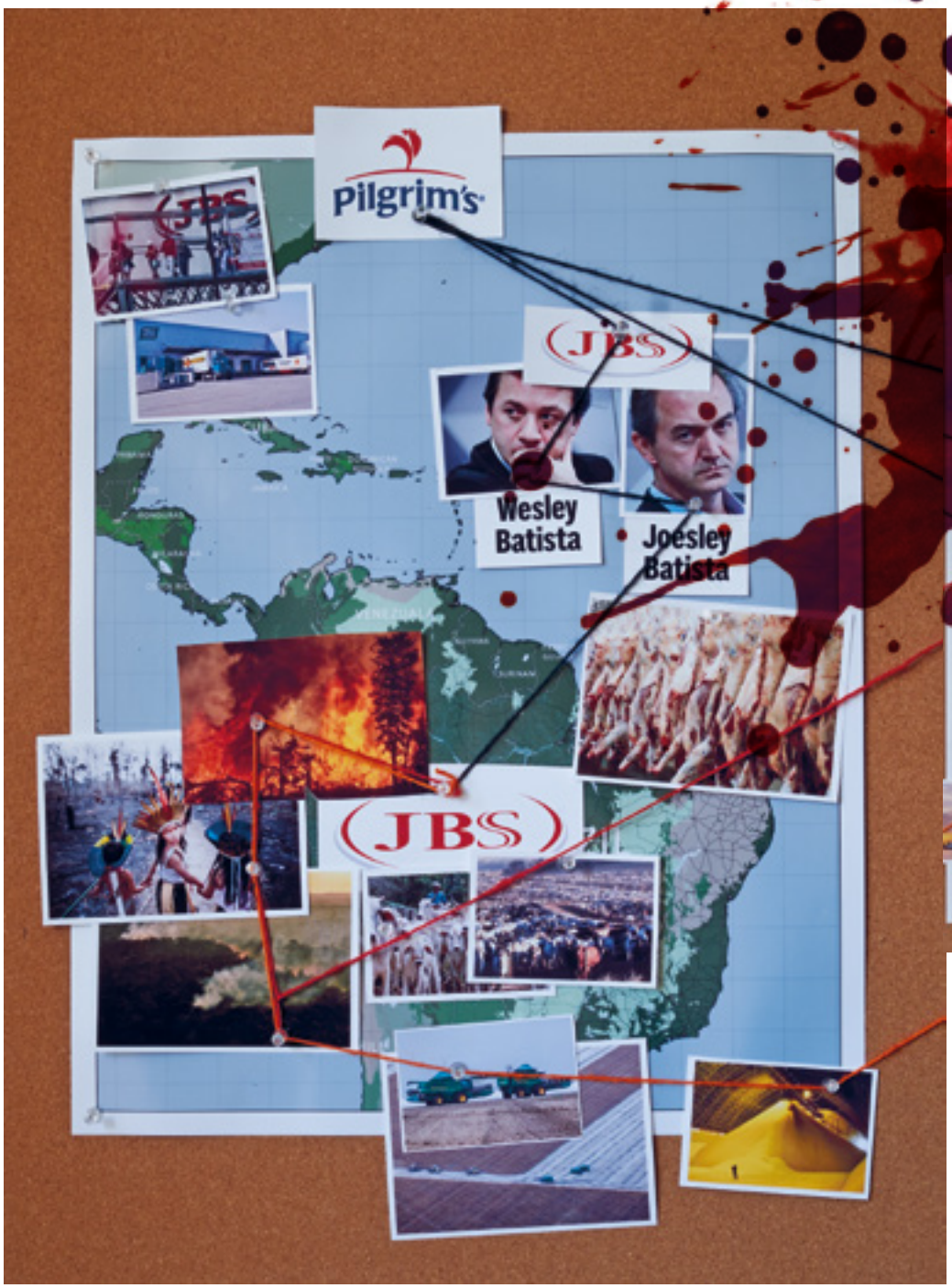
57 DNV GL (2019) p7
58 Wasley A et al (2019c)

JBS – the world's biggest industrial meat company – is still slaughtering the Amazon



Today, JBS is the biggest cog in the destructive global meat industry.[1] Its operations have been estimated to produce around half the annual carbon emissions of fossil fuel giants such as ExxonMobil, Shell or BP.[2] The scale of its environmental and social destruction became a global scandal in 2009, when Greenpeace International published *Slaughtering the Amazon.*[3] The investigation that report laid out exposed how the biggest names in the Brazilian cattle industry – including JBS, then accounting for 10% of global beef production – were linked to hundreds of ranches operating in the Amazon, including some associated with recent and illegal deforestation and modern-day slavery. The report revealed how 'criminal or "dirty" supplies of cattle are "laundered" through the supply chain to an unwitting global market.'[4] In the months following its publication, JBS and the three other major processors in the Brazilian cattle sector signed the G4 Cattle Agreement, as described above.

Eleven years on from the signing of that agreement, however, JBS is still slaughtering the Amazon. JBS and its network of subsidiaries have been repeatedly linked to suppliers found to be engaging in illegal deforestation in the Amazon[5] and operating illegally in protected areas and on Indigenous lands.[6] Its suppliers have also been implicated in modern-day slavery[7] and its slaughterhouses linked to unacceptable working conditions,[8] mass outbreaks of Covid-19[9] and salmonella-tainted chicken exports.[10] Members of the Batista family – the company's principal shareholders (via holding company J&F Investimentos) and senior executives – are notorious for their history of systematic bribing of Brazilian politicians.[11] Despite its public claims of openness – and its decade-old commitment through the G4 Cattle Agreement – JBS is backsliding on transparency measures for its cattle supply chains.[12] Moreover, a recent investigation reports that JBS is not merely turning a blind eye to its suppliers' violations but has been directly implicated in transporting deforestation-linked cattle to one of its own direct suppliers.[13]

It is clear that JBS's business model is incompatible with the environmental emergency we are facing. As of 2017 (the most recent year for which data are readily available), approximately 30% of its beef exports from Brazil are assessed to have come from the Amazon.[14] And despite the multiple supply chain risks that are detailed below, the company's global exports from Brazil are booming – JBS saw an increase in trade volume from Brazil of 40% between 2017 and 2019[15] and was responsible for around a third of Brazil's beef exports in 2019.[16]

What is JBS and who is behind it?

Brazil-based JBS SA, founded (originally as Friboi) in 1953 by José Batista Sobrinho,[17] is today a giant in the world of industrial meat. It has grown through a series of acquisitions largely funded by the state-owned Brazilian National Bank for Economic and Social Development (BNDES),[18] which owns more than a fifth of the company.[19] A further 40% is owned by the Batista family, which also holds senior management positions.[20]

Though hardly a household name outside Brazil, JBS is the second-largest food company in the world by annual sales (after Nestlé).[21] It is the world's largest processor of animal protein,[22] largest producer of beef and chicken and processor of leather, and second-largest producer of pork and lamb.[23] JBS also makes a range of other products mainly based on meat industry by-products, including biodiesel, collagen, pharmaceutical inputs, personal hygiene and cleaning items, and animal nutrition ingredients.[24]

JBS currently has 242,105 employees and 400 production units in 15 countries,[25] including the USA, where it is the second-largest meat processor.[26] It claims to serve over 270,000 businesses in more than 190 countries.[27]


Joesley Batista

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Wesley Batista

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Big in the UK

From left:

27 April 2011, Moy Park, Coolhill, Dungannon, Northern Ireland.

Chicken processing. ©Anton Mislawsky/ Shutterstock.com

'Pummeled by the impacts of political signals encouraging the clearing of forests, mostly for land grabbing, Brazil's forests are at a breaking point. It's critical for Europe to use its trade might and purchasing power to help roll back this tragic dismantling of Brazil's environmental protection, which has implications for the global climate, local people and the country's valued ecosystem services. [Policymakers] have the information they need to assess the extent of the problem in the Brazilian soy and beef sectors. It's time for them to act.'[28]

Britaldo Soares-Filho, Universidade Federal de Minas Gerais (UFMG), July 2020

While only a small percentage of the UK's beef imports come from the Amazon region,[29] JBS – a key player in the destruction of the Amazon for cattle ranching – has significant interests in the UK's meat industry.

According to Panjiva trade data, in 2019 JBS exported a fairly modest 11,332 tonnes of beef products and (with its subsidiary Seara) 27,239 tonnes of chicken products to the UK.[30] JBS facilities in or adjacent to the Amazon biome in Brazil are listed as the exporters of around 6% of the beef products. The vast majority of JBS's beef exports to the UK consist of beef offal, and nearly all of this is imported by JBS's UK subsidiary, JBS Global UK Ltd.[31]

JBS maintains a significant presence in the UK food sector via poultry giant Moy Park and pork processor Tulip. The direct owner of Moy Park and Tulip is a US food company called Pilgrim's Pride, of which JBS in turn owns a controlling stake – meaning that both Moy Park and Tulip are indirect JBS subsidiaries.[32] JBS formerly owned Moy Park directly, but sold the company to Pilgrim's Pride in 2017 for $1.04 billion – a transaction announced during the same week in which Joesley and Wesley Batista were arrested in Brazil[33] (see page 31) and which was labelled by Bloomberg as the 'latest move by JBS to offload assets' to help pay for legal settlements following the brothers' confession to bribery.[34] The transfer, while not obviously benefiting Pilgrim's Pride, did not affect JBS or the Batista family's ultimate (if now less direct) control of the company.

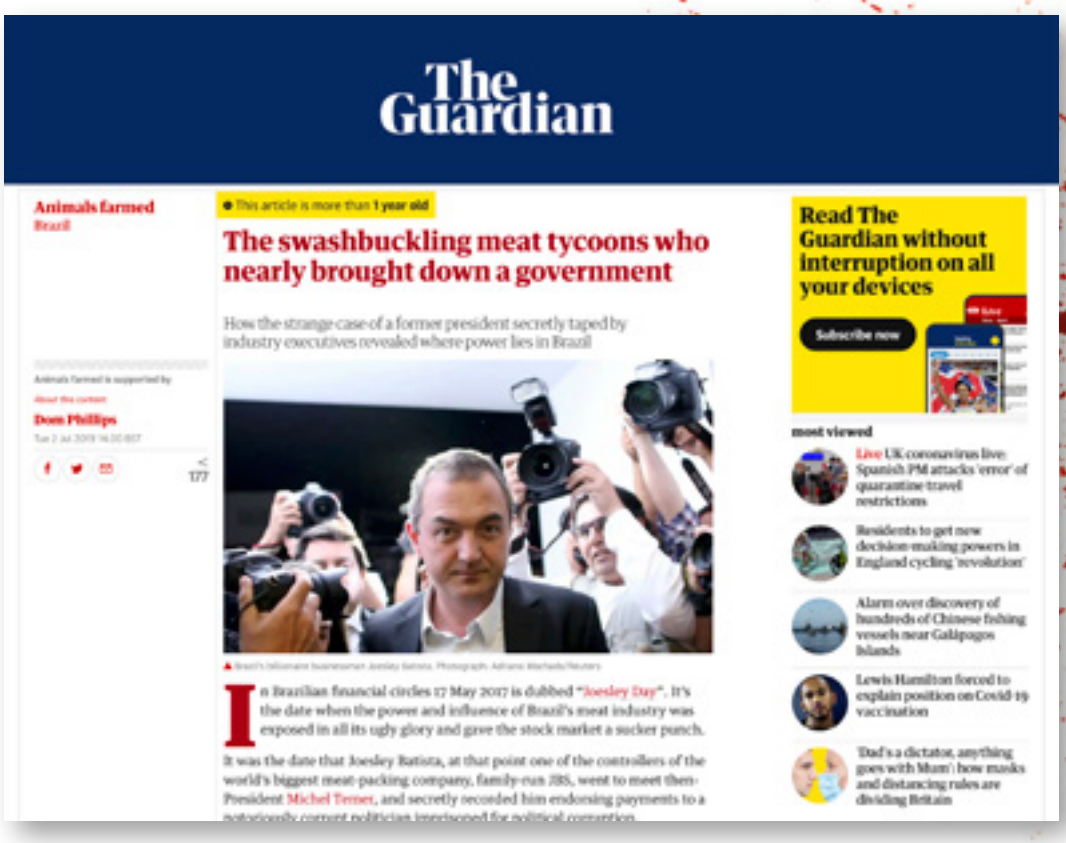
With a market share of around 30%,[35] Tulip is the UK's largest pork producer: it has 15 production facilities across the UK[36] and breeds and rears around 1.5 million pigs a year.[37] It also claims to operate the country's 'only fully dedicated lamb supply chain', with over 450 farmers.[38] Tulip claims to supply 'all the leading retail and foodservice businesses',[39] including the UK operations of the supermarket chains Aldi, Lidl, Marks & Spencer, Morrisons, Sainsbury's, Tesco and Waitrose[40] and its website boasts of its 2017 supplier award from McDonald's.[41]

Northern Ireland–based Moy Park produces about 30% of the chicken sold in the UK – over 280 million chickens per year – and owns 12 processing and manufacturing units in Northern Ireland, England, France and the Netherlands.[42] The company is Northern Ireland's largest private sector business, with a reported turnover of £1.6 billion ($2.1 billion) in 2018.[43] Moy Park reportedly supplies several UK supermarket chains, including Marks & Spencer, Sainsbury's and Tesco,[44] as well as fast food chains including Burger King, KFC, McDonald's, Nando's and Pizza Hut.[45]

Moy Park's history is marred by scandals. In May 2020, in the midst of the Covid-19 crisis, the company faced calls for the temporary closure of one of its processing plants in Northern Ireland following the death of an employee from the disease and amid trade union fears that clusters might be forming in 'a growing number of meat packing sites', including two Moy Park sites.[46]

The previous year the firm had come under fire after an investigation uncovered 'extreme' animal suffering at three of its farms,[47] and again after thousands of chickens 'roasted to death' at a Moy Park farm during the summer heatwave.[48] Since 2015 the firm has been fined more than £1 million ($1.3 million) for a series of infractions, including subjecting chickens to 'unnecessary pain and distress',[49] failure to pay workers the minimum wage[50] and unsafe work systems that led one employee to suffer life-changing injuries in an accident.[51]

Risk factor: corruption


The Guardian

Animals farmed
Brazil

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The swashbuckling meat tycoons who nearly brought down a government

How the strange case of a former president secretly taped by industry executives revealed where power lies in Brazil

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'It was the rule of the game. [...] Corruption was on the upper floor, with the authorities.'[52]

Joesley Batista

'Strong political connections and financing from state-owned banks facilitated the growth of JBS and other group companies. The family and its companies are now implicated in politically-linked corruption investigations.'[53]

Debtwire, October 2016

While JBS was founded by José Batista Sobrinho, most of the company's expansion has come under the leadership of his three sons: José Batista Júnior (known as Júnior Friboi), Wesley and Joesley.[54]

The Batista family also owns a significant share of JBS, via holding company J&F Investimentos. According to the 2017 US Securities and Exchange Commission filing, 'J&F is owned, indirectly through several Brazilian holding companies, by the Batista Family' including JBS founder José Batista Sobrinho and five of his children.[55] As of 25 June 2020, the Batista family's investment arm held a 40.03% stake in JBS,[56] with an additional 2.3% stake held by JBS itself and classified as 'treasury'.[57] The Brazilian government's BNDES bank is the second-largest shareholder of JBS, with a 21.32% stake.[58] Foreign investors – including international banks, investor funds and sovereign wealth funds – appear to hold at least 16% of the group, according to Bloomberg.[59]

According to Debtwire, the Batista family's political links and relationships with government and the state, and particularly its ties with state-owned banks, have been key to its growth. BNDES provided financing to JBS for its landmark acquisitions, including Pilgrim's

Screenshots of various news articles covering the Batista brothers Joesley and Wesley.

Pride (see page 29).[60] Debtwire reports that, according to campaign finance disclosures, JBS was the largest donor in Brazil's 2010 and 2014 presidential election campaigns.[61]

In 2017, as part of 'Operation Carwash', a multi-year probe into corruption involving Brazilian politicians and businesspeople, Brazil's Federal Police exposed bribery by JBS executives on a truly massive scale. As the Bureau of Investigative Journalism summarises it, the targets stretched 'from meat inspectors to the highest office in Brazil: Temer' (Michel Temer was at that point the country's president).[62] As a result of the investigation J&F Investimentos agreed in a leniency deal to pay R$10.3 billion ($3.2 billion) – one of the biggest fines in global corporate history.[63] On this occasion Wesley and Joesley Batista escaped prosecution through a plea bargain with government prosecutors, but they admitted to having bribed close to 1,900 politicians.[64]

In September 2017, four months later, the Batista brothers were arrested on allegations of insider trading involving the sale of large numbers of shares in JBS in the weeks before they admitted to the bribery of high-ranking officials (an admission that caused such a dramatic collapse in share prices that trading on Brazil's stock exchange was temporarily suspended).[65] In 2018 the brothers spent several months in jail for having failed to admit to this insider trading as part of their plea testimony during the Operation Carwash investigation, and they were banned from management positions in companies owned by J&F Investimentos, including JBS.[66]

Nevertheless, at the end of May 2020, Brazil's Superior Court of Justice authorised Wesley and Joesley Batista to return to their positions in J&F Investimentos and its subsidiary companies. The court ruling indicated that it was essential for Brazil's national economy during the pandemic for the brothers to return to management in order to make decisions that would safeguard production, jobs and tax collection at J&F Investimentos companies, which reportedly supply 25% of Brazil's food market.[67]

Allegations of financial misconduct associated with JBS are not exclusive to the Batista family. Early in 2020, the CEO of JBS-owned Pilgrim's Pride was one of four current and former chicken company executives indicted in the USA for conspiring to fix prices and rig bids for broiler chickens from at least 2012 to 2017.[68]

23 August 2019, Itaituba, Pará, Brazil, 6°19’28.8” S 55°21’29.76” W. ©Victor Moriyama/Greenpeace

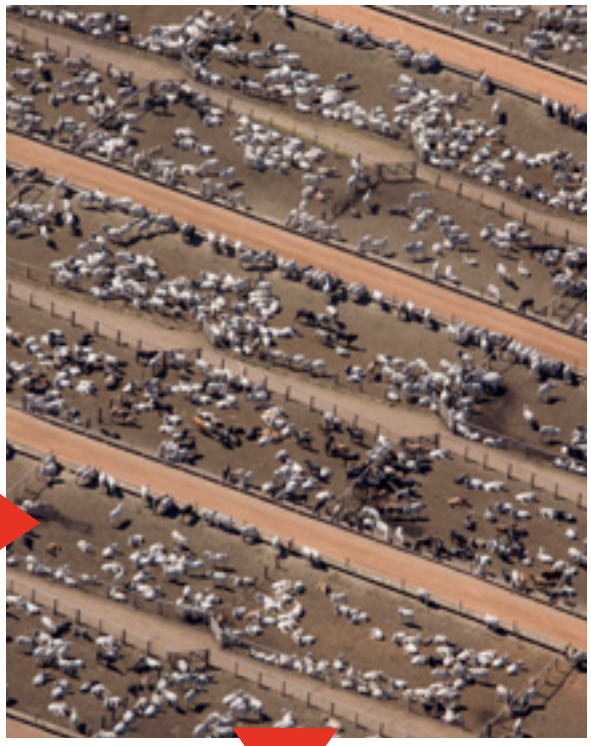
Risk factor: deforestation

Failure by JBS to map out its entire cattle supply chain, including indirect suppliers, exposes it to serious risk of trade from suppliers linked to deforestation, and the evidence laid out below shows that it does in fact trade with such suppliers. Its publicised role in transporting cattle between farms means it may even be facilitating the process of cattle laundering, a widespread problem in the Brazilian Amazon.

JBS's cattle suppliers have been repeatedly linked to forest destruction – legal or otherwise – in violation of the 2009 G4 Cattle Agreement (see pages 20–21).

In 2017, following its Carne Fria ('Cold Meat') in investigation into over a dozen slaughterhouses in Pará, Tocantins and Bahia, Brazil's environment agency IBAMA suspended two JBS plants and fined the company a total of R$24.7 million ($7.7 million) for buying cattle raised on embargoed land that had previously been illegally deforested and cleared by burning.[69] According to Reuters, the agency also accused JBS of having 'for years knowingly bought cattle that were raised on illegally deforested land' in the Amazon state of Pará. IBAMA reported that JBS had bought 49,438 illegal cattle between 2013 and 2016, half of them directly from farms under embargo for illegal deforestation – a clear violation of the terms of its TAC and the G4 Cattle Agreement – and the remainder via 'three-way "laundering" transactions to disguise the source'.[70] (Such 'triangulation' – sourcing via an intermediary to conceal the origin of beef linked to environmental issues – appears to be common;[71] see also pages 42–43.) IBAMA added that JBS was the purchaser of 84% of the animals its investigation had detected as coming from deforested lands.[72] An audit by federal prosecutors found that 19% of the cattle JBS purchased in Pará in 2016 had 'evidence of irregularities'.[73]

JBS denied purchasing from embargoed ranches and won an injunction allowing the plants to continue



Opposite, from top left:

9 July 2020, Alta Floresta, Mato Grosso, Brazil, 11°50'19.9091" S 57°16'37.1755" W: Deforestation and fire monitoring in the Amazon. ©Christian Braga/Greenpeace

24 November 2015, Aripuanã, Mato Grosso, Brazil: Cattle in an embargoed area. ©Bruno Kelly/Greenpeace

July 2019: Screenshot of Facebook social media post shows JBS-branded livestock truck reportedly being used to collect cattle from a farm that has been embargoed.

8 August 2008, Fazenda Estancia Bahia, Mato Grosso, Brazil: Cattle farm. ©Greenpeace/ Daniel Beltrá

1 April 2009, Brazil: Slaughtered cattle hang in a Marfrig slaughterhouse facility. ©Ricardo Funari/ Lineair/Greenpeace

buying cattle, against which IBAMA appealed.[74] According to Amnesty International, although JBS claims that its appeal against the fines was upheld, IBAMA's website shows that as of early July 2020 they remain active at different stages of the agency's administrative procedure.[75]

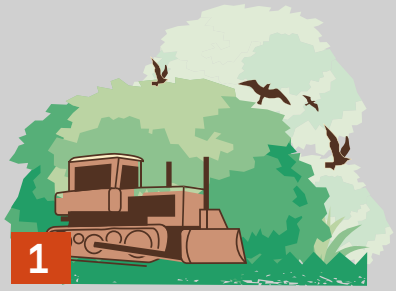
In 2019, as the Amazon was being ravaged by fires set deliberately to clear land,[76] investigations by the Bureau of Investigative Journalism revealed that JBS had purchased cattle directly from at least three farms that had had fires within their boundaries.[77] Further investigations revealed that more than a quarter of a million fire alerts[78] had been issued in areas from which JBS slaughterhouses are believed to buy cattle (far more than in the zones linked to competitors Minerva and Marfrig, with around 66,000 and 80,000 alerts respectively).[79] Additional analysis of the 2019 fires confirmed that JBS had the highest risk exposure of any beef processor to fires inside its assumed buying zones.[80]

Early in 2020, a Greenpeace Brazil investigation[81] revealed JBS's exposure to cattle laundered from the Ricardo Franco State Park. According to the Greenpeace Brazil report, transport records show that between April 2018 and June 2019 Fazenda Barra Mansa – a farm registered to Marcos Antonio Assi Tozzati (a business partner and former advisor of ex-government chief of staff Eliseu Padilha) that is a significant supplier to JBS – received at least 4,000 head of cattle from two neighbouring farms inside the park: Fazenda Paredão I & II. One of these is registered under the name of Tozzatti and the other to companies apparently controlled by Padilha and Tozzatti. Satellite analysis by Greenpeace Brazil shows that between 1998 and 2019 thousands of hectares were deforested within the declared boundaries of the two farms; this is by definition illegal, given that they lie within the Ricardo Franco State Park, a Conservation Unit (protected area of high biodiversity value).[82] According to the civil case filed by the Public Ministry of the State of Mato Grosso against Tozzatti in 2016, at least 2,097 ha were cleared illegally.[83] According to the Greenpeace Brazil report, transport records indicate JBS facilities in Pontes e Lacerda received at least 6,000 cattle from Fazenda Barra Mansa between January 2018 and June 2019.[84] According to shipping data based on export documents, between April 2018 and July 2019 the JBS meat processing facility in Pontes e Lacerda exported some 29,300 tonnes of beef products worth around $135 million. Approximately 15% of these exports went to EU countries, including Spain, the Netherlands, the UK, Germany, Italy, Greece and Portugal.[85]

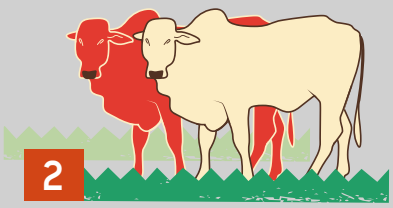
A recent Greenpeace Brazil investigation reveals another farm sanctioned for illegal deforestation to which JBS is linked by a direct supplier under the same ownership: Fazenda Tiborna, owned by Antônio Lucena Barros. Better known as 'Maranhense', Barros has previously been accused of illegal extraction of mahogany in the Kayapó Indigenous lands, as reported by Greenpeace Brazil.[86] According to the report findings based on mapping analysis, up until September 2019, the boundaries of Fazenda Tiborna overlapped with the Triunfo do Xingu Environmental Protection Area (APA) in Pará. In September 2019, following an embargo from IBAMA for deforestation and a R$3 million ($750,000) fine, Barros changed the property boundaries on the Rural Environmental Registry (CAR – see page 18), reducing the farm's area from 58,000 ha to 7,000 ha. Some of the area within the old boundaries was reallocated to new farms with different named owners. This included the embargo area, which is now the responsibility of a separate farm with no known connection to Barros. Between August 2019 and June 2020 – ie predominantly after the boundary revision – an additional 5,369 ha of forest were cleared within the former property boundaries – the second-largest clearance in the Amazon in the period. The clearance is concentrated in an area where there is currently no CAR record. The Greenpeace Brazil investigation found that according to transport records, between January 2018 and February 2020, cattle were moved from Fazenda Tiborna to 29 different farms, including Fazenda Nuvem Branca II – also owned by Barros and a direct supplier of JBS.[87]

July 2019: Screenshots of Facebook social media post show JBS-branded livestock truck reportedly being used to collect cattle from a farm that has been embargoed.

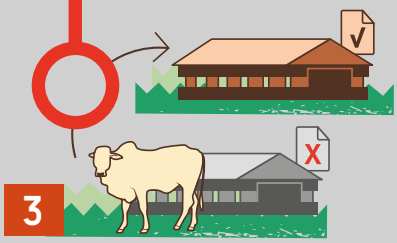
The system: how does 'cattle laundering' work?



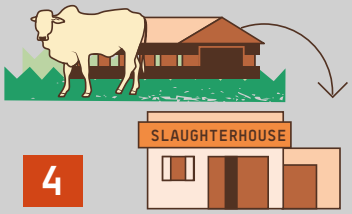
Land, often public, is deforested and subdivided



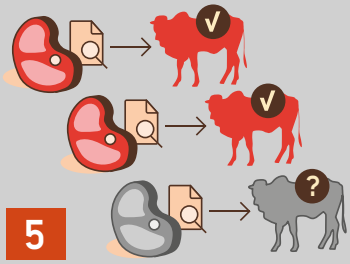
Cattle are introduced in recently deforested areas



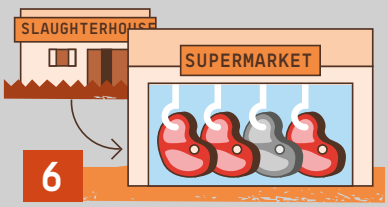
After a while, the cattle grazing in the deforested areas are sent to another farm without irregularities like land grabbing or deforestation



The 'clean' farm sells the irregular cattle to the slaughterhouse, effectively hiding the trail of destruction



Without the control of all suppliers, direct and indirect, meat from deforestation 'contaminates the entire value chain



And it is sold to supermarkets, mixed with other products made without irregularities

An accomplice in the cattle laundering process?

While JBS remains apparently unable to monitor its indirect suppliers, a new investigation by Repórter Brasil and the Bureau of Investigative Journalism[88] suggests that the company must be aware of the identities of at least some of its direct suppliers' own suppliers, as it appears to be routinely involved in the transportation of cattle between the farms where they are reared and farms that fatten cattle for slaughter, including farms that are direct suppliers to JBS itself. This transport activity is reportedly undertaken by JBS's own transportation subsidiary – in May 2019 the logistics coordinator of JBS's Brazilian beef business unit Friboi[89] even gave an interview to a Brazilian TV channel in which he spoke of offering ranchers the option of a cost-saving 'three-legged journey' in which the same trucks transport lean cattle from the farm where they have been reared to the farm where they will be fattened, before departing the farm laden with fattened cattle to be transported to the slaughterhouse.[90] There is a strong risk that at least some of the cattle that JBS transports to its direct suppliers are ultimately purchased by the company, making the farms from which it transports them its indirect suppliers.

Moreover, in at least one instance JBS trucks and employees appear to have transported cattle from a farm in Mato Grosso state (Fazenda Estrela do Aripuanã) that was embargoed for deforestation in 2014 – and which has been the location of a number of recent forest fires – to another farm with the same ownership (Fazenda Estrela do Sangue), from which two JBS slaughterhouses received a total of around 7,000 animals between November 2018 and November 2019. Fazenda Estrela do Sangue is certified under SISBOV (a supply chain traceability scheme coordinated by the Ministry of Agriculture, which is voluntary but required by certain export markets – see page 15), meaning that it can export animals to the EU.[91] GTAs, which must be filed every time a consignment of livestock is moved, show that a large number of cattle (again around 7,000) were transported from the embargoed farm to its sister operation between June 2018 and August 2019, by unspecified hauliers.[92] However, social media posts by a JBS driver show that in July 2019, a convoy of five JBS trucks transported cattle on this route.[93] Given that transportation of cattle to its direct suppliers from other farms is reportedly a routine activity for JBS (as the TV interview mentioned above makes clear), it seems reasonable to suppose that this may not have been the only time the company was involved in transferring cattle from Fazenda Estrela do Aripuanã to Fazenda Estrela do Sangue. In any event, the one transport in which its involvement is documented shows that JBS must have been aware that its direct supplier Estrela do Sangue was receiving cattle originally reared at Estrela do Aripuanã. Further, given that details of the embargo on the latter farm appear in a publicly accessible IBAMA database,[94] it had no justifiable excuse not to be aware that the farm was embargoed for deforestation. It is hard to see how JBS can explain its failure to do due diligence on:

1. A farm from which it has undertaken to carry out haulage;
2. A supplier, of whose identity it was demonstrably aware, to its direct supplier;
3. Its own cattle supplies, if – as seems likely – at least some of the cattle transported from Estrela do Aripuanã to Estrela do Sangue during 2018–19 ended up ultimately being purchased from the latter farm by JBS.

JBS Greeley, Colorado, USA

7 April 2020, Colorado, USA: Screenshot from local news broadcaster Denver7 reporting threat from Greeley City's Department of Public Health to shut down the JBS Greeley meat processing facility over worker Covid-19 concerns, notably lack of social distancing and pressure on workers. Source: https://youtu.be/KDDzLiNFg7s

JBS Tolleson, Arizona, USA

28 May 2020, Arizona, USA: Screenshot from local news broadcaster ABC15 Arizona reporting JBS meat processing facility in Tolleson twice declined Arizona state's offer to help with Covid-19 testing. Source: https://youtu.be/Lg6TVI4s1gM

Risk factor: public health

JBS/Seara, Dourados, Mato Grosso do Sul, Brazil

9 May 2018, Brazil: Screenshot from JBS promotional film shot inside the Dourados JBS/Seara meat processing facility to publicise its winning of a 2017 excellence award. In July 2020 1,000 workers at this site tested postive for Covid-19.
Source: https://youtu.be/nbMMUU3FIDM

In July 2020, mass testing at a JBS pork processing facility in Dourados in Brazil's Mato Grosso do Sul state revealed an outbreak of Covid-19, with more than 1,000 of the 4,300 labourers – many foreign – testing positive.[95] The JBS plant 'was the initial focus for the outbreak' according to an infectious diseases specialist for the state health services.[96] Many of the facility's Indigenous workers live in nearby reserves, where more than 150 people were subsequently infected according to an Indigenous nurse who works in the reserve. The town reportedly became the epicentre of the virus within the state, with around 3,500 cases as of 14 July 2020.[97]

JBS is 'one of four domestic meat suppliers to have a plant banned from exporting to China amid concern over coronavirus infections'.[98]

15 September 2019, Acre, Brazil: Members of the Huni Kuin Indigenous community stand in the burnt remains of their lands – they are determined to reforest to preserve their culture and knowledge of natural science and medicine. ©David Tesinsky/Greenpeace

15 May 2020, Amazonas, Brazil: Through the 'Wings of Emergency' Project, Greenpeace Brazil and Instituto Socioambiental (ISA) transport hygiene kits and hospital supplies as well as sewing machines and fabric to produce masks to São Gabriel da Cachoeira, one of the Brazilian cities most impacted by Covid-19. ©Marcos Amend/Greenpeace

9 June 2020, Amazonas, Brazil: Through the 'Wings of Emergency' Project, Greenpeace Brazil delivers hygiene kits and mattresses to the Indigenous Primary Care Unit (UAPI) in the Alto Rio Negro Indigenous land in São Gabriel da Cachoeira. ©Christian Braga/Greenpeace

'By failing to effectively monitor for illegally grazed cattle entering its supply chain, JBS fails to carry out adequate due diligence as established under the UN Guiding Principles on Business and Human Rights. Under the terms of the UN Guiding Principles, JBS contributes to human rights abuses against Indigenous peoples and residents of Reserves by participating in the economic incentives for cattle illegally grazed in protected areas.'[99]

Amnesty International, July 2020

'Because it's an invasion, [loggers and ranchers] set fire to the forest and start making fences, putting cattle on the land, in that order. After cattle [comes] agriculture and that's the way they're getting in.'[100]

Giovani Tapura, Manoki leader, Irantxe Indigenous Territory

'Since the Bolsonaro government began, working conditions in the fields have worsened. The employer thinks that because he has elected a president who defends only the entrepreneur, anything goes.'[101]

Jorge Ferreira dos Santos, coordinator of the Rural Employees of the State of Minas Gerais (Adere-MG)

Risk factor: human rights violations

Failure by JBS to map out its entire cattle supply chain, including indirect suppliers, exposes it to serious risk of trade from suppliers linked to human rights violations from land grabbing to slavery, and there is considerable evidence that it has actually bought cattle from or originating with such suppliers – as laid out below.

The steady expansion of the industrial meat sector – notably the rearing of cattle and the growing of soya for feed – and the scale of land-use change are undermining the rights of Indigenous Peoples and other local communities in large areas of South America.

While in Brazil these problems did not begin with President Bolsonaro, his tenure has certainly exacerbated them.

For example, Bolsonaro's government has legitimised more than a hundred farms established illegally inside Indigenous lands in the Brazilian Amazon, putting the total area of Indigenous lands occupied in this way at 250,000 ha[102] – about the size of Luxembourg.[103] Meanwhile, Bolsonaro has not ratified a single new Indigenous territory since taking office at the start of 2019.[104] There is also fear that the current chaos of the global pandemic will be used as an opportunity by Brazil's government to further strip away protections for the Amazon and the rights of its Indigenous Peoples[105] – indeed, in May 2020 the country's environment minister was videoed calling on the government to take advantage of the media's exclusive focus on the virus to bypass Congress and push through environmental deregulation.[106]

Slavery is another serious issue. According to article 149 of Brazil's Penal Code, slavery is defined by four elements: forced labour (which involves restricting the freedom to leave the employer), debt bondage (a form of enslavement linked to debts, often fraudulent), degrading conditions (work that denies human dignity, putting health, safety and life at risk) and/or an exhausting working day (the intensity of work demanded reducing the worker to a state of complete exhaustion, again putting health, safety and life at risk).[107]

Since 1995, more than 50,000 people have reportedly been rescued from slave labour in Brazil.[108] The 'Dirty List' (*Lista Suja*) of slave labour is a database created by the Brazilian government in 2003 that names the employers in cases where people have been rescued from conditions of slavery as defined by the Penal Code. Employers remain on the list for two years, or – if they enter into a restitution agreement with the government – are moved to a watch list from which they may be removed after just one year.[109]

In May 2020 the Brazilian Ministry of the Economy added 41 new names to the 141 already on the Dirty List. Most of the new offenders are farmers or cattle ranchers; together, they have been found to have subjected 1,074 workers to conditions analagous to slavery.[110]

However, as a result of the Covid-19 pandemic, the Brazilian government 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.[111]

In August 2019, President Bolsonaro defended changing the rules that define slave labour, mocking an inspection in which an employer was threatened with a 'tremendous fine' for failing to provide a toilet: 'Can't you pee at the foot of the tree?', the President asked. His speech came a week after federal police working with labour inspectors had rescued 20 workers from a farm where workers were found to be toiling from 5am to 5pm and sleeping in straw huts or under trees, and where no worker timesheet records were kept. According to the inspectors, 'they bathed in a stream that passes close to the community, with no guarantee of privacy and in waters that are visibly inadequate for the cleanliness of the human body'.[112]

19 September 2019, Amazonas, Brazil: The Apurinã Indigenous lands have suffered from encroachment and fires in recent years. ©David Tesinsky/Greenpeace

JBS has sourced cattle from farms linked to allegations of slavery and violence and has repeatedly bought cattle with a high risk of originating from properties illegally established on protected Indigenous lands or extractive reserves.

In 2017, it emerged that between 2013 and 2016 JBS had previously bought cattle from a farm in Pará state that was under investigation for keeping workers in conditions of modern slavery[113] – police had found workers forced to live in circumstances described as inhumane and degrading, with inadequate shelter, toilets and drinking water;[114] the prosecutors believed the workers were in debt bondage, with illegal deductions being taken from their wages as payment for food and equipment. JBS claimed that it had immediately stopped sourcing from the farm when it became aware of the raids, and excused its failure to police its own supply chain by saying that the farm had not been included in the government's Dirty List. Nevertheless, the incident led to Waitrose removing its own-brand corned beef from its shelves due to its containing beef supplied by JBS.[115]

In 2018 JBS received cattle that appear to have come indirectly from a farm whose owner, Valdelir João de Souza, was charged but acquitted in July 2020 on the grounds of insufficient evidence[116] in connection with the 'Colniza Massacre' – the brutal 2017 murder of nine men in a remote area of the Amazon state of Mato Grosso, according to an investigation by Greenpeace Brazil. According to the report, transport records. Transport records show that in May 2018 JBS purchased 143 head of cattle from a farm which, only minutes previously, had purchased an identical number of cattle of the same gender and age composition from two farms in Rondônia state registered the previous month to de Souza. The man listed as the owner of the farm from which JBS purchased the cattle works at a sawmill formerly owned by de Souza. The next month one of the two farms registered to de Souza sold 153 head of cattle to another farm in Rondônia that in subsequent months sold dozens of animals to slaughterhouses belonging to JBS and to its rival Marfrig. While these transactions may have been entered into in good faith by the two processors, the May purchase and resale in particular has been described by the director of Friends of the Earth Brazil as suggestive of cattle laundering, of the kind described on page 33. He referred to such 'triangulation' as 'a common practice'.[117]

According to 2020 investigations by Greenpeace Brazil based on transport records, in December 2018 JBS received 18 cows from a farm called Fazenda Bela Vista that is in turn supplied by Fazenda Mata Verde I – a farm established on interdicted[118] Ituna-Itatá Indigenous lands in Pará state whose owner, Lazir Soares de Castro, owns two farms within the interdicted area and more beyond it. Castro has a history of environmental infractions listed by IBAMA on multiple properties, including deforestation.[119] According to the Greenpeace Brazil report, in September 2018, transport records show the movement of 379 animals from Fazenda Mata Verde I to Fazenda Bela Vista.[120]

In July 2020, Amnesty International published the findings of a joint investigation with Repórter Brasil that included details of a 2019 case in which, on two occasions, JBS purchased cattle directly from a farm in the Rio Ouro Preto Extractive Reserve, Rondônia.[121] The report also documents further 2019 cases linked to the Jaci Paraná Extractive Reserve and the Uru-Eu-Wau-Wau Indigenous lands (also in Rondônia): in both instances, JBS repeatedly purchased cattle from legal farms outside the respective protected areas operated by farmers who also operate illegal farms within the protected areas. In each case, transport records reveal the movement of cattle from a farm inside one of the protected areas to a legal farm and separate records register separate movements from these legal farms to JBS slaughterhouses: 'In two cases, the second movement (from the legal farm to a JBS plant) was registered just a few minutes after the movement between the farm inside the protected area to the legal farm. Both movements involved an identical number of cattle of an identical age range and sex.' Amnesty International provided JBS with an opportunity to comment on whether it had processed any cattle in 2019 from farms located in the named protected areas, to which it responded 'We do not purchase cattle from any farm involved in the illegal grazing within protected areas'; it did not answer a question about monitoring indirect suppliers.'[122] As with the other transaction involving farms in Rondônia described earlier, these very rapid transfers of ownership from farm to farm and then to JBS may be indicative of cattle laundering, in this instance aimed at obscuring the link to farms illegally established on Indigenous lands and extractive reserves.

Endnotes

19 September 2019, São Felix do Xingu, Pará, Brazil, 7°7'1.94" S 52°22'11.31" W: Cattle lot.
©Fábio Nascimento/Greenpeace

1 JBS (2020) p16

2 ExxonMobil, Shell and BP were responsible for 577, 508 and 448 $MtCO_2e$ 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 $MtCO_2e$, 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 & ITAP (2018).

3 Greenpeace International (2009)

4 Greenpeace International (2009) part 1 piii

5 See Boadle A (2017), Greenpeace Brazil (2020a), Locatelli P & Aranha A (2017) and Wasley A et al (2019d).

6 See Amnesty International UK (2020), Earthsight (2019) and Greenpeace Brazil (2020a,b,c).

7 Gross AS & Aranha A (2017), Wasley A et al (2019b)

8 Santini D & Wrobleski S (2014)

9 Mano A (2020)

10 Wasley A et al (2019a)

11 Wasley A et al (2019b)

12 Wenzel F (2019a)

13 Wasley A, Heal A & Campos A (2020)

14 Trase platform 'Bulk downloads, Brazil – Beef (all years)'

15 Including exports from JBS subsidiary Seara, JBS exported around 480,287 tonnes of beef products from Brazil in 2017 and 674,801 tonnes in 2019 – an increase of 194,514 tonnes. Source: Panjiva database (https://panjiva.com/data/braziltrade-data), consulted 17 July 2020.

16 Panjiva trade data show JBS and its subsidiary Seara exporting 674,613 tonnes of beef products from Brazil in 2019. ComexStat puts total beef exports in 2019 at 2,011,520 million tonnes. Sources: Panjiva database and ComexStat, consulted 17 July 2020.

17 Debtwire (2016), Tharawat Magazine (2019)

18 Between 2002 and 2013, BNDES released a total of R$12.8 billion ($5.9 billion) for companies controlled by J&F according to the NGO Contas Abertas. Source: Tognolli C (2019). See also Wasley A et al (2019b).

19 JBS website 'Ownership and corporate'

20 Based on information extracted from Orbis (https://orbis.bvdinfo.com) on the ownership of J&F Investimentos.

21 JBS (2019) p3

22 JBS (2020) p16

23 JBS (2019) p2; see also Wasley A et al (2019b)

24 JBS (2020) p17

25 JBS (2020) pp13, 16

26 National Provisioner (2019)

27 JBS (2020) p16

28 Universidade Federal de Minas Gerais (2020)

29 The Beef Site (2018)

30 Importers listed in the trade data include Importo Ltd, JBS Group, L&M Food Group, Lamex Food Group, Meadow Vale Foods Ltd, Penasul UK Ltd, Seara Group and Sun Valley Foods Ltd. Source: Panjiva database (https://panjiva.com/data/braziltrade-data).

31 The trade data indicate imports to 'JBS'; the UK address of the company provided is that of JBS Global UK Ltd.

32 Moy Park is listed as a controlled subsidiary of JBS and JBS SA as its Global Ultimate Owner on the Orbis database (accessed 16 January 2020). Pilgrim's Pride acquired Tulip in October 2019; see Mello G & Mano A (2019).

33 BBC (2017)

34 Casey S & Freitas T (2017)

35 Tulip website 'How we do it'

36 Tulip website 'Who we are'

37 Tulip website 'How we do it'

38 Tulip website 'How we do it'

39 Tulip website 'Who we are'

40 Tulip website 'Wholesale'

41 Tulip (2017)

42 Moy Park website 'About'

43 Ryan C (2019)

44 Belfast Telegraph (2018), Farming UK (2019)

45 Mulligan J (2017), Nando's website 'FAQs: Our food' and Wasley A et al (2019b)

46 Armagh i (2020)

47 BBC (2019)

48 Laws J (2019)

49 Wasley A et al (2019b)

50 BBC (2018)

51 Ridler J (2019)

52 Quoted in Wasley A et al (2019b).

53 Debtwire (2016)

54 Debtwire (2016)

55 United States Securities and Exchange Commission (2017)

56 JBS website 'Ownership and corporate', Bloomberg Terminal 'JBS ownership summary'

57 Treasury shares are shares that a company holds in itself which have been bought back from a shareholder. JBS website 'Ownership and corporate', Bloomberg Terminal 'JBS ownership summary',

58 JBS website 'Ownership and corporate', Bloomberg Terminal 'JBS ownership summary'

59 Bloomberg listings only account for 83.68% of shareholdings. Note too that some filings date from 2017. Source: Bloomberg Terminal 'JBS ownership summary'.

60 Between 2002 and 2013, BNDES released a total of R$12.8 billion ($5.9 billion) for companies controlled by J&F according to the NGO Contas Abertas. Source: Tognolli C (2019). See also Wasley A et al (2019b).

61 Debtwire (2016)

62 Wasley A et al (2019b)

63 Brito R & Bautzer T (2017), Wasley A et al (2019b)

64 BBC (2017), Wasley A et al (2019b)

65 BBC (2017)

66 Henderson G (2020)

67 Henderson G (2020)

68 Durbin D-A (2020)

69 Boadle A (2017), Locatelli P & Aranha A (2017)

70 Boadle A (2017)

71 Phillips D (2020a)

72 Boadle A (2017)

73 Ministério Público Federal (2018)

74 Boadle A (2017)

75 Amnesty International (2020) p30

76 Andreoni M & Hauser C (2019)

77 Wasley A et al (2019c)

78 'Fire alerts' or 'fire hot spots' (FHS) are thermal anomalies (ie unusually hot areas) detected by satellites. It is important to distinguish alerts 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.

79 Wasley A et al (2019c)

80 Chain Reaction Research (2020). JBS's potential buying zone is based on metrics developed by Imazon; see Imazon (2017).

81 Greenpeace Brazil (2020a). See also Mazzetti C (2020).

82 See Greenpeace Brazil (2020a) pp10–15. The public prosecutor's investigations determined that both farms were established and cleared after the park was created in 1997.

83 Ministério Público do Estado de Mato Grosso (2016)

84 Greenpeace Brazil (2020a) p16

85 Greenpeace Brazil (2020a) p23

86 Greenpeace Brazil (2003)

87 Greenpeace Brazil (2020c)

88 Wasley A, Heal A & Campos A (2020)

89 JBS website 'Beef value chain'

90 Canal Rural (2020)

91 Ministério da Agricultura, Pecuária e Abastecimento (2020)

92 Wasley A, Heal A & Campos A (2020)

93 Wasley A, Heal A & Campos A (2020); see also https://web.archive.org/web/20200612184826/https:/www.facebook.com/pages/Fazenda-Estrela-do-Araipuan%C3%A3-Airport/1726303227596309

94 IBAMA website 'Consulta de autuações ambientais e embargos'. Fazenda Estrela do Araipuanã is operated by Ronaldo Venceslau Rodrigues da Cunha; details on the embargo can be found by searching for the CNPJ 36187119649.

95 Mano A (2020)

96 Phillips D (2020c)

97 Phillips D (2020c)

98 Mano A (2020)

99 Amnesty International UK (2020)

100 Fonseca B & Oliveira R (2020)

101 Camargos D (2020)

102 Fonseca B & Oliveira R (2020)

103 258,600 ha. Source: CIA website 'The World Factbook'.

104 Fonseca B & Oliveira R (2020)

105 Jordan L & Athayde AT (2020)

106 Spring J (2020)

107 Camargos D (2020)

108 Escravo, Nem Pensar! (2020)

109 Camargos D (2020)

110 Camargos D (2020)

111 Escravo, Nem Pensar! (2020)

112 Escravo, Nem Pensar! (2020)

113 Gross AS & Aranha A (2017)

114 Wasley A et al (2019b)

115 Gross AS & Aranha A (2017)

116 Rodrigo P (2020)

117 Phillips D (2020a)

118 'Interdicted' lands are areas to which access by third parties is restricted by the Fundação Nacional do Índio (FUNAI – the federal agency for Indigenous Peoples) for the protection of isolated Indigenous Peoples and groups. The interdiction of the area may or may not be carried out concurrently with the demarcation process, regulated by Decree No. 1775/96.

119 IBAMA website 'Consulta de autuações ambientais e embargos'

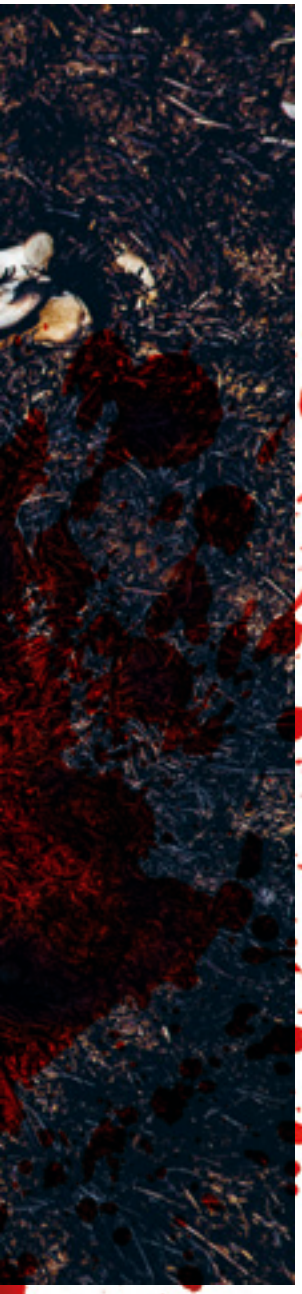
120 Greenpeace Brazil (2020b)

121 Amnesty International (2020); see also Cowie S (2020)

122 Amnesty International (2020) p7, 45–61

Part 2:

How industrial meat is cooking the climate



15 January 2013, Yass, Australia: Livestock remains following a recent bushfire – 2013 saw temperatures in Australia exceed 50ºC and the creation of a new fire danger rating of 'catastrophic'. ©Tom Jefferson/Greenpeace

'If the livestock sector were to continue with business as usual, this sector alone would account for 49% of the emissions budget for 1.5°C by 2030, requiring other sectors to reduce emissions beyond a realistic or planned level. [...] Continued growth of the livestock sector increases the risk of exceeding emissions budgets consistent with limiting warming to 1.5°C and 2°C, limits the removal of CO2 from the atmosphere through restoring native vegetation, and threatens remaining natural carbon sinks where land could be converted to livestock production.'[1]

Helen Harwatt et al, The Lancet Planetary Health, December 2019

1 April 2009, Brazil: Marfrig slaughterhouse facilities. ©Ricardo Funari/Lineair/Greenpeace

While JBS exemplifies the high-risk nature of Brazil's industrial meat sector, its activities and links alone do not provide a full picture of the global meat industry's heavy toll on people and planet. The second part of this report attempts to shed some light on the industry's wider impacts, on the nature and characteristics of the industrial meat sector as a whole, and on how we might begin the urgent process of moving beyond it to a more resilient mode of food production that can help to ensure planetary health and social justice.

What a carve-up – industrial meat's impact

Opposite, from top:

9 July 2020, Alta Floresta, Mato Grosso, Brazil, 12°4'17.6258" S 57°26'31.3174" W: Deforestation and fire monitoring in the Amazon. ©Christian Braga/ Greenpeace

19 August 2010, Querência, Mato Grosso, Brazil. Cattle ranching in a deforested area. ©Rodrigo Baléia/ Greenpeace

21 July 2016, Marabá, Pará, Brazil: Cattle ranch. ©Tommaso Protti/ Greenpeace

20 February 2013, Dourados, Mato Grosso do Sul, Brazil: Sowing maize after soya. ©Werner Rudhart/ Greenpeace

March 2012, Tangara da Serra, Mato Grosso, Brazil: Harvesting soya bean crop. ©Pulsar Imagens/Alamy Stock Photo

Of all the things we eat, meat and dairy products have the most damaging effects on our environment. Some 80% of global deforestation is a result of agricultural production,[2] which is also the leading cause of habitat destruction in general.[3] Animal agriculture – including both livestock rearing and animal feed production – is the most significant driver of deforestation,[4] and is additionally responsible for approximately 60% of direct food-related climate emissions (excluding from land-use change),[5] including a third of humanity's nitrogen emissions.[6]

Taking into account land used predominantly for feed production or grazing, livestock production uses 77% of agricultural land globally, despite providing only 17% of the global population's dietary energy and 33% of its dietary protein.[7] But these proportions look set to soar. In emerging economies in particular, agribusiness and food companies are energetically promoting the spread of Western-style diets, dominated by a meat and dairy component.[8] On current trends, world meat consumption is forecast to rise 76% by 2050, including a doubling in the consumption of poultry, a 69% increase in beef and a 42% increase in pork.[9]

However, not all meat is created equal. Some meat production systems have disproportionate environmental and social impacts due to their scale and the inputs – of land, chemicals, feed and water – they require to maintain production. Such systems characterise industrial meat production. It is industrial meat production above all that is contributing to catastrophic deforestation rates and human rights abuses in the Brazilian Amazon, the Cerrado and elsewhere. Yet because those impacts are being driven in large part by the expansion in soya cultivation to produce feed for livestock, including for export markets, we need to look beyond the countries where the bulk of the destruction and the worst abuses are actually occurring to appreciate the global nature of the crisis, with wealthy countries systematically externalising much of the environmental and social cost of their food production. Furthermore, as detailed below, industrial meat production entails other environmental and social harms beyond those associated with large-scale land-use change – harms that are worldwide in their scope.

Since the mid-20th century, Europe's farming sector has changed dramatically. Traditional farm management, which generally favoured a greater diversity of habitats and wild species, was increasingly replaced by more industrialised agriculture.[10] Rapid expansion of the livestock sector through factory farming dramatically externalised costs and increased the availability of animal protein, driving a 60% rise in EEC/EU per capita meat consumption since the 1960s.[11]

In the last decade, EU meat and dairy production have continued to be concentrated in fewer and larger farms.[12] At the same time, the number of animals reared for meat and the volume of meat output have increased.[13] The UK has been no exception to this trend towards intensification: 1,700 intensive poultry and pig farms had been licensed by the Environment Agency as of 2017 – an increase of a quarter since 2011. The two biggest farms at that time were recorded as having the capacity to house 1.7 million and 1.4 million chickens respectively.[14] At that date 95% of chicken produced in the UK was intensively farmed,[15] as is three-quarters of UK pork.[16] There are no official records held on how many intensive beef units are in operation in the UK as they do not require a government permit.[17]


KFC

Pile it high and sell it cheap

Opposite, from top left:

1 April 2009, Brazil: Marfrig slaughterhouse facilities. ©Ricardo Funari/Lineair/ Greenpeace

9 September 2014, Germany: Chicken fattening. ©Fred Dott/ Greenpeace

10 April 2017, Germany: Meat on supermarket shelves. ©Bodo Marks/ Greenpeace

6 June 2019, São Paulo, Brazil: Fast food at KFC. ©Barbara Veiga/ Greenpeace

24 September 2019, New York, USA: UK Prime Minister Boris Johnson holds bilateral meeting with US President Donald Trump. (Official White House photo by Shealah Craighead)

The slogan of Tesco's founder, Jack Cohen – 'Pile it high and sell it cheap'[18] – emphasises the importance of large turnover and low price over environmental protection, workers' rights or food quality – a business model that even today characterises most large supermarket chains. There is an obvious link between the mass merchandising approach of supermarkets and fast food companies and the rapid expansion of industrial meat production. For instance, rising UK consumption of poultry – the livestock whose production is the most industrialised and which consumes the most industrial feed[19] – has been partly fuelled by supermarkets competing to sell the cheapest chicken. Industry reports indicate a strong correlation between marketing ploys such as special offers and increases in chicken sales.[20] Fast food companies, pursuing a similar strategy, account for an even greater proportion of the UK's chicken sales: in 2019, the UK spent £1.6 billion ($2 billion) on chicken in supermarkets and £2.3 billion ($2.9 billion) in chicken shops such as Kentucky Fried Chicken.[21] Retail price cuts, and the resultant need both to slash production costs and to increase output in order to meet rising demand, have perpetuated a cycle of industrialisation and intensification,[22] with much of the environmental and social cost being externalised to feed-producing countries in South America and elsewhere.

Moreover, the impact of the industrial meat sector goes far beyond the footprint of its operations in wealthy Western countries, as it has an extensive and growing worldwide presence. Fast food companies in particular are expanding particularly aggressively in countries with below-average meat consumption, such as China and India.[23]

The industrial meat sector is also increasingly being used as a weapon in trade negotiations, notably in the context of Brexit. In 2019 negotiations, for example, the UK's minister in charge of preparing for a possible no-deal Brexit, Michael Gove, proposed to introduce non-tariff quotas on Brazilian beef, allowing Brazilian producers to undercut Irish exports, if the Irish government did not drop its insistence on the Brexit 'backstop'.[24] Meanwhile, Donald Trump's negotiating team has warned that the USA will not sign a trade deal with the UK unless the latter opens its doors to US meat, which would mean a lowering of current UK food safety and animal welfare standards, which are based on EU standards.[25] The UK government has so far refused to write these standards into UK law, despite calls from the National Farmers' Union and non-governmental organisations (NGOs), and Secretary of State for International Trade Liz Truss has supported a US trade deal on the grounds that it would lead to cheaper fertiliser, pesticides and animal feed[26] – all agricultural inputs that are central to industrial meat production and whose use needs to be reduced to tackle the climate and nature emergency.

What defines the industrial meat sector?

Attempts to define the industrial meat sector largely focus on specific methods of production – often those associated with the intensive animal agriculture methods commonly known as factory farming. However, in order to capture a full picture of its impact on people and nature, a broader interpretation is required. Accordingly, the industrial meat economy can be characterised in terms of its **scale, long supply chains, consolidation** and concentration of land ownership, and **extractive** and **exploitative** nature:

- **Scale:** Industrial meat production involves practices and volumes of demand that create a large environmental footprint – whether in the form of land use (pasture or land used for feed production), deforestation or other conversion of natural ecosystems, GHG emissions, chemical inputs or polluting outputs. Often this footprint is 'offshored' through **long supply chains** that externalise social and environmental costs. For example, the soya that feeds UK chickens may be produced on deforested and/or illegally appropriated land in Brazil.

- **Consolidation:** The industrial meat system is dominated by an ever-shrinking number of increasingly large corporations. Aspects of this domination include concentration of land ownership with larger and fewer farms; control of inputs, processing and distribution by a few players such as large commodity traders or meat processing companies; and the concomitant centralisation of processing and distribution. Together these features define a system in which the objective is the efficient (cheap and rapid) production of specific products, often relying on a small number of main feed crops, such as soya and maize. Contract farming dominates much industrial meat production and is associated with high levels of debt for the producer.[27] Such concentration, along with a focus on international supply chains (especially in the case of feed, but also for meat itself), inevitably compromises food sovereignty (with populations potentially being dependent on the output of corporations in other countries) and may also jeopardise food security at a national level.[28]

- **Extractive nature:** Industrial meat production is characterised by practices (including but not limited to conversion of natural ecosystems) that degrade the land, deplete biodiversity, produce significant GHG emissions and/or air and water pollution, and

From left:

9 September 2014, Germany: Chicken fattening. ©Fred Dott/Greenpeace

11 June 2017, Matopiba, Brazil: Agribusiness in the Cerrado, a region under intense pressure from the expansion of soya and maize for export. ©Marizilda Cruppe/Greenpeace

25 May 2019, Luís Eduardo Magalhães, Bahia, Brazil, 12°5'43.2848" S 45°48'28.9464" W: Transport trucks waiting to be loaded with soya. ©Marizilda Cruppe/Greenpeace

24 February 2006, Sinop, Mato Grosso, Brazil: Spraying a soya crop. ©Greenpeace/ Daniel Beltrá

increase the vulnerability of the area under or adjacent to production to damage from climate change or other environmental shocks.

- **Exploitative nature:** Disregard for human rights appears to be endemic in the industrial meat economy, with vulnerable groups particularly affected. In Brazil, for example, exploitation begins with the invasion and expropriation of Indigenous Peoples' lands by ranchers or the displacement and marginalisation of traditional communities to enable the establishment of vast arable croplands – also driving food insecurity. Production itself may entail slave labour, which is a well-documented risk in Brazil's cattle sector.[29] Further along supply chains, slaughterhouses the world over are associated with use of migrant or irregular workforces who are often subjected to substandard accommodation, poor pay and stressful working conditions.[30]

Other characteristics typical of the industrial meat economy include:

- **Animal confinement** in intensive operations commonly known as factory farms, which are typified by animals being confined, usually indoors, with no or limited access to space in which they can engage in natural behaviour – conditions that impair their health and welfare. The animals also have limited or no access to grazing and forage crops, requiring feed to be mainly or entirely produced off the farm.[31]
- **Heavy use of inputs** such as chemical fertilisers and pesticides in feed production or antibiotics in livestock rearing.[32]
- **Monoculture** – in other words, a high level of product specialisation – with each farm growing only one or a small number of different crops for feed or focusing solely on rearing animals of one species.[33] This approach, typical of globally traded commodities, is often detrimental to economic stability, food security and the environment. Monoculture is by no means unique to the industrial meat economy (being widespread in arable farming for human consumption, especially on an industrial scale, and frequently encountered in smaller-scale meat and dairy production) but is nevertheless highly characteristic of it.

The economic business model of the industrial meat economy may also be usefully defined in opposition to a resilient food economy (see page 83).

19 November 2014, Germany:
Industrial pork production.
© Lucas Wahl/Greenpeace

Endnotes

1 Harwatt H et al (2019)

2 Kissinger G, Herold M & De Sy V (2012) p11

3 'For terrestrial and freshwater ecosystems, land-use change has had the largest relative negative impact on nature since 1970, followed by the direct exploitation, in particular overexploitation, of animals, plants and other organisms mainly via harvesting, logging, hunting and fishing. […] Agricultural expansion is the most widespread form of land-use change, with over one third of the terrestrial land surface being used for cropping or animal husbandry. This expansion, alongside a doubling of urban area since 1992 and an unprecedented expansion of infrastructure linked to growing population and consumption, has come mostly at the expense of forests (largely old-growth tropical forests), wetlands and grasslands.' Source: Díaz S et al (2019) p4.

4 See De Sy V et al (2015), Henders S, Persson UM & Kastner T (2015) and Kissinger G, Herold M & De Sy V (2012).

5 IPCC (2014) p824. Total direct agricultural emissions amount to ~5.8 $GtCO_2e/yr$. Of this, animal products (all livestock emissions) account for:

- 2.1 $GtCO_2e/yr$ from enteric fermentation of animals
- 0.99 $GtCO_2e/yr$ from manure
- 0.34 $GtCO_2e/yr$ from fertiliser emissions (of total 0.68; at least 50% are directly for feed)

Total direct emissions from livestock (industrial or otherwise) therefore amount to 3.43 $GtCO_2e/yr$, which is 59% of total direct agricultural emissions.

6 Vaughan A (2020)

7 United Nations Environment Programme (2019) p202

8 See eg Feng E (2017), Hancock T (2017), Lee T (2015), Rogers C (2018) and Tandon S (2016).

9 Compared with 2012 levels. Source: Godfray HCJ et al (2018), reporting on Alexandratos N & Bruinsma J (2012).

10 EEA (2015)

11 Based on FAOSTAT data. Source: Buckwell A & Nadeu E (2018) p22.

12 Eurostat (2019)

13 European Commission (2019). The increase in livestock populations has predominantly been in the numbers of pigs and chickens raised for meat.

14 Wasley A & Davies M (2017)

15 Wasley A et al (2017)

16 According to the RSPCA, 'Just under a quarter of all UK pig production […] is farmed to RSPCA welfare standards' (source: RSPCA Assured website 'What is RSPCA Assured?').

17 Wasley A & Kroeker H (2018)

18 O'Grady S (2001)

19 FEFAC (2019) p11. Compound feed – fodder composed of various raw materials of vegetable and animal origin and additives – is mainly consumed by poultry (approximately 60% of their intake), and less by pigs (approximately 35%) and cattle (approximately 10% on average, with considerable differences between systems).

20 See eg Oborne R (2018).

21 Hancock A (2020)

22 Wasley A & Kroeker H (2018)

23 Greenpeace UK (2020) p8

24 Lockwood A (2019)

25 Payne A (2020)

26 Truss L (2020)

27 See eg Lowrie A (2019), Moodie A (2017) and Philpott T (2018).

28 Gerber PJ et al (2013)

29 See eg Darlington S (2017), Global Slavery Index website 'Country studies: Brazil', ILO (2009) and Repórter Brasil (2019).

30 See eg McConnell BM (2019), van der Zee B, Levitt T & McSweeney E (2020) and Wozniacka G (2020).

31 FoodPrint (nd)

32 See eg Uwizeye A et al (2020), Dowler C (2020b) and Alliance to Save Our Antibiotics (2020).

33 Khoury CK et al (2014)

Butchering the earth – the planetary cost of industrial meat

Breaking the climate budget and polluting our planet

'The bottom line is that the changing climate is already hammering forests around the world, and future impacts could become severe enough to negate forests' ability to sequester carbon altogether."[1]

Gabriel Popkin, Yale E360, July 2020

If business as usual continues, by 2030 the livestock sector will have spewed out almost half (49%) of the total quantity of greenhouse gases that human activity worldwide can emit from now on if global warming is to be restricted to the 1.5°C target recognised as the safe maximum by the Paris Agreement.[2] The global operations of JBS alone are reported to produce around half the annual carbon emissions of fossil fuel giants such as ExxonMobil, Shell or BP.[3]

In July 2020, an article published in *Science* found that EU soya imports were responsible for the indirect emission of a total of around 58.3 $MtCO_2e$ from both legal and illegal deforestation in the Amazon and Cerrado biomes between 2009 and 2017[4] – equivalent to a year's emissions from 15 coal-fired power plants.[5]

However, carbon emissions are not the industrial meat sector's only contribution to the climate emergency. Livestock manure and in particular synthetic fertilisers (heavily relied on to increase feed crop yields[6]) emit large quantities of nitrogen compounds. As well as contributing to ozone depletion and to air and water pollution[7] (including the growth of coastal 'dead zones' – areas of low oxygen concentration in estuaries and seas that suffocate and ultimately kill fish and much other marine animal life[8]), these have a significant climate impact. Synthetic nitrogen-based fertiliser is a major source of nitrous oxide,[9] a greenhouse gas with up to 300 times the global warming potential of carbon dioxide;[10] as a result, in CO_2 equivalent terms synthetic fertiliser is responsible for 12% of global direct emissions from agriculture.[11]

In July 2020, scientists from the Food and Agriculture Organization of the United Nations (FAO), the World Bank and Wageningen University published findings in *Nature Food* that show that nitrogen pollution emitted by global livestock production alone is more than the planet can cope with. More than two-thirds of the sector's emissions come from crops grown to feed animals, followed by nitrogen released by the buildup and management of manure. The report concludes that a reduction in the production and consumption of livestock products is required to keep these emissions within planetary boundaries.[12]

Opposite:

12 August 2008, Brazil: Fires and cattle ranching in the Amazon. ©Greenpeace/ Daniel Beltrá

9 August 2018, Jair Bolsanaro. ©BW Press/ Shutterstock.com

Devouring the land

'Roughly 20% of soy exports and at least 17% of beef exports from [the Brazilian Amazon and Cerrado] biomes to the EU may be contaminated with illegal deforestation.'[13]

Raoni Rajão et al, Science, July 2020

'Led by President Jair Bolsonaro, who came into power in January 2019, the new administration has encouraged the clear-cutting of forests on private properties and public lands – in defiance of Brazil's Forest Code law and the soy moratorium agreement, which bans the clearing of forests for soy production. The government has also dismantled a series of environmental protections meant to stop illegal deforestation in conservation units and Indigenous Peoples' lands, staunch protectors of the country's forests.'[14]

Universidade Federal de Minas Gerais (UFMG), July 2020

'Soya used in animal feed represents 99% of our total soya footprint.'

Tesco, correspondence with Greenpeace UK, 24 September 2019

Taking into account land used for feed production and grazing, livestock production already uses 77% of agricultural land worldwide, despite providing the global population with only 17% of its dietary energy and 33% of its dietary protein.[15] Yet the industry's demand for land appears to be insatiable.

The two leading drivers of deforestation globally – ahead of the mining and timber/pulp industries and notoriously destructive commodities such as palm oil, rubber and cocoa – are beef and soya.[16]

The deforestation impact of the beef industry is felt most severely in South America.[17] As mentioned earlier in this report, the sector is one of the major contributors to deforestation in the wider Amazon region, with cattle ranchers responsible for

Supermarket packaged raw chicken wings and thighs. ©Levent Konuk

80% of land clearing in every country with Amazon forest cover.[18]

Soya is a key component of industrial meat production – an estimated 90% of soya beans produced globally are used as a protein source in animal feed.[19] Soya production has more than doubled since 1997,[20] driven by growing demand for animal feed to supply the factory farms that produce much of the meat and dairy sold by supermarkets and fast food chains worldwide.[21]

In Brazil, soya production has more than quadrupled over the past two decades[22] and is projected to increase by another third over the next 10 years, with exports growing by 42%.[23] By the end of the next decade, a further 9.5 million ha[24] – an area three times the size of Belgium[25] – is forecast to be planted with soya within Brazil alone, putting even greater pressure on its forests and natural ecosystems.

In 2006, a Greenpeace campaign exposing the links between soya expansion and Brazilian Amazon deforestation led the major soya traders to agree a moratorium on the purchase of soya from farms within the region that had cleared forests after July that year (later revised to July 2008).[26] But while the moratorium has been fairly successful in halting direct Amazon deforestation by the soya industry (with the deforestation rate in the affected areas falling by over 80%[27]), soya production in the Amazon has continued to ramp up. The area planted with soya increased by 3.5 million ha between 2006 and 2018 – with the expansion mainly occurring on land previously used to graze cattle,[28] which ranchers sell to soya farmers before moving on to develop new, often forested land. Selling land on for soya cultivation increases the financial viability of cattle ranching in the region (for example, the proceeds from selling a farm in Mato Grosso to a soya cultivator will be enough to pay for a much larger tract of land in Pará), meaning that soya is still a significant indirect driver of Amazon deforestation.[29] Moreover, the present government's hostility to the Soy Moratorium may strengthen calls from the growers' lobby Aprosoja for it to be abandoned altogether.[30]

Also under serious threat from both cattle ranching and soya cultivation are the Cerrado dry forest and savannah biome in Northeast Brazil (the world's most biodiverse savannah[31]) and the Gran Chaco dry forest biome (the continent's second-largest forest after the Amazon[32]), which covers parts of Argentina, Bolivia and Paraguay.[33] Neither the Soy Moratorium nor the G4 Cattle Agreement applies to these areas (a proposed extension of the former to the Cerrado came to nothing, despite two years of talks[34]). The Cerrado has already lost half of its original vegetation to agricultural expansion,[35] while some 23% of the Gran Chaco had been converted to cropland or grazing land by 2017.[36] At that point there were already 2.6 million cattle[37] in Argentina's Chaco Province (one of several provinces wholly or partly within the biome), with the provincial and federal governments incentivising production in forest areas[38] and reportedly aiming to double the size of the herd.[39]

The UK imports roughly 3.2 million tonnes of soya each year, with a further 600,000 tonnes already embedded in imported meat and other products.[40] These imports are largely driven by consumption as feed in industrial animal agriculture – primarily chicken production, which in the UK is almost exclusively industrial.[41] Data from the soya industry itself indicates that meeting the UK's annual demand for soya requires 1.4 million ha of land[42] – an area larger than Northern Ireland.[43] Approximately 68% of UK soya imports come from South America[44] and the commodity is a leading component of the UK's deforestation footprint.[45]

Opposite, from top:

25 November 2015, Ucuará, Pará, Brazil: Forest fire in the Amazon. ©Lunae Parracho/Greenpeace

24 November 2015, Aripuanã, Mato Grosso, Brazil: Cattle in an embargoed area. ©Bruno Kelly/Greenpeace

23 March 2019, Formosa do Rio Preto, Brazil, 11°19'9.78" S 46°25'6.54" W: Harvest of soya in embargoed area of the Estrondo estate – Greenpeace Brazil documented violence against traditional Cerrado communities within the estate, where Bunge and Cargill both have silos. ©Victor Moriyama/Greenpeace

Poisoning the environment

The meat industry's growing demand for soya and other feed crops is leading to increasing use of ever more dangerous chemicals to extend the growing season and increase yields. In Brazil[46] and Argentina[47] it is estimated that over 95% of the soya grown is genetically modified (GM), which goes hand-in-hand with intensive use of herbicides and other hazardous chemical inputs.[48] Data from the FAO show that pesticide use per unit area has increased by over 250% in both countries since the introduction of GM crops in the mid-1990s.[49] Brazil is now reportedly the largest buyer of highly hazardous pesticides (HHPs) in the world,[50] with official data showing a significant spike in approvals of new and environmentally hazardous pesticide products under the governments of Michel Temer and current president Jair Bolsonaro.[51]

In 2019, over the course of just three months, 500 million honey bees died in Brazil, with evidence pointing towards the cause being a huge increase in approvals of new pesticides containing known bee-killing chemicals such as Fipronil. Nearly two-thirds of the country's spending on HHPs is linked to soya production, primarily for animal feed.[52] Fipronil, which is not approved for use in the EU,[53] is widely used in Brazil on soya crops.[54]

Above:

1 May 2004, Rio Grande do Sul, Brazil: Pesticide warehouse. ©Greenpeace/Rodrigo Baléia

24 March 2019, Barreiras, Bahia, Brazil, 11°53'37.26" S 45°36'5.64" W: Tractor spraying crops. ©Victor Moriyama/Greenpeace

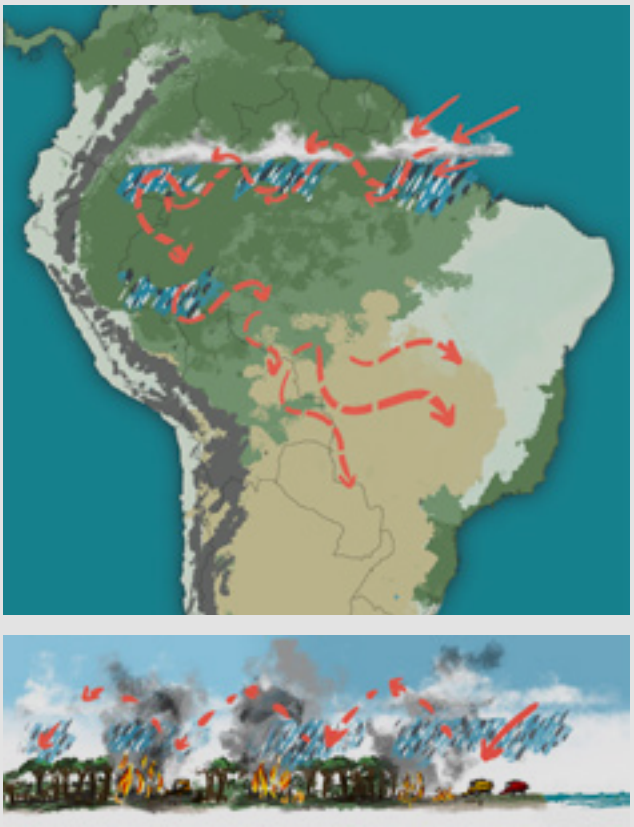
The Amazon's flying rivers are collapsing

The 'flying rivers' is the name for the naturally occurring phenomenon that provides the moisture that maintains the Amazon rainforest. Air currents carry huge quantities of water vapour from the South Atlantic far into the forest, where it falls as rain. This moisture then evaporates again with the help of the forest's trees, which act as a gigantic pump, drawing water up from the ground and releasing it back into the air as vapour. The whole cycle can repeat half-a-dozen times between the Amazon's headwaters and the sea. Now, as aggressive agriculture is destroying huge swathes of the Amazon, these flying rivers are weakening and carrying less moisture. This in turn is making the forest drier, tipping it into a cycle of drought that may become impossible to halt and will bring about the death of the Amazon rainforest.

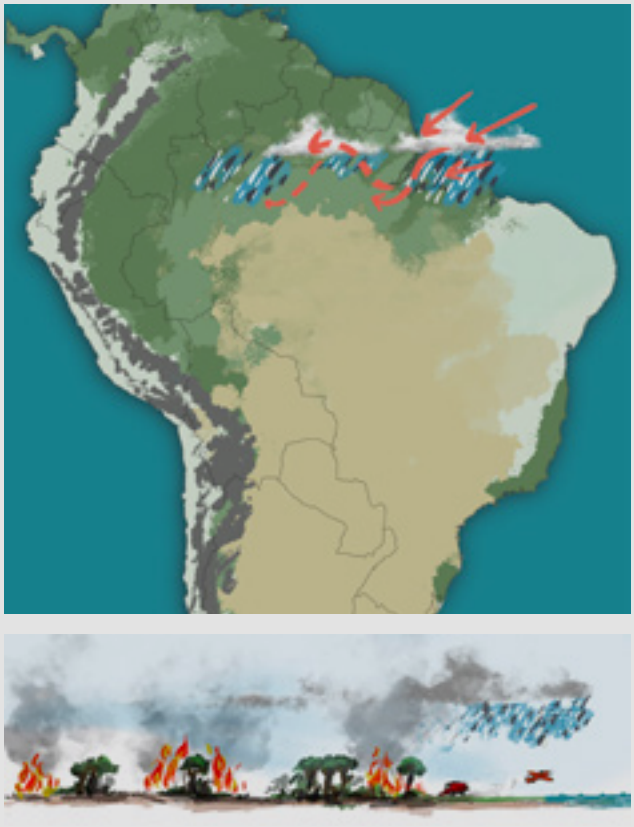
Source: Webb J (nd) 'Bleeding the flying river dry: Deforestation, climate change and drought in the Amazon' Health on the Frontlines blog series, Amazon Frontlines https://www.amazonfrontlines.org/chronicles/bleeding-river/

Intact: the 'flying rivers' are the Amazon creating its own rain

Now: the 'rivers' are drying up – less forest means less rain



Tipped: as the forest is reduced the rain cycle collapses



8 June 2016, Serra do Divisor, Acre, Brazil.
©Markus Mauthe/Greenpeace

21 September 2019, Pará, Brazil,
3°55'39.83" S 52°1'40.25" W.
©Fábio Nascimento/Greenpeace

1 April 2015, Serra Azul, Brazil: Dried earth within the region's water reservoir – millions of people face water shortages. ©Gabriel Lindoso/Greenpeace

23 September 2015, Pará, Brazil: A young Munduruku joins a meeting with the Federal Prosecution Service to discuss the impacts of the São Luiz do Tapajós hydro power plant, a major dam planned by the Brazilian government on the Tapajós river.
©Lunae Parracho/Greenpeace

Endnotes

1 Popkin G (2020)

2 Harwatt H (2019), Harwatt H et al (2019). See also United Nations Climate Change website 'The Paris Agreement'.

3 ExxonMobil, Shell and BP were responsible for 577, 508 and 448 $MtCO_2e$ Scope 1+3 GHG emissions in 2015, respectively (source: Carbon Majors Database (2017)). In 2016, JBS's Scope 1+3 GHG emissions from processing and production of beef, pork and chicken totalled 280 $MtCO_2e$. Source: GRAIN & ITAP (2018).

4 Rajão R et al (2020) Table S16. Calculation takes into account municipalities' export shares.

5 United States Environmental Protection Agency website 'Greenhouse gas equivalencies calculator'

6 IDDRI (2018)

7 Vaughan A (2020)

8 Breitburg D et al (2018)

9 IPCC (2014), see eg p384

10 United States Environmental Protection Agency website 'Understanding global warming potentials'

11 12% = 0.68 $GtCO_2e/yr$. The total figure comprises direct agriculture emissions but does not include emissions from land-use change. Source: IPCC (2014) p823.

12 Uwizeye A et al (2020)

13 Rajão R et al (2020)

14 Universidade Federal de Minas Gerais (2020)

15 United Nations Environment Programme (2019) p202

16 European Commission (2013) pp21–22 and Henders S, Persson UM & Kastner T (2015) p6

17 Henders S, Persson UM & Kastner T (2015) p6

18 Wasley A et al (2019c)

19 Sharma S, IATP & Schlesinger S (2017) p25

20 144 million tonnes of soya beans were produced globally in 1997 and 353 million tonnes in 2017 (the most recent year for which data are currently available). Source: FAOSTAT website 'Crops'.

21 According to Eurostat data, almost three-quarters of the livestock units (72.2%) in the EU-28 were reared on very large farms in 2013. Source: Eurostat (2018).

22 FAOSTAT website 'Crops'

23 Ministério da Agricultura, Pecuária e Abastecimento (2019) p39, Table 11

24 From 35.8 million ha in 2018/19 to 45.3 million ha in 2028/29. Source: Ministério da Agricultura, Pecuária e Abastecimento (2019) p14, Table 3.

25 30.5 million ha. Source: CIA website 'The World Factbook'.

26 Adario P (2016), Greenpeace International (2014)

27 Average annual deforestation in the 95 soya-producing municipalities monitored by the Soy Moratorium between the 2008/09 and 2017/18 growing seasons was 5.2 times lower than between 2001/02 and 2007/08. Source: ABIOVE & Agrosatéllite (2018) p20.

28 ABIOVE & Agrosatéllite (2018) p18

29 Fearnside P (2017) pp19–20, Gollnowa F et al (2018)

30 The Economist (2020)

31 Ministry of the Environment (2017) p65

32 WWF website 'Gran Chaco'

33 See Baumann M et al (2016), Critical Ecosystem Partnership Fund (2017) pp146–151 and Global Forest Watch website 'Gran Chaco deforestation'.

34 The Economist (2020)

35 See Critical Ecosystem Partnership Fund (2017) pp51–52, Gibbs HK et al (2015a) and Spring J (2018).

36 MapBiomas Chaco Project (2019)

37 Ministerio de Producción y Trabajo & Secretaría de Agroindustria (2018) p20

38 Gobierno del Pueblo de la Provincia del Chaco (2016) pp21–23, Secretaría de Ambiente y Desarrollo Sustentable (2018) p473

39 Diario Norte (2017)

40 Efeca (2019) p3

41 Greenpeace UK (2020)

42 Calculated using the RTRS's 'Soy print calculator', available at http://www.responsiblesoy.org/contribute-to-change/know-your-soy-print/?lang=en.

43 1.34 million ha. Source: WorldAtlas website 'Northern Iceland'.

44 Specifically Argentina, Brazil and Paraguay. Source: Efeca (2019) p14.

45 WWF & RSPB (2020)

46 International Service for the Acquisition of Agri-biotech Applications (2017) pp16–17

47 International Service for the Acquisition of Agri-biotech Applications (2017) p21

48 Leguizamón A (2014), Pretty J & Bharucha ZP (2015) and Schiesari L et al (2013)

49 In Argentina pesticide application rates increased from 1.93 kg/ha in 1996 to 4.88 kg/ha in 2017, whilst in Brazil rates increased from 1.99 kg/ha to 5.95 kg/ha. Source: FAOSTAT website 'Pesticides indicators'.

50 Dowler C (2020a), Gonzalez J (2020)

51 In 2018, Temer's final year in office, 450 new pesticide products were approved by the Ministry of Agriculture – a 13-year high. Data to 21 May 2019 show that by that date 169 products had already been approved since Bolsonaro was elected. Almost half the products approved during this period contain active ingredients featured on the Pesticide Action Network's (PAN's) list of highly hazardous pesticides, indicating that they pose a risk to human health or the environment. 14% contain chemicals explicitly prohibited in the EU. Source: Clarke JS (2019).

52 Hanson T (2019)

53 European Commission website 'EU pesticides database: Fipronil'

54 Jordan L & Perpétua S (2020)

15 September 2019, Acre, Brazil: Members of the Huni Kuin Indigenous community stand in the burnt remains of their lands – they are determined to reforest to preserve their culture and knowledge of natural science and medicine.
©David Tesinsky/Greenpeace

Disposable lives – the human cost of industrial meat

24 September 2014, Itaituba, Pará, Brazil: Munduruku Indigenous People and riverside communities from the Tapajós River region participate in a workshop about the Indigenous and Tribal Peoples Convention 169 of the ILO (International Labor Organisation).
©Gabriel Bicho/Greenpeace

‘Workers are considered as expendable as the things that they’re slaughtering.”[1]

Raj Patel, Lyndon B Johnson School of Public Affairs, University of Texas-Austin

28 May 2020, Arizona, USA: Screenshot from local news broadcaster ABC15 Arizona reporting JBS meat processing facility in Tolleson twice declined Arizona state’s offer to help with Covid-19 testing. Source: https://youtu.be/Lg6TVI4s1gM

Trampling the rights of Indigenous Peoples and traditional communities

The industrial meat sector's assault on human rights in Brazil is not confined to the Amazon and beef production (see page 41). Greenpeace Brazil recently documented violence against local communities while investigating one soya-producing estate in the adjoining Cerrado savannah, Agronegócio Estrondo, which was established via a land grab and has a history of slave labour and illegal land clearance.[2] Major global commodities companies Bunge and Cargill both operate silos within the estate's boundaries[3] and have been sourcing soya directly from its plantations.[4] Tens of thousands of tonnes of soya from this estate have been traded to several European countries.[5]

14 September 2014, Maranhão, Brazil: Destruction of the Araribóia Indigenous lands in the Cerrado.
©Markus Mauthe/Greenpeace

'Rampant deforestation, uncontrolled expansion of agriculture, intensive farming, mining and infrastructure development, as well as the exploitation of wild species have created a "perfect storm" for the spillover of diseases.'[6]

Professors Josef Settele, Sandra Díaz, Eduardo Brondizio and Dr. Peter Daszak, lead authors of the 2019 IPBES Global Assessment Report on Biodiversity and Ecosystem Services, April 2020

'[US] health researchers now have been strictly forbidden from factoring in the environmental impact of food. The involvement of the Department of Agriculture in issuing health guidelines has always opened such recommendations up to being conflicted, but excluding the health impacts of climate change now makes any guidelines meaningless. The duality is simply obsolete; what is bad for the planet is bad for you.'[7]

James Hamblin, The Atlantic, October 2019

Above: 14 February 2018, Bangkok, Thailand: A man wears a face mask. ©Chanklang Kanthong/Greenpeace

12 June 2020, São Gabriel da Cachoeira, Brazil: Indigenous Primary Care Unit (UAPI). ©Christian Braga/Greenpeace

Sowing sickness – spreading disease and pollution

Due to its links to deforestation and habitat degradation, industrial meat production contributes to the increased risk of zoonoses[8] – diseases such as Covid-19[9] that are originally found in non-human animals but jump the species barrier and begin to infect humans.[10] The majority of emerging infectious diseases originated in animals, and particularly in wild species.[11] Outbreaks of many such diseases have occurred in Brazil, and some experts believe that the Amazon, as a tropical forest with a high diversity of wild mammals that is suffering rapid deforestation and widespread land use change and ecosystem disruption, is a likely source of further such events[12] – as one expert put it, 'Where you have a huge biodiverse zone, the Amazon, and then you have an encroaching human footprint, through urbanisation, road networks, deforestation [...] you have all of the ingredients for a virus spillover recipe.'[13] As the main driver of deforestation in the region,[14] the meat industry is therefore increasing the risk of future pandemics.

Deforestation, or more specifically air pollution caused by the fires set to clear newly felled forest land for agriculture, has also been linked to an increased incidence of respiratory diseases, especially in children. It is feared that in the Amazon region the rising number of Covid-19 infections (to which Indigenous communities appear to be especially vulnerable),[15] combined with the potential impact of the imminent 2020 fire season, may overwhelm the region's health system.[16]

However, disease-related impacts do not stop with deforestation itself. The intensification of livestock production (including factory farming[17]) facilitates disease transmission both within livestock populations and from livestock to humans through reduced genetic diversity of livestock populations, much higher animal stocking densities and the increased movement of people on and off farms.[18]

Besides the increased risk of zoonotic outbreaks, negative human health effects from intensive livestock farming include respiratory disease caused by air pollutants, especially ammonia,[19] as well as the danger of pathogens developing resistance to antibiotics and other antimicrobial medicines – which the World Health Organization (WHO) recently declared a 'global health emergency'[20] – due to their excessive use on livestock in industrial systems. Health risks are particularly severe when large livestock populations are kept in close proximity to residential areas: one study describes the situation in the Netherlands, as well as in other parts of the West and Asia, as tantamount to a 'natural experiment' exposing residents to 'potentially harmful bacteria, viruses, and air pollutants'.[21]

The processing stage of the meat supply chain has also been heavily linked to the spread of Covid-19 in particular (see also below). According to the Articulação dos Povos Indígenas do Brasil (APIB), in Mato Grosso do Sul the meat processing industry has played a significant and direct part in spreading the disease to some Indigenous communities via Indigenous employees.[22] In the USA, several meat processing plants were forced to close following Covid-19 outbreaks.[23] Lobbying from the industry, including a full-page advertisement placed in the *Washington Post* and *New York Times* by Tyson CEO John Tyson,[24] persuaded the Trump administration to invoke the Defense Production Act so as to ensure that meat processing plants remained open.[25] Within a week of this order being issued, the reproduction rate of the coronavirus in US counties that are home to major meat processing plants reportedly reached nearly twice the national rate.[26] In Europe, too, outbreaks linked to slaughterhouses and meat processing plants have been identified in several countries, including the UK and Germany: at least 37 Covid-19 clusters were reported across Europe between March and late June 2020, with over 4,000 workers becoming infected.[27]

21 April 2015, New Zealand: Screenshot of Primary ITO promotional video 'Just the job - a career in meet processing'. Source: https://www.youtube.com/watch?v=WFcogcS7y4A&t=325s

'Meat-processing workers are uniquely vulnerable to the coronavirus and the risk of contracting it because of the oppressive and dangerous working conditions in these facilities. This is about how those [B]lack, Latino and Asian workers are more significantly affected than their white co-workers."[28]

Brent Newell, senior attorney at Public Justice, July 2020

Exploiting workers

The outbreaks of Covid-19 at meat processing plants around the world have shone a light on the poor working conditions within the meat industry. The virus has swept through a number of these facilities, fuelled by cold and crowded working conditions and the inadequate protection of workforces who are reportedly often obliged to live in crowded communal housing.[29]

In the USA, outbreaks have occurred at processing plants run by meat giants JBS, Smithfield and Tyson Foods.[30] In mid-April one JBS plant in Greeley, Colorado, was closed after an outbreak in which five workers reportedly died,[31] but reopened nine days later without comprehensive testing of staff:[32] by mid-June the death toll at the plant stood at seven.[33] Meanwhile, three workers died at one UK plant where, according to the family of one plant worker, staff were initially told that they could not wear face masks because they would be taking them from the National Health Service and where employees report being reluctant to take sick leave – despite the risk of infecting colleagues – because they receive only the country's inadequate statutory sick pay. [34] Hundreds of meat processing plant employees in France, Germany and Ireland have also contracted the virus.[35]

In the USA, Black, Latino and Asian workers make up an estimated 70% of the processing line workers in meat processing facilities.[36] The Centers for Disease Control and Prevention (CDC) found that by 31 May 2020 people of colour ('racial or ethnic minorities') made up 87% of Covid-19 cases in these facilities.[37] More than 17,350 workers were known to have been infected by that date, with 91 Covid-19 related deaths,[38] and Covid-19 has continued to disproportionately impact Black, Latino and immigrant workers at processing plants.[39] Worker advocacy groups have filed a civil rights complaint[40] against JBS and Tyson with the US Department of Agriculture, alleging that the companies' failure to follow CDC guidance on social distancing and provision of personal protective equipment had a discriminatory impact on the predominantly Black, Latino and Asian workforce.[41]

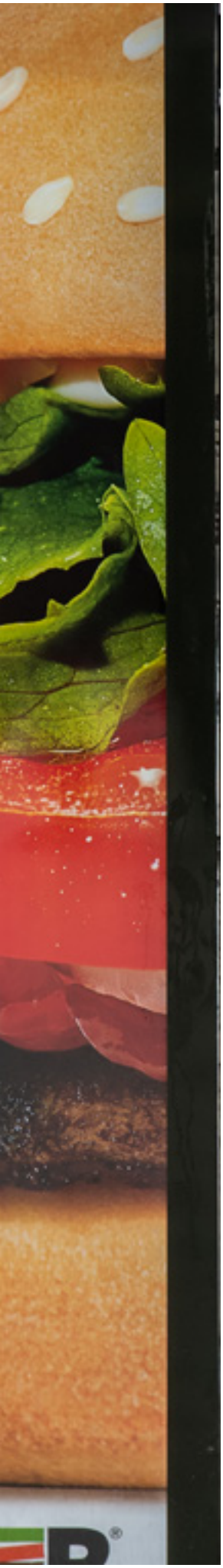
But even without the menace of Covid-19, meat processing has long been recognised as a highly dangerous job. In the USA, meat processing workers have some of the highest rates of occupational injury and illness,[42] while in Brazil (where a 2018 survey in one chicken plant found that over 70% of workers had suffered occupational accidents or diseases[43]) major processors JBS, Minerva and Marfrig are reported to have illegally failed to report work-related illnesses in order to avoid paying sick pay.[44] Migrant workers are at particular risk, as safety information may not be translated into languages that they understand.[45]

Across the world, the industry is also a hotbed of low pay and exploitation. In Germany, where up to 80% of meat industry workers are migrants,[46] staff are reportedly brokered to meat companies by subcontractors on terms that have been described as resembling modern slavery,[47] though the government has recently vowed to improve conditions.[48]

5 May 2019, Fast food consumption in the UK. ©Chris J Ratcliffe/ Greenpeace

Opposite, top: 11 June 2011, São Paulo, Fast food consumption in Brazil. ©Barbara Veiga/ Greenpeace

7 March 2019, Fast food consumption in the UK. ©Chris J Ratcliffe/ Greenpeace



Poor diet, poor health

As we have seen above (pages 49–51), the growth of the industrial meat economy has both responded to and stimulated rising meat consumption, particularly in the West but increasingly elsewhere in the world. A report by some of the world's leading scientists and health experts, published in *The Lancet* in January 2019,[49] stresses the gulf between the way we currently eat and the healthy, sustainable food systems we need to protect nature, the climate and public health. In particular, it assesses current global consumption of red meat (including pork) as being more than double the optimal level that it identifies as healthy (or, in the terms of the summary report, compatible with 'planetary health' – ie ensuring both environmental sustainability and public health).[50] Consumption is particularly excessive in regions such as North America, Latin America and Europe, while in all three regions consumption of poultry, eggs and (in North America and Europe) dairy products is also well over planetary health levels.[51] Reviewing the literature, the report identifies high red meat consumption as associated with increased risk of coronary heart disease, stroke, type 2 diabetes and colorectal cancer.[52]

Endnotes

12 June 2020, Cachoeirinha dos Padres Reference Centre, São Gabriel da Cachoeira, Amazonas, Brazil: Greenpeace Brazil, through the 'Wings of Emergency' Project, transported some of the equipment needed to equip Indigenous Primary Care Units (UAPIs) in the region. UAPIs are intended to support low-risk Indigenous patients with Covid-19. ©Christian Braga/Greenpeace

1 Kinniburgh C (2020)
2 Greenpeace International (2019b)
3 Greenpeace Brazil investigation; see Greenpeace International (2019b).
4 See Greenpeace International (2019b); documentation held by Greenpeace International.
5 Greenpeace International (2019b) p39. Documentation held by Greenpeace International.
6 Settele J et al (2020)
7 Hamblin J (2019)
8 EcoHealth Alliance (2019)
9 United Nations Environment Programme & International Livestock Research Institute (2020)
10 World Health Organization website 'Zoonoses'
11 Scientists estimate that between 60–70% of emerging infectious diseases are zoonotic. See eg Jones KE et al (2008), Karesh WB et al (2012) and Wang L-F & Crameri G (2014).
12 Nava A et al (2017)
13 Jordan L & Howard E (2020)
14 FAO (2016)
15 Indigenous Peoples' mortality rate from the pandemic is 150% higher than the Brazilian average. Source: Cannon JC (2020). By 29 July 2020, there had been 19,773 cases reported within Indigenous communities and 590 deaths registered in 145 different ethnicities. Source: Emergência Indígena website 'Overview of COVID-19 within the Indigenous population'.
16 Fischer L (2020), Médecins Sans Frontières (2020)
17 Graham JP et al (2008), Jones BA et al (2013)
18 Jones BA et al (2013)
19 Westhoek H et al (2015)
20 World Health Organization (2017)
21 Smit LAM & Heederik D (2017)
22 Emergência Indígena website 'Plan to stand against the COVID-19 spread in Brazil'
23 See eg Dorning M, Carey D & Merrill D (2020).
24 Tyson (2020)
25 Trump DJ (2020)
26 Dorning M, Carey D & Merrill D (2020)
27 Ross A (2020)
28 Reiley L (2020)
29 See eg Pina R (2020), van der Zee B, Levitt T & McSweeney E (2020).
30 The association with these three companies was initially reported in the Washington Post (Telford T & Kindy K (2020)). The research and advocacy NGO Environmental Working Group (EWG) later did an analysis of Johns Hopkins county-level data on exposures and confirmed cases along with the number of infected workers from news reports and press releases from the companies. Tyson, JBS and Smithfield accounted for 75% of all infected workers reported in news stories. (Source: Graddy S, Rundquist S & Walker B (2020).) FERN Environment did a similar breakdown that confirms JBS, Smithfield and Tyson lead in number of Covid-19 cases in the USA: see Douglas L (2020a). See also Mother Jones (2020), Schlosser E (2020).
31 Bradbury S (2020a)
32 Bradbury S (2020b)
33 Grabell M, Perlman C & Yeung B (2020)
34 Levitt T (2020)
35 See Askew K (2020), Kevany S (2020) and McSweeney E (2020).
36 Fremstad S, Rho HJ & Brown H (2020), cited by Reiley L (2020)
37 CDC (2020)
38 CDC (2020)
39 Douglas L (2020b)
40 Public Justice Food Project (2020)
41 Reiley L (2020)
42 McConnell BM (2019)
43 Diário Causa Operária (2018)
44 Locatelli P (2016)
45 McSweeney E (2020)
46 Staudenmaier R (2020)
47 Soric M (2020), Young H (2020)
48 Staudenmaier R (2020)
49 Willet W et al (2019)
50 Willet W et al (2019) pp448, 460; EAT-Lancet Commission (2019) pp7, 12–13, 21
51 For example, in North America average consumption of red meat would need to fall by 84%, of poultry by 57%, of eggs by 63%, and of dairy by 31% from 2016 levels to reach levels the study defines as optimal for the planetary health boundary. In the region described as encompassing Europe and Central Asia the corresponding reductions required would be 77% for red meat, 20% for poultry, 54% for eggs and 21% for dairy, while in Latin America and the Caribbean the required reductions would be 76% for red meat and 47% for poultry and eggs (with average dairy consumption for the region able to increase). Analysis based on Willet W et al (2019) p460 Figure 1; see also EAT-Lancet Commission (2019) pp12–13.
52 Willet W et al (2019) p455

23 August 2017, UK. ©Soil Association

'Our current agricultural system is broken. If we keep producing food using current unsustainable agricultural practices, we will undermine future food production. We need to redirect government subsidies towards more sustainable and regenerative farming. We simply cannot afford the cost of inaction."[1]

Professor Sir Robert T. Watson FRS, Chair of IPBES

'The UK [...] has a home-grown food security problem. [...] The UK is awash with food but from modes of production, processing and packaging which are unsustainable ecologically and socially."[2]

Tim Lang, Feeding Britain

Fostering a just transition

As the previous sections have shown, the industrial meat economy is predicated on large-scale monocultural farming operations with high levels of agrochemical inputs and environmental and social impacts, and a highly consolidated food processing and distribution infrastructure. It is all too easy for consumers who appreciate the ready availability of cheap meat to be seduced into overlooking this system's downsides. But by its very nature, the industrial meat economy destroys natural habitats such as forests, wiping out biodiversity; pollutes air and water while contributing to the climate emergency; expropriates Indigenous Peoples' land; condemns workers to modern slavery and other mistreatment; compromises public health by encouraging poor diet and creating circumstances favourable to the emergence and spread of zoonotic diseases; and reduces the diversity and resilience of agricultural production while increasing dependence on complex and inflexible supply chains, so increasing the global population's vulnerability to external shocks and imperilling its food security.[3]

For all these reasons, it is vital that the world's food economy moves beyond the industrial meat model as quickly as possible – though the climate imperative lends a special urgency to this transition. But for such a transition to be effective, and indeed for it to take place at all, we must have a clear idea of its desired end goal – a food economy able to feed healthily and satisfyingly a growing global population, while minimising GHG emissions, preserving and making space for nature, respecting Indigenous land rights, providing decent employment, fostering vibrant communities and ensuring food security.

13 May 2018, UK. ©Soil Association

What defines a resilient food economy?

A resilient food economy will ensure planetary health and secure social justice for all those who work in it or are affected by it.[4] Critically, this means that it will need to be aligned with the urgent need to address the climate and nature emergency in ways that build environmental and economic resilience (including improved soil health), social justice, food security and sovereignty, and public health. A resilient food economy will therefore:

- **Uphold social justice and food security,** including protecting Indigenous Peoples' lands and the rights of local communities and ensuring a healthy environment both today and for future generations; provide adequate support domestically and globally for farmers and labourers throughout the supply chain who are currently dependent on the industrial food economy for their income, enabling them to transition to planet-friendly forms of farming or other forms of employment; and ensure the right of all people to a healthy (ideally plant-rich) diet, produced by ecologically sound and sustainable methods.

- **Minimise its environmental footprint and maximise environmental health** at farm, community, national and global levels, for example through:

  - **Improved biodiversity, soil health and clean water**
  - **Circular systems** involving high levels of nutrient recycling (including of food waste) and minimal external inputs of fertilisers and agrochemicals
  - **Smarter food production,** including using land for food, not feed
  - **An end to factory farming** and industrial meat production
  - **Shorter supply chains** to reduce GHG emissions from transport and storage (while fostering community-level food economies).

- **Dramatically reduce livestock production and global trade in commodities** such as palm oil, pulp and wood chips, and soya, so as to ensure that agricultural land is used to produce food for direct human consumption, not animal feed or energy crops. This will free up land for restoration and regeneration of natural habitats and facilitate a shift to local and agro-ecological production with which nature can coexist – both measures that will maximise biodiversity benefits and carbon uptake and storage while reducing GHG emissions and pollution.

- **Integrate animal agriculture into a diverse farming system** in which stocking densities and models of husbandry respect animal welfare and contribute to nature conservation and ecosystem restoration.

11 April 2012, Amapá, Brazil: Scarlet ibis fly over the biological reserve of Piratuba Lake. ©Rogério Reis/Tyba/Greenpeace

How do we get there?

Transitioning to a resilient food economy and non-industrial model of meat and dairy production will inevitably require a dramatic reduction in the scale of production and consumption of industrial meat and dairy products. The EAT-*Lancet* report referred to earlier (see page 77) calls for global consumption of red meat (including pork) to be be reduced by more than half (with production falling by about 75% against a 2010 baseline) by 2050 to achieve diets that on a worldwide basis are compatible with planetary health. It also makes clear that in regions with high consumption much bigger reductions will be required, along with significant cuts in consumption of poultry and dairy products.[5]

Greenpeace International has itself developed a vision 'for a healthier life and planet' based around a target of halving global meat and dairy production and consumption against a 2013 baseline by 2050.[6] Like the EAT-*Lancet* proposal, Greenpeace International's vision would require much more severe reductions in regions with high consumption levels: for example, average meat consumption in the EU would need to fall by 71% from 2017 levels by 2030 and 81% by 2050[7] (Conversely, in countries with low current levels of consumption much more modest decreases would be required.[8]) As part of the phase-out of all trade in industrial meat, companies in high-consumption countries should aim to reduce overall meat and dairy production and sales by 50% by 2025.

Under such conditions, meat and dairy products would have to become merely co-products of a predominantly plant-focused farming system, to which livestock contributed via natural fertiliser inputs (including by means of rotational systems such as temporary pasture) while being fed to the greatest extent possible on agricultural wastes. This would free up land currently used to produce animal feed to be either used for arable production for direct human consumption, or else reforested or otherwise returned to its natural state. In turn, this would allow animal agriculture to make a much higher net contribution of calories to the system than is currently the case with industrial, grain-fed production,[9] while allowing the restoration of forests and other natural ecosystems that is a vital component of the response to the climate and nature emergency.

26 September 2014, Itaituba, Pará, Brazil: Munduruku woman cleaning fish during a workshop on the Indigenous and Tribal Peoples Convention 169 of the ILO. ©Fábio Nascimento/Greenpeace

Endnotes

1 Watson R (2019)

2 Lang T (2020)

3 See eg MacDonald JM, Hoppe RA & Newton D (2018).

4 'Planetary health' is defined by the EAT-Lancet Commission as 'the health of human civilization and the state of the natural systems on which it depends', following on from the work of the earlier Rockefeller Foundation-Lancet Commission. See EAT-Lancet Commission (2019) p7.

5 Willett W et al (2019) p460, EAT-Lancet Commission (2019) pp12-13

6 Greenpeace International (2018)

7 Greenpeace European Unit (2020). The figures for the UK are similar: 70% and 80% respectively.

8 Greenpeace International (2018) pp14-15

9 Greenpeace International (2013) pp21, 29

31 March 2015, Itaituba, Pará, Brazil: Tapajós River. ©Fábio Nascimento/ Greenpeace

7 April 2012, Rio Negro, Serra do Acacá, Brazil: Fungi. ©Markus Mauthe/Greenpeace

1 November 2004, Brazil: Parrots. ©Greenpeace/ Flavio Cannalonga

28 July 2005, Belterra, Brazil: Purple flowers of the Jambo tree. ©Greenpeace/Daniel Beltrá

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