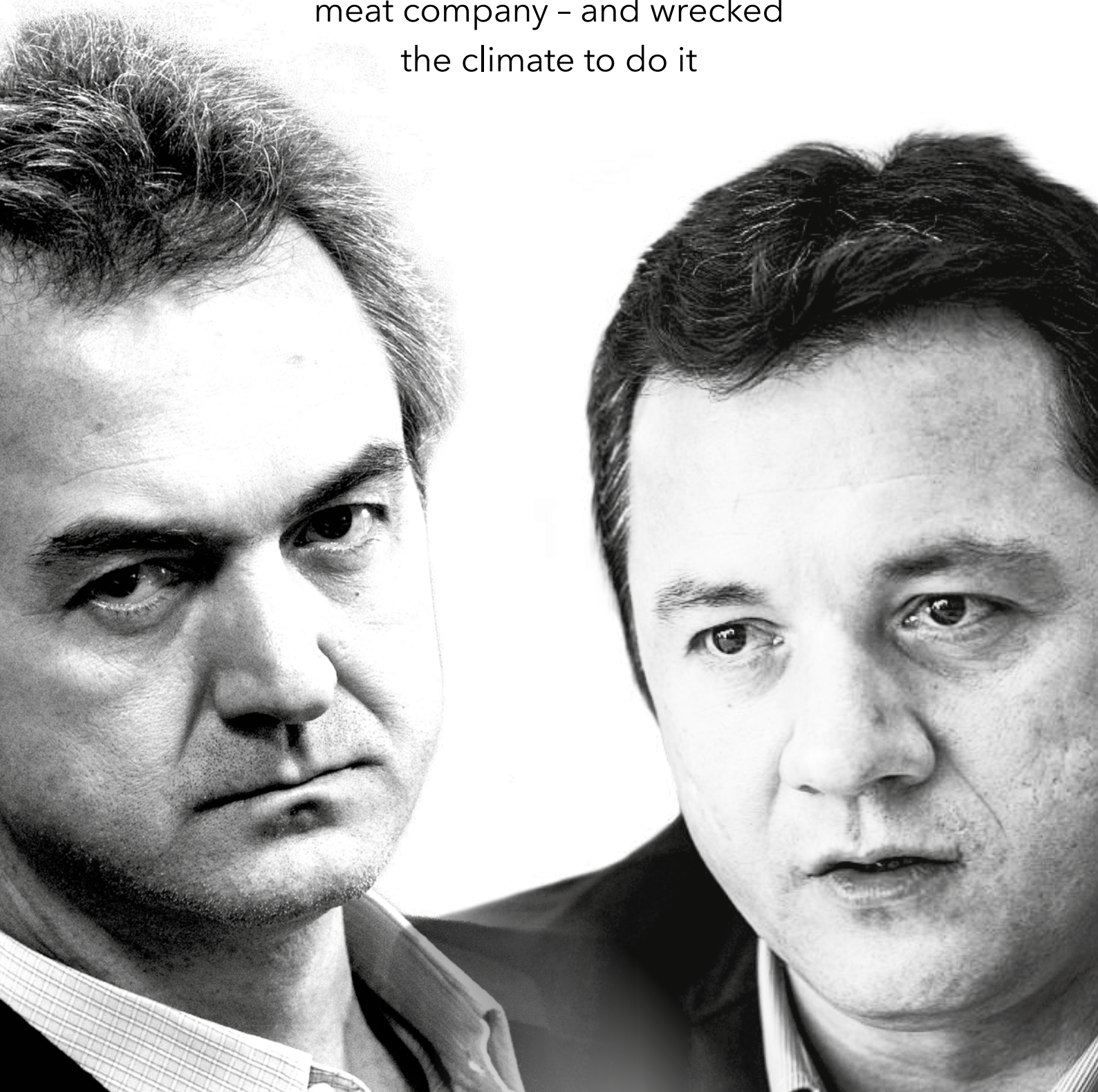


THE BOYS FROM BRAZIL

How JBS became the world's largest
meat company - and wrecked
the climate to do it



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Nelore cattle grazing in a pantanal's farm, Mato Grosso, Brazil. Photo: Lucas Ninno/Getty Images

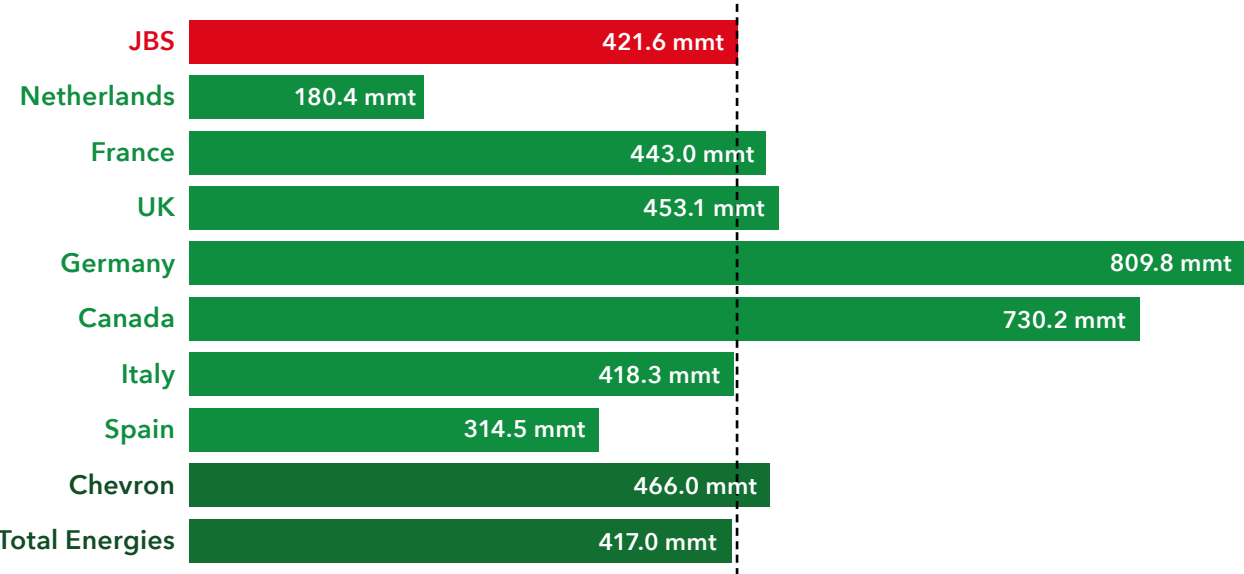
OVERVIEW

JBS is the largest and most powerful meat processing company in the world, and it is growing rapidly. The \$76 billion¹ revenue Brazilian-based meat company is pursuing a strategy of constant expansion, buying up competitors, entering new markets and controlling ever more of the industrial meat supply chain. In the course of cementing its position, JBS has been accused of driving the destruction of the Amazon rainforest and other ecosystems, it has been responsible for enormous climate emissions, and has been linked to bribery, price-fixing, pollution, worker exploitation, and allegations of selling tainted meat.^{2,3}

JBS employs over 250,000 people globally, with customers in 190 countries,⁴ and it is responsible for the slaughter of some 76,000 cattle, 132,000 pigs and nearly 14 million poultry birds every day. From Australia to the United States (US), JBS's range of brands include Pilgrim's, Swift and Friboi, and its customers include Burger King, McDonald's, Carrefour, Tesco and Walmart. The wider climate, deforestation, environmental, animal welfare, biodiversity loss, and local impact of its operations are immense – and often overlooked. Responsible for vast methane greenhouse gas (GHG) emissions, IATP estimate JBS increased its annual emissions by 51% in five years from 280 million metric tonnes in 2016 to 421.6 million metric tonnes in 2021. This is more than Italy or Spain's annual climate footprint and nearly all of France's at 443 mmt or the UK's at 453 mmt. It is approximately equivalent to fossil fuel giant Total's 2020 emissions.⁵

JBS has been accused of driving the destruction of the Amazon rainforest and other ecosystems

Figure 1: Comparison of JBS greenhouse gas emissions



Source: IATP/Feedback/Desmog (2022)

As part of its business model, JBS is linked to the destruction and degradation of vast swathes of rainforests and ecosystems, most notably in the Brazilian Amazon – an area at risk of reaching an irreversible climate change-related ‘tipping point’.⁶ JBS’s total deforestation footprint in six Brazilian states since 2008 was conservatively estimated at 200,000 hectares (ha) in its direct supply chain and 1.5 million ha in its indirect supply chain.⁷ This is linked to forest fires, modern-day slave labour and violent invasions of Indigenous peoples’ land, reserves and territories.⁸ Although JBS has made numerous public pledges to eliminate deforestation from its supply chain since 2009, it has repeatedly broken its promises and failed to live up to these commitments. Recent pledges by JBS to reduce its GHG emissions by 2030 have notably excluded supply chain or ‘Scope 3’ emissions from and the livestock and animal feed that it sources and the associated emissions from forest clearances and fires, land conversion, enteric fermentation, and farming fuel and agrochemicals used in its supply chains – which represent 97% of its total emissions liability.⁹

Figure 2: JBS’s deforestation footprint¹⁰



*Estimate since 2008 in six Brazilian states. Source: Chain Reaction Research (2020).

BUSINESS LOSSES

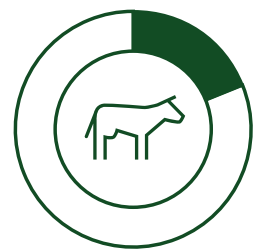
Just as JBS recently announced record annual profits of \$4.5 billion¹¹ and investors prepare to meet for the JBS Annual General Meeting (AGM) in São Paulo in Brazil, a chorus of local, Indigenous and global campaign groups are calling for the company's key customers, supermarkets, banks and financiers to drop JBS. Major investors such as the Norwegian Government Pension Fund (GPF)¹² and Nordea Asset Management¹³ have divested and dropped JBS for its links to or risk of corruption and (in the case of Nordea) for its environmental impacts. Significantly, six major European-based supermarkets and JBS customers - including Sainsbury's in the UK, Lidl in the Netherlands and Delhaize in Belgium - recently removed JBS or Brazilian beef products from their supermarket shelves because of the firm's links to deforestation in the Amazon and elsewhere, following an investigation by Réporter Brasil in partnership with Mighty Earth.¹⁴

The impact on the company's revenues from its environmental destruction and criminality seems limited. A ready supply of financiers continue to stand willing to back the company. Despite facing sustained legal and public pressure, and in response JBS has to some extent managed to launder its reputation; skilfully using the media, managing legal threats in recent years, running global PR campaigns, and rolling out a series of lofty, yet largely insubstantial policies on corruption, deforestation and GHG emissions. From its humble beginnings in the Batista family-owned butcher's shop in Anápolis in central western Brazil, JBS has grown to be the largest meat processor in the world, with annual revenues of \$76 billion.

CLIMATE CULPRIT

The global livestock sector is responsible for 14.5% to 19% of human-induced global GHG emissions - including high levels of methane,¹⁵ which has a global warming potential roughly 86 times higher than CO₂ over a 20-year timescale.¹⁶ The UN Intergovernmental Panel on Climate Change's (IPCC) report¹⁷ calls for immediate, rapid, and large-scale reductions in GHGs to avoid the worst of the climate emergency. Urgent action is required to decarbonise the economy in line with the Paris Climate Agreement 1.5°C goal is required. Radical changes to the industrial livestock sector - and methane emissions in particular - and major shifts to plant-based substitutes, agroecology, and reduced meat consumption, are core to this transition.

Remarkably, given its emissions-intensive business, JBS recently obtained \$1bn in financing from a 'Sustainability-Linked Bond' (SLB).¹⁸ JBS said the bond was part of its plan to tackle climate change, yet the SLB's conditions do not mention deforestation at all, and only address JBS's Scope 1 and 2 emissions (direct emissions rather than those from the supply chain), which some sources say account for less than 10% of its total emissions.¹⁹ The bond was criticised by civil society organisations (CSOs) in an open letter to investors, saying, "At best, this bond will have negligible real-world impact, at worst it provides sustainability cover for a business model that will see JBS expand its climate-intensive activities over the next decade."²⁰



The global livestock sector is responsible for 14.5% of human-induced global GHG emissions

While JBS talks about reducing its Amazon deforestation footprint, the numbers tell a different story. Cattle farming is by far the largest driver of deforestation in the Amazon, and JBS's base of direct cattle supplier farms in the Amazon more than doubled, from about 7,700 in 2009 to 16,900 in 2020, while the number of JBS slaughterhouses in the Amazon also more than doubled over this period (there are currently 21).²¹ Despite multiple investigations since 2009 by groups ranging from Greenpeace and Réporter Brasil to Amnesty International and The Bureau of Investigative Journalism, JBS has been slow to take responsibility or provide full transparency and traceability for the tens of thousands of its indirect cattle suppliers operating in key biomes such as the Amazon, the Cerrado and the Pantanal. The truth is, JBS has not committed to eliminating deforestation from its entire supply chain until 2035 – or for another 13 years.²²

JBS has not committed to eliminating deforestation from its entire supply chain until 2035

RECOMMENDATIONS

We are calling for:

Investors and financiers

- Investors, banks and financiers to divest from JBS and its subsidiaries and exclude them from their investment funds and bond portfolios.

Customers

- Supermarkets, retailers and fast food and food service companies to drop JBS and its subsidiaries as a meat supplier.

Brazilian government

- To divest all financing for JBS via Brazil's BNDES development bank.
- Introduce strong, enforceable rules against deforestation, including agriculture-driven deforestation and degradation.
- Introduce strict regulatory limits on mega and factory farm methane emissions, particularly large-scale cattle, dairy and pork production.

JBS

- Disclose its emissions fully - both direct and indirect - including carbon dioxide, nitrous oxide and methane.
- Allow an independent third party to verify JBS's emissions claims.

1. JBS OVERVIEW



Greeley JBS Meat Packing Plant, Colorado.
Photo: Matthew Stockman/Staff/Getty Images

Headquarters

São Paulo, Brazil

CEO

Gilberto Tomazoni²³

Net revenue

US\$ 76.2 bn²⁴

EBITDA

US\$ 9 bn²⁵

Net income

US\$ 4,454,000,000²⁶

Company type

Publicly listed on the São Paulo Stock Exchange, Brazil²⁷

JBS is the world's largest meat processor.²⁸ It has beef, pork, lamb and poultry processing facilities, in addition to cattle and sheep feedlots.²⁹ Outside the food sector, JBS operates in segments related to the food sector value chain with interests in leather, personal care and cleaning products, collagen, metal packaging, casings, biodiesel, transportation, waste management and recycling.³⁰ Globally it has the capacity to slaughter 76,150 heads of cattle, 132,000 pigs and 13.8 million poultry birds each day.³¹ It is present in more than 20 countries with over 500 facilities, employing more than 250,000 people.³² It has more than 70 brands sold in over 180 countries, and it aims to have 10 global brands each with sales of over \$1 billion.³³ Notable brands include Swift, Certified Angus Beef, Pilgrim's Pride, Moy Park, and Gold Kist. It counts Burger King, Carrefour, KFC, McDonald's, Stop & Shop, Tesco, Walmart and Wendy's amongst its customers.³⁴

JBS has more than 70 brands sold in over 180 countries

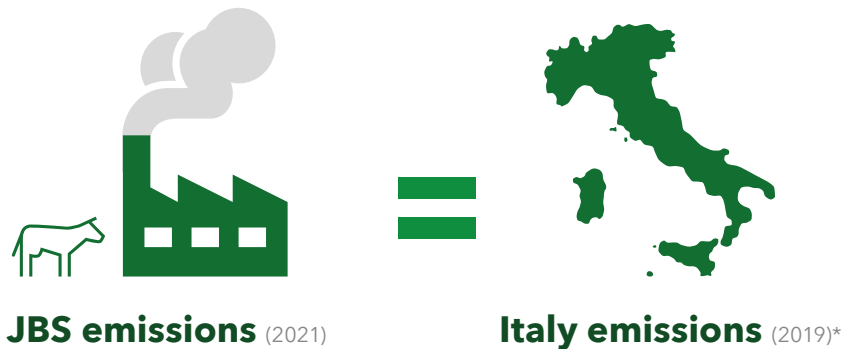
The majority of the company's revenue in 2021, was made in the United States (51%), followed by Asia (15%), Brazil (12%), and then Europe (7%).³⁵ The majority of its exports in 2020 went to China (27.2%), then 'others' (25.7%), followed by 'Africa and the Middle East' (11.2%) and USA (10.6%).³⁶ Unsurprisingly, JBS has the largest climate footprint of any meat company in the world. Research groups IATP and GRAIN estimated that in 2016 JBS

had emissions of 280 million metric tonnes of CO2 equivalent, putting the company on par with Taiwan in terms of emissions.³⁷ JBS’s own carbon accounting for the same period found that its emissions were just 3% of those calculated by IATP and GRAIN.³⁸ IATP and GRAIN speculate that this disparity may have been due to JBS excluding most of its Scope 3 (supply chain) emissions.³⁹ New estimates by IATP, Feedback and Desmog found JBS’s emissions jumped by 51% to 421.6 million metric tonnes in 2021, which was greater than Italy (418.2 mmt) and Spain’s (314.5 mmt) annual climate footprint and nearly as much as France (442.9mmt) and the UK’s (453.1 mmt).⁴⁰

Figure 3: JBS slaughter capacity⁴¹



Figure 4: JBS emissions equivalent to the emissions of Italy



Source: IATP/Feedback/Desmog (2022). *Latest available

HISTORY

JBS SA, was founded in the city of Anápolis, in the central western Brazilian state of Goiás, in 1953 by José Batista Sobrinho.⁴² José worked with his brother on a small-scale operation, buying cattle from farmers and selling them on to local meat packers.⁴³ They then opened a butcher’s shop and eventually, in 1968, bought a slaughterhouse on the outskirts of Brasília. As the operation grew it acquired more slaughterhouses, rapidly expanding throughout Brazil during the 1980s, remaining a family operation as it grew. José’s three sons – José Jnr, Wesley, and Joesley – reportedly all left school aged 17 to run the slaughterhouses.⁴⁴

In 1996 the company hired Jeremiah O’Callaghan, now JBS’s chairman,⁴⁵ to help make JBS a global company.⁴⁶ This began with national consolidation, followed by acquisitions in Latin America. In 2007 JBS launched an IPO

in Brazil in that same year, the Brazilian Development Bank, The National Bank for Economic and Social Development (BNDES), began investing in JBS⁴⁷ – as part of a government scheme to turn Brazilian companies into “national champions.”⁴⁸ These cash injections allowed JBS to buy up companies globally turning itself into the largest meat producer in the world. Some key acquisitions were Smithfield Beef and Swift & Company in the US, and the Tasman Group in Australia.⁴⁹ In the years that followed, JBS received some R\$10.8 billion in financing⁵⁰ to fund its expansion, particularly from BNDES.

In 2009, Greenpeace published its ground-breaking report *Slaughtering the Amazon*.⁵¹ It calculated that the cattle sector in the Brazilian Amazon was the single largest driver of global deforestation, pointing the finger squarely at JBS and the other big meatpackers (one of which JBS purchased that same year).⁵² The furore caused by the report placed JBS and Brazilian beef at the centre of growing concerns over deforestation in the Amazon. This in turn saw JBS commit in 2009 to avoiding cattle from recently deforested land - a commitment which it reiterated in 2020 despite having repeatedly reneged on it in the meantime.⁵³



CORRUPTION

Despite growing concerns over its environmental impacts, JBS's revenue grew a massive 4,250% in just 10 years alone, from R\$4bn in 2007 to R\$170bn by 2016.⁵⁴ At the same time as its astronomical rise, the 'Lava Jato' (or 'Operation Car Wash') corruption scandal had begun unfolding.⁵⁵ Criminal investigations started in 2014, rocking Brazil with successively larger revelations of high-level political corruption. Previously untouchable politicians, executives and fixers all faced jail time.⁵⁶ By 2017, JBS had been dragged into the scandal via one of Lava Jato's spin off investigations. When faced with prosecution, senior JBS's executives agreed to pay a fine equivalent to \$62m and to cooperate with prosecutors as part of a plea bargain.⁵⁷

Meanwhile, Joesley Batista, former JBS chair and son of founder José Batista, began taping conversations. Joesley met with Brazil's then President, Michel Temer, in his home and secretly recorded their conversation. The pair allegedly discussed a plot to buy the silence of an already imprisoned politician. The recordings caused a political firestorm implicating the President and leading to him being charged for corruption.⁵⁸ Joesley's ability to meet the President out of hours and candidly discuss bribery plots, arguably showed JBS's immense power and how deeply the company was embroiled in high-level political corruption.

The most scandalous revelations about JBS's business came in plea bargain statements. According to the testimony of JBS's parent company J&F Investimentos S.A. in connection with a plea agreement in a US criminal case, it had paid at least \$177.6 million in bribes.⁵⁹ In plea bargain testimony to Brazil's Supreme Court, JBS executives admitted to bribing 1,829 politicians, including three sitting Presidents.⁶⁰ In return, JBS got hundreds of millions of dollars in financing from state institutions, tax benefits and potentially favourable regulation.⁶¹ It seems then, that JBS's growth was in fact been enabled, not by canny business decisions and shrewd management, but by corruption and law breaking on an industrial

Despite growing concerns over its environmental impacts, JBS's revenue grew a massive 4,250% in just 10 years

scale. The Batista family was effectively using public money from BNDES to bribe politicians and government officials to get more funds to finance their global business expansion, national political influence and the continued expansion into the world's largest remaining rainforest, the Amazon. In return for the recordings and their confessions, the Batista brothers received immunity from prosecution.⁶² JBS's main shareholder, J&F Investimentos, owned and controlled by the Batista family, agreed to pay a record R\$10.3 billion fine – or US\$3.2 billion – over 25 years.⁶³ Subsequently, J&F sold several of its other businesses, reportedly to cover costs, and the Batista brothers were removed from management positions, but JBS continued to thrive.⁶⁴ Deft handling of the media, the judiciary, and law enforcement has meant that at almost every turn JBS and its owners, largely came out on top, despite admitting to rampant, era-defining, criminality.

**It seems that
JBS's growth
has been enabled,
by corruption
and law breaking
on an industrial
scale**

INVESTIGATIONS

In addition to the Lava Jato corruption investigation, the past five years have seen JBS embroiled in investigations over bribing meat inspectors, selling tainted meat, US slaughterhouse-related water pollution and worker safety failings,⁶⁵ and buying cattle from Brazilian farms that use modern-day slave labour.⁶⁶ It is now facing serious criticism, and legal issues, over its alleged failure to protect US meatpacking workers from Covid-19, and it has become emblematic of the Brazilian beef industry's links to deforestation.⁶⁷

The JBS Beef Production Facility in Greeley, Colorado, U.S. Photo: Michael Ciaglo/ Bloomberg/Getty Images



With annual revenues of \$76bn, JBS is worth over three times what it was in 2017, in part due to the pandemic triggering a rise in meat and food prices, but also because the company has settled its biggest legal troubles.⁶⁸ Amongst other issues, the two Batista brothers, Joesley and Wesley, who were facing jail in Brazil for manipulating markets, have been set free following their plea deal. They are now considerably richer.⁶⁹

JBS's recent history has perhaps been its most tumultuous. Now it seems set to continue to grow, buying up plant-based firms in order to become a 'protein company' and are eyeing a possible listing on the New York Stock Exchange.⁷⁰ How much it has changed remains to be seen. According to reports, Wesley Batista Filho, the grandson of company founder José, is reportedly being groomed for a top spot and the company's board is reportedly filled with family members and executives with ties to JBS, suggesting that for the foreseeable future JBS will remain a family-led business.⁷¹

JBS have been embroiled in investigations over bribing meat inspectors, selling tainted meat, US slaughterhouse-related water pollution and worker safety failings

OWNERSHIP

JBS S.A. is traded on São Paulo's B3 exchange.⁷² The controlling shareholder group consists of J&F Investimentos and Formosa (48.25%), the first of which is reportedly owned by the JBS founding Batista family and controlled by Joesley and Wesley Batista.⁷³ The other major shareholder is the Brazilian Development Bank (BNDES) which holds 20.57%. The third largest shareholder is Fundo de Investimento em Participações Multiestratégia Formosa (approx. 6.5%), which, was indirectly owned by JBS founding family members Joesley and Wesley Batista.⁷⁴ The rest of the company stock is held by minority shareholders, including the largest holders the investment funds BlackRock, Vanguard and FMR LLC (each with between 1 to 1.7%).⁷⁵

TOP BRANDS

JBS has a large portfolio of brands, covering all aspects of its business, not just the sale of meat.⁷⁶ Its aim is to move beyond being a meatpacker into "a value-added product company" the key to this is having strong recognised brands.⁷⁷ Controlling this part of the food value chain may enable JBS to become even more profitable. The JBS brands map produced by Civil Eats is a good visualisation of where the company's brands are based.⁷⁸ In the US, key beef brands include Swift, 5 Star, Clear River Farms, Moyer, Certified Angus Beef, Aspen Ridge and Weddel. In the EU, major meat brands include Moy Park, Oak Crown, Geo. Adams and Albert van Zoonen.⁷⁹ In terms of food, it has brands that sell meat for retail and foodservice, chilled and frozen prepared meals, breaded items, at least two lines of plant-based products, multiple kinds of charcuterie and other cold cuts, sausages, bacon, margarine and ingredients for industrial kitchens.⁸⁰ JBS's multiple lines of beef are differentiated by provenance, breed, quality of cut, what they are fed on and whether they are antibiotic or hormone-free.



GLOBAL REACH

JBS claims to sell its products in almost every country in the world.⁸¹ It has physical operations in around 20 countries, a large portfolio of brands, hundreds of subsidiaries and is a member of over a hundred trade bodies.⁸² Its immense operations are organised under **five main units**.

1 JBS USA PORK

This covers pork and 'value added' production in the US. This includes five pork processing facilities able to slaughter a combined 92,600 pigs per day, as well as distribution centres, two genetic units and facilities for making finished products such as hams or ready meals. Its flagship brands are Swift, Swift Premium, and La Herencia.⁸³

2 JBS USA BEEF

This segment controls beef production in the US, Canada, Australia, and Europe. It has two leather processing facilities (one in Australia and one in the US), and two lamb facilities and a pork processing plant in Australia. It also includes Vivera, the third-largest plant-based food maker in Europe, based in the Netherlands. Its flagship brands are Swift, Primo, Great Southern and 1855⁸⁴ It also includes Vivera, the third-largest plant-based food maker in Europe, based in the Netherlands.⁸⁵



3 SEARA

Production of prepared foods and fresh poultry and pork products in Brazil. Key brands are Seara, Marba, Massaleve, Seara Gourmet and Incrível – a line of plant-based products.⁸⁶ Seara's production takes place in Brazil, but it makes a sizable portion of its revenues from exports.⁸⁷

4 JBS BRAZIL

Beef production in Brazil, along with leather and related businesses. This segment is responsible for the cattle supply chain in Brazil and leather production in Argentina, Uruguay, the US, and Italy.⁸⁸ According to quarterly reports, 36% of JBS Brazil's revenue comes from exports, though it is not clear what proportion of this revenue comes from beef, leather, or other related businesses.⁸⁹

5 PILGRIM'S PRIDE

Production of prepared foods and fresh poultry and pork products in the US, Mexico, and Europe. Flagship brands are Pilgrim's, Moy Park, Gold'n Plump, Bare Chicken, and Del Dia.⁹⁰

PLANT-BASED MEAT

JBS is rapidly expanding its interests in plant-based alternatives and is reportedly reinventing itself as a protein company rather than a meat company.⁹¹ This has meant going on a buying spree to acquire companies already in the market as well as creating its own plant-based product lines and subsidiaries. Like other major meatpackers, JBS positions its plant-based products as part of a flexitarian lifestyle, not as a catalyst for people switching to fully vegetarian or vegan diets.^{92, 93, 94} With plant-based products acting as a new protein, adding to the company's business.⁹⁵

JBS is rapidly expanding its interests in plant-based alternatives

JBS has three major plant-based units; Planterra Foods, a US-based company established by JBS, it sells products under the Ozo brand;⁹⁶ Vivera, the third-largest manufacturer of plant-based food products in Europe, which JBS purchased in 2021, in a deal valued at €431 million;⁹⁷ and the Seara Incrível product line, a range of vegetarian products that are sold in Brazil.⁹⁸ This brand also hosts the Incrível Lab - which JBS describes as an "innovation hub completely focused on plant-based products."⁹⁹

Box 1: Brand JBS

For Earth Day 2021, JBS took out a full-page advert in *The New York Times*. Under the banner 'Agriculture can be part of the climate solution', the ad explained JBS's plan to reduce its own emission intensity by 30% by 2030 (the focus on emission intensity means absolute emissions, could increase and JBS would still meet its pledge), before achieving net zero by 2040.¹⁰⁰ The campaign was immediately lambasted as greenwashing by Food Politics and Peeled.¹⁰¹ At a similar time JBS launched a US focused website for the company under the banner JBS Foods.¹⁰² This seems to encompass the business operations of JBS USA Beef, JBS USA Pork and Pilgrim's Pride. Filled with beautiful images of family meals, verdant landscapes and happy workers, JBS is portrayed as a wholesome and sustainable company focused on family values and the welfare of its staff. The website has pages on JBS's Net Zero commitment, its subsidized Community College Program, the Covid vaccine drive that includes the chance to win free meat for a year and a link to its 2020 Sustainability Report entitled 'Celebrate Your Foodprint'.



Family eating burgers in back yard, celebrating 4th of July. Photo: vgajic/iStock

There is a separate part of the website called 'Our Stories', that features slick video interviews with JBS factory employees set to moving music. The staff talk about the struggles in their lives (homelessness, abusive relationships, fleeing civil war, cancer), set against the opportunities and fulfilment they found working at JBS. They are all long-term employees, generally filmed in comfortable looking family homes, several of them describe their JBS co-workers as their 'family'. JBS's efforts to create a brand identity for itself in the US seems designed not just to increase sales of its products, but also to position itself for a US Stock Exchange listing and to counter the concerns about its treatment of workers and its environmental impacts.¹⁰³



2. CLIMATE IMPACT

The industrial livestock sector is a major contributor to global GHG emissions. It is estimated that the production of animal-based food is responsible for around 14.5% of all human-induced global GHG emissions.¹⁰⁴ As a consequence, rich nations need to make huge reductions in meat consumption to avoid catastrophic climate change, but instead meat production is expanding.¹⁰⁵ As the world's largest meatpacker JBS has a crucial role to play in this - it is the largest GHG emitter of all meat and dairy companies in the world, by a considerable margin.¹⁰⁶

The industrial livestock sector is a key driver of not just of CO₂ emissions but also of methane.¹⁰⁷ Methane has a global warming impact 86 times higher than CO₂ over a 20-year period, however, it breaks down much more quickly.¹⁰⁸ This means that action to curb methane emissions is vital to combat climate change, especially as it would have a relatively quicker effect on warming.¹⁰⁹

Experts say cutting emissions from livestock represents one of the biggest opportunities to slow warming by 2040.¹¹⁰ The livestock industry has generally disputed this, resorting to 'fuzzy maths' to downplay its impact and the need for it to change.¹¹¹ JBS has responded to pressure about its methane and other GHG emissions and its deforestation record by announcing it will become net-zero by 2040 and have zero deforestation in its entire supply chain by 2035.¹¹² However, the same year these commitments were made, JBS was accused of sourcing beef from farms

Experts say cutting emissions from livestock represents one of the biggest opportunities to slow warming by 2040

linked with deforestation in the Cerrado,¹¹³ Greenpeace published reports on JBS's destructive supply chain in the Amazon and the Pantanal,¹¹⁴ and it was given a score of one out of 100 on the Soy & Cattle Deforestation Tracker developed by Mighty Earth.^{115, 116}

CLIMATE EMISSIONS

Calculations by the research groups IATP and GRAIN found that JBS emitted 280 million tonnes (Mt) of CO₂-equivalent in 2016, putting JBS on par with Taiwan in terms of emissions or around half the annual carbon equivalent emissions of fossil fuel companies such as BP, ExxonMobil or Shell.^{117, 118} For the same year, JBS calculated its total emissions were just 8.9 Mt of CO₂-eq.¹¹⁹ Despite coming up with a radically smaller figure than IATP and GRAIN, JBS's claimed its calculations for 2016 included Scope 1, 2 and 3 emissions.¹²⁰ IATP and GRAIN concluded: "Either the company has excluded most of its supply chain emissions from its calculations, or its publicly reported emissions data is inaccurate."¹²¹ In practice, the majority of a meat company's emissions are Scope 3 emissions - which include farm emissions from livestock, manure, farm machinery fuel, livestock feed production, production of the agrochemicals needed to produce that animal feed, plus deforestation, forest fires, and land-use changes triggered by the expansion of livestock grazing and animal feed production.¹²²

As part of the issuance of its 'Sustainability-Linked Bond' in 2021, JBS confirmed that over 90% of its emissions are Scope 3 emissions.¹²³ Though, in practice, it seems its definition of Scope 3 is radically different from that used by IATP and GRAIN - who worked with the FAO's widely accepted GLEAM methodology to calculate JBS's emissions.¹²⁴ Crucially JBS does not appear to be including Scope 3 emissions from forest clearance, forest fires, and land conversion linked to its cattle and feed supply chains, or from agrochemicals used in the production of feedstock.¹²⁵ The result is that, even when JBS says its calculations include Scope 3, it still comes up with a much lower figure for its total emissions than IATP and GRAIN. JBS reported its total emissions as:

- 6.7 Mmt of CO₂ eq. in 2018
- 7.2 Mmt of CO₂ eq. in 2019
- 6.8 Mmt of CO₂ eq. in 2020.¹²⁶

Updated estimates by IATP recently found that JBS increased its annual emissions by a staggering 51% in five years from 280 million metric tonnes in 2016 to 421.6 million metric tonnes in 2021. This is more than Italy or Spain's annual climate footprint and nearly all of France's at 443 mmt or the UK's at 453 mmt. It is approximately equivalent to fossil fuel giant Total's 2020 emissions.¹²⁷

Massive under-reporting of its Scope 3 emissions is not the only criticism of JBS's environmental plans.¹²⁸ The 'Food Emissions 50 Company Benchmark', by investor focused non-profit Ceres, assesses companies on environmental performance. It found that in 2021 JBS USA failed in the assessed categories - GHG emissions disclosures and reduction targets.¹²⁹

The 'Food Emissions 50 Company Benchmark' found that in 2021 JBS USA failed in the assessed categories

Similarly, a recent climate emissions reduction assessment of JBS in the *Corporate Climate Responsibility Monitor 2022* concludes:¹³⁰

“In their emission disclosure and their net-zero target for 2040 JBS fails to take responsibility for an estimated 97% of its emissions footprint, by neglecting emissions from farms and feedlots that are not owned by JBS and emissions related to deforestation. The company plans to continue growth in a GHG emission-intensive industry; we did not find evidence of any planned deep decarbonisation measures.”

Despite the issues with how it calculates its emissions and questions over its plans to address them, JBS recently borrowed \$1bn via a Sustainability-linked Bonds (SLB).¹³¹ This is tied to JBS reducing its Scope 1 and 2 GHG emissions by 30% by 2030 against a 2019 baseline.¹³² The SLB was criticised by financial institutions and CSOs for not taking into account Scope 3 emissions, which JBS acknowledge account for 90% of its emissions, for not giving sufficient evidence it was aligned with the Paris Agreement climate goals, and for potentially not being aligned with the Science Based Targets initiative methodology.¹³³ JBS’s updated net zero plans now state it will “provide a roadmap consistent with the criteria set forth by the Science-Based Targets initiative (SBTi),” including reductions in Scope 1, 2 and 3 emissions.¹³⁴ Notably, the wording of the net-zero pledge is vague and it fails to address methane.

AMAZON DEFORESTATION

Perhaps the main focus of reporting on JBS’s climate impact has been its Brazilian cattle supply chain. Researchers conservatively estimated that JBS’s total deforestation footprint in six Brazilian states since 2008 may be as high as 200,000 ha in its direct supply chain and 1.5 million ha in its indirect supply chain.¹³⁵ These estimates help make JBS the lowest ranked company on Mighty Earth’s Soy & Cattle Deforestation Tracker, scoring one out of 100.¹³⁶

A recent investigation by Repórter Brasil in partnership with Mighty Earth found that JBS’s supply chain means that even its slaughterhouses in São Paulo, thousands of miles away from the Amazon, are linked to deforestation.¹³⁷ JBS made a much-publicised pledge to “achieve zero deforestation across its global supply chain by 2035.” Given how it operates and its history of broken promises on stopping deforestation, this is in effect akin to saying it will continue to destroy the Amazon rainforest for another 13 years.¹³⁸

Deforestation rates in the Brazilian Amazon have increased under the Jair Bolsonaro presidency, as the administration implemented deep cuts to environmental protection services whilst weakening environmental laws.^{139, 140} The subsequent surge in forest fires and destruction brought increased scrutiny on companies linked to deforestation, including JBS. Though JBS’s activities made it the focus of such scrutiny long before the Bolsonaro presidency. It has been calculated that more than 780,000 square kilometres of forest have been lost in Brazil in the last 30 years.¹⁴¹ Nearly half of Brazil’s carbon emissions come from the clearing of vast tracts of forest.¹⁴² Pasture expansion for cattle production has been linked



Drone aerial view of deforestation in the Amazon rainforest. Trees cut and burned on illegally to open land for agriculture and livestock in the Jamanxim National Forest, Pará, Brazil. Photo: Paralaxis/iStock

to 80% of the clearing.¹⁴³ As of 2020, an estimated 57 million hectares of the Brazilian Amazon is now used for cattle ranching.¹⁴⁴ In 2021, a report from Brazil's National Institute of Space Research (INPE) showed deforestation in the Brazilian Amazon was at its highest level in over 15 years.¹⁴⁵

JBS's position as the largest beef producer in the country (by some estimates it is responsible for around half of all cattle slaughtered in Brazil), make it likely it is linked to largescale deforestation.^{146, 147} Despite committing to reduce deforestation in the Federal Prosecutors' TAC accord and the voluntary G4 Cattle Agreement signed in 2009, JBS is still associated with a range of issues, including suppliers linked to deforestation, fires, use of modern-day slave labour, land grabbing and encroachment of Indigenous peoples' land, reserves and protected areas. JBS's links to individual specific instances of large-scale deforestation have been established in forensic detail.¹⁴⁸ Academics found that in 2017 nearly 50% of beef exports to the EU from the Brazilian Amazon states of Pará and Mato Grosso to the EU may have been linked to illegal deforestation in 2017.¹⁴⁹ However, the opacity of the cattle supply chain in Brazil and the scale of the problem, make it hard to tie any one meatpacker to the issue at scale.

In the absence of reliable publicly available data, methodologies have been developed for estimating the deforestation attributable to meatpackers operating in Brazil. One method, developed by [Imazon](#) identifies the area within which individual slaughterhouses could potentially source cattle – based on distance, local geography, river and road networks, as well as interviews with slaughterhouse staff. Deforestation data from Brazilian Spatial Agency (INPE-Prodes) is mapped onto these 'purchasing areas', to show the deforestation that has occurred in the buying zone of each slaughterhouse.

The opacity of the cattle supply chain in Brazil and the scale of the problem, make it hard to tie any one meatpacker to the issue at scale



Although deforestation within these buying zones is not proven to be linked to cattle and consequently to the slaughterhouses, it is an efficient method to understand the amount of deforestation that the slaughterhouses could be linked to. Since cattle is currently the main driver of deforestation,¹⁵⁰ the likelihood of recent deforestation being linked to the cattle supply chain is high. Based on this method, Imazon estimated that the buying zones of JBS's slaughterhouses in Brazil include some 4.6 million hectares exposed to risks associated with deforestation.¹⁵¹

Chain Reaction Research used animal transport record data (called GTAs) to identify a sample of JBS's direct and indirect suppliers, and assessed deforestation at those suppliers using deforestation data.¹⁵² Based on these methods, they found that "JBS's total deforestation footprint since 2008 may be as high as 200,000 ha in its direct supply chain, and 1.5 million ha in its indirect supply chain."¹⁵³ Analysis of Brazilian beef exports by Trase found that JBS, which was the biggest exporter of beef, had an above average share of exports of beef with a deforestation risk.¹⁵⁴

The current opaque nature of Brazil's cattle market has made it very difficult to fully assess JBS's impact in Brazil. Despite this, government inspectors, journalists and CSOs have repeatedly shown the company is linked to deforestation.¹⁵⁵ In response JBS has repeatedly made pledges to reform, promising to fully trace its supply chain, limit deforestation and improve its sustainability efforts.¹⁵⁶ These targets have subsequently been missed or ignored by the company, only to be re-pledged later (see Box 2).

Since cattle is currently the main driver of deforestation, the likelihood of recent deforestation being linked to the cattle supply chain is high

Box 2: Broken promises – JBS’s zero deforestation commitments

In March 2021, JBS pledged to eliminate illegal Amazon deforestation from its supply chain by 2025, and in other Brazilian biomes by 2030 (later updated to 2025), to and achieve a zero-deforestation goal across its global supply chain by 2035.¹⁵⁷ These commitments are only the latest round in a series of promises; previous promises have been repeatedly broken. JBS originally undertook to remove deforestation from its supply chain in 2009 when, along with three other Brazilian meatpackers, it signed the so called ‘Cattle Agreement’ with Greenpeace, and a binding Terms of Adjustment of Conduct (TAC) with the Federal Prosecutor’s Office of Pará.^{158, 159} The mirage of JBS’s promises and commitments stand in stark contrast to the findings of those who have actively investigated its supply chain.

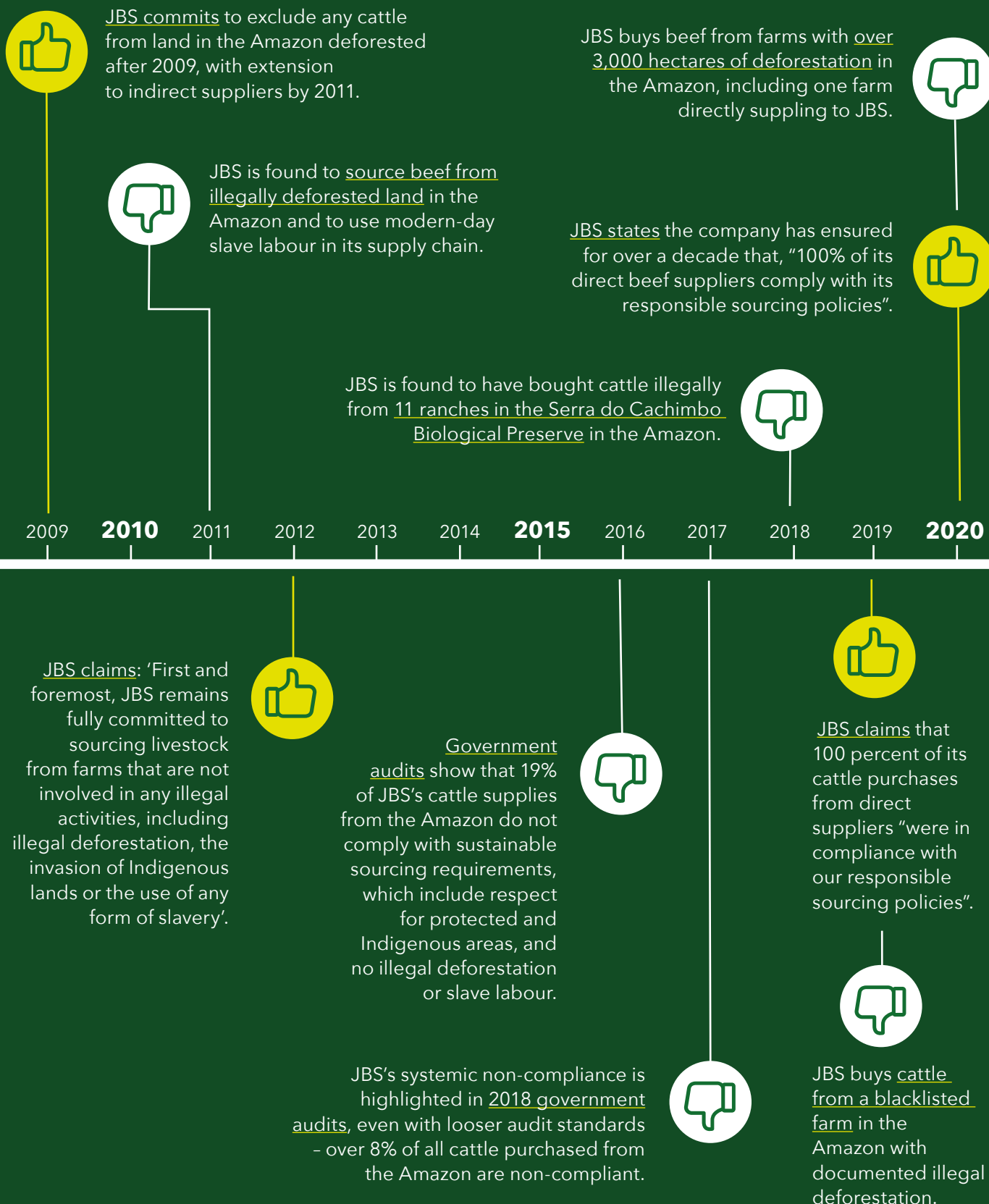
Mighty Earth’s 2020 article *A Timeline of Disappointment*, summarizes JBS’s history of failing to live up to its deforestation commitments.¹⁶⁰

When in 2017 the Brazilian government fined JBS over US\$7 million for buying cattle from illegally deforested areas in the Amazon, Greenpeace suspended all talks with JBS relating to the Cattle Agreement.¹⁶¹ In 2020, Greenpeace published a report entitled *How JBS is still Slaughtering the Amazon*, highlighting how JBS had failed to adhere to any of its commitments under the agreement and was getting worse in terms of supply chain transparency. The report states: “JBS’s business model is incompatible with the environmental emergency we are facing.”¹⁶² During the same period, reporting on JBS’s Brazilian cattle sourcing, by multiple different organisations, raised accusations of links with deforestation, land clearance, modern-day slavery, dodging embargos, and indirect supply chain ‘cattle laundering’.

In 2020, JBS announced a Green Platform that it says will use blockchain technology to monitor direct and indirect suppliers in the Amazon biome.¹⁶³ They say the platform will combine GTA animal transport data with other information to exclude non-compliant suppliers. JBS say it will be mandatory for direct suppliers by 2025, but does not explain how it will address indirect suppliers.

In 2021, a controversial law was proposed in the Brazilian legislature that will effectively legalise land grabbing of public land, including rainforests (which are often used and home to Indigenous communities) The proposed law is seen as condoning land grabs, deforestation, and often the violent displacement of Indigenous communities.¹⁶⁴ More broadly, the political climate under President Bolsonaro makes it highly unlikely that domestic law will force JBS to curtail the environmental impacts of its cattle supply chain in Brazil.

Figure 5: Broken promises – JBS’s zero deforestation commitments



JBS CATTLE SUPPLY CHAIN

JBS, like all Brazil's other major meatpackers such as Marfrig and Minerva, had long maintained it cannot trace its cattle through its complex supply chain, and therefore, it cannot eliminate cattle linked to deforestation from its supplies.¹⁶⁵ As a result, proving the links between the meatpacker's purchases and deforestation is seen as a key step to pressuring them to change. In Brazil cows are often born, raised, and fattened on different farms, moving between them as they grow.¹⁶⁶ The farm, which sells to a meatpacker, is described as a 'direct supplier'. The farms lower down the chain which sell to direct suppliers are referred to as 'indirect suppliers'. Herds are not moved all at once from one farm to another, at times cattle from different herds are mixed together to form new herds. Some 'whole cycle' farms exist, raising cattle from birth to slaughter, but generally, for each direct supplier, there are one or more indirect suppliers.¹⁶⁷ This is part of what makes the system hard to track.

In the wake of Greenpeace's 2009 *Slaughtering the Amazon* report JBS said it would set up a system to monitor its direct and indirect suppliers, in order to eliminate farms linked to deforestation. The effectiveness of this system was highly questionable. Reviews found serious irregularities in both JBS's purchases and the independent audits of its system.¹⁶⁸ A 2015 study found that JBS's system (along with the renewed enforcement of other regulations), may have led to lower rates of deforestation on ranches that supplied it directly.¹⁶⁹ But indirect suppliers were not covered by the system, even though JBS had said they would be. This meant JBS was only checking the last link in the chain.

The risk posed by not tracing the full supply chain is that deforestation continues. Ranchers can move cattle from deforested areas in the Amazon or otherwise illegal sites onto approved farms before selling them onto meatpackers. Indeed, the same 2015 study pointed out that overall "the outcomes for forest conservation are limited by the narrow application of the agreements, which opens the door to laundering and leakage."¹⁷⁰ In an interview with *The Guardian* in 2020, the study's author, Associate Professor Holly Gibbs from the University of Wisconsin-Madison, said: "Cattle supply chains are really fluid and producers can move between the different roles and commonly sell as both direct suppliers and indirect suppliers, ... Direct suppliers often own multiple properties but only one property is monitored." She went on to compare the system to using air conditioning during a heatwave while leaving the windows open: "The cattle companies are monitoring direct suppliers but there are so many loopholes that the indirect suppliers can just come in and out."¹⁷¹

Proving the links between the meatpacker's purchases and deforestation is seen as a key step to pressuring them to change

LACK OF TRANSPARENCY

In 2020 JBS refused to answer questions about what share of its beef was sourced from indirect suppliers.¹⁷² The same year, Greenpeace published an update to its 2009 report, entitled, *How JBS is still Slaughtering the Amazon*. It found that “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.”¹⁷³

In 2021, an investigation by *Réporter Brasil* in partnership with Mighty Earth found that meat sold by major retailers in the US and Europe could be traced back to indirect suppliers linked to deforestation in the Amazon, the Cerrado and the Pantanal.¹⁷⁴ The cattle had been butchered over 1,000 kilometres from the Amazon, in a JBS slaughterhouse in São Paulo state, and its origin obscured by a complex supply chain. A JBS commissioned audit of its own commitments from 2019, *states*, “In the case of indirect suppliers, JBS has not yet been successful in implementing traceability processes.”¹⁷⁵ The company told the audit, it needed to access GTA forms to be able to identify indirect suppliers. GTAs track cattle between farms for animal health purposes, they show the movement of cattle from birth to slaughter.¹⁷⁶ GTAs are not made public, and the Brazilian Ministry of Agriculture, argues that the GTAs contain information that is private and protected by law, hence it will not make them public.¹⁷⁷ JBS argues that they cannot trace cattle as they do not have access to the GTAs. However, despite the JBS’s inability to trace the cattle it buys, others have been able to do so. There were multiple investigations by journalists and CSOs in 2020 which uncovered cases of non-compliance in JBS’s cattle supply chain.¹⁷⁸

Notably, Global Witness obtained all of JBS’s GTA cattle transport permits from the Brazilian state of Pará for 2017, 2018 and 2019. Not only was it able to use them to identify JBS’s indirect suppliers, but it also used the data, along with satellite image analysis, to identify deforestation in both its direct and indirect suppliers (JBS disputed Global Witness’ findings).¹⁷⁹ Global Witness’ report on JBS’s GTAs concludes: “JBS could access and use cattle transport permits to monitor its indirect suppliers for deforestation if it chose to, and could have required its direct suppliers to provide these permits to it as a condition of purchasing from them.”¹⁸⁰

JBS has not been able to eliminate illegal deforestation from its supply chain, but says it is working hard on it.¹⁸¹ The company has repeatedly set targets for a year in the future by which it will have cleaned up its act, yet it fails repeatedly to meet those targets. A possible conclusion to draw from this, is that JBS really cannot remove those cattle from its supply chain, not because it is a technologically insurmountable task, but because its business model relies on them. A recent investigation by Bloomberg in Brazil found that when cattle ranchers selling to JBS failed government deforestation checks, JBS’s response was to not to exclude them, but instead to help them figure out how to get off government blacklists.¹⁸² Bloomberg summarizes this clearly: “Legalizing suppliers by helping them file paperwork is at the crux of JBS’s strategy to clean up its supply chain. That’s not the same as eliminating deforestation.”¹⁸³



The company has repeatedly set targets for a year in the future by which it will have cleaned up its act, yet it fails repeatedly to meet those targets

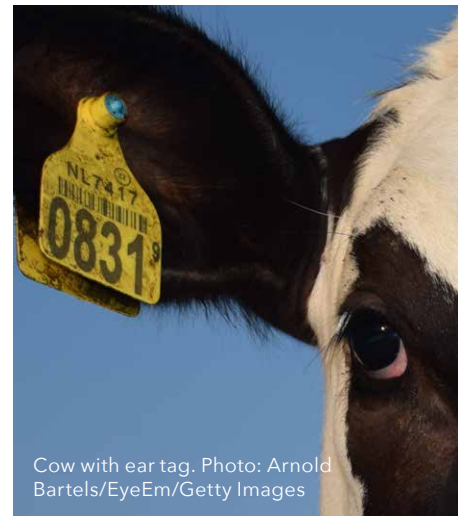
FULL TRACEABILITY - EAR TAGS

The European Union implemented a mandatory cattle tracing system in response to the BSE crisis in 1997, assigning an individual number and ear tag to every cow born. Uruguay introduced a system in 2001 on similar grounds.¹⁸⁴ Campaigners argue that a similar system in Brazil would make full, birth-to-slaughterhouse traceability straightforward. Others have proposed using existing GTA animal transport records to track indirect suppliers.¹⁸⁵ However, it has been argued that even if you have GTAs, it can be hard to detect laundering or false GTAs without supplementary information.¹⁸⁶

Brazil already has an ear tag cattle tracing system called SISBOV, but the system is voluntary. The number of farms using SISBOV is very low, this could be because the level of traceability it offers is only required for a few markets, for example, exports of fresh beef to the EU (but not processed products such as canned beef or beef jerky).¹⁸⁷ The Ministry of Agriculture maintains a list of farms using SISBOV, that are eligible to export fresh beef to the EU.¹⁸⁸ It includes around 10 farms linked to JBS. One of them, Fazenda Guimaraes in Mato Grosso state, appears in a Mighty Earth report because it purchased cattle from farms in the same ownership as a farm accused of illegally clearing forest in 2019.¹⁸⁹

An expanded SISBOV system could improve cattle supply chain traceability and help tackle deforestation, but it is unlikely this will become mandatory anytime soon. There were several reasons given for this by people interviewed for this report. One is the powerful lobbying strength of JBS and other meatpackers, who may resist the idea.¹⁹⁰ A second related argument, is that the powerful Ruralist Bench (Bancada ruralista) in the Brazilian parliament would oppose the system. Third, it has been suggested that even if it were possible politically, it would take five to ten years to successfully get a law on ear tags passed and then physically implemented. By which time too much damage would have been done to the Amazon and other threatened biomes such as the Cerrado and the Pantanal.

In 2020 China suspended imports from several Brazilian meat processing plants over concerns of Covid-19 outbreaks in the slaughterhouse facilities. In 2021, Brazil suspended beef exports to China, this time over a reported case of BSE (bovine spongiform encephalopathy).¹⁹¹ A few weeks after China imposed a ban, Indonesia, Saudi Arabia, and Egypt followed suit. China alone accounts for 48% of all beef exports from Brazil.¹⁹² As the largest importer of Brazilian beef, if China demanded greater traceability via an expanded SISBOV system similar to that used by the EU, this could have a huge impact on the sector. In 2017 imports of fresh beef from Brazil to the US were banned, over food safety concerns, the ban was lifted in 2020.¹⁹³ Six slaughterhouses are now licenced to export to the US, five of which are in Mato Grosso, a state that is known for some of the highest levels of forest loss in Brazil.¹⁹⁴



Cow with ear tag. Photo: Arnold Bartels/EyeEm/Getty Images

An expanded SISBOV system could improve cattle supply chain traceability and help tackle deforestation

3. JBS'S KEY CUSTOMERS

Figure 6: Some of JBS's customers



Greenpeace summarised JBS's incredible reach succinctly, stating, "JBS has business interests in every continent except Antarctica."¹⁹⁵ JBS publishes some information about its customers and details occasionally appear in reporting on the company. But the scale of its business makes it hard to definitively list JBS's customers. Its meat and food products are sold branded and unbranded, to restaurants, foodservice companies, supermarket chains, and small retailers. Identified JBS customers include, Asda, Burger King, Costco, KFC, Lidl, McDonald's, Mars, M&S, Nando's, Nestlé, Pizza Hut, Sainsbury's, Subway, Tesco, Walmart,¹⁹⁶ Subway, Outback and Wendy's.¹⁹⁷ The US Pilgrim's Pride subsidiary reportedly supplies Publix, Chick-fil-A, Kroger, and Sam's Club.¹⁹⁸ JBS's Certified Angus Beef brand can be found at Shoprite, Fairway Markets and The Cheesecake Factory amongst others.¹⁹⁹ Its Swift brand is available at BJ's, Food Lion, Weis Markets, WinCo, and Stop & Shop.²⁰⁰

The scale of its business makes it hard to definitively list JBS's customers

In Brazil, JBS supplies the nation's largest supermarkets GPA, Carrefour and Grupo Big (now owned by Carrefour).²⁰¹ In Australia, JBS reportedly supplies Coles and Aldi supermarket chains.²⁰² JBS's products are so ubiquitous that it is possible a supermarket could simultaneously be selling JBS brand items, products made by other brands using JBS meat, and their own shop brands containing JBS meat. This creates the space for retailers to disavow parts of JBS, whilst continuing to do business with its other arms. One example of this is leading UK supermarket Tesco, which publicly cancelled its beef supply contract with JBS in 2012 following a Greenpeace campaign.²⁰³ However, Tesco continues to buy pork and poultry from JBS's UK subsidiaries Moy Park and, and sells products made by other brands that until recently used JBS beef.²⁰⁴

Despite the difficulties presented by the ubiquity of JBS, CSOs continue to pressure key supermarkets and retailers to drop deforestation-linked beef with increasing success. Recently, six supermarkets across Europe agreed to drop Brazilian beef altogether and/or beef products tied to JBS due to

Amazon deforestation risks identified in an investigation by *Réporter Brasil* in partnership with Mighty Earth.²⁰⁵ The supermarkets are, Sainsbury's in the UK, Lidl and Albert Heijn in the Netherlands, Auchan in France, and Delhaize and Carrefour in Belgium. The UK-based corned beef company Princes also said it had stopped sourcing beef from JBS.²⁰⁶

FINANCING AMAZON DESTRUCTION

The following are the current key shareholders in JBS. Companies which we believe should urgently drop JBS.

JBS's top shareholders

J&F INVESTIMENTOS

J&F Investimentos is a holding company, reportedly owned by Joesley and Wesley Batista.²⁰⁷ On its website J&F claims to employ over 250,000 people, with businesses across the globe (much of this employment and global footprint is presumably due to JBS, as J&F's other businesses appear to be largely Brazil based).²⁰⁸ J&F Investimentos's companies reportedly supply 25% of Brazil's food market.²⁰⁹

**J&F
Investimentos's
companies
reportedly supply
25% of Brazil's
food market**

BNDES PARTICIPAÇÕES S.A

BNDES Participações S.A is the investment arm of the Brazilian Development Bank (BNDES).²¹⁰ With a loan book bigger than the World Bank,²¹¹ BNDES is the largest development lender in the Americas.²¹² Its stated mission is "To foster sustainable and competitive development in the Brazilian economy, generating employment while reducing social and regional inequalities."²¹³ BNDES has predominantly focused on large public works in Brazil and across South America.²¹⁴ It has been criticised for focusing on huge companies, mega projects and infrastructure at the expense of the environment, Indigenous people and poor communities.²¹⁵ It is also accused of not being transparent; President Bolsonaro has criticised the bank for being a 'black box'.²¹⁶ In 2019, a Brazilian court said BNDES lent \$911million more than it should have for foreign projects, as a result of inflated project budgets.²¹⁷

BNDES first lent to JBS as part of a government-led "National champions scheme", that aimed to turn a handful of Brazilian enterprises into successful multinational corporations.²¹⁸ A key part of the scheme was subsidised state credit.²¹⁹ BNDES became a shareholder in JBS and lent the company more than \$2.4 billion, at single-digit interest rates, when commercial banks at the time were charging close to 30% for capital.^{220, 221} The lending succeeded, JBS used the money to buy up competitors, quickly becoming the world's largest beef company and the biggest producer of poultry globally.²²²

All the cheap finance came with strings attached. According to Joesley Batista's plea bargain, the politicians directing state largess to JBS expected a return for themselves and their political parties. Joesley claims to have made payments totalling BRL 9.6 million to Guido Mantega, the ex-president of BNDES and Brazil's finance minister from 2006-2015 (under both Presidents Luiz Lula da Silva and Dilma Rousseff). Mantega supposedly

used his influence to help JBS obtain BNDES loans and acted as an intermediary for payments to Lula and Rousseff. Both former presidents have denied the accusations.²²³

BNDES also lent heavily to several companies involved in the [Lava Jato corruption scandal](#).²²⁴ The construction giant Odebrecht, a company at the heart of Lava Jato, was one of the bank's top borrowers and its largest Lavo Jato linked client - the second largest being J&F Investimentos.²²⁵ On its website, BNDES says "companies financed by the Bank were investigated under Lava Jato and later convicted of acts of corruption that do not concern the process of granting BNDES financing or the investments that the Bank has made in these companies."²²⁶ However, the US Justice Department, which fined J&F separately to the Brazilian authorities, stated, "In exchange for the bribe payments, J&F was able to obtain hundreds of millions of dollars in financing from BNDES."²²⁷

ASSET MANAGERS: BLACKROCK

With \$10 trillion assets under management and the world's largest asset management firm,²²⁸ BlackRock held around 2.5% of JBS's shares (BlackRock's stake now appears to have dropped to approx. 1.7%),²²⁹ making it one of the largest shareholders after the Batista family linked companies and BNDES. BlackRock has faced criticism for its investment in JBS. In 2020 Mongabay reported that its shareholding in the company was worth \$334 million and that its investments in JBS and its competitors were "at odds with [BlackRock's] its own public rhetoric [...] in which it has positioned itself as leading the financial industry's prioritization of environmental, social and governance (ESG) criteria when deciding where to invest a client's money."²³⁰ BlackRock has defended its investment in JBS by saying they are part of Exchange Traded Funds (ETFs). These funds hold a basket of shares for a given market or segment, and the fund manager does not interfere in the proportion of shares held within the portfolio. BlackRock told [Mongabay](#) "It is important to observe that over 90% of BlackRock's patrimonial assets under management are in funds that track third party indices."²³¹

Some of BlackRock's investments in JBS are via the Carbon Efficient Index (ICO2 B3), an ETF which claims to be a socially responsible investment option, that is furthering the debate on climate change in Brazil.²³² Its key criteria for including a company is that they report direct greenhouse gas emissions (not necessarily act on them).²³³ While saying its investments in ETFs, which buy shares in JBS, are beyond its control, BlackRock has claimed to be able to exert control over JBS, in part because of those same investments. When questioned on its links to JBS, BlackRock told [Repórter Brasil](#) that they have engaged with JBS on deforestation and are monitoring its response.²³⁴ Though, [Repórter Brasil](#) points out that BlackRock's sustainability policy for agribusiness fails to even mention livestock once, calling into question the company's approach to JBS.²³⁵

Alongside its so-called 'passive investments' BlackRock reportedly purchased \$4.4 million of debt securities from JBS and has around \$60.4 million of active investments in the company.²³⁶ These investments cannot be defended behind the veil of a basket fund, they are direct choices by the company which therefore have presumably passed its

BNDES Participações S.A has been criticised for focusing on huge companies, mega projects and infrastructure at the expense of the environment, Indigenous people and poor communities

ESG screening. BlackRock has been very vocal about sustainable investing and ESG-led finance, it is widely seen to have put climate change and sustainability at the centre of its business model.²³⁷ BlackRock’s CEO Larry Fink said in his 2021 letter to CEOs of companies in which Blackrock invests on behalf of its clients, “No issue ranks higher than climate change on our clients’ lists of priorities.”²³⁸ However, the company’s Chief Investment Officer for Sustainable Investing recently left, and published an essay on the fatal flaws in BlackRock’s sustainability plans,²³⁹ describing sustainable investing as a “dangerous placebo that harms the public interest.”²⁴⁰

JBS KEY FINANCIERS

JBS relies heavily on financing to sustain its activities and expansion. In a financial update covering 2021, it gives the company’s net debt stood at \$12.4 billion.²⁴¹ Its investors and creditors include some of the world’s top banks and investments funds, many of which have policies that are supposed to stop them investing in projects which have damaging environmental and climate impacts. JBS’s links to both illegal and legal deforestation could affect its ability to obtain financing. Activists have targeted JBS’s investors and creditors, in the expectation that driving up the cost of finance for the company would prevent it from continuing its environmentally destructive behaviours. This has involved shaming institutions, to shift employee or customer behaviour, as well as lobbying for financial due diligence laws that could make it harder to invest in JBS harder.

JBS’s links to both illegal and legal deforestation could affect its ability to obtain financing

Financiers exposed

The [Forests & Finance](#) initiative examines the policies of financial institutions making investments in forest-risk commodities.²⁴² Using data from [Forests & Finance](#) it is possible to compile a list of JBS’s top creditors by value.²⁴³ [Forests & Finance](#) also provides data on JBS’s top shareholders (excluding J&F Investimentos and other Batista family linked shareholders).

Forests & Finance Data on JBS ²⁴⁴	
Creditors	Shareholders
1. Santander (\$735m)	1. BNDES (\$1,501m)
2. Bradesco (\$680m)	2. BlackRock (\$139m)
3. BTG Pactual (\$610m) ²⁴⁵	3. Fidelity Investments (\$122m)
4. Banco Do Brasil (\$414m)	4. Algemeen Burgerlijk Pensioenfonds (Abp) (\$113m)
5. Barclays (\$392m)	5. Vanguard (\$92m)
6. JPMorgan Chase (\$343m)	6. Itau Unibanco (\$66m)
7. Mizuho Financial (\$165m)	7. Capital Group (\$59m)
8. Deutsche Bank (\$134m)	8. Bradesco (\$48m)
9. Itaú Unibanco (\$119m)	9. Safra Group (\$46m)
10. XP Investimentos (\$94m)	10. Lazard (\$46m)

Chain Reaction Research compiled a list of institutions with financial ties to JBS and its affiliates, the list takes into account bonds, loans, underwriting, and shareholdings.²⁴⁶ As the list has a wider scope than the Forests & Finance data it includes different entities and involves far larger sums of money (it was also produced a year earlier).²⁴⁷

Investor Parent	Country	Bonds	Loans	Shares	Underwriting	Total
Barclays	United Kingdom	0	3,349	8	920	4,276
BNDES	Brazil	0	0	2,528	0	2,528
Royal Bank of Canada	Canada	45	1,459	1	495	2,000
JPMorgan Chase	United States	185	1,058	8	355	1,606
Rabobank	Netherlands	0	1,266	0	186	1,453
BMO Financial Group	Canada	18	908	6	495	1,428
Farm Credit Services	United States	0	1,268	0	0	1,268
Commercial Finance Group						
Credit Suisse	Switzerland	0	1,212	29	0	1,241
Santander	Spain	0	209	38	962	1,209
Bradesco	Brazil	0	151	71	712	934
Banco do Brasil	Brazil	0	6	41	862	909
BTG Pactual	Brazil	0	0	20	801	822
Truist Financial	United States	0	571	0	186	757
Fidelity Investments	United States	614	0	143	0	757
Bank of America	United States	0	701	8	0	709
US Bancorp	United States	0	501	0	186	688
BlackRock	United States	330	0	336	0	666
Deutsche Bank	Germany	78	173	12	155	418
Wells Fargo	United States	5	384	12	0	401
Voya Financial	United States	43	293	1	0	337
Total		1,319	13,509	3,262	6,316	24,406

Note: Figures in millions of US Dollars. Source: *Chain Reaction Research* (2020)

Beef policies ranked

Forests & Finance also ranks financial institution's policies, with scores of one to ten, based on how well they compare to a model policy on that issue. It has profiles of many (but not all) of those exposed to JBS. The table below shows the scores for those institutions. The first list shows the scores by overall environmental policies relating to beef, and the second shows scores for the specific criteria on zero-deforestation and no-conversion of natural forests and ecosystems with regards to beef.²⁴⁸

Forest & Finance Policy Scores	
Overall beef policy	Zero deforestation beef
7.7/10 RaboBank	8.5/10 BNDES , RaboBank , Banco Do Brasil , Bank Of America
5.1/10 Banco Do Brasil	3.9/10 Deutsche Bank
3.4/10 Bank Of America	0/10 JPMorgan Chase , Santander , Bradesco , Fidelity Investments , BlackRock
3.5/10 Deutsche Bank	
2.6/10 BNDES	
2.5/10 JPMorgan Chase	
1.7/10 Santander	
0/10 Bradesco , Fidelity Investments and BlackRock	

Impact of ESG policies on JBS investments

The JBS investors with policies that have been ranked by Forests & Finance generally score badly. However, there are some institutions which stand out for having a high scoring policy whilst being heavily invested in JBS, in particular Rabobank with almost \$1.5 billion of exposure.²⁴⁹ Several investors score well for having a policy specifically focused on not investing in beef unless companies and their suppliers “commit to zero-deforestation and no-conversion of natural forests and ecosystems”. The emphasis is on ‘committing’ to zero deforestation, rather than having a supply chain which is currently not causing deforesting. This presumably means that JBS’s pledges on deforestation and net-zero are enough to satisfy the ESG departments of investors. It is also possible that the institutions with high scoring ESG policies on beef are able to maintain the policies and still invest in JBS because the company is so large. Investments in the non-beef parts of JBS might still comply with ESG policies. This could include, loaning JBS money to expand its biogas ventures or US turkey farms, or plant-based factories in Europe.

TOP CREDITORS

Barclays has over \$4bn of exposure to JBS, the largest sum of any of the institutions listed by Chain Reaction Research. Its ESG policies have not been scored by Forests & Finance, but [according to the Barclays website](#) the company is a signatory to the New York Forest Declaration of the United Nations.²⁵⁰ It has a [Forestry and Agricultural Commodities Statement](#) and it published a [Soft Commodities Compact Progress Report](#), neither of which reference beef, cattle or livestock.²⁵¹ Barclays has responded to criticisms of its investments in the past, albeit slowly and after protracted campaigning that involved financial losses to the company.²⁵²

The second largest institution on the list is, BNDES, which is due to its roughly 21% shareholding in JBS. According to Forests & Finance, BNDES does have a strong policy on deforestation (though a low scoring policy on

beef overall). This does not seem to have affected its investment in JBS – possibly because the investment was made some time ago. The loss in the value of its shareholdings after the Lava Jato corruption revelations led BNDES to push a shareholder action against J&F Investimentos seeking compensation. It was reported in 2020 that BNDES will sell its stake in JBS as part of the company's anticipated US listing,²⁵³ but this has not been confirmed. In February of 2022 it was reported that BNDES had sold 50 million JBS share raising \$370 million, and it had sold 70 million shares a few months earlier, as part of a plan to fully divest from JBS.²⁵⁴

The Royal Bank of Canada is the third institution on the Chain Reaction Research list of institutions exposed to JBS. Feedback lists the bank as one of the biggest creditors to the meat and dairy industry overall.²⁵⁵ It was seventh on a list of "The Top 10 financial institutions without deforestation policies that provide the most financing to the 350 most influential companies in forest-risk supply chains", published in a 2021 Global Canopy report.²⁵⁶

DEFUNDING DEFORESTERS

The forest fires that ravaged the Amazon in 2019 triggered a global outcry. This included public statements from investors. Ceres and the Principles for Responsible Investment (PRI) released a statement, backed by 230 institutional investors with \$16 trillion in assets under management, calling on companies with business ties to the Amazon to take action to stop the fires and work to reverse current deforestation trends.²⁵⁷ The signatories included some with investments in cattle and JBS specifically.²⁵⁸

In 2020, a coalition of investors wrote a separate letter expressing concern over Brazil's roll back of environmental protections.²⁵⁹ Subsequently one investor, Nordea Asset Management, divested from JBS publicly. Stating that the decision was based on JBS's environmental record, Nordea dropped a stake worth around €40m.²⁶⁰ Eric Pedersen, Head of Responsible Investments at Nordea told *The Guardian* it was not just JBS's poor past record on the issue which had forced the decision, but also its lack of meaningful response to growing pressure.²⁶¹ In 2018, the world's largest sovereign wealth fund, the Norwegian Government Pension Fund Global (GPFG), managed by Norges Bank, divested from JBS. It did so after commissioning an investigation into the company's links to corruption.²⁶² Apart from these two high profile cases, there has not been much public divestment from JBS. Though it is possible many have divested quietly.²⁶³ Amongst these pockets of divestment, JBS's stock is generally rated reasonably well. Rating agency Fitch upgraded its score for JBS in June 2021 from BB+ to BBB-.²⁶⁴ It said the upgrade reflected "JBS's strong business profile, low leverage, strong liquidity and positive FCF [free cash flow] generation, favourable debt amortizing profile, track record of access to the international market and the recent settlement with Department of Justice of its parent company."^{265, 266} All three of the major rating agencies have JBS in a similar position and describe the company's outlook as 'Stable' or 'Positive'.²⁶⁷

The forest fires that ravaged the Amazon in 2019 triggered a global outcry. This included public statements from investors

BOYCOTTS

There was reportedly a non-formal boycott of JBS meat in Brazil, after the Lava Jato corruption revelations became public. In 2019 elected officials in New York City and Los Angeles attempted to introduce legislation stopping municipal bodies buying products linked to deforestation. This was in response to growing concern about wildfires in the Amazon and had a focus on beef. The former Brooklyn borough president (now city mayor), Eric Adams, commented, “Companies like Marfrig, JBS, and Cargill are some of the main culprits in this issue—we need to cut ties from them.”²⁶⁸

INVESTOR PRESSURE: STOREBRAND ASSET MANAGEMENT

In 2020 a coalition of investors, led by Norwegian insurance and pension firm Storebrand Asset Management sent letters to Brazilian embassies in seven countries, calling for meetings and expressing concern over the country’s roll back of environmental protections.²⁶⁹ Whilst the letter did not spell out consequences if Brazil’s government did not act, seven European financial firms told Reuters they could divest from Brazil-linked holdings if environmental destruction continued.²⁷⁰ One signatory, Nordea Asset Management, did publicly divest from JBS in the month following the letter’s publication.²⁷¹ If other signatories have also divested, it has not been publicised. The Storebrand letter was apparently the starting point for the formation of the Investor Policy Dialogue on Deforestation (IPDD). In 2021, the IPDD issued a statement praising President Bolsonaro’s restatement of Brazil’s existing commitment to eliminate illegal deforestation in the Amazon by 2030, but noted that recent government policies had been heading in the opposite direction.²⁷²

DROP JBS CAMPAIGNS

Drop JBS is an ongoing campaign focused on the company’s retail customers in the UK (primarily Tesco) and investors (Santander and Barclays). It seeks to bring together existing efforts and campaigns targeting JBS’s customers and financiers. The campaign is supported by Feedback, Greenpeace UK, Mighty Earth and BankTrack. An example of existing work that Drop JBS is linked to, is a petition launched by Greenpeace asking Tesco to “Stop buying from companies owned by JBS”. The campaign includes action packs for Tesco customers wishing to campaign at their local branches of the supermarket.

Finally, the Amazonia80x2025 is a campaign led by the Coordinator of Indigenous Organizations of the Amazon Basin (COICA), calling for a global agreement for the permanent protection of 80 percent of the Amazon by 2025. The campaign was officially launched in Marseilles at the IUCN ‘World Conservation Congress’.²⁷³ It does not target JBS specifically, but it cites cattle farming as a driving force of deforestation in the Amazon. As part of ongoing protests against Brazil’s land reform laws, and court cases seeking to depose Indigenous people of their lands, The Articulation of the Indigenous Peoples of Brazil (APIB) convened the Struggle for Life camp in Brasilia from the 22 August to the 2 September 2021.²⁷⁴ The camp formed the basis for ongoing organisation and protests.



Wesley Batista, former chief executive officer of JBS SA, exits after a congressional inquiry hearing from the National Congress building in Brasilia, Brazil, on Wednesday, Nov. 8, 2017. The securities regulator opened an investigation on October 26 accusing brothers Joesley and Wesley Batista for insider trading and market manipulation. JBS SA, Joesley and Wesley have repeatedly denied any wrongdoing. Photo: Andre Coelho/ Bloomberg/Getty Images

CONCLUSION

The world's largest and most powerful meat company, JBS, is pursuing a strategy of constant expansion, buying up competitors, entering new markets and controlling ever more of the industrial meat supply chain. In the course of cementing its position, JBS has driven the destruction of the Amazon rainforest and other ecosystems. It is responsible for supersized climate emissions estimated to be larger than Italy's, and has been linked to bribery, price-fixing, pollution, worker exploitation, and selling tainted meat. JBS's deforestation footprint in Brazil since 2008 was estimated at 200,000 ha in its direct supply chain and 1.5 million ha in its indirect supply chain. This is fuelling devastating forest fires, land grabs, habitat loss, modern-day slave labour, and violent invasions of Indigenous peoples' land and territories.

JBS has driven the destruction of the Amazon rainforest and other ecosystems

JBS has repeatedly broken its promises to clean up its business, including pledges to eliminate deforestation from its supply chain. Currently, JBS has not committed to eliminate deforestation from its entire global supply chain until 2035 – not for another 13 years. On top of this, in its emission disclosure and net-zero target for 2040 JBS fails to take responsibility for an estimated 97% of its emissions footprint, by neglecting emissions from farms and feedlots that are not owned by JBS and ignoring Scope 3 emissions related to deforestation and land conversion. It is little wonder a chorus of local, Indigenous, and global groups are saying enough is enough.

JBS has repeatedly broken its promises to clean up its business, including pledges to eliminate deforestation from its supply chain

RECOMMENDATIONS

We are calling for:

Investors and financiers

- Investors, banks and financiers to divest from JBS and its subsidiaries and exclude them from their investment funds and bond portfolios.

Customers

- Supermarkets, retailers and food service companies to drop JBS and its subsidiaries as a meat supplier.

Brazilian government

- To divest all financing for JBS via Brazil's BNDES development bank.
- Introduce strong, enforceable rules against deforestation, including agriculture-driven deforestation and degradation.
- Introduce strict regulatory limits on mega and factory farm methane emissions, particularly large-scale cattle, dairy and pork production.

JBS

- Disclose its emissions fully - both direct and indirect - including carbon dioxide, nitrous oxide and methane.
- Allow an independent third party to verify JBS's emissions claims.

ENDNOTES

- 1 JBS (2022) *JBS 2021 Management Report and Financial Statements*, JBS: São Paulo, Brazil. Exchange rate as of April 5, 2022, see <https://www.foreignexchange.org.uk/fx-rates/conversion/1/BRL/USD>
- 2 See: "Brazil's JBS pledges net zero greenhouse emissions by 2040", *Reuters*, Ana Mano and Nayara Figueiredo, March 24, 2021, <https://www.reuters.com/business/energy/brazils-jbs-pledges-net-zero-greenhouse-emissions-by-2040-2021-03-24/>; "Behind the curtain of the JBS net zero pledge", IATP, Ben Lilliston, October 21, 2021, see <https://www.iatp.org/documents/behind-curtain-jbs-net-zero-pledge/>; "Brazil meat-packing giant JBS to pay record \$3.2bn corruption fine," BBC News, May 31, 2017; "Pilgrim's to Pay \$110 Million Fine for Chicken Price Fixing," *Bloomberg Law*, Megan Durisin, Kanga Kong, October 14, 2020; Violation Tracker JBS Summary, see: <https://violationtracker.goodjobsfirst.org/parent/jbs>; "Rotten beef and illegal deforestation: Brazil's largest meatpacker rocked by scandals," Mongabay, Mike Gaworecki, April 5, 2017
- 3 "Rotten beef and illegal deforestation: Brazil's largest meatpacker rocked by scandals," *Mongabay*, Mike Gaworecki, April 5, 2017
- 4 JBS (2022) *JBS 2021 Management Report and Financial Statements*, JBS: São Paulo, Brazil; "JBS: The Brazilian Butchers Who Took Over the World," *The Bureau of Investigative Journalism*, Andrew Wasley, Alexandra Heal, Lucy Michaels, Dom Phillips, André Campos, Diego Junqueira, Claire Smyth and Rory Winters, July 2, 2019
- 5 IATP (2021) *World's largest meat company, JBS, with a 2040 Net Zero climate target, increases emissions by 51% in five years; continues to greenwash its huge climate footprint*, Institute of Agriculture and Trade Policy (IATP): Minneapolis, United States
- 6 See: "Climate crisis: Amazon rainforest tipping point is looming, data shows," *The Guardian*, Damian Carrington, March 7, 2022; "How Big Beef Is Fueling the Amazon's Destruction," *Bloomberg*, Jessica Brice, January 21, 2022; Violation Tracker JBS Summary: <https://violationtracker.goodjobsfirst.org/parent/jbs>
- 7 Chain Reaction Research (2020) *JBS: Outsized Deforestation in Supply Chain, COVID-19 Pose Fundamental Business Risks*, Chain Reaction Research: Washington, D.C., USA
- 8 See: "Revealed: how Tesco fuelled record breaking fires in Brazil's wetlands," *Greenpeace*, Alison Kirkman, March 4, 2021; "JBS among meat firms linked to slavery-tainted ranches in Brazil," *Reuters*, Fabio Teixeira, January 5, 2021; "Brazilian beef farms' used workers kept in conditions similar to slavery," *The Guardian*, Dom Philips, January 6, 2021; "Brazil: Cattle illegally grazed in the Amazon found in supply chain of leading meat-packer JBS," *Amnesty International*, July 15, 2020 (updates July 28, August 7 and October 7, 2020); Amnesty International (2020) *From Forest to Farmland - Cattle Illegally Grazed in Brazil's Amazon Found in JBS's Supply Chain*, Amnesty International: London, United Kingdom; Amazon Watch (2020) *Complicity in Destruction III - How Global Corporations Enable Violations of Indigenous Peoples' Rights in The Brazilian Amazon*, Amazon Watch: Oakland, Canada
- 9 New Climate Institute/Carbon Market Watch (2022) *Corporate Climate Responsibility Monitor 2022*, New Climate Institute/Carbon Market Watch: Cologne, Germany/Brussels, Belgium
- 10 Chain Reaction Research (2020) *JBS: Outsized Deforestation in Supply Chain, COVID-19 Pose Fundamental Business Risks*, Chain Reaction Research: Washington, D.C., USA
- 11 JBS (2022) *JBS 2021 Management Report and Financial Statements*, JBS: São Paulo, Brazil
- 12 Norges Bank (2018) "Decisions on exclusion, active ownership and observation", press release, July 10, 2018, see: <https://www.nbim.no/en/the-fund/news-list/2018/decisions-on-exclusion-active-ownership-and-observation>; Norges Bank website, "Observation and exclusion of companies", <https://www.nbim.no/en/the-fund/responsible-investment/exclusion-of-companies/>
- 13 "Investors drop Brazil meat giant JBS," *The Guardian*, Dom Phillips, July 28, 2020
- 14 "Supermarkets Across Europe Drop Brazilian Beef Over Deforestation Linked to Meat Giant JBS," *Mighty Earth*, December 2021
- 15 Xu, X., Sharma, P., Shu, S. et al (2021) *Global greenhouse gas emissions from animal-based foods are twice those of plant-based foods*, *Nature Food* 2, 724-732, September 13, 2021
- 16 See: R B Jackson et al (2020) *Increasing anthropogenic methane emissions arise equally from agricultural and fossil fuel sources*, *Environmental Research Letters*, 15 071002, July 15, 2020; IPCC (2014) *Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* ed O Edenhofer et al Cambridge: Cambridge University Press
- 17 IPCC (2021) *AR6 Climate Change 2021: The Physical Science Basis*, IPCC: Geneva, Switzerland
- 18 See: "JBS USA Announces Successful Issuance of Sustainability-Linked Bond," JBS Foods, press release, November 16, 2021; JBS (2021) *JBS Sustainability-Linked Bond Framework*, JBS: São Paulo, Brazil
- 19 "Brazilian Meat Company JBS Issues 'Sustainability-Linked' Bonds," *Forests and Finance*, June 23, 2021
- 20 BankTrack/Greenpeace International/Rainforest Action Network/Profundo/Amazon Watch/Feedback/Friends of the Earth U.S./Wilderness Society (2021) *Concerns on the Issuance of US\$ 1 Billion Sustainability-Linked Bond (SLB) by JBS*, open letter, BankTrack/Greenpeace International/Rainforest Action Network/Profundo/Amazon Watch/Feedback/Friends of the Earth U.S./Wilderness Society: Nijmegen, The Netherlands/Amsterdam, The Netherlands/San Francisco, CA, USA/Amsterdam, The Netherlands/Oakland, Canada/London, United Kingdom/Washington, D.C., USA
- 21 "How Big Beef Is Fueling the Amazon's Destruction," *Bloomberg*, Jessica Brice, January 21, 2022
- 22 "JBS Makes Global Commitment to Achieve Net-Zero Greenhouse Gas Emissions by 2040," JBS Foods, press release, March 23, 2021
- 23 JBS Board, Council and Committees, Executive Officers: <https://ri.jbs.com.br/en/esg-investors/corporate-governance/board-council-and-committees/>
- 24 JBS (2022) *Earnings Releases Q4*, JBS: São Paulo, Brazil, see: <https://ri.jbs.com.br/en/financial-information/results-center/>
- 25 EBITDA is an abbreviation for earnings before interest, taxes, depreciation, and amortization. It is a means of measuring a company's profitability. See: [https://uk.practicallaw.thomsonreuters.com/8-3823430?transitionType=Default&contextData=\(sc.Default\)&firstPage=true](https://uk.practicallaw.thomsonreuters.com/8-3823430?transitionType=Default&contextData=(sc.Default)&firstPage=true)
- 26 JBS (2022) *JBS 2021 Management Report and Financial Statements*, JBS: São Paulo, Brazil
- 27 JBS (2022) *JBS 2021 Management Report and Financial Statements*, JBS: São Paulo, Brazil
- 28 See: "World's biggest meat producer JBS pays \$11m cybercrime ransom," *The Guardian*, Kalyeena Makortoff, June 10, 2021; JBS (2021) *Institutional Presentation including 3Q21 results*, JBS: São Paulo, Brazil; World Economic Forum, Partners, JBS: <https://www.weforum.org/organizations/grupo-jbs-friboi-sa>

- 29 JBS (2022) *JBS 2021 Management Report and Financial Statements*, JBS: São Paulo, Brazil
- 30 JBS (2022) *JBS 2021 Management Report and Financial Statements*, JBS: São Paulo, Brazil
- 31 JBS (2022) *Institutional Presentation including 4Q21 and 2021 Results*
- 32 See: JBS (2020) *Institutional Presentation including 4Q20 and 2020 results*, JBS: São Paulo, Brazil; JBS (2022) *JBS 2021 Management Report and Financial Statements*, JBS: São Paulo, Brazil
- 33 JBS (2021) *JBS 2020 Management Report and Financial Statements*, JBS: São Paulo, Brazil
- 34 See: 'UK supermarkets linked to 2020's record-breaking forest fires in Brazil's Pantanal wetlands', Greenpeace UK, press release, March 4, 2021; Greenpeace International (2021) *Making Mincemeat of the Pantanal*, Greenpeace International: Amsterdam, The Netherlands; Mighty Earth (2021) *Processed beef sold at Delhaize, Albert Heijn, and Stop & Shop supermarkets linked to Brazilian deforestation*, Mighty Earth: Washington DC
- 35 JBS (2022) *JBS 2021 Management Report and Financial Statements*, JBS: São Paulo, Brazil
- 36 JBS (2022) *JBS 2021 Management Report and Financial Statements*, JBS: São Paulo, Brazil
- 37 Grain/Institute for Agriculture and Trade Policy (2018) *Emissions impossible: How big meat and dairy are heating up the planet*, Grain/ Institute for Agriculture and Trade Policy (IATP): Barcelona, Spain/Minneapolis, MN, USA
- 38 Grain/Institute for Agriculture and Trade Policy (2018) *Emissions impossible: How big meat and dairy are heating up the planet*, Grain/ Institute for Agriculture and Trade Policy (IATP): Barcelona, Spain/Minneapolis, MN, USA
- 39 Grain/ Institute for Agriculture and Trade Policy (2018) *Emissions impossible: How big meat and dairy are heating up the planet*, Grain/ Institute for Agriculture and Trade Policy (IATP): Barcelona, Spain/Minneapolis, MN, USA
- 40 IATP/Desmog/Feedback (2022) World's largest meat company, JBS, increases emissions by 51% in five years despite 2040 net zero climate target, continues to greenwash its huge climate footprint, IATP/Desmog/Feedback; Washington, DC/London
- 41 JBS (2022) *Institutional Presentation including 4Q21 and 2021 Results*
- 42 JBS, History: <https://ri.jbs.com.br/en/jbs/history/>
- 43 "JBS: The Brazilian butchers who took over the world," *The Bureau of Investigative Journalism*, Andrew Wasley, Alexandra Heal, Lucy Michaels, Dom Phillips, André Campos, Diego Junqueira, Claire Smyth and Rory Winters, July 2, 2019
- 44 "JBS: The Brazilian butchers who took over the world," *The Bureau of Investigative Journalism*, Andrew Wasley, Alexandra Heal, Lucy Michaels, Dom Phillips, André Campos, Diego Junqueira, Claire Smyth and Rory Winters, July 2, 2019; JBS, History: <https://ri.jbs.com.br/en/jbs/history/>
- 45 JBS (2022) *JBS 2021 Management Report and Financial Statements*, JBS: São Paulo, Brazil
- 46 "JBS: The Story Behind the World's Biggest Meat Producer," *Forbes*, Keren Blankfeld, April 21, 2011
- 47 "JBS: The Story Behind the World's Biggest Meat Producer," *Forbes*, Keren Blankfeld, April 21, 2011
- 48 "Brazil: The creaking champions," *Financial Times*, Joe Leahy, April 21, 2013
- 49 See: JBS, History: <https://ri.jbs.com.br/en/jbs/history/>; JBS, Corporate Profile: <https://ri.jbs.com.br/en/jbs/corporate-profile/>; Debtwire (2016) *Profile: Batista Family Brazil*, Debtwire: New York, NY, USA
- 50 Debtwire (2016) *Profile: Batista Family Brazil*, Debtwire: New York, NY, USA
- 51 Greenpeace US (2009) *Slaughtering the Amazon*, Greenpeace US: Washington, D.C., USA
- 52 See: "JBS S.A. announces the acquisition of Pilgrim's Pride Corp. and association with Bertin S.A.," JBS, press release, September 16, 2009; "Misconduct in Agroholdings. The Case of JBS.," LaScala - *International Competence Center on Large Scale Agriculture/Leibniz Institute of Agricultural Development in Transition Economies (IAMO)*, January 16, 2019; "Brazil's JBS agreed to buy Marfrig's Seara poultry unit: source," Reuters, Fabíola Gomes and Jeb Blount, June 9, 2013
- 53 "Fact Check: JBS Exaggerates Deforestation Commitment", *Mighty Earth*, Sarah Lake, October 5, 2020
- 54 "Culture of corruption engulfs Brazilian elite," *Financial Times*, Joe Leahy and Andres Schipani, May 25, 2017
- 55 "What did Lava Jato, Brazil's anti-corruption investigation, achieve?," *The Economist*, March 9, 2021
- 56 See: "After seven years, Brazil shuts down Car Wash anti-corruption squad," *Reuters*, Ricardo Brito and Gram Slattery, February 4, 2021
- "Operation Car Wash: Is this the biggest corruption scandal in history?," *The Guardian*, Jonathan Watts, June 1, 2017;
- 57 "In a notice to shareholders last week, JBS, the world's largest meat processing company, announced that "seven executives of the company and its controlling entity, J&F Investimentos, entered into a plea bargain agreement with the federal public prosecutor's office, which was ratified by the supreme court". JBS executives in €62m corruption plea bargain, *Irish Farmers Journal*, <https://www.farmersjournal.ie/jbs-executives-in-62m-corruption-plea-bargain-279088>
- Brazil plea-bargain testimony says president took \$4.6 million in bribes, *Reuters*, <https://www.reuters.com/article/us-brazil-corruption-idUSKCN18F22K>
- 58 See: "How Brazil's Michel Temer could be tried for corruption," *Financial Times*, Joe Leahy and Andres Schipani, July 16, 2017; "Risks to Brazil's Temer subsides after bungled JBS plea bargain", *Reuters*, Anthony Boodle, September 13, 2017, <https://www.reuters.com/article/us-brazil-corruption-temer/risks-to-brazils-temer-subside-after-bungled-jbs-plea-bargain-idUSKCN1BO2H5>; "Brazil ex-President Temer charged in graft case linked to meatpacker JBS," *Reuters*, Eduardo Simões, March 29, 2019; "The swashbuckling meat tycoons who nearly brought down a government", *The Guardian*, Dom Philips, July 2 2019, <https://www.theguardian.com/environment/2019/jul/02/swashbuckling-meat-tycoons-nearly-brought-down-a-government-brazil>;
- 59 "J&F Investimentos S.A. Pleads Guilty and Agrees to Pay Over \$256 Million to Resolve Criminal Foreign Bribery Case," The United States Department of Justice, Press release, October 14, 2020
- 60 "Meat Giant JBS's Owner Settles U.S. Corruption Charges," *The Wall Street Journal*, Luciana Magalhaes, Samantha Pearson and Jacob Bunge, October 14, 2020; "J&F, Holding Company of Brazil's JBS, in Talks to Settle Corruption Case", Dow Jones Newswires, Luciana Magalhaes, May 24 2017, <https://www.dowjones.com/scoops/jf-holding-company-brazils-jbs-talks-settle-corruption-case-2/>
- 61 *Murphy III v. JBS S.A.* (1:17-cv-03084) District Court, E.D. New York, see: <https://www.courtlistener.com/docket/6066273/murphy-iii-v-jbs-sa/>
- 62 "UPDATE 1-Brazilian top court justice rejects JBS appeal on assets sale," *Reuters*, Ricardo Brito, Frances Kerry and Bill Trott, July 3, 2017; "J&F, Holding Company of Brazil's JBS, in Talks to Settle Corruption Case", Dow Jones Newswires, Luciana Magalhaes, May 24 2017, <https://www.dowjones.com/scoops/jf-holding-company-brazils-jbs-talks-settle-corruption-case-2/>
- 63 "Brazil meat-packing giant JBS to pay record \$3.2bn corruption fine," *BBC*, May 31, 2017

- 64 See "Brazil's Batista Brothers Are Out of Jail and Worth \$6 Billion," *Bloomberg*, Felipe Marques and James Attwood, July 15, 2021; "Brazil's J&F sells Havaianas maker for \$1.1 billion: filing," *Reuters*, Tatiana Bautzer and Guillermo Parra-Bernal, July 12, 2017
- 65 See: "US Department of Labor cites JBS Foods Inc. for Repeated Safety Failures After Worker's Death at Swift Beef's Colorado Facility," Press Release, U.S. Department of Labor, September 28, 2021; "JBS USA accused of illegally releasing wastewater into Greeley-area waterway," *The Denver Post*, Judith Kohler, February 1, 2019; Rotten beef and illegal deforestation: Brazil's largest meatpacker rocked by scandals," *Mongabay*, Mike Gaworecki, April 5, 2017; "Has Brazil recovered from Operation Carne Fraca?," *The Poultry Site*, September 16, 2019
- 66 See: "Brazilian beef farms 'used workers kept in conditions similar to slavery'," *The Guardian*, Dom Phillips, January 6, 2021; "JBS among meat firms linked to slavery-tainted ranches in Brazil," *Reuters*, Fabio Teixeira, January 5, 2021
- 67 See: "On the Slaughterhouse Floor, Fear and Anger Remain," *The New York Times*, Peter S. Goodman, December 29, 2021; "The pandemic exposed the human cost of the meatpacking industry's power: 'It's enormously frightening,'" *The Guardian*, Alvin Chang, Michael Sainato, Nina Lakhani, Rashida Kamal and Aliya Uteuova, November 16, 2021; "The disposable US workforce: life as an 'essential' meatpacking plant worker," *The Guardian*, Aaron Nelson, November 19, 2021
- 68 "Brazil's Batista Brothers Are Out of Jail and Worth \$6 Billion," *Bloomberg*, Felipe Marques and James Attwood, July 15, 2021
- 69 "Brazil's Batista Brothers Are Out of Jail and Worth \$6 Billion," *Bloomberg*, Felipe Marques and James Attwood, July 15, 2021
- 70 "With a Banner 2020 Behind It, Meat Giant JBS Set Sights on U.S. IPO," *Forbes*, Chloe Sorvino, March 25, 2021
- 71 "Brazil's Batista Brothers Are Out of Jail and Worth \$6 Billion," *Bloomberg*, Felipe Marques and James Attwood, July 15, 2021
- 72 JBS (2022) *JBS 2021 Management Report and Financial Statements*, JBS: São Paulo, Brazil.
- 73 See: J&F Investimentos, S.A. ("J&F") is a private investment holding company based in São Paulo, Brazil. It is wholly owned by brothers Wesley Batista and Joesley Batista. J&F owns approximately 250 companies in 30 countries worldwide," see: <https://www.sec.gov/litigation/admin/2020/34-90170.pdf>; and see: <https://ri.jbs.com.br/en/esg-investors/corporate-governance/ownership-and-corporate/>
- 74 See: JBS (2019) Offering Memorandum, JBS: São Paulo, Brazil; Fundo de investimento em participações multiestratégia formosa - Informe trimestral, see: <https://cvmweb.cvm.gov.br/SWB/Sistemas/SCW/CPublica/InfoTrim/CPublicalnfTrimV2.aspx?PKPARTIC=155739&TpConsulta=24&TpPartic=73>
- 75 See: JBS S.A. business summary: <https://www.marketscreener.com/quote/stock/JBS-S-A-6499588/company/>
- 76 See: JBS Foods - Our Brands: <https://jbsfoodsgroup.com/our-brands>; JBS Foods Australia: <https://jbsfoodsgroup.com/businesses/jbs-foods-australia>
- 77 JBS (2021) *JBS 2020 Management Report and Financial Statements*, JBS: São Paulo, Brazil
- 78 "Op-ed: Giant Meat and Dairy Companies Are Dominating the Plant-Based and Cellular Meat Market," *Civil Eats*, Philip H. Howard, September 22, 2021
- 79 JBS Foods - Our Brands, see: <https://jbsfoodsgroup.com/our-brands>
- 80 Retail and foodservice, Aspen Ridge ('Natural' Angus Beef - meat for retail and foodservice) / Moy Park Foodservice Chilled and frozen prepared meals, Seara: Turma da Mônica (Brazilian comic book series ready meal range) at least two lines of plant-based products, - OZO (plant based meat - brand of Planterra a JBS subsidiary) multiple kinds of margarine - Doriana/Delícia/Primor (Soy based margarine) charcuterie and other cold cuts, LeBon (cold cuts, cold meats and prepared meals) + Rigamonti (Italian cured meats) sausages, bacon, - Premier Beehive (Pork cold cuts, bacon and sausages. sub brands: Beehive, Medallion and Primo) breaded items - Rezende (sausages, hams, prepared meals, pizzas, breaded items, hamburgers, and fresh pork and turkey products) ingredients for industrial kitchens - JBS Trading (raw materials - animal fats, vegetable oils and chemical products to food, hygiene and cleaning, and biodiesel industry)
- 81 JBS (2022) *JBS 2021 Management Report and Financial Statements*, JBS: São Paulo, Brazil
- 82 JBS (2021) Sustainability Report: Environmental, Social and Governance JBS 2020, JBS: São Paulo, Brazil
- 83 JBS (2022) Institutional Presentation including 4Q21 and 2021 Results, JBS: São Paulo, Brazil
- 84 JBS (2022) Institutional Presentation including 4Q21 and 2021 Results, JBS: São Paulo, Brazil
- 85 "World's biggest meat firm pays \$409m for plant-based protein maker," *AFN*, Jack Ellis, May 5, 2021
- 86 JBS (2022) Institutional Presentation including 4Q21 and 2021 Results, JBS: São Paulo, Brazil
- 87 JBS (2022) *JBS 2021 Management Report and Financial Statements*, JBS: São Paulo, Brazil
- 88 JBS (2022) Institutional Presentation including 4Q21 and 2021 Results, JBS: São Paulo, Brazil
- 89 JBS (2022) *JBS 2021 Management Report and Financial Statements*, JBS: São Paulo, Brazil
- 90 JBS (2022) Institutional Presentation including 4Q21 and 2021 Results, JBS: São Paulo, Brazil
- 91 "Brazil's Batista Brothers Are Out of Jail and Worth \$6 Billion," *Bloomberg*, Felipe Marques and James Attwood, July 15, 2021
- 92 "Planterra Foods Going Global with UK, Australia & New Zealand Expansions Planned," *Vegconomist*, July 7, 2021
- 93 "Patently Delicious - Denver is becoming a food haven, and patents are poised to be a bigger economic ingredient," *Denver Business Journal*, Greg Avery, July 23, 2020
- 94 "Fake meat startup expands overseas and into a new Denver facility," *Denver Business Journal*, Greg Avery, Jul 6, 2021
- 95 See: "How Planterra is bringing JBS into the plant-based space," *Food Dive*, Megan Pinski, October 26, 2020; "Quanto faturam e quais marcas têm BRF, JBS, Marfrig e Minerva? Quadro compara frigoríficos e explica preferências dos analistas," *InfoMoney*, Priscila Yazbek, May 28, 2021
- 96 "Patently Delicious - Denver is becoming a food haven, and patents are poised to be a bigger economic ingredient," *Denver Business Journal*, Greg Avery, Jul 23, 2020
- 97 "JBS on its acquisition of Viverra: 'It is an important step in our plant-based trajectory'," *FoodNavigator*, Katy Askew, April 20, 2021
- 98 Linha Incrível Seara's product list: <https://www.lojaseara.com.br/categoria/incrivelt>
- 99 "Seara Alimentos introduces Linha Incrível," JBS, press release, January 10, 2020, JBS: São Paulo, Brazil
- 100 "Least credible food industry ad of the week: JBS and climate change," *Food Politics*, Marion Nestle, April 26, 2021
- 101 "The facts behind the food industry's splashiest Earth Day ad," *Peeled*, Lisa Elaine Held, April 27, 2021
- 102 JBS Foods website, see: <https://jbsfoodsgroup.com/>
- 103 "On the Slaughterhouse Floor, Fear and Anger Remain," *The New York Times*, Peter S. Goodman, December 29, 2021

- 104 See: FAO (2013) Tackling Climate Change through Livestock - A global assessment of emissions and mitigation opportunities, FAO: Rome, Italy; Xu, X., Sharma, P., Shu, S. et al (2021) Global greenhouse gas emissions from animal-based foods are twice those of plant-based foods, *Nature Food* 2, 724-732, September 13, 2021
- 105 See: OEDC-FAO (2021) OECD-FAO Agricultural Outlook 2021-2030, OEDC/FAO: Paris/Rome; "Huge reduction in meat-eating 'essential' to avoid climate breakdown," *The Guardian*, Damian Carrington, October 10, 2018
- 106 Grain/ Institute for Agriculture and Trade Policy (2018) Emissions impossible: How big meat and dairy are heating up the planet, Grain/ Institute for Agriculture and Trade Policy: Barcelona, Spain/ Minneapolis, MN, USA
- 107 IPCC (2021) AR6 Climate Change 2021: The Physical Science Basis, IPCC: Geneva, Switzerland
- 108 See: "How methane-producing cows leapt to the frontline of climate change," *Financial Times*, Emiko Terazono, Camilla Hodgson, October 10, 2021; UNECE Sustainable Energy, Methane Management, The Challenge: <https://unece.org/challenge>
- 109 See: Global Assessment: Urgent steps must be taken to reduce methane emissions this decade, UN, press release, January 10, 2020, UN: New York, NY, USA; "It's time to freak out about methane emissions," *Vox*, Rebecca Leber, November 3, 2021
- 110 See: Climate & Clean Air Coalition/UNEP (2021) Global Methane Assessment – Benefits and Costs of Mitigating Methane Emissions, Climate & Clean Air Coalition/UNEP: Paris, France/Nairobi, Kenya; "Reduce methane or face climate catastrophe, scientists warn," *The Guardian*, Fiona Harvey, August 6, 2021
- 111 "Beef Industry Tries to Erase Its Emissions With Fuzzy Methane Math," *Bloomberg*, Ben Elgin, October 19, 2021
- 112 See: JBS Net Zero 2040 website: <https://jbs.com.br/netzero/en/>; "JBS makes global commitment to achieve net-zero greenhouse gas emissions by 2040," JBS Foods, press release, March 23, 2021
- 113 See: Chain Reaction Research (2021) Key Cerrado Deforesters Linked to the Clearing of More than 110,000 Hectares, Chain Reaction Research: Washington, D.C., USA.
- 114 See: "How Big Beef Is Fueling the Amazon's Destruction," *Bloomberg*, Jessica Brice, January 21, 2022; Greenpeace International (2021) Making Mincemeat of the Pantanal, Greenpeace International: Amsterdam, The Netherlands; Greenpeace International (2020) How JBS is Still Slaughtering the Amazon, Greenpeace International: Amsterdam, The Netherlands Greenpeace US (2009) Slaughtering the Amazon, Greenpeace US: Washington, D.C., USA
- 115 Greenpeace International (2021) Making Mincemeat of the Pantanal, Greenpeace International: Amsterdam, The Netherlands
- 116 Mighty Earth Soy & Cattle deforestation tracker 2021, see: <https://www.mightyearth.org/soy-and-cattle-tracker/>
- 117 Grain/ Institute for Agriculture and Trade Policy (2018) Emissions impossible: How big meat and dairy are heating up the planet, Grain/ Institute for Agriculture and Trade Policy: Barcelona, Spain/ Minneapolis, MN, USA
- 118 Feedback (2020) Butchering the Planet: The big-name financiers bankrolling livestock corporations and climate change, Feedback: London, United Kingdom
- 119 JBS (2016) Annual and Sustainability Report JBS 2016, JBS: São Paulo, Brazil
- 120 Grain/ Institute for Agriculture and Trade Policy (2018) Emissions impossible: How big meat and dairy are heating up the planet, Grain/ Institute for Agriculture and Trade Policy: Barcelona, Spain/ Minneapolis, MN, USA
- 121 Grain/ Institute for Agriculture and Trade Policy (2018) Emissions impossible: How big meat and dairy are heating up the planet, Grain/ Institute for Agriculture and Trade Policy: Barcelona, Spain/ Minneapolis, MN, USA
- 122 Grain/Institute for Agriculture and Trade Policy (2018) Emissions impossible: How big meat and dairy are heating up the planet, Grain/ Institute for Agriculture and Trade Policy (IATP): Barcelona, Spain/Minneapolis, MN, USA
- 123 ISS ESG (2021) Second Party Opinion (SPO) – Sustainability Quality of the Issuer and Sustainability-Linked Securities JBS S.A., ISS ESG: Rockville, MD, USA
- 124 Grain/ Institute for Agriculture and Trade Policy (2018) Emissions impossible: How big meat and dairy are heating up the planet, Grain/ Institute for Agriculture and Trade Policy: Barcelona, Spain/ Minneapolis, MN, USA
- 125 Registro público de emissões, Participantes, JBS S/A: <https://www.registropublicodeemissoes.com.br/participantes/475>
- 126 JBS (2021) Sustainability Report: Environmental, Social and Governance JBS 2020, JBS: São Paulo, Brazil
- 127 IATP (2021) World's largest meat company, JBS, with a 2040 Net Zero climate target, increases emissions by 51% in five years; continues to greenwash its huge climate footprint, Institute of Agriculture and Trade Policy (IATP): Minneapolis, United States
- 128 See: "JBS makes fresh commitments to net-zero emissions and zero deforestation", *FoodNavigator*, Oliver Morrison, March 26, 2021; "We're living in a golden age of greenwash – From 'carbon neutral' flights to 'net zero' bacon, dishonest green PR is on the rise," *Greenpeace UK*, Stefano Gelmini, June 29, 2021
- 129 See: <https://www.ceres.org/resources/reports/food-emissions-50-company-benchmark>
- 130 New Climate Institute/Carbon Market Watch (2022) Corporate Climate Responsibility Monitor 2022 – Assessing the Transparency and Integrity of Companies' Emission Reduction and Net-Zero Targets, New Climate Institute/ Carbon Market Watch: Cologne, Germany/Brussels, Belgium
- 131 See: "JBS USA Announces Successful Issuance of Sustainability-Linked Bond," JBS Foods, press release, November 16, 2021; BankTrack/Greenpeace International/ Rainforest Action Network/Profundo/Amazon Watch/ Feedback/Friends of the Earth U.S./Wilderness Society (2021) Concerns on the Issuance of US\$ 1 Billion Sustainability-Linked Bond (SLB) by JBS, open letter, BankTrack/Greenpeace International/Rainforest Action Network/Profundo/Amazon Watch/Feedback/Friends of the Earth U.S./Wilderness Society: Nijmegen, The Netherlands/Amsterdam, The Netherlands/San Francisco, CA, USA/Amsterdam, The Netherlands/ Oakland, Canada/ London, United Kingdom/Washington, D.C., USA
- 132 JBS (2021) JBS Sustainability-Linked Bond Framework, JBS: São Paulo, Brazil
- 133 "Brazilian Meat Company JBS Issues 'Sustainability-Linked' Bonds," *Forests and Finance*, June 23, 2021
- 134 JBS Net Zero 2040 website, see: <https://jbs.com.br/netzero/en/>
- 135 Chain Reaction Research (2020) JBS: Outsized Deforestation in Supply Chain, COVID-19 Pose Fundamental Business Risks, Chain Reaction Research: Washington, D.C., USA
- 136 Mighty Earth Soy & Cattle deforestation tracker, see: <https://www.mightyearth.org/soy-and-cattle-tracker/>
- 137 Mighty Earth (2021) Processed beef sold at Delhaize, Albert Heijn and Stop & Shop supermarkets linked to Brazilian deforestation, Mighty Earth: Washington, D.C., USA
- 138 "JBS Promises 14 More Years of Forest Destruction," *Mighty Earth*, March 24, 2021
- 139 See: "Brazil: Amazon sees worst deforestation levels in 15 years," *BBC News*, November 19, 2021; "Large-scale deforesters emboldened under Brazil's Bolsonaro, data indicate," *Mongabay*, Suzana Camargo, April 26, 2021; "Open letter calling on Bolsonaro to protect Amazon exposes double standards," *EarthSight*, December 5, 2019

- 140 "Enquanto milhares de brasileiros morrem na pandemia, governo aproveita para enfraquecer leis ambientais," Mongabay, Suzana Camargo, March 11, 2021
- 141 Skidmore M E, Moffette F, Rausch L, Christie M, Munger J and Gibbs H K (2021), Cattle ranchers and deforestation in the Brazilian Amazon: Production, location, and policies, Global Environmental Change, Volume 68, May 2021
- 142 Skidmore M E, Moffette F, Rausch L, Christie M, Munger J and Gibbs H K (2021), Cattle ranchers and deforestation in the Brazilian Amazon: Production, location, and policies, Global Environmental Change, Volume 68, May 2021
- 143 Skidmore M E, Moffette F, Rausch L, Christie M, Munger J and Gibbs H K (2021), Cattle ranchers and deforestation in the Brazilian Amazon: Production, location, and policies, Global Environmental Change, Volume 68, May 2021
- 144 Mapbiomas, infographics, Amazônia – Evolução anual da cobertura e uso da terra (1985-2020): <https://mapbiomas-br-site.s3.amazonaws.com/Infograficos/Cole%C3%A7%C3%A3o6/MBI-Infografico-6.0-PTBR-amazonia.jpg>
- 145 "Amazon Deforestation Soars to 15-Year High," The New York Times, Manuela Andreoni, November 19, 2021
- 146 See: Medina G (2021), Market share de empresas domésticas na cadeia produtiva da carne bovina no Brasil, Informe GEPEC, volume 25, n.1. 220-239, January 7, 2021; Abiec (2021) Beef Report – Profile of Brazilian Livestock 2021, Abiec: Sao Paulo, Brazil
- 147 "How Big Beef Is Fueling the Amazon's Destruction," Bloomberg, Jessica Brice, January 21, 2022
- 148 See: "Revealed: new evidence links Brazil meat giant JBS to Amazon deforestation," The Guardian, André Campos, Andrew Wasley, Alexandra Heal, Dom Phillips and Piero Locatelli, July 27, 2020; Greenpeace International (2020) How JBS is Still Slaughtering the Amazon, Greenpeace International: Amsterdam, The Netherlands; Global Witness (2020) Beef, Banks and the Brazilian Amazon, Global Witness: London, United Kingdom; Chain Reaction Research (2020) JBS, Marfrig, and Minerva: Material Financial Risk from Deforestation in Beef Supply Chains, Chain Reaction Research: Washington, D.C.; "Supermarkets Across Europe Drop Brazilian Beef Over Deforestation Linked to Meat Giant JBS," Mighty Earth, press release, December 15, 2021
- 149 Rajão R et al (2020), The rotten apples of Brazil's agribusiness, Science, volume 369, Issue 6501, 246-248, July 17, 2020
- 150 "How beef demand is accelerating the Amazon's deforestation and climate peril," The Washington Post, Christopher Ingraham August 27, 2019
- 151 Imazon/Instituto Centro de Vida (2017) Os frigoríficos vão ajudar a zerar o desmatamento da Amazônia?, Imazon/ Instituto Centro de Vida: Belém, Brazil/Cuiabá, Brazil
- 152 "JBS Announces Monitoring Program Following Chain Reaction Research Report on Deforestation Risks," Aidenvironment, October 2, 2020
- 153 Chain Reaction Research (2020) JBS: Outsized Deforestation in Supply Chain, COVID-19 Pose Fundamental Business Risks, Chain Reaction Research: Washington, D.C., USA
- 154 Trase (2019) Mapping the Deforestation Risk of Brazilian Beef Exports, Trase: Stockholm, Sweden
- 155 See: Amnesty International (2020) From Forest to Farmland - Cattle Illegally Grazed in Brazil's Amazon Found in Jbs's Supply Chain, Amnesty International: London, United Kingdom; Global Witness (2020) Beef, Banks and the Brazilian Amazon, Global Witness: London, United Kingdom; Greenpeace Brasil (2020) Case Study - Ricardo Franco State Park, Greenpeace Brasil: São Paulo, Brazil; Greenpeace International (2020) How JBS is Still Slaughtering the Amazon, Greenpeace International: Amsterdam, The Netherlands; "Bad beef: UK retailers feed illegal deforestation fears as JBS corned beef imports persist," Earthsight, May 5, 2019
- 156 "Fact Check: JBS Exaggerates Deforestation Commitment," Mighty Earth, Sarah Lake, October 5, 2020
- 157 See: "JBS makes global commitment to achieve net-zero greenhouse gas emissions by 2040," JBS, press release, March 23, 2021, JBS: São Paulo, "Brazil; Brazil's JBS brings forward goal of eliminating deforestation in supply chain," Reuters, Nayara Figueiredo, July 1, 2021
- 158 Chain Reaction Research (2020) JBS, Marfrig, and Minerva: Material Financial Risk from Deforestation in Beef Supply Chains, Chain Reaction Research: Washington, D.C., USA
- 159 "Despite Progress, Brazilian Meatpacking Companies Still Cannot Promise 'Deforestation-Free'," Greenpeace USA, Daniel Brindis, 2019
- 160 "Fact Check: JBS Exaggerates Deforestation Commitment," Mighty Earth, Sarah Lake, October 5, 2020
- 161 See: "JBS recommits to Cattle Agreement in the Amazon," Greenpeace USA, Jess Miller, December 20, 2012; "Greenpeace Brazil Suspends Negotiations with Cattle Giant JBS," Greenpeace USA, Rodrigo Estrada, March 23, 2017
- 162 Greenpeace International (2020) How JBS is Still Slaughtering the Amazon, Greenpeace International: Amsterdam, The Netherlands
- 163 "The JBS Green Platform," JBS Global UK, press release, October 29, 2020
- 164 "The Law That Could Break the Amazon," Climate Advisers, Matt Piotrowski, June 22, 2020
- 165 "Brazilian meatpackers' commitment to emissions targets under scrutiny," Financial Times, Michael Pooler and Emiko Terazono, June 27, 2021
- 166 "How Big Beef Is Fueling the Amazon's Destruction," Bloomberg, Jessica Brice, January 21, 2022
- 167 "Meat company faces heat over 'cattle laundering' in Amazon supply chain," The Guardian, Dom Phillips, February 20, 2020
- 168 Global Witness (2020) Beef, Banks and the Brazilian Amazon, Global Witness: London, United Kingdom
- 169 Gibbs H K, Munger J, L'Roe J, Barreto P, Pereira R, Christie M, Amaral T and Walker N F (2016), Did Ranchers and Slaughterhouses Respond to Zero-Deforestation Agreements in the Brazilian Amazon?, Conservation Letters, Volume 9, Issue 1, 32-42, January/February 2016
- 170 Gibbs H K, Munger J, L'Roe J, Barreto P, Pereira R, Christie M, Amaral T and Walker N F (2016), Did Ranchers and Slaughterhouses Respond to Zero-Deforestation Agreements in the Brazilian Amazon?, Conservation Letters, Volume 9, Issue 1, 32-42, January/February 2016
- 171 "Meat company faces heat over 'cattle laundering' in Amazon supply chain," The Guardian, Dom Phillips, February 20, 2020
- 172 Chain Reaction Research (2020) JBS, Marfrig, and Minerva: Material Financial Risk from Deforestation in Beef Supply Chains, Chain Reaction Research: Washington, D.C., USA
- 173 Greenpeace International (2020) How JBS is Still Slaughtering the Amazon, Greenpeace International: Amsterdam, The Netherlands
- 174 "Exportações de carne conectam desmatamento no Brasil a grandes varejistas globais," Repórter Brasil, December 10, 2021
- 175 Det Norske Veritas (2019) Evaluation of Fulfillment to the "Public Livestock Commitment" JBS S.A., Det Norske Veritas: São Paulo Brazil
- 176 See: "Satellites, maps and the flow of cattle: Brazilian solutions for reducing deforestation are already in use," Mongabay, Naira Hofmeister, Fernanda Wenzel and Pedro Papini, 12 November 2020; Proforest (2017) Socio-environmental monitoring of the cattle sector in Brazil, Proforest: Oxford, United Kingdom
- 177 "Major Brazilian suppliers of beef to China linked to deforestation," Diálogo Chino, Flávia Milhorance, June 15, 2020

- 178 Chain Reaction Research (2020) JBS, Marfrig, and Minerva: Material Financial Risk from Deforestation in Beef Supply Chains, Chain Reaction Research: Washington, D.C., USA
- 179 Global Witness (2020) Beef, Banks and the Brazilian Amazon, Global Witness: London, United Kingdom
- 180 Global Witness (2020) Beef, Banks and the Brazilian Amazon, Global Witness: London, United Kingdom
- 181 JBS, Sustainability, JBS Global Commitments and 2030 Goals, see: <https://jbs.com.br/en/sustainability/jbs-global-commitments-and-2030-goals/>
- 182 "How Big Beef Is Fueling the Amazon's Destruction," Bloomberg, Jessica Brice, January 21, 2022
- 183 "How Big Beef Is Fueling the Amazon's Destruction," Bloomberg, Jessica Brice, January 21, 2022
- 184 See: European Commission, Food Safety, Bovine Animals, see: https://ec.europa.eu/food/animals/identification/bovine-animals_en; "Deforestation-linked Brazilian beef still flowing into international markets: report," Mongabay, Claire Asher, November 6, 2018
- 185 "Beef giant JBS vows to go deforestation-free – 14 years from now," Mongabay, Aurora Solá, April 6, 2021
- 186 For example, if you don't know the productivity per hectare of a farm that cattle are listed as coming from on a GTA, it's not possible to assess if there are an unrealistic number of cattle passing through that farm. Interview with NGO staff.
- 187 de Mello Brandão Vinholis M, Carrer M J and Souza, Meirelles de Souza H (2017), Adoption of beef cattle traceability at farm level in São Paulo State, Brazil, *Ciência Rural*, v. 47, n. 9, 2017
- 188 SISBOV information is accessible via this webpage, and see: https://www.gov.br/agricultura/pt-br/assuntos/sanidade-animal-e-vegetal/saude-animal/rastreabilidade-animal/listas-traces/lista-traces-ue_2021_09_08.pdf
- 189 Mighty Earth (2019) Rapid Response Soy & Cattle Report, Report 8, December 2019, Mighty Earth: Washington, D.C., USA
- 190 "Beef giant JBS vows to go deforestation-free – 14 years from now," Mongabay, Aurora Solá, April 6, 2021
- 191 "Brazil suspends beef exports to China after cases of mad cow disease," Financial Times, Bryan Harris, September 5, 2021
- 192 "Indonesia, Saudia Arabia and Egypt ban Brazilian beef," EuroMeat News, September 16, 2021
- 193 "US lifts Brazilian beef import ban amid quality concerns," AP News, David Pitt, February 22, 2020
- 194 "Amazon slaughterhouses eye greater share of American pie as Brazil beef sales surge," Earthsight, September 23, 2021
- 195 "UK supermarkets linked to 2020's record-breaking fires in Brazil's Pantanal wetlands," Greenpeace UK, Alison Kirkman, March 4, 2021
- 196 "UK supermarkets linked to 2020's record-breaking fires in Brazil's Pantanal wetlands," Greenpeace UK, Alison Kirkman, March 4, 2021
- 197 JBS (2018) Annual and Sustainability Report JBS 2017, JBS: São Paulo, Brazil
- 198 Cruelty Free Investing, JBS: <http://crueltyfreeinvesting.org/jbs/>
- 199 Certified Angus Beef website: <https://www.certifiedangusbeef.com/buy/>
- 200 "JBS meat products: Where they're sold and under what name brand," Fox Business, Daniella Genovese, June 2, 2021
- 201 See: Repórter Brasil (2021) Steak in the supermarket, forest on the ground, Monitor, issue 9, February 2021, Repórter Brasil: São Paulo, Brazil; "A New Link Tracing Beef from Amazon Forest to Grocery Stores," Bloomberg, Jessica Brice, February 24, 2021; "Carrefour Reinforces Its Leading Position in Brazil with the Acquisition of Grupo Big," Carrefour, press release, March 24, 2021
- 202 "Meat industry tries to quell supply fears over JBS Foods cyber attack," Financial Review, Brad Thompson, June 1, 2021
- 203 "Tesco cancels meat contract over Amazon cattle claims," The Telegraph, Louise Gray, June 5, 2012
- 204 See: Tesco PLC Frequently Asked Questions: <https://www.tescopl.com/tackling-deforestation/frequently-asked-questions/>; "Bad beef: UK retailers feed illegal deforestation fears as JBS corned beef imports persist," Earthsight, May 5, 2019; Tesco website, Princes Corned Beef 200G product description: <https://www.tesco.com/groceries/en-GB/products/258859585>; "Supermarkets Across Europe Drop Brazilian Beef Over Deforestation Linked to Meat Giant JBS," Mighty Earth, press release, December 15, 2021; "Tesco's meat problem (commentary)," Mongabay, Robin Willoughby, August 3, 2021
- 205 "Supermarkets Across Europe Drop Brazilian Beef Over Deforestation Linked to Meat Giant JBS," Mighty Earth, press release, December 15, 2021
- 206 "Supermarkets Across Europe Drop Brazilian Beef Over Deforestation Linked to Meat Giant JBS," Mighty Earth, press release, December 15, 2021
- 207 See: "Paper Excellence wins arbitration to complete acquisition of Brazil's Eldorado: sources," Reuters, Tatiana Bautzer, February 3, 2021; DebtWire (2016) Profile: Batista Family Brazil, Debtwire: New York, NY, USA; "Brazil's J&F Investimentos to Buy 44% Stake in Alpargatas for \$725 Million," The Wall Street Journal, Jeffrey T. Lewis and Luciana Magalhaes, November 23, 2015
- 208 J&F Investimentos, Quem Somos: <https://www.ifinvest.com.br/quem-somos/>
- 209 See: Greenpeace International (2020) How JBS is Still Slaughtering the Amazon, Greenpeace International: Amsterdam, The Netherlands; "Batista Brothers Cleared To Return To JBS SA," Drovers, Greg Henderson, May 28, 2020
- 210 BNDES - The Brazilian development bank website, see: https://www.bndes.gov.br/SiteBNDES/bndes/bndes_en/Institucional/The_BNDES/BNDESPAR_bylaws.html
- 211 BNDES - The Brazilian development bank website, Investor Relations, Financial information: https://www.bndes.gov.br/SiteBNDES/bndes/bndes_en/Institucional/Investor_Relations/Financial_Information/loan_portfolio_ingles.html
- 212 "Brazil's Bolsonaro vows to probe BNDES development bank," Reuters, Reuters staff, November 9, 2018, see: <https://www.reuters.com/article/us-brazil-politics-bndes-idUSKCN1NE04G>
- 213 See: "BNDES Speaks Out: giant Brazilian bank offers rare in-depth interview," Mongabay, Sue Branford, April 6, 2016; "Brazil's Bolsonaro vows to probe BNDES development bank," Reuters, Rodrigo Viga Gaier, Anthony Boadle and Leslie Adler, November 9, 2018
- 214 "BNDES Speaks Out: giant Brazilian bank offers rare in-depth interview," Mongabay, Sue Branford, April 6 2016
- 215 "BNDES Speaks Out: giant Brazilian bank offers rare in-depth interview," Mongabay, Sue Branford, April 6, 2016
- 216 "Brazil's Bolsonaro vows to probe BNDES development bank," Reuters, Rodrigo Viga Gaier, Anthony Boadle and Leslie Adler, November 9, 2018
- 217 "Audit court: BNDES lent \$911M more than it should have for foreign projects," S&P Global Market Intelligence, Helgi Gudmundsson, April 5, 2019
- 218 "JBS: The Brazilian butchers who took over the world, The Bureau of Investigative Journalists," The Bureau of Investigative Journalism, Andrew Wasley, Alexandra Heal, Lucy Michaels, Dom Phillips, André Campos, Diego Junqueira, Claire Smyth and Rory Winters, July 2, 2019
- 219 "Brazil: The creaking champions," Financial Times, Joe Leahy, April 21, 2013
- 220 "Brazil's sordid tale of beef and bribes," The Globe and Mail, Stephanie Nolen, May 24, 2017

- 221 "BNDES Weighs Selling \$3.5 Billion JBS Stake After Earnings," Bloomberg, Fabiana Batista, Rachel Gamarski, Tatiana Freitas, Vinícius Andrade, February 13, 2020
- 222 See: "Brazil's sordid tale of beef and bribes," The Globe and Mail, Stephanie Nolen, May 24, 2017; "Brazil Prosecutors Seek \$5 Billion in JBS, BNDES Case," Lucror Analytics, Tatiana Freitas, December 10, 2019
- 223 DebtWire (2018) Shareholder Profile: Batista family fights to stay atop JBS as scandals deepen, Debtwire: New York, NY, USA
- 224 BNDES, O BNDES e a Lava Jato: <https://aberto.bndes.gov.br/aberto/caso/lava-jato/>
- 225 "Brazil's Odebrecht corruption scandal explained," BBC, Daniel Gallas, April 17, 2019
- 226 "Algumas empresas de engenharia financiadas pelo Banco foram investigadas pela Lava Jato e, posteriormente, condenadas por atos de corrupção que não dizem respeito ao processo de concessão de financiamento do BNDES e nem aos investimentos que o Banco tenha feito nessas empresas." BNDES, O BNDES e a Lava Jato: <https://aberto.bndes.gov.br/aberto/caso/lava-jato/>
- 227 BNDES, O BNDES e a Lava Jato: <https://aberto.bndes.gov.br/aberto/caso/lava-jato/> use - <https://www.justice.gov/opa/pr/jf-investimentos-sa-pleads-guilty-and-agrees-pay-over-256-million-resolve-criminal-foreign>
- 228 "BlackRock hits a record \$10 trillion assets under management," Bloomberg, Silla Brush and Alex Wittenberg, January 14, 2022
- 229 "Stock indices let Brazil meatpackers shed ties to deforestation, draw investors," Mongabay, Fernanda Wenzel, Naira Hofmeister, Pedro Papini, 6 October 2020
- 230 "BlackRock's \$400m stake in Amazon meatpackers defies sustainability cred," Mongabay, Fernanda Wenzel, Naira Hofmeister and Pedro Papini, September 24, 2020
- 231 "BlackRock's \$400m stake in Amazon meatpackers defies sustainability cred," Mongabay, Fernanda Wenzel, Naira Hofmeister and Pedro Papini, September 24, 2020
- 232 See: Repórter Brasil (2020) The Money that Feeds the Cattle, Monitor, issue 7, December 2020, Repórter Brasil: São Paulo, Brazil; B3, Market data and indices, Indexes, Sustainability Indices, Carbon Efficient Index (ICO2 B3): https://www.b3.com.br/en_us/market-data-and-indices/indices/sustainability-indices/carbon-efficient-index-ico2.htm
- 233 B3 (2020) Carbon Efficient Index (Ico2) Methodology, B3: São Paulo, Brazil
- 234 "BlackRock silent on livestock in latest global warming policy," Mongabay, André Campos and Piero Locatelli, September 9, 2020
- 235 See: Repórter Brasil (2020) The Money that Feeds the Cattle, Monitor, issue 7, December 2020, Repórter Brasil: São Paulo, Brazil; "BlackRock silent on livestock in latest global warming policy," Mongabay, André Campos and Piero Locatelli, September 9, 2020
- 236 "BlackRock's \$400m stake in Amazon meatpackers defies sustainability cred," Mongabay, Fernanda Wenzel, Naira Hofmeister and Pedro Papini, September 24, 2020
- 237 "BlackRock Responds to Demands for Stronger Climate Action with Bold New Commitments," SB, January 14, 2020
- 238 "World's largest money manager says sustainable investing surge to continue, pushes for more disclosure," CNBC, Pippa Stevens, January 26, 2021
- 239 "The ESG investing industry is dangerous," Financial Times, Robert Armstrong, August 24, 2021
- 240 "The Secret Diary of a 'Sustainable Investor' – Part 1," Medium, Tariq Fancy, August 20, 2021
- 241 JBS (2022) Earnings Releases Q4, JBS: São Paulo, Brazil <https://ri.jbs.com.br/en/financial-information/results-center>
- 242 Forests & Finance website: <https://forestsandfinance.org/>
- 243 This includes companies which have either taken part in JBS bond issuances, hold a company bondholding, have a revolving credit facility with JBS or have extended corporate loans to the company.
- 244 Forests & Finance, Data Deep Dive: <https://forestsandfinance.org/data/>
- 245 See: ICIJ, Pandora Papers, The Power Players, Brazil, Minister of the Economy, Paulo Guedes: <https://projects.icij.org/investigations/pandora-papers/power-players/en/player/paulo-guedes/>; "Ministro Paulo Guedes e presidente do Banco Central, Roberto Campos Neto, são donos de offshore," El País, Allan De Abreu, Ana Clara Costa (Piauí), Regiane Oliveira and Marina Rossi, October 3, 2021
- 246 Chain Reaction Research (2020) JBS: Outsized Deforestation in Supply Chain, COVID-19 Pose Fundamental Business Risks, Chain Reaction Research: Washington, D.C., USA
- 247 Chain Reaction Research (2020) JBS: Outsized Deforestation in Supply Chain, COVID-19 Pose Fundamental Business Risks, Chain Reaction Research: Washington, D.C., USA
- 248 In terms of environmental indicators, it looks at policy wording relating to damaging peatlands, High Carbon Stock tropical forest areas or protected areas, as well as policies aimed at protecting High Conservation Value areas.
- 249 Chain Reaction Research (2020) JBS: Outsized Deforestation in Supply Chain, COVID-19 Pose Fundamental Business Risks, Chain Reaction Research: Washington, D.C., USA
- 250 Barclays, Sustainability, Addressing Climate Change, Achieving net zero operations: <https://home.barclays/society/our-approach-to-sustainability/managing-environmental-and-social-impacts/>
- 251 Barclays says it supports the New York Forest Declaration objective of "supporting all endeavours to cut natural forest loss in half by 2020, and to end it by 2030" and it has adopted the Banking Environment Initiative's Soft Commodities Compact, which means the bank will help "our corporate clients in a number of soft commodity sectors achieve zero net deforestation by 2020."
- 252 Leitner R, British students force end of Barclays Bank's investments in South African Apartheid 1969-1987, The Global Nonviolent Action Database, February 8, 2014
- 253 "Brazil meatpacker JBS plans U.S. listing as BNDES sells stake: sources," Reuters, Tatiana Bautzer, Aluisio Alves and Carolina Mandl, March 5, 2020
- 254 "Brazil's BNDES raises \$370 mln in meatpacker JBS shares sale, says executive" Reuters, Rodrigo Viga Gaier, Peter Frontini and Chris Reese, February 16, 2022
- 255 Feedback (2020) Butchering the Planet: The big-name financiers bankrolling livestock corporations and climate change, Feedback: London, United Kingdom
- 256 Global Canopy (2020) Time for change: delivering deforestation-free supply chains, Thomson E, Global Canopy: Oxford, United Kingdom
- 257 "The Chain: Investor Pressure Mounts on Companies Connected to Amazon Fires, Deforestation in Brazil," Chain Reaction Research, September 19, 2019
- 258 See the undated Investor Statement on Forest Fires and the Amazon here: <https://bit.ly/3M45TI9>
- 259 "Global investors demand to meet Brazil diplomats over deforestation," Reuters, Jake Spring, June 23, 2020
- 260 "Nordea drops JBS shares over environment, COVID-19 response," Reuters, Ana Mano, August 1, 2020
- 261 "Investors drop Brazil meat giant JBS," The Guardian, Dom Phillips, July 28, 2020

- 262 See: "World's largest pension fund dumps shares in beef firm in wake of corruption scandal," Earthsight, July 24, 2018; Norges Bank Investment Management, The Fund, Responsible investment, Observation and exclusion of companies: <https://www.nbim.no/en/the-fund/responsible-investment/exclusion-of-companies/>
- 263 "The pressure's on": HSBC warns meat company JBS over Amazon deforestation" The Bureau of Investigative Journalism, Andrew Wasley and Alexandra Heal, August 12, 2020
- 264 Fitch Ratings, Ratings Definitions: <https://www.fitchratings.com/products/rating-definitions#about-rating-definitions>
- 265 "JBS Upgraded by Fitch to Investment Grade," JBS, notice to the market, June 8, 2021
- 266 "Parent of Brazil's JBS pleads guilty to U.S. foreign bribery charges," Reuters, Jody Godoy and Sabrina Valle, October 14, 2020
- 267 See: JBS, Shareholder Information, Ratings: <https://ri.jbs.com.br/en/shareholder-information/ratings/>; "Quanto faturam e quais marcas têm BRF, JBS, Marfrig e Minerva? Quadro compara frigoríficos e explica preferências dos analistas," InfoMoney, Priscila Yazbek, May 28, 2021
- 268 "NYC and LA officials want to enact city-wide boycotts of food companies sourcing from the Amazon," The Counter, Jessica Fu, November 15, 2019
- 269 "Global investors demand to meet Brazil diplomats over deforestation," Reuters, Jake Spring, June 23, 2020
- 270 "Global investors demand to meet Brazil diplomats over deforestation," Reuters, Jake Spring, June 23, 2020
- 271 "Investors drop Brazil meat giant JBS," The Guardian, Dom Phillips, July 28, 2020
- 272 "Investors welcome Brazil's Amazon commitment and reiterate call for specific actions to achieve it," Storebrand, Press release, April 21, 2021
- 273 "Indigenous leaders push new target to protect Amazon from deforestation," Reuters, Matthew Green and Jake Spring, September 5, 2021
- 274 APIB, Indigenous Mobilization, Struggle for life: <https://apiboficial.org/luta-pela-vida/?lang=en>

ACKNOWLEDGEMENTS

Editor: Alex Wijeratna

Designer: [Lucy Peers](#)

April 2022

Cover photos

Left: Joesley Batista. Photo Lula Marques/Agência PT/Flickr

Right: Wesley Batista. Photo: Paulo Fridman/Bloomberg/Getty Images



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