



 **RAPID RESPONSE #5**

[CATTLE]

Monitoring deforestation in Brazilian supply chains

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Abbreviations

AFi – Accountability Framework initiative	IT – Indigenous Territory
CAR – Cadastro Ambiental Rural / <i>Rural Land Registry</i>	PRODES – Projeto de Monitoramento do Desmatamento na Amazônia Legal por Satélite / <i>Project for Monitoring Deforestation in the Legal Amazon by Satellite</i>
CNPJ – Cadastro Nacional da Pessoa Jurídica / <i>Brazilian National Registry of Legal Entities</i>	SIE – Serviço de Inspeção Estadual/ <i>State Inspection of slaughterhouses</i>
CPP – Compromisso Público da Pecuária / <i>Public Livestock Commitment</i>	SIGEF – Sistema de Gestão Fundiária / <i>Land Tenure Management System</i>
DETER – Detecção de Desmatamento em Tempo Real/ <i>Real-Time Deforestation Detection</i>	SIF – Serviço de Inspeção Federal/ <i>Federal Inspection of slaughterhouses</i>
DPaP – Do Pasto ao Prato mobile app and initiative	SNCI – Sistema Nacional de Certificação de Imóveis Rurais / <i>National Rural Property Certification System</i>
EUDR – European Union Deforestation Regulation	TAC – Termo de Ajustamento de Conduta / <i>Conduct Adjustment Agreement</i>
FUNAI – Fundação Nacional dos Povos Indígenas / <i>National Indigenous People Foundation</i>	UEWW – Uru-Eu-Wau-Wau people
GTA – Guia de Trânsito Animal/ <i>Animal Transportation Documentation</i>	UEWW IT – Uru-Eu-Wau-Wau Indigenous Territory
IBAMA – Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis / <i>Brazilian Institute of Environment and Renewable Natural Resources</i>	ZDC – Zero Deforestation and Conversion
INCRA – Instituto Nacional de Colonização e Reforma Agrária / <i>National Institute for Colonization and Agrarian Reform</i>	Brazilian States :
INPE – Instituto Nacional de Pesquisas Espaciais / <i>National Institute for Space Research</i>	Goiás – GO • Mato Grosso – MT •
	Mato Grosso do Sul – MS • Minas Gerais – MG •
	Pará – PA • Rondônia – RO • Tocantins – TO

EXECUTIVE SUMMARY

Land invasions, deforestation and conversion, fires and illegal cattle ranching continue to threaten Indigenous Territories and surrounding areas in Brazil, according to new Mighty Earth research. Our Rapid Response #5 Cattle report features five case studies in the Amazon and Pantanal biomes, covering 3,966 hectares of recent deforestation and conversion on farms that previously had direct or indirect links to JBS, Marfrig, and Minerva Foods. These farms are located in the borders or close to Indigenous territories of the Uru-Eu-Wau-Wau, Cinta Larga, Laiana and Aikanã people in Rondônia state (Amazon), Xavante people in Mato Grosso state (Amazon), and Terena people in Mato Grosso do Sul state (Pantanal). In this report, we specially highlight the violence and the “fear of not surviving a constant war” which threaten the Uru-Eu-Wau-Wau people, as well as the impact of deforestation-related issues over their way of life.

Despite alerts sent to beef slaughterhouses and major retailers (such as Carrefour and GPA/Casino¹) in the past three years, our research finds they are still selling beef products in Brazil that originate from high-risk regions where nature destruction persists, together with the poor implementation of monitoring policies in the indirect cattle supply chain. In 2024, a sample of 70 beef products coming from high-risk slaughterhouses located in Rondônia was identified in the stores we visited for Carrefour, GPA/Casino, and Assai/Sendas retailers. Some 83% of them were linked to JBS slaughterhouses, including those located at Pimenta Bueno and Vilhena, already flagged in previous reports² for buying cattle illegally raised in the Uru-Eu-Wau-Wau Indigenous territory.

Cattle ranching is the primary driver of deforestation in the Brazilian Amazon, responsible for 87% of the total, from 1985 to 2021.³ Although the Amazonian state of Rondônia occupies just 2.8% of Brazil’s land, it had 18.16 million head of cattle in 2023, which represents 7.6% of the national total.⁴ In 2022, the state of Rondônia was responsible for almost 7% of the country’s deforestation, and the latest data shows significant forest degradation. In 2024, the wildfire season was particularly intense, with a staggering

The Rapid Response Program

Mighty Earth, in partnership with AidEnvironment, and using data collected through the Do Pasto ao Prato mobile app initiative, has released this report as part of its *Rapid Response* program. The *Rapid Response* program tracks recent deforestation in Brazil’s cattle and soy supply chains; it benefits from additional investigations from Repórter Brasil and field research. It aims to proactively halt deforestation in its early stages by urging companies to drop slaughterhouses and cease trading with suppliers involved in recent, visually confirmed fires or land clearing. By rapidly ending business with actors contributing to deforestation, we can avoid further environmental destruction and prevent hundreds of hectares of deforestation from becoming thousands.

The reports are published quarterly and push national and international meatpackers, traders and retailers operating in Brazil to act by sending a rapid response to stop deforestation and conversion. The program also alerts international retailers, public prosecutors, feed manufacturers, financial institutions, and other key players about the risks of deforestation in Brazil’s beef and soy supply chains, encouraging them to take urgent action. 

1 Casino was still the major owner and controller of GPA (Grupo Pão de Açúcar) when our investigation started. For this reason, we maintain this denomination.

2 Carrefour nous enfume (Mighty Earth, 2022), Carrefour nous enfume toujours (Mighty Earth, 2022), Despite lawsuit, Casino Group still sells beef from Amazonian Indigenous territory (Geojournalism Laboratory and Center for Climate Crime Analysis, 2023).

3 Donoso, V. G., et al. (2024) *Amazon Deforestation and Global Meat Consumption Trends: An Assessment of Land Use Change and Market Data from Rondônia That Shows Why We Should Consider Changing Our Diets*, Sustainability, vol. 16, nº11, 2024.

4 IBGE (2024) *Produção da Pecuária Municipal 2023*, IBGE: Rio de Janeiro, Brazil.

4,521 fire alerts in August alone⁵. Fires affecting native vegetation accounted for the highest number of alerts (21%) over the past five years, according to the Brazilian Institute for Space Research (INPE). The majority of fires start outside Indigenous lands, but due to their close proximity, they often spread into these protected territories, as evidenced in the first case study of this report, which is situated in the buffer zone of the ancestral lands of the Uru-Eu-Wau-Wau (UEWW) Indigenous people, in Rondônia.

Indigenous Territories and protected areas are crucial for safeguarding forests and biodiversity in Brazil. In fact, the vast majority of the remaining forests are found in these regions (for example, the Uru-Eu-Wau-Wau territory mentioned in this report). However, these protected areas are under severe pressure, and local conflicts often involve illegal activities, such as slash-and-burn agriculture and logging. These are the first steps of deforestation that pave the way for illegal cattle grazing and, sometimes, even the establishment of rural property boundaries within Indigenous Territories.

In this new Rapid Response report, we found that JBS, Marfrig and Minerva slaughterhouses supplying retailers Carrefour, Grupo Mateus, Assaí/Sendas and GPA/Casino were linked to 851,121 hectares of deforestation – equivalent to more than one million football pitches – in the Amazon and the Cerrado between 2009 and 2024. We found more than half (54%) of it originating from potential indirect suppliers. Brazilian beef giant JBS alone accounts for an astonishing 83% of the total impacted land that we found.

In partnership with AidEnvironment and Repórter Brasil, Mighty Earth conducted an investigation on a sample of 1,409 fresh, frozen and processed beef products collected via the 'Do Pasto ao Prato' (dPaP) mobile app, between February and December 2024. Data from the scanned label packaging on the beef samples showed they came from 174 slaughterhouses, including 39 in the Legal Amazon. The scanned beef products were found in 100 retail stores belonging to the four largest retailers above in 44 cities in 19 Brazilian states.

Combining this data with a sample of Animal Transportation Documentation (Guia de Trânsito Animal, GTA) from seven states in Brazil, the analysis identified 6,259 direct and 7,312 indirect cattle suppliers with records of deforestation linked to 38 slaughterhouses, 26 of which are owned by JBS, seven by Marfrig, and five by Minerva Foods.

Our research revealed that the JBS slaughterhouse in Pimenta Bueno in Rondônia, the Marfrig slaughterhouse in Tangará da Serra in Mato Grosso, and the Minerva Foods slaughterhouse in Araguaína in Tocantins were the most exposed to deforestation between 2021 and 2024, when considering their potential direct suppliers. Using a list of indirect suppliers, Marfrig's unit in Chupinguaia (Rondônia), JBS's plant in Barra do Garças (Mato Grosso), and Minerva Foods' plant in Araguaína (Tocantins) were the ones associated with the highest rates of deforestation. Notably, all four of the largest retailers in Brazil sell beef products from at least one of these high-risk slaughterhouses.

Asks

We call on retailers GPA/Casino, Carrefour, and Assaí/Sendas to terminate any direct or indirect business relationship with meatpackers involved in widespread and persistent deforestation or ecosystem conversion through their direct and indirect supply chains, including maintaining a watchful eye over the buffer zones of Indigenous and other protected territories.

⁵ TerraBrasilis (INPE, 2025), see: <https://terrabrasilis.dpi.inpe.br/>

Additionally, the slaughterhouses that are identified in this report as exposed to the highest rates of deforestation from 2021 to 2024 should be suspended until they can ensure their cattle supply chains are free from deforestation and conversion since the initial stage of cattle production. We urge retailers to immediately disclose the volume and origin of their beef products on a public platform, including details on the slaughterhouses, the lists of direct and indirect farm suppliers, and the proportion of beef products sourced from a fully third-party verified Zero Deforestation and Conversion (ZDC) supply chain. Furthermore, we urge them to proactively report and monitor all alleged cases of deforestation, land conversion, and human rights violations through a public grievance mechanism.

We call on JBS, Marfrig, and Minerva Foods to investigate our allegations and urgently suspend the farms and ranches with recent deforestation or conversion from where they indirectly and directly source cattle. These meatpackers should also immediately disclose on a public platform the volume and origin of cattle—including the lists of all direct and indirect farms and the proportion of cattle from ZDC farms—and submit all cases of deforestation and conversion through a public grievance mechanism to monitor the progress, engagement and suspension of each non-compliant farm, as recommended by the Accountability Framework Initiative (AFi).

LINKS BETWEEN RETAILERS AND SLAUGHTERHOUSES

During the data collection period (4 February and 18 December 2024), a team of consumers, volunteers and researchers identified 1,409 beef products in retail stores in Brazil, scanned labels and collected their data through the 'do Pasto ao Prato' (dPaP) mobile application. The products were in 100 stores owned by French retailers GPA/Casino (Grupo Pão de Açúcar, 25 stores),⁶ Carrefour (44 stores), as well as Brazilian retailers Grupo Mateus (11 stores) and Assaí/Sendas (20 stores). These stores were scattered across 44 municipalities in 19 Brazilian states.

The stores owned by the retailers where the sampled beef products were identified are as follows:

- **Carrefour:** Atacadão, Carrefour Bairro, Carrefour Hiper, Sam's Club
- **GPA/Casino:** Pão de Açúcar, Extra, Compre Bem
- **Assaí/Sendas:** Assaí Atacadista
- **Grupo Mateus:** Mateus, Mix Mateus

The codes of the Federal Inspection of Slaughterhouses (*Serviço de Inspeção Federal*, SIF) and the State Inspection of Slaughterhouses (*Serviço de Inspeção Estadual*, SIE), both sanitary registries, or the numbers of the Brazilian National Registry of Legal Entities (*Cadastro Nacional da Pessoa Jurídica*, CNPJ) associated with each identified beef product provided information on the meatpacker and location of the slaughterhouse where the meat was processed. Using the codes collected, we were able to link 1,336 out of the 1,409 scanned beef products to 174 slaughterhouses operated by 93 meatpackers across 20 states.

Table 1 shows the number of beef products by retailer linked to slaughterhouses operated by the three major meatpackers and "other" meatpackers.

Table 1. Number of beef products per retailer linked to meatpackers

Retailer	JBS	Marfrig	Minerva Foods	Other	No data
Carrefour	378	61	11	206	31
Casino/GPA	100	78	36	72	14
Grupo Mateus	59	9	0	108	7
Assaí/Sendas	139	24	0	55	21
Total	676	172	47	441	73
	1,336				73
	51%	13%	4%	33%	-

⁶ Since March 14, 2024, that is, after the beginning of our investigation, Casino Group has owned only 22.5% of GPA's shares (down to previously 41%). This means it has lost control of the company. See: Groupe Casino (2024) *Notice of Meeting, Ordinary and Extraordinary Annual General Meeting*, Groupe Casino: Saint-Étienne, France

Of the 1,336 beef products for which we were able to trace the slaughterhouses, 676 (51%) are linked to 52 JBS-owned slaughterhouses, 172 (13%) to 16 Marfrig-owned slaughterhouses, and 47 (4%) to six Minerva Foods-owned slaughterhouses. The other 441 meat products (33%) were linked to 100 slaughterhouses operated by 90 other meatpackers.

Table 2 shows the number of slaughterhouses operated by the three largest meatpackers (JBS, Marfrig, and Minerva Foods) and “other” meatpackers linked to the sampled beef products by retailer.

Table 2. Number of slaughterhouses by retailer linked to meatpackers

Retailer	JBS	Marfrig	Minerva Foods	Other	Total
Carrefour	29	10	4	23	66
Casino/GPA	37	7	4	57	105
Grupo Mateus	12	3	0	31	46
Sendas/Assaí	30	7	0	22	59
Total*	52	16	6	100	174
In the Legal Amazon*	19	5	3	12	39

*As some slaughterhouses are linked to multiple retailers, these duplicates have been removed to calculate the total.

Of the 174 slaughterhouses, 74 are operated by JBS, Marfrig, or Minerva Foods, of which 27 are in the Legal Amazon region, as shown in Table 2 above.

DIRECT AND INDIRECT CATTLE SUPPLIERS LINKED TO THE IDENTIFIED SLAUGHTERHOUSES

To establish the link between the three largest Brazilian meatpackers and these direct and indirect suppliers, we used a sample of the GTA data available in seven Brazilian states.⁷ Of the beef products for which the slaughterhouses could be traced, 530 are linked to slaughterhouses in one of the seven states where GTAs are available, and most of these are related to slaughterhouses located in the states of Mato Grosso and Mato Grosso do Sul (164 and 149 beef products, respectively).

Considering only the slaughterhouses operated by JBS, Marfrig, and Minerva Foods in the seven states covered by our GTA data sample, the 530 identified beef products are linked to 38 slaughterhouses: 26 are operated by JBS, seven by Marfrig, and five by Minerva Foods (see Table 3).

⁷ Goiás, Minas Gerais, Mato Grosso do Sul, Mato Grosso, Pará, Rondônia and Tocantins.

Table 3. JBS, Marfrig, and Minerva Foods slaughterhouses with the GTA data from AidEnvironment's sample and the number of beef products linked to each slaughterhouse (*).

JBS (26 slaughterhouses)							
Municipality	State	SIF	No. of beef products	Municipality	State	SIF	No. of beef products
Goiânia	GO	862	23	Confresa	MT	3470	23
Mozarlândia	GO	4507	21	Diamantino	MT	3000	23
Senador Canedo	GO	2058	17	Juara	MT	200	11
Ituiutaba	MG	504	4	Pedra Preta	MT	2019	3
Iturama	MG	3225	4	Pontes e Lacerda	MT	51	18
Campo Grande**	MS	1662	47	Marabá	PA	457	28
Campo Grande**	MS	4400	80	Redenção	PA	807	6
Naviraí	MS	3181	9	Santana do Araguaia	PA	1110	11
Nova Andradina	MS	49	9	Pimenta Bueno	RO	2880	11
Alta Floresta	MT	4302	9	Porto Velho	RO	4149	8
Araputanga	MT	2979	8	São Miguel do Guaporé	RO	175	8
Barra do Garças	MT	42	18	Vilhena	RO	4333	20
Colíder	MT	4268	17	Araguaína	TO	4001	12

Marfrig (7 slaughterhouses)				Minerva Foods (5 slaughterhouses)			
Municipality	State	SIF	No. of beef products	Municipality	State	SIF	No. of beef products
Mineiros	GO	3047	16	Palmeiras de Goiás	GO	431	18
Bataguassu	MS	4238	4	Janaúba	MG	2471	5
Pontes e Lacerda	MT	1900	2	Mirassol D'Oeste	MT	2911	13
Tangara da Serra	MT	1751	3	Paranatinga	MT	2500	4
Várzea Grande***	MT	292	10	Araguaína	TO	1940	1
Várzea Grande***	MT	2015	2				
Chupinguaia	RO	3250	4				

* The GTA data sample used for this analysis does not cover JBS Dourados (MT), operated by Seara, as well as Marfrig Lucas do Rio Verde (MT) and Rio Verde (GO), both operated by BRF Foods.

** JBS operates two slaughterhouses in Campo Grande (MS).

*** Since 2019, Marfrig and Minerva have swapped their slaughterhouses in Paranatinga (now operated by Minerva) and Várzea Grande (then operated by Marfrig).

Our analysis focused only on slaughterhouses operated by JBS (including Friboi and excluding Seara), Marfrig (excluding BRF Foods), and Minerva Foods in the seven states covered by our GTA sample.⁸ The location of direct and indirect cattle suppliers was obtained by cross-referencing official land tenure registration data (SIGEF) with a sample of GTAs from 2017 to 2023. Our analysis identified 27,898 direct cattle suppliers (Figure 1) and 30,521 indirect suppliers (Figure 2) to the 38 JBS, Marfrig, and Minerva Foods

⁸ The GTA data does not cover the listed JBS slaughterhouse in Dourados (MT), operated by Seara, as well as Marfrig slaughterhouses in Lucas do Rio Verde (MT) and Rio Verde (GO), which are operated by BRF.

slaughterhouses. It is important to note that this sample of direct and indirect suppliers represents only a small fraction of the meatpackers' suppliers in Brazil. For example, JBS states that it has 73,000 direct cattle suppliers in Brazil without mentioning the number of indirect suppliers.⁹

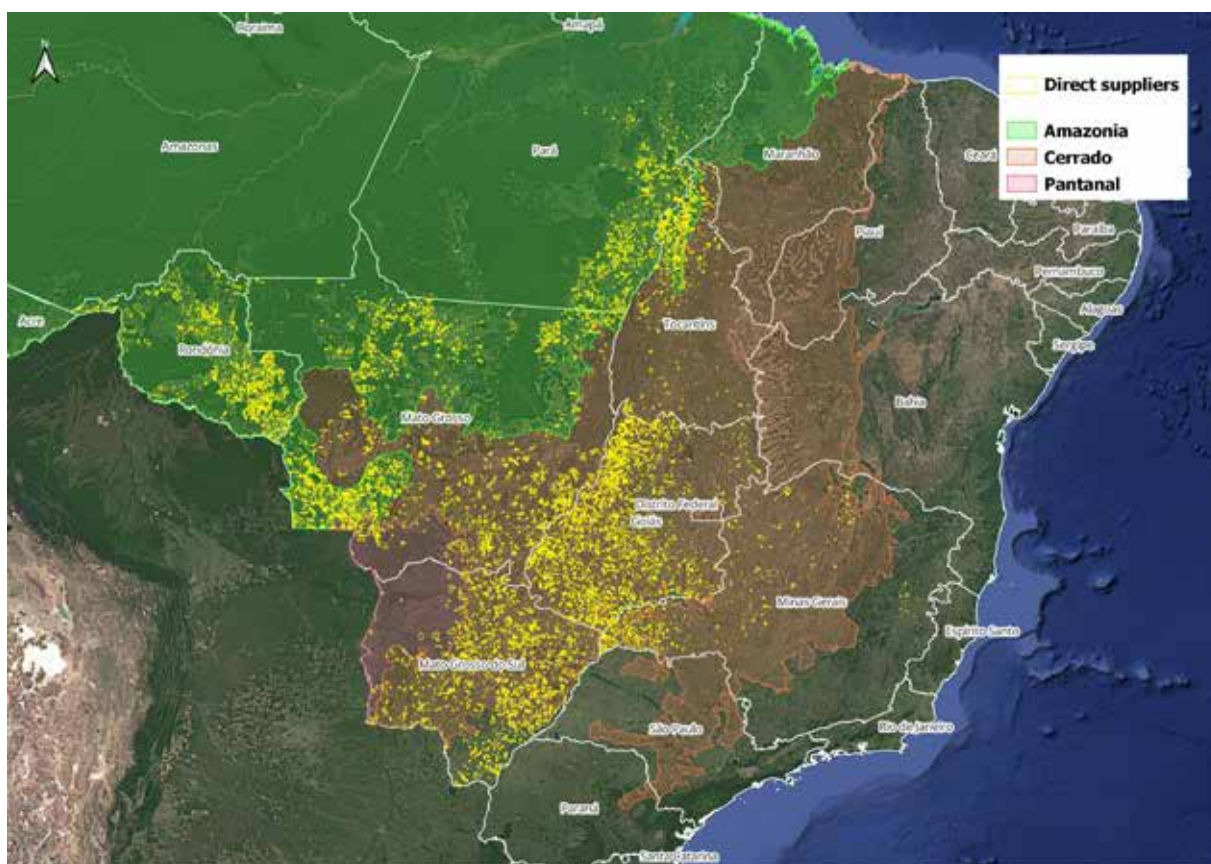


Figure 1. Properties that directly supplied the 38 identified JBS, Marfrig, and Minerva Foods slaughterhouses Source: AidEnvironment (2025)

9 JBS (2023) People and Planet: *The JBS Commitment to Eliminating Agriculture-Related Deforestation*, JBS: São Paulo, Brazil

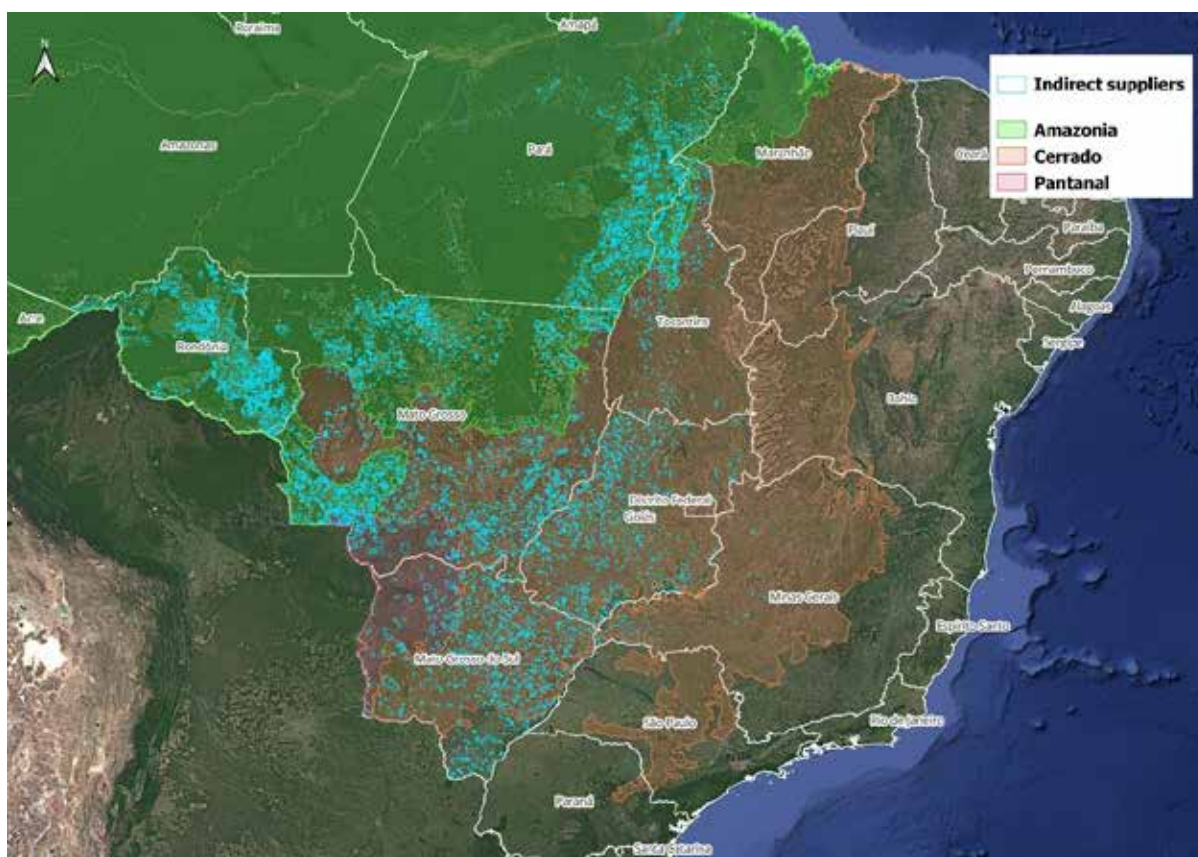


Figure 2. Properties that indirectly supplied the 38 identified JBS, Marfrig, and Minerva Foods slaughterhouses Source: AidEnvironment (2025)

DEFORESTATION ANALYSIS

Direct and indirect suppliers to the identified slaughterhouses

Our deforestation analysis considered a sample of direct and indirect suppliers to the 38 listed slaughterhouses operated by JBS, Marfrig¹⁰ and Minerva Foods (Table 3). Once the potential direct and indirect suppliers to these slaughterhouses were identified, we overlaid the deforestation data onto the properties' polygons (areas).

We considered two periods for calculating deforestation: between 2009 and 2020 and between 2021 and 2024. The first period, while including legal and illegal deforestation, takes into account the deforestation cut-off date of the Brazilian Forest Code, which does not allow illegal deforestation after July 2008. The second period considers the European Union Deforestation Regulation (EUDR) cut-off date, which is 31 December 2020. For both periods, we used a combination of data from the Project for Monitoring Deforestation in the Legal Amazon by Satellite (*Projeto de Monitoramento do Desmatamento na Amazônia Legal por Satélite*, PRODES) led by the Brazilian National Institute for Space Research (*Instituto Nacional de Pesquisas Espaciais*, INPE) and MapBiomas Alerta to assess deforestation.

¹⁰ By the end of October 2024, Marfrig finalized the sale process of 11 slaughterhouses located in Brazil, one in Argentina and one in Chile, to Minerva (<https://www.canalrural.com.br/economia/uruguai-impede-aquisicao-de-unidades-da-marfrig-pela-minerva-no-pais/>). Marfrig informs that currently (May 2025) it operates two plants in Brazil, one in Mato Grosso and another in São Paulo state.

Between 2009 and 2024,¹¹ we found for our sample a total of 851,121 hectares of deforestation and conversion in the Amazon, Cerrado and Pantanal biomes linked to 6,259 direct suppliers and 7,312 indirect suppliers to the 38 JBS, Marfrig, and Minerva Foods slaughterhouses. Of the total deforestation identified between 2009 and 2024, 29% occurred in the Amazon biome, 58% in the Cerrado biome, and 13% in the Pantanal biome. Of this same total, 46% occurred in the properties of direct suppliers and 54% in the properties of indirect suppliers.

Table 4 summarizes the hectares of deforestation and conversion potentially linked to the 38 identified JBS, Marfrig, and Minerva Foods slaughterhouses broken down by the two periods and by direct and indirect suppliers.

Table 4. Deforestation between 2009 and 2020 and between 2021 and 2024 on properties owned by direct and indirect suppliers to the 38 listed slaughterhouses operated by the three leading meatpackers (in hectares)

Slaughterhouses / Deforestation	Direct suppliers			Indirect suppliers			Direct + Indirect Total (ha)
	2009-2020	2021-2024*	Total (ha)	2009-2020	2021-2024*	Total (ha)	
JBS (26 slaughterhouses)	265 293	49 325	314 618	311 632	82 030	393 662	708 280
Marfrig (7 slaughterhouses)	39 991	9 772	49 763	67 490	20 547	88 037	137 800
Minerva (5 slaughterhouses)	38 253	4 746	42 999	27 222	9 672	36 894	79 893
Total (without overlap)**	332 914	60 401	393 315	369 086	88 721	457 806	851 121

* Non-complying with the EUDR cut-off date of December 31, 2020.

** To calculate total deforestation (without overlap), duplicate deforestation data for properties supplying more than one slaughterhouse were removed.

Focusing on the slaughterhouses with the most significant ongoing and likely future negative impacts on forests, we identified those potentially linked to cattle farms with the highest recent deforestation rates. Of the 38 slaughterhouses, 13 (including nine from JBS) have the highest level of exposure to deforestation (see Table 5 below).

Table 5. Slaughterhouses exposed to the highest deforestation rates between 2021 and 2024 in a sample of direct and indirect suppliers*

Meatpacker	Slaughterhouse (SIF code)	State	Deforestation in direct suppliers (ha)	Deforestation in indirect suppliers (ha)	Total (ha)
JBS	Campo Grande (1662, 440)**	MS	4,353	13,338	17,691
JBS	Alta Floresta (4302)	MT	5,694	6,540	12,235
JBS	Pimenta Bueno (2880)	RO	5,755	6,475	12,230
JBS	Redenção (807)	PA	3,418	6,625	10,043
JBS	Barra do Garças (42)	MT	2,762	7,084	9,846
JBS	São Miguel do Guaporé (175)	RO	4,380	5,442	9,822
JBS	Pedra Preta (2019)	MT	410	6,849	7,259
JBS	Iturama (3225)	MG	5,411	2	5,413
JBS	Mozarlândia (4507)	GO	3,763	1,273	5,036
Marfrig	Chupinguaia (3250)	RO	2,354	9,135	11,489
Marfrig	Pontes e Lacerda (1900)	MT	1,248	5,376	6,624
Marfrig	Tangara da Serra (1751)	MT	4,331	1,895	6,226
Minerva Foods	Araguaína (1940)	TO	2,627	4,352	6,979
Total			46,507	74,385	120,892

* From January to July 2021, data from MapBiomas Alerta, and from August 2021 to July 2024, data from PRODES.

** Numbers referring to two different slaughterhouses operated by JBS in Campo Grande (MS).

¹¹ The exact "PRODES period" runs from August 2008 to July 2024.

We estimated the proportion of beef products identified in supermarkets via the dPaP data collection, coming from the 13 slaughterhouses with the highest recent deforestation and conversion rates. Of the total sampled beef products from JBS, Marfrig and Minerva Foods slaughterhouses sold by Carrefour, GPA/Casino, Grupo Mateus and Assaí/Sendas, more than 38% are connected to the 13 units with the highest recent deforestation rates. Specifically, 50% of Grupo Mateus’s beef products originate from these high deforestation-risk slaughterhouses, while Carrefour accounts for 47% (see Table 6 below).

Table 6. Percentage of beef products sold by retailers sourced from JBS, Marfrig and Minerva Foods slaughterhouses with the highest exposure to deforestation

Retailer	Total of beef products originating from slaughterhouses with deforestation	Total of beef products originating from slaughterhouses with the highest deforestation rates	Proportion of beef products from slaughterhouses with the highest deforestation rates
Carrefour	284	134	47%
GPA/Casino	157	44	28%
Assaí/Sendas	109	29	27%
Grupo Matheus	26	13	50%
Total	576	220	38%

Figures 3, 4, 5, and 6 below show the links between the supermarkets where the beef products were sampled and the 38 slaughterhouses where we identified that their direct and indirect cattle suppliers were involved in deforestation between 2009 and 2023.

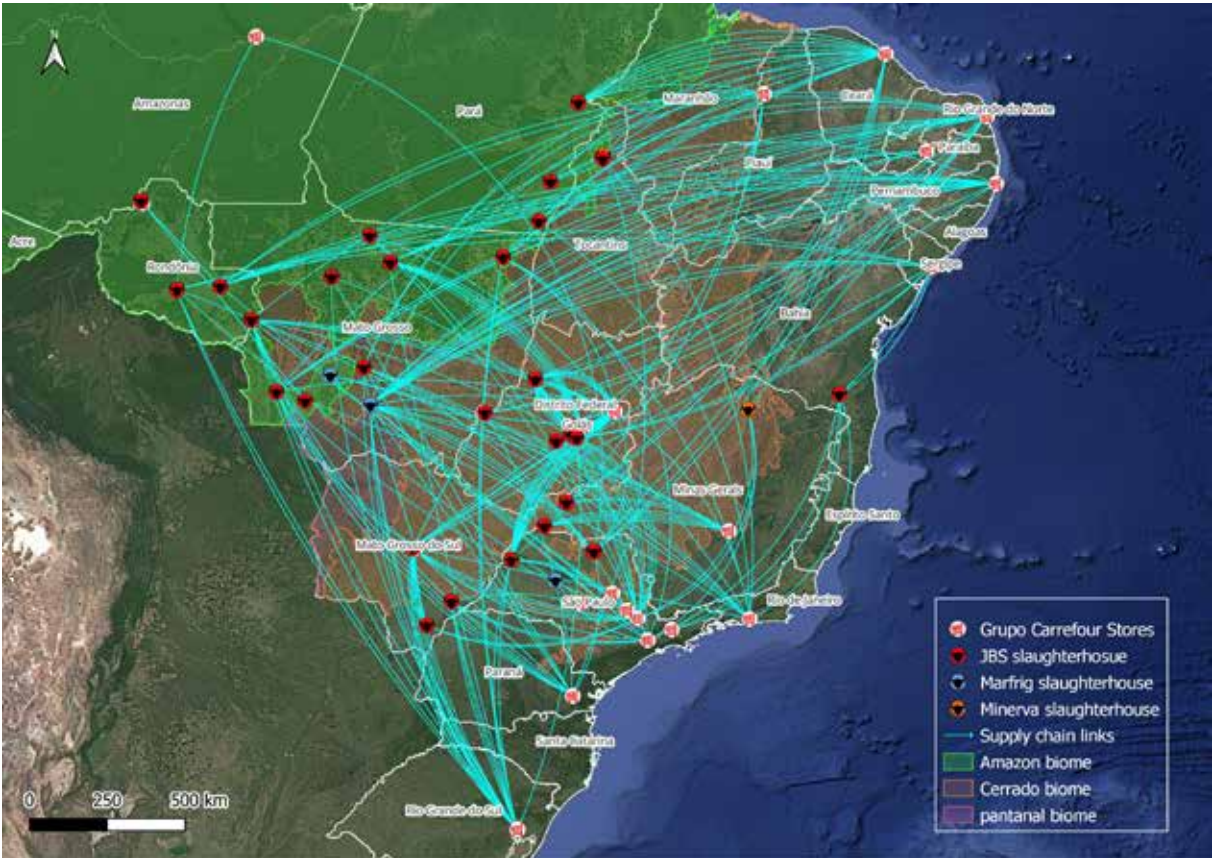


Figure 3. Connections between the identified Carrefour stores and the JBS, Marfrig, and Minerva Foods slaughterhouses with direct and indirect suppliers involved in deforestation after 2009 Source: AidEnvironment (2025)

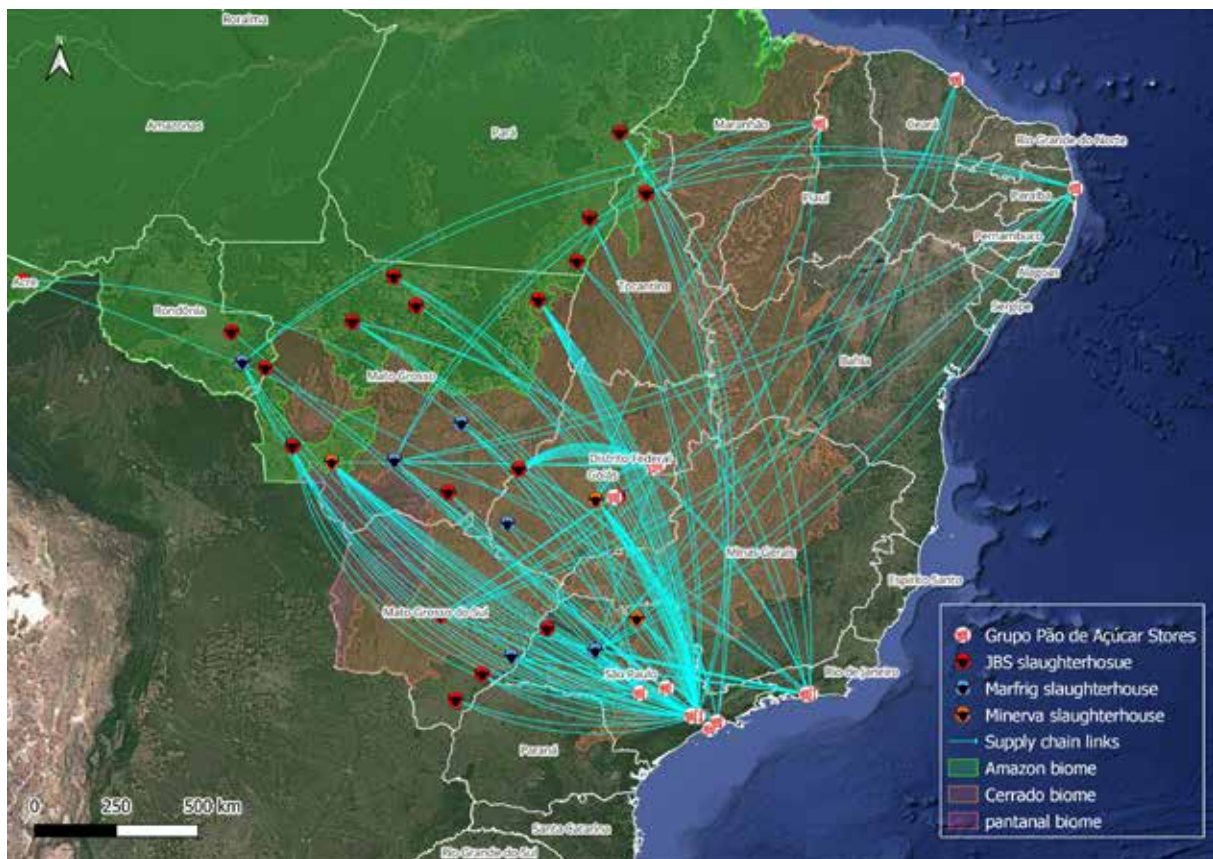


Figure 4. Connections between the identified GPA/Casino stores and the JBS, Marfrig, and Minerva Foods slaughterhouses with direct and indirect suppliers involved in deforestation after 2009 Source: AidEnvironment (2025)

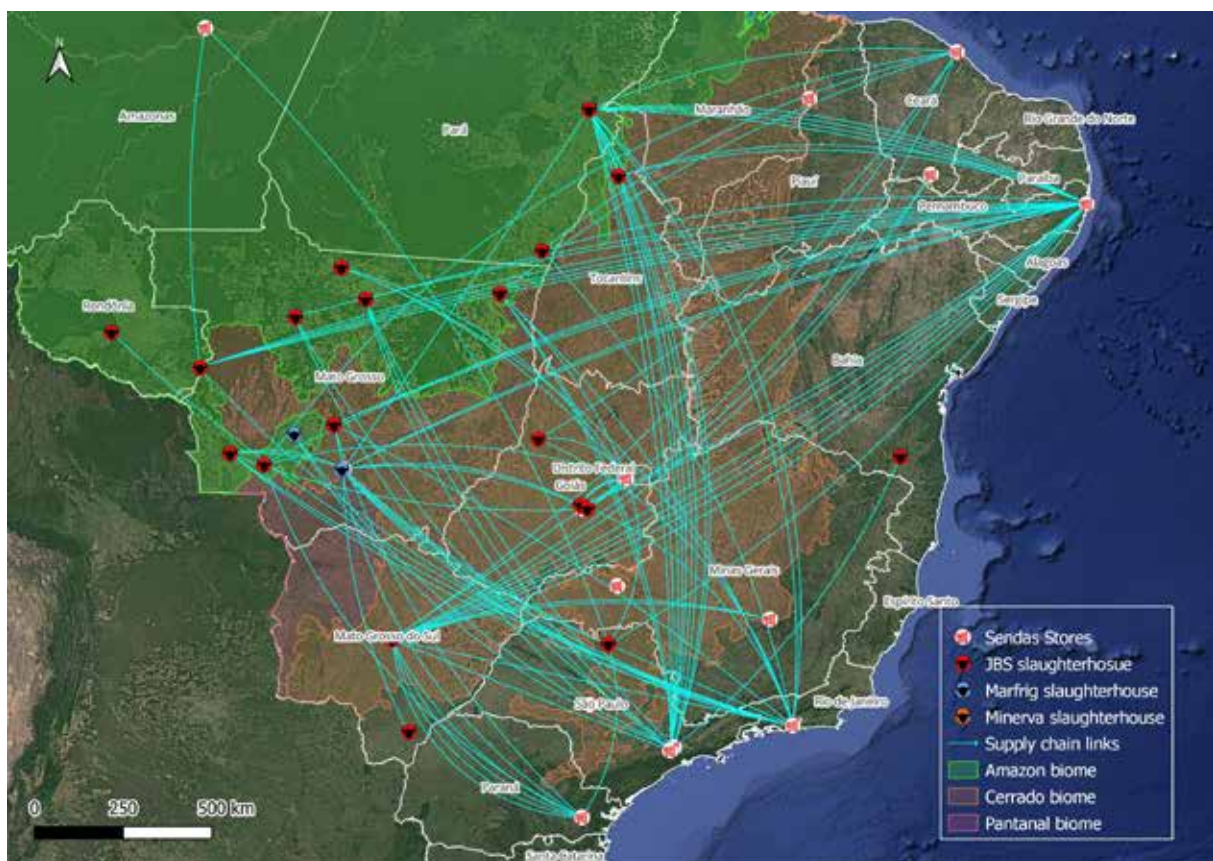


Figure 5. Connections between the identified Assaí/Sendas stores and JBS, Marfrig, and Minerva Foods slaughterhouses with direct and indirect suppliers involved in deforestation after 2009 Source: AidEnvironment (2025)

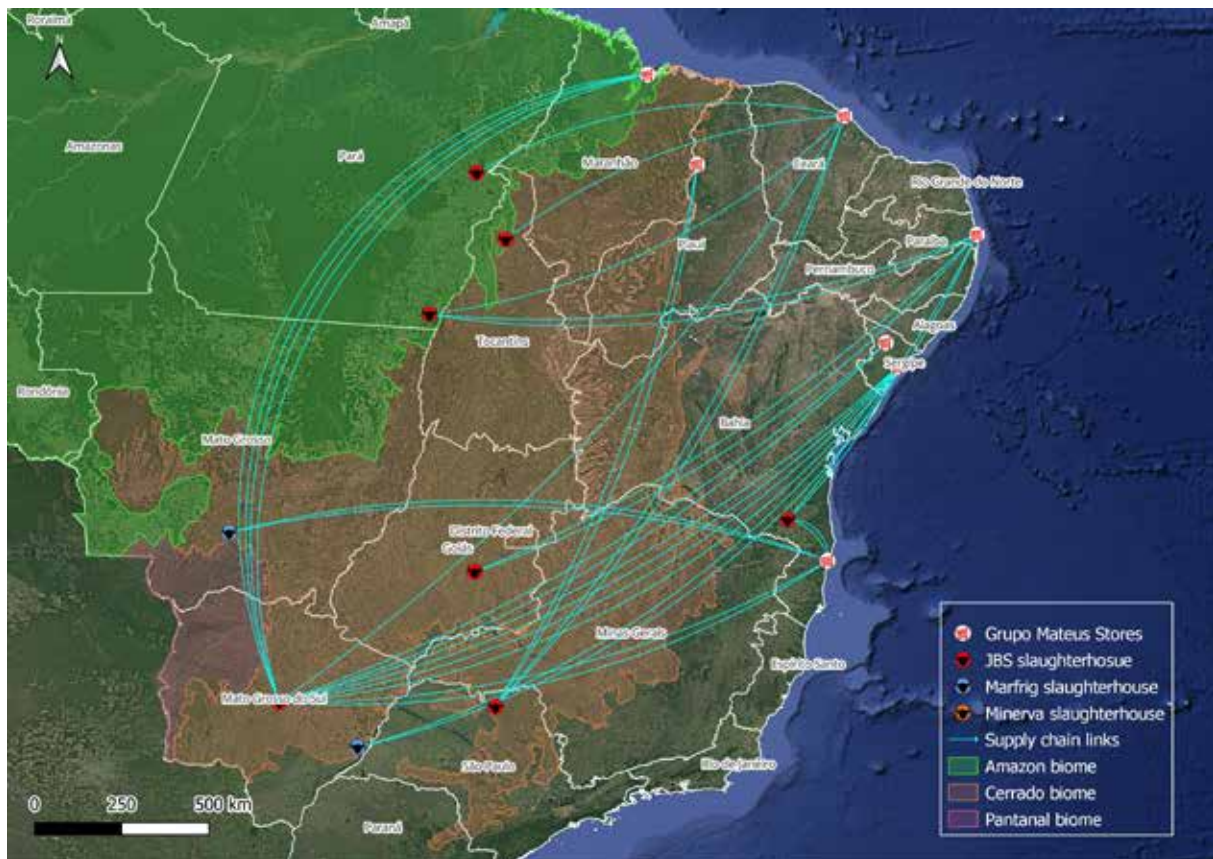


Figure 6. Connections between the identified Grupo Mateus stores and JBS, Marfrig, and Minerva Foods slaughterhouses with direct and indirect suppliers involved in deforestation after 2009 Source: AidEnvironment (2025)

CASE STUDIES

Recent deforestation in the Brazilian beef supply chain

To select the case studies, we considered a sample of potential direct and indirect suppliers to the targeted 38 slaughterhouses linked to the meat products identified in 100 Carrefour, GPA/Casino, Grupo Mateus and Assaí/Sendas stores across Brazil. We reviewed recent deforestation on direct and indirect supplier properties to identify potential case studies. The analysis first considered deforestation alerts from the Realtime Deforestation Detection system (Detecção de Desmatamento em Tempo Real, DETER) in the Amazon, Cerrado and Pantanal biomes between August and November 2024. Deforestation alerts were then visually confirmed for the selected case studies, and the hectares of cleared native vegetation were calculated using Planet satellite imagery.¹²

These cases were selected based on criteria that allow us to illustrate the recent, diverse and systemic aspect of native vegetation conversion in the cattle supply chain in Brazil. They include fire and deforestation events potentially linked to the country’s leading meat processing companies and retailers, prioritizing the Amazon, Pantanal and Cerrado biomes, as well as direct and indirect cattle suppliers with a significant area of native vegetation at risk in the rural property. Each case study includes a description with the location, the size of the deforestation, the type of vegetation, “Before and after” satellite imagery, among other data, as well as their supply chain links to slaughterhouses and the sample of beef products collected in the shops of the targeted retailers. We found 3,966 hectares of recent deforestation and 1,342,694 tons of CO₂ emissions linked to these five cases. Table 7 summarizes the five selected case studies, which are further detailed below.

Table 7. Summary of five case studies linking deforestation to potential direct and indirect suppliers to slaughterhouses and retailer stores

Property	Municipality, state	Meatpacker	Linked retailer	Biome	Deforestation (ha)	Tons of CO2*	Fire alerts	Remaining vegetation (ha)
Fazenda Santa Luzia (Gleba Rio Alto, Setor Nova Floresta)/ Fazenda Esperança	Governador Jorge Teixeira, RO	JBS, Marfrig	GPA/Casino, Carrefour, Assaí/ Sendas	Amazon	44	25,234	58	544
Fazenda Itaporã (Lote 552 Remanescente - Gleba Corumbiara)	Pimenta Bueno, RO	Marfrig, Minerva Foods	GPA/Casino	Amazon	125	71,042	32	642
Fazenda Pena Branca	Vilhena, RO	JBS, Marfrig	GPA/Casino, Carrefour, Assaí/ Sendas	Amazon	499	229,787	45	1,746
Fazenda Chapéu I and II	Bom Jesus do Araguaia, MT	JBS, Marfrig, Minerva Foods	GPA/Casino, Carrefour	Amazon	922	413,760	214	14,712
Fazenda Santa Delfina	Miranda, MS	JBS	GPA/Casino, Carrefour, Assaí/ Sendas	Pantanal	2,376	602,870	375	4,141
Total					3,966	1,342,694	724	21,785

* The calculation of CO₂ emissions refers to the “above-ground carbon emissions” according to the cleared vegetation type¹³.

12 Planet imagery is accessed through the NICFI Satellite Data Program. Planet Analytic Imagery And Archive, see: <https://www.planet.com/products/planet-imagery/>

13 [Source: Nogueira et al. (2015). *Carbon stock loss from deforestation through 2013 in Brazilian Amazonia*]. The tons of CO₂ emissions are calculated per type of vegetation times the ratio of molecular weight of carbon dioxide to carbon (44/12) times the number of hectares cleared.

Case ID 5.1. Fazenda Santa Luzia (Gleba Rio Alto, Setor Nova Floresta) /
Fazenda Esperança

Property: Fazenda Santa Luzia / Fazenda Esperança Amazon biome

Governador Jorge Teixeira, Rondônia

Coordinates property: -10.62744, -63.4655 • **Area property (ha):** 580

CAR: RO-1101005-09E4A978707C4818B3FD7B2C089F6E6B, RO-1101005-592E75D963A74C7EB5287D1322FCB6EC
and other eight overlapping CARs • **SIGEF/SNCI:** 9501491683270

Ownership and other linked properties

Ownership: Antônio Carlos Pereira de Castro • **Company group:** No linked company found • **Linked properties:** At least three linked properties in Rondônia. In Monte Negro (RO), Sítio São Benedito - Gleba 33, Travessa B 24, Lote 15 (unknown area). Other linked properties in Cujubim (RO) and Machadinho d'Oeste (RO) (unknown names and sizes).

Cleared area

44,40 hectares • 25,234 tons of CO2 • 58 fire alerts

Clearance Coordinates: -10.6145, -63.4649 • **Clearance period:** April to October 2024

Inside Forest Code's protected areas: Yes - 40 ha cleared inside Legal Reserve

Type of vegetation: Submontane dense ombrophilous forest • **Priority for biodiversity conservation:** Extremely high

Remaining native vegetation : 7,190 ha

Indigenous territories (overlapping or bordering): Bordering the Indigenous territory Uru-Eu-Wau-Wau (Uru-Eu-Wau-Wau people) and close to the Pacaás Novos National Park.

Environmental fines and embargoes

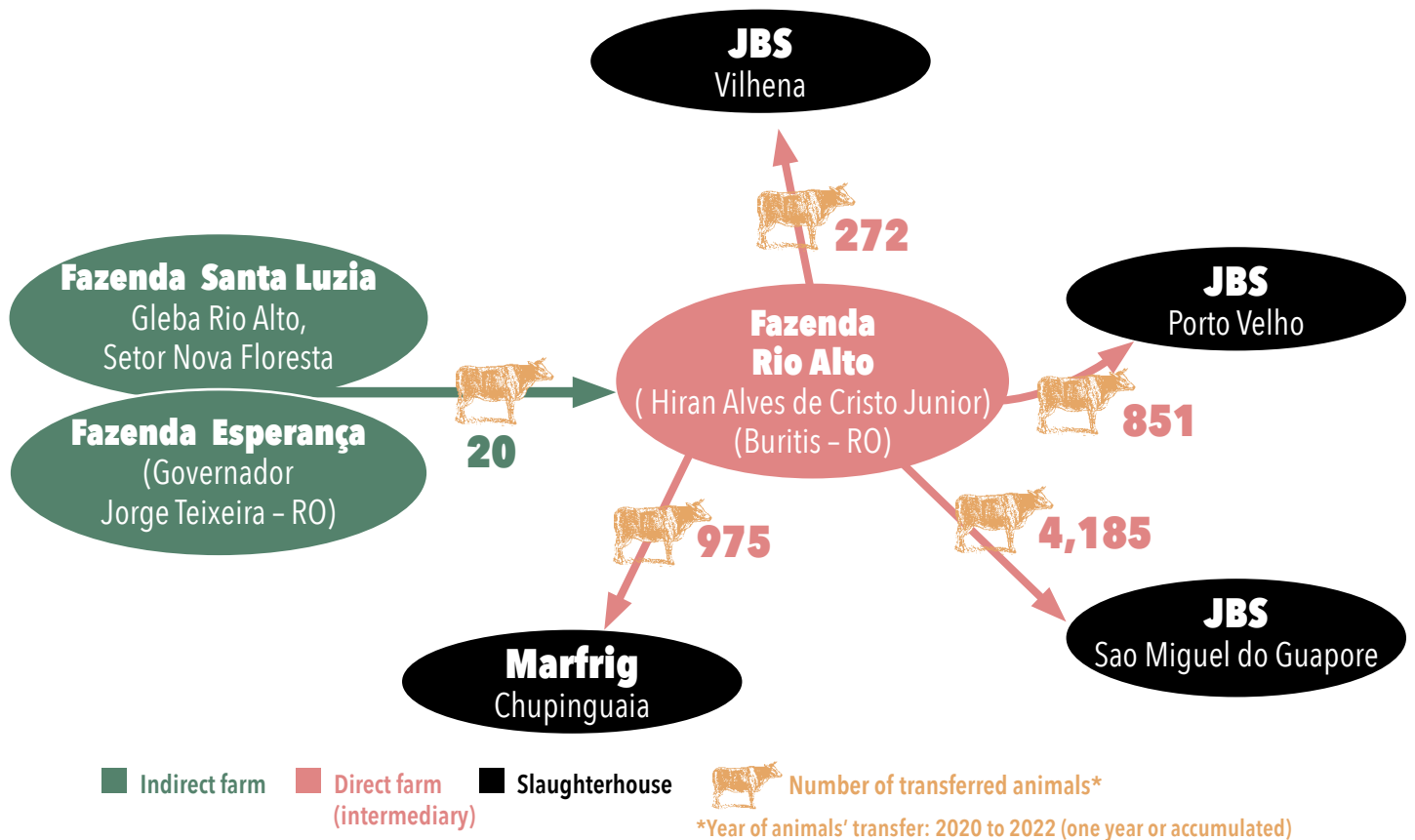
Embargoes: Yes Two embargoes for illegal clearance of native vegetation in an unknown property in Cujubim (RO) and linked property Lote 40 in Machadinho d'Oeste (RO) in 2018.

Environmental fines: Yes BRL 1,955,000 Two fines for illegal clearance of native vegetation: One of 349 ha in an unknown property in Cujubim (RO) in 2018 and one of 41 ha in linked property Lote 40 in Machadinho d'Oeste (RO) in 2018.

Supply chain links

Direct or indirect supplier to: Indirect to JBS Porto Velho (SIF 4149), JBS São Miguel do Guaporé (SIF 175), JBS Vilhena (SIF 4333) and Marfrig Chupinguaia (SIF 3250)

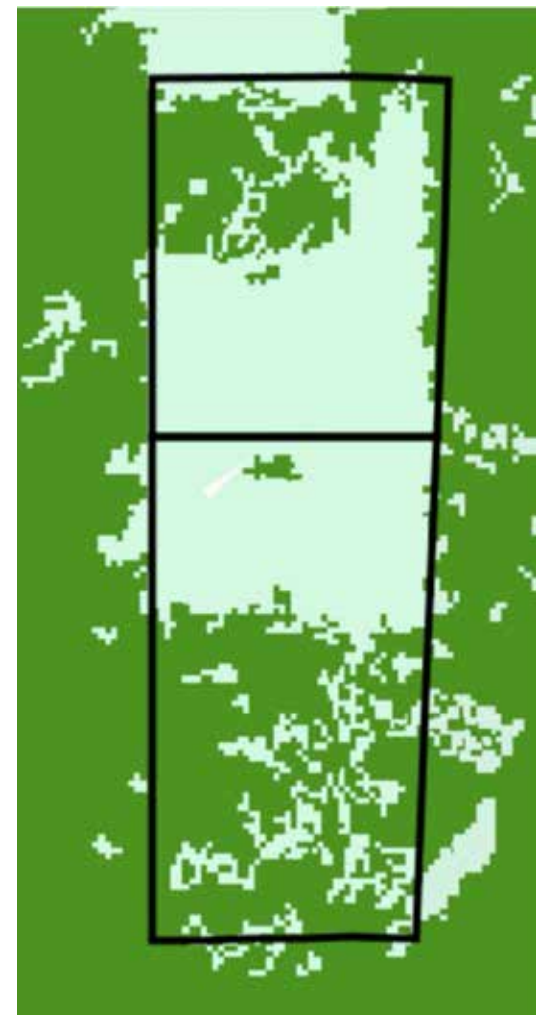
Supplying meat to: Carrefour, GPA/Casino, Assaí/Sendas



Beef product found at a GPA/Casino store in the city of São Paulo, Brazil, on November 21, 2024, and produced at the JBS slaughterhouse located in Vilhena, Rondonia (SIF 4333).



Beef product found at an Atacadão (Carrefour) store in the city of Porto Velho, Brazil, on November 29, 2024, and produced at the JBS slaughterhouse located in Porto Velho, Rondonia (SIF 4149).



**Fazenda Santa Luzia/
Fazenda Esperança - June 2024**

Source: Imagery ©2024 Planet Labs Inc.

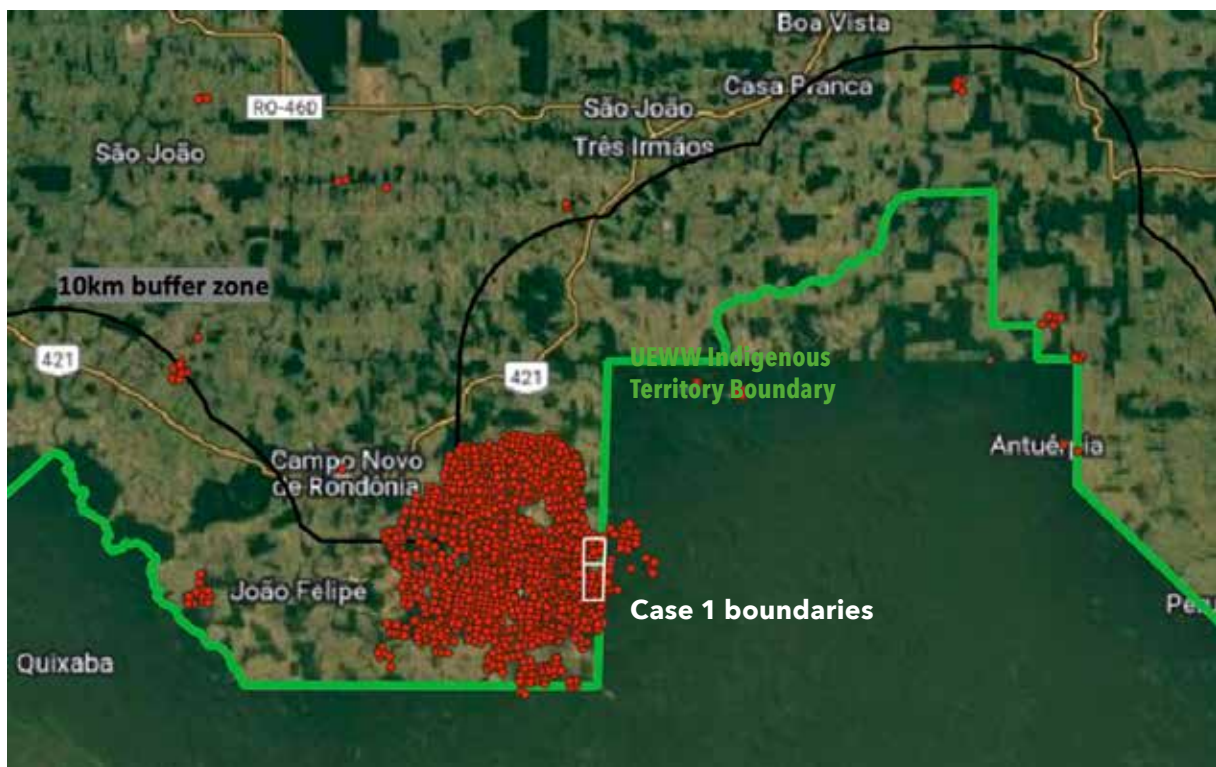
**Fazenda Santa Luzia/
Fazenda Esperança - October 2024**

Source: Imagery ©2024 Planet Labs Inc.

**Official EUDR (JRC) map showing
forest cover as of December 31,
2020. Dark green area is considered
forest according to the EUDR
definition. Other areas are non-
forest.**

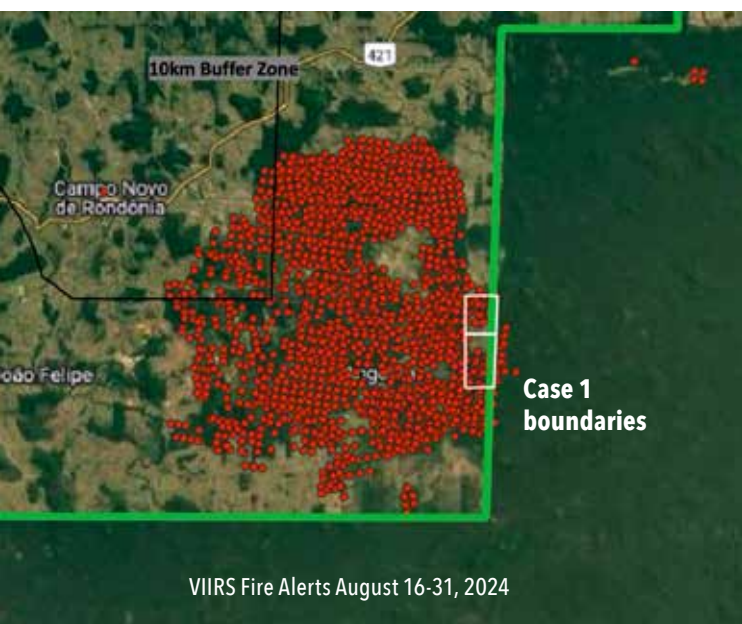
Source: Imagery J R C Forest Coverage 2020

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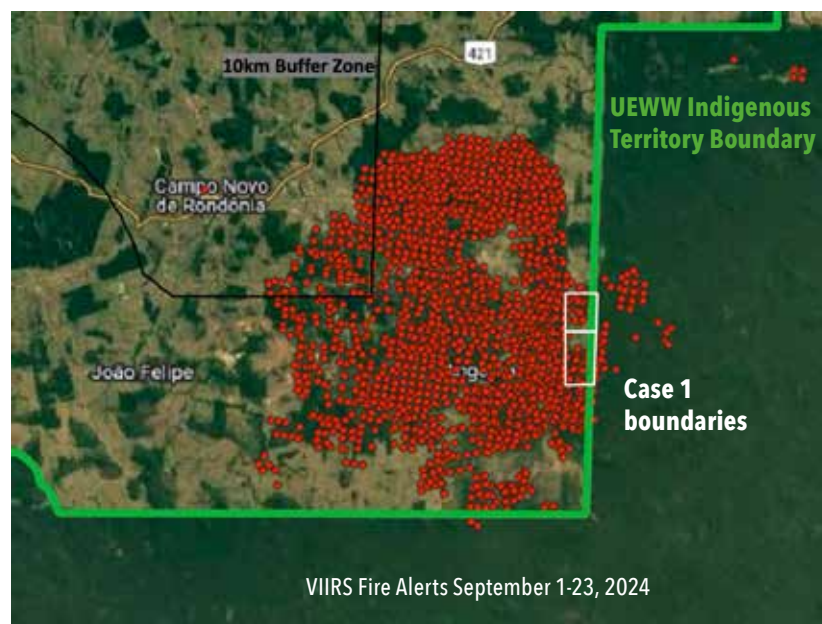


JBS slaughterhouse in Porto Velho, Rondonia (SIF 4149)

Fires starting in the region close to where Fazenda Santa Luzia (Gleba Rio Alto, Setor Nova Floresta)/Fazenda Esperança is located, in the buffer zone of the Uru-Eu-Wau-Wau territory in Rondônia, from August to October 2024. See below, the fire dynamics through time.



VIIRS Fire Alerts August 16-31, 2024



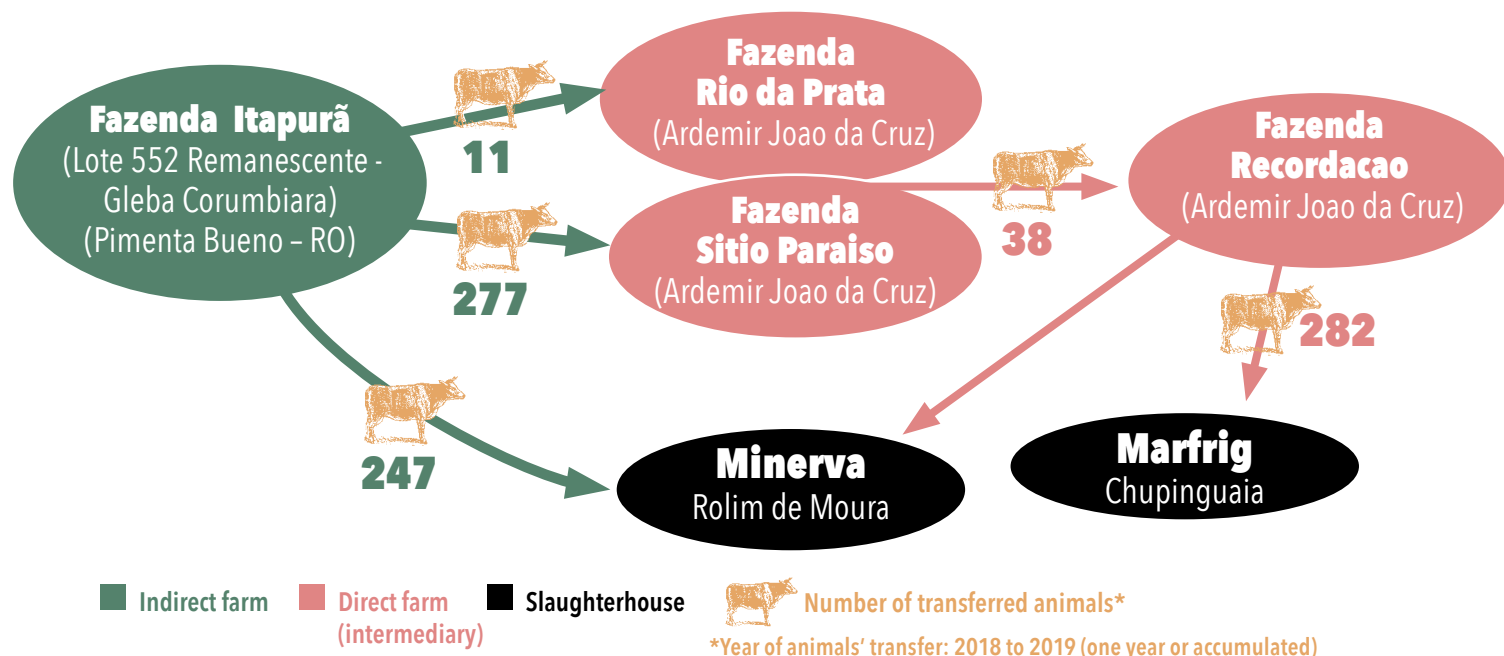
VIIRS Fire Alerts September 1-23, 2024

Fires detected between August and September 2024 from the buffer zone where Case 5.1 is located, bordering the Indigenous territory of the Uru-Eu-Wau-Wau people, Rondonia state, Amazon. Source: VIIRS 375 m Active Fire Detection. Data Product from Global Forest Watch (2025).

The movement of the detected fires during the 2024 summer fire season (above) indicates that the fires started around Fazenda Santa Luzia (Gleba Rio Alto, Setor Nova Floresta)/Fazenda Esperança. The fires spread into the protected Uru-Eu-Wau-Wau Indigenous lands in September 2024.

Property: Fazenda Itaporã Amazon biomePimenta Bueno, Rondônia • **Coordinates property:** -11.5473, -60.4107 • **Area property (ha):** 1,032**CAR:** RO-1100189-BE25E937E7F64515BA3495ED2D491B72**Ownership and other linked properties**

Ownership: Ardemir João da Cruz • **Company group:** Agropecuária Santa Cruz (cattle-producing company), Frigomil Frigorífico (slaughterhouse), AC Agro Participações (non-financial holding), Vale da Serra Participações (non-financial holding), NC Agro Participações (non-financial holding), and Notário Cruz Empreendimentos (real state), all registered in Pimenta Bueno (RO) • **Linked properties:** At least 17 linked properties in Rondônia. In Parecis (RO) - Fazenda Recordação (820 ha), Fazenda Santa Maria. In Pimenta Bueno (RO) - Fazenda Serra de Ouro, Fazenda Rio da Prata, Fazenda Rio Machado, Fazenda Boa Vista, Fazenda Santa Maria, Fazenda Flamboyant, Fazenda Japão (1,970 ha). In Espigão d'Oeste (RO) - Lotes 25 and 26A - Barão do Melgaço - Gleba Corumbiara (140 ha). In São Francisco do Guaporé (RO) - Fazenda Espora de Ouro, Fazenda Pau Brasil, Fazenda Luar. In seringueiras (RO) - Fazenda Luar do Sertão. In Pimenteiras do Oeste (RO) - Fazenda Porta do Céu. In Santa Luzia do Oeste (RO) - Fazenda Santo Rei. And one unknown property (name and size) in Nova Mamoré (RO).

Cleared area**125 hectares • 71,042 tons of CO2 • 32 fire alerts****Clearance Coordinates:** -11.5414, -60.4998 • **Clearance period:** June to November 2024**Inside Forest Code's protected areas:** Yes, 123 ha inside the Legal Reserve**Type of vegetation:** Submontane dense ombrophilous forest • **Priority for biodiversity conservation:** No**Indigenous territories (overlapping or bordering):** Bordering the Indigenous Territory Roosevelt (home to the Cinta Larga people)**Environmental fines and embargoes****Embargoes:** -**Environmental fines:** -**Supply chain links****Direct or indirect supplier to:** Indirect to Marfrig Chupinguaia (SIF 3250) and Minerva Foods Rolim de Moura (SIF 791)**Supplying meat to:** GAP/Casino



Fazenda Itaporã - June 2024

Imagery © 2024 Planet Labs PBC



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property
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Fazenda Itaporã - October 2024

Imagery © 2024 Planet Labs PBC



Official EUDR (JRC) map showing forest cover as of December 31, 2020 . Dark green area is considered forest according to the EUDR definition. Other areas are nonforest.

Imagery JRC Forest Coverage 2020

Property: Fazenda Pena Branca Amazon biome

Vilhena, Rondônia • **Coordinates property:** -12.3345, -60.6518 • **Area property (ha):** 2,065

CAR: RO-1100304-D24E4810BE2A44048B9B5C8320F21646, RO-1100304-9ECE6A48A3704E80A1F364A76162058B • **SIGEF/SNCI:** 9500339031083

Ownership and other linked properties

Ownership: Sônia Castilho Rocha • **Company group:** No linked company found • **Linked properties:** Two properties in Aquidauana (MS) totaling 6,205 hectares: Fazenda Caldeirão (2,818 ha) and fazenda Futuro (3,387 ha).

Cleared area

498,80 hectares • 229,787 tons of CO2 • 45 fire alerts

Clearance Coordinates: -12.3258, -60.6502 • **Clearance period:** June to October 2024

Inside Forest Code's protected areas: Yes, 406 ha inside the Legal Reserve

Type of vegetation: Contact between savanna and rainforest • **Priority for biodiversity conservation:** Extremely high

Indigenous territories (overlapping or bordering): Close (~13km) to the Tubarão Latunde Indigenous Territory (Laiana and Aikanã people)

Environmental fines and embargoes

Embargoes:

-

Environmental fines:

-

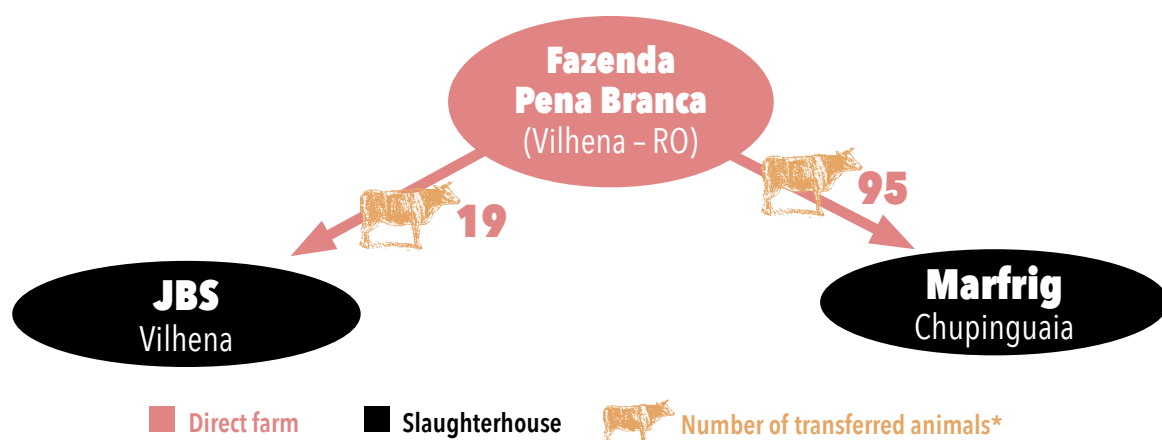
Supply chain links

Direct or indirect supplier to:

Direct to JBS Vilhena (SIF 4333) and Marfrig Chupinguaia (SIF 3250)

Supplying meat to:

Carrefour, GPA/Casino, Assaí/Sendas





Fazenda Pena Branca - June 2024

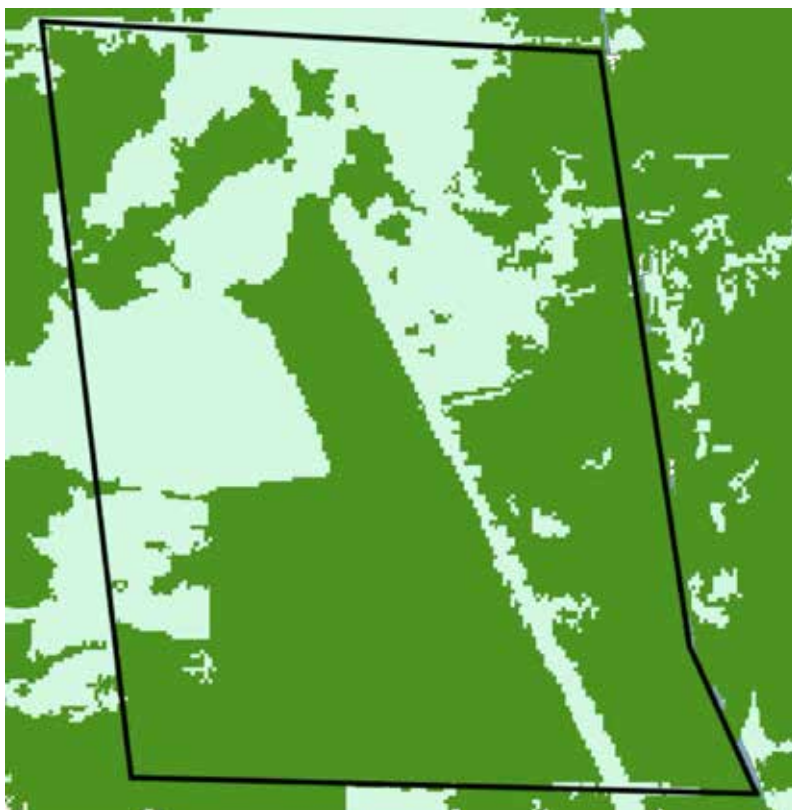
Imagery © 2024 Planet Labs PBC



Fazenda Pena Branca - October 2024

Imagery © 2024 Planet Labs PBC

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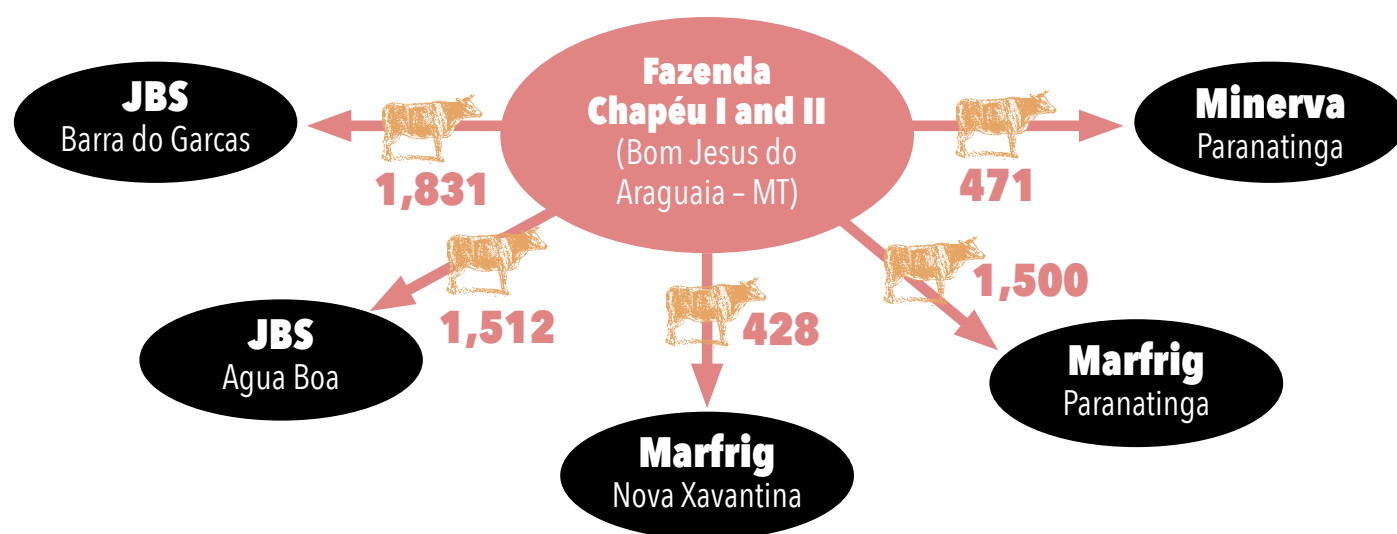


**Official EUDR (JRC) map showing forest cover as of December 31, 2020.
Dark green area is considered forest according to the EUDR definition.
Other areas are non-forest.**

Source: Imagery J R C Forest Coverage 2020

Property: Fazenda Chapéu I and II Amazon biomeBom Jesus do Araguaia, Mato Grosso • **Coordinates property:** -12.3883, -51.5921**Area property (ha):** 17,103**CAR:** MT-5101852-C81B5FC4455441808A3F3C19592B0C80, MT-5101852-E4C50FECD2484C2B81F898C42CAD23C9**SIGEF/SNCI:** 9010401567010**Ownership and other linked properties**

Ownership: Milton Vilela de Carvalho • **Company group:** Chapéu Agropecuária e Participações declared as a cattle-producing company (registered in Araçatuba - SP, Birigui - SP, Bom Jesus do Araguaia - MT and Ribeirão Cascalheira - MT) • **Linked properties:** At least five linked properties in Mato Grosso and São Paulo. In São José do Xingu (MT) - Fazenda Pesa III. In São Félix do Araguaia (MT) - Fazenda Produtiva. In Cocalinho (MT) - Fazenda Cocalinho. In Água Boa (MT) - Fazenda Lagoinha. One linked property in Araçatuba (SP) (unknown size and name)

Cleared area**921,70 hectares • 413,760 tons of CO₂ • 214 fire alerts****Clearance Coordinates:** -12.4324, -51.5774 • **Clearance period:** June to October 2024**Inside Forest Code's protected areas:** Yes, 922 ha in the Legal Reserve and APP (Permanent Protection Area)**Type of vegetation:** Contact between savanna and seasonal forest**Priority for biodiversity conservation:** No**Remaining native vegetation :** 1,260 ha**Indigenous territories (overlapping or bordering):** Between the Indigenous Territory Marãiwatsédé (Xavante people) and the Araguaia National Park**Environmental fines and embargoes****Embargoes:** -**Environmental fines:** -**Supply chain links****Direct or indirect supplier to:** Direct to JBS Barra do Garcas (SIF 42), JBS Agua Boa (SIF 4121), Marfrig Nova Xavantina (SIF 2345), Marfrig Paranatinga (SIF 2500), Minerva Paranatinga (SIF 2500)**Supplying meat to:** Carrefour, GPA/Casino

■ Direct farm

■ Slaughterhouse



Number of transferred animals*

*Year of animals' transfer: 2018 to 2024 (one year or accumulated)



Fazenda Chapéu I and II - June 2024

Imagery © 2024 Planet Labs PBC



Fazenda Chapéu I and II - October 2024

Imagery © 2024 Planet Labs PBC



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property
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deforestation

**Official EUDR (JRC) map showing forest cover as of December 31, 2020.
Dark green area is considered forest according to the EUDR definition.
Other areas are non-forest.**

Source: Imagery J R C Forest Coverage 2020

Property: Fazenda Santa Delfina Pantanal biomeMiranda, Mato Grosso do Sul • **Coordinates property:** -20.1014, -56.4367**Area property (ha):** 11,757**CAR:** MS-5005608-1DDEE3BD57EF4BE4BFD95A7DDC978B79 • **SIGEF/SNCI:** 9070570185544**Ownership and other linked properties**

Ownership: GL Agropecuária • **Company group:** GL Investimentos e Participações Ltda, Paulo Sérgio Coutinho Galvão Filho, and Graziela Lafer Galvão are the declared owners of GL Agropecuária (CNPJ 54.100.714/0002-81). The owners are also linked to Klabin, the second-largest pulp and paper Brazilian company, and to Drogasil, one of Brazil's largest pharmacy shop brands, and to more than 45 other companies, from investment holdings and real estate to cattle-producing companies, such as Gepel Rural and Saje Imobiliária. • **Linked properties:** No other linked properties found

Cleared area**2,376.10 hectares • 602,870 tons of CO2 • 375 fire alerts****Clearance Coordinates:** -20.1498, -56.4791 • **Clearance period:** July to October 2024**Inside Forest Code's protected areas:** No**Type of vegetation:** July to October 2024**Priority for biodiversity conservation:** Extremely high**Remaining native vegetation :** 1,260 ha**Indigenous territories (overlapping or bordering):**

Close (~13km) to the Indigenous Territory Cachoeirinha (Terena people)

Environmental fines and embargoes**Embargoes:** -**Environmental fines:** -**Supply chain links****Direct or indirect supplier to:****Direct to JBS Campo Grande (SIF 4400 or 1662)****Supplying meat to:****Carrefour, GPA/Casino, Assaí/Sendas**

■ Direct farm

■ Slaughterhouse



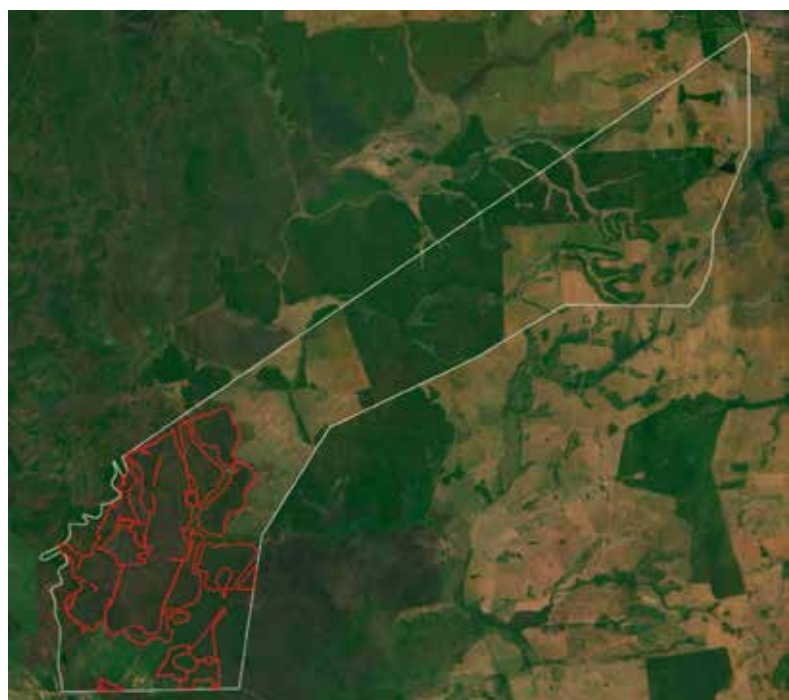
Number of transferred animals*

*Year of animals' transfer: 2018 to 2024 (one year or accumulated)



Fazenda Santa Delfina - June 2024

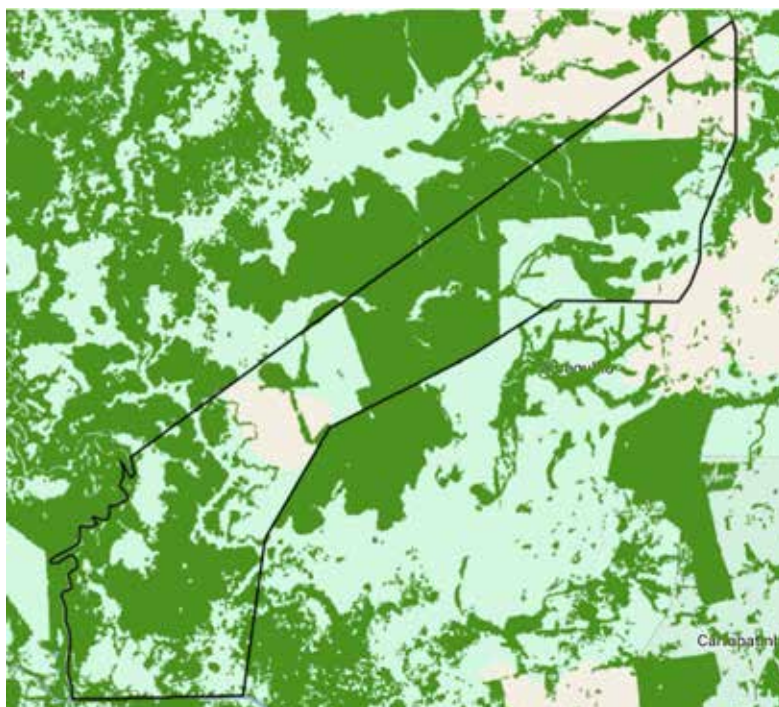
Imagery © 2024 Planet Labs PBC



Fazenda Santa Delfina - October 2024

Imagery © 2024 Planet Labs PBC

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Official EUDR (JRC) map showing forest cover as of December 31, 2020.
Dark green area is considered forest according to the EUDR definition.
Other areas are non-forest.

Source: Imagery J R C Forest Coverage 2020

DEFORESTATION AND DEGRADATION INSIDE INDIGENOUS LANDS OR BORDERING THEM THREATEN COMMUNITIES IN RONDÔNIA

*Indigenous leader in Brazil fears his people will not survive
a “constant war” with the meat industry*

All the cases featured in this report are close to Indigenous areas in Brazil. Two of them are found at the borders of Indigenous Territories, in areas called “buffer zones” (cases 5.1 and 5.2), and two are at close distances of around 13km (cases 5.3 and 5.5). Case 5.4 is not so near (more than 50km away), but the farm is located between an Indigenous territory and a national park.

The 5.1 case study in the municipality of Governador Jorge Teixeira (Rondônia) borders the Uru-Eu-Wau-Wau Indigenous territory and illustrates the potential danger posed by the expansion of cattle activities in areas surrounding Indigenous lands in the Amazon. Since 2008, PRODES alerts have recorded 40,894 hectares of deforestation within the 10 km buffer zone of the Uru-Eu-Wau-Wau Indigenous Territory. Prior to 2008, the PRODES dataset recorded more than 332,760 hectares of forest clearance within the same buffer region (see image opposite).

Indigenous Territories and other protected areas in Brazil are frequently threatened by invasions, deforestation, fires and land disputes. However, the legal framework is clear in prohibiting economic activities led by non-Indigenous people within these protected areas. The buffer zones (Zona de Amortecimento ou “Zona Tampão”) are areas established around a conservation area with the aim of filtering out the negative impacts of activities occurring outside it. While human activities should be regulated in the buffer zone to minimize detrimental impacts and help to protect Indigenous and other conservation areas, the threats in the buffer zones are generally more severe than those in the conservation or protected areas due to a lack of proper regulation and unclear territorial boundaries.



Deforestation (in yellow dots) in the area surrounding the Uru-Eu-Wau-Wau Indigenous Territory in Rondonia, Brazil.



Cattle raising in legal farms in the buffer zone of the Uru-Eu-Wau-Wau territory. December 2024.

Credit: Mighty Earth

But the danger is not only next door. Cattle ranching inside Indigenous Territories drives deforestation and conversion and drastically impacts the way of life of Indigenous communities. In an interview to Mighty Earth on December 2, 2024, Bitate Uru-Eu-Wau-Wau, the leader of the Uru-Eu-Wau-Wau Indigenous people, expresses deep concern about the growing challenges his community faces due to the increasing invasions of their land and the destruction of their territory. He points out that since 2019, there has been increasing pressure on the Uru-Eu-Wau-Wau people. Illegal land grabbing, logging, illegal cattle ranching, and mining have taken a heavy toll. "The presence of non-Indigenous people poses a serious threat to our communities' safety, as occurred in 2023 when community members were taken hostage during an ambush."¹⁴

The Uru-Eu-Wau-Wau Indigenous territory covers 1.8 million hectares.



First deforestation recorded using drones self-operated by Indigenous communities in the Uru-Eu-Wau-Wau territory, in 2019.

Credit: Jupaú Association/Kanindé Association

¹⁴ Neidinha, artista Mundano e indígenas sofrem emboscada no Burareiro. Amazonia Real, 15 May 2023. <https://amazoniareal.com.br/neidinha-artista-mundano-e-indigenas-sofrem-emboscada-no-burareiro/>



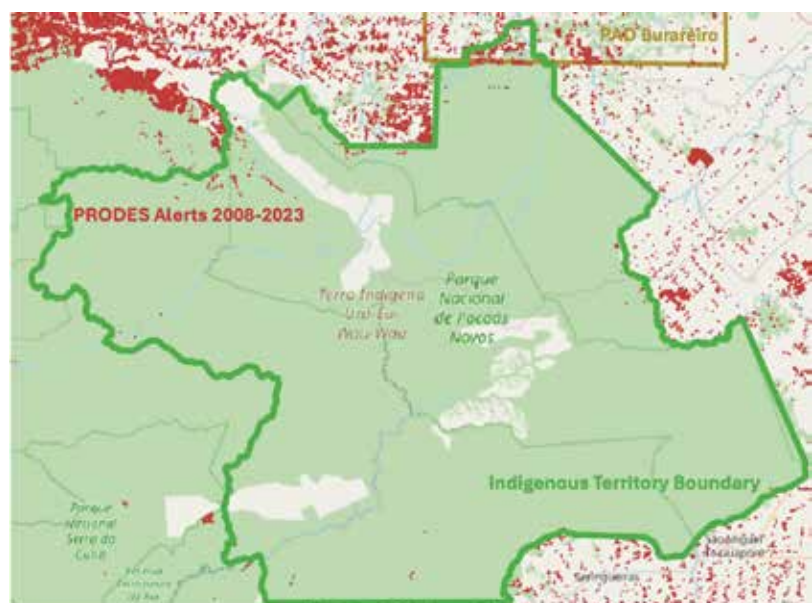
Cattle grazing in the PAD Burareiro area, Uru-Eu-Wau-Wau territory, in February 2023.

Credit: Jupaú Association/Kanindé Association

The Uru-Eu-Wau-Wau people face a complex situation marked by the presence of non-Indigenous people on their lands. The situation is particularly critical in the area known as PAD Burareiro, where more than 70% of the Indigenous land was used for cattle grazing in 2022.¹⁵ Since 2008, PRODES alerts have confirmed 5,254 hectares of deforestation alerts inside the Uru-Eu-Wau-Wau territory, 49% of which occurred within the area overlapping with PAD Burareiro. Between 2001 and 2024, 20,731 hectares – an area twice the size of Paris – were cleared inside the Uru-Eu-Wau-Wau territory, according to PRODES, with a significant rate of deforestation in the first years of the period, when legal instruments or sectorial agreements designed to prevent companies from buying deforestation-related agricultural commodities were not yet in force.¹⁶

The devastation of the forest goes beyond its native vegetation. It has a profound impact on the Indigenous community's way of life. According to Bitate, it becomes more difficult to hunt, fish, and grow crops that have historically provided sustenance. He said: "The dwindling wildlife and fish populations, combined with the loss of vital resources such as Brazilian nuts, are threatening both our food security and our cultural practices, including the sacred use of harpy eagle feathers in our rituals."

The presence of non-Indigenous people also prevents access to sacred sites. "For my people, the land is sacred and very important, as it is where we cultivate our crops, bury our dead, and it's being destroyed," Bitate says. "We can't access our sacred spaces, like the Burareiro

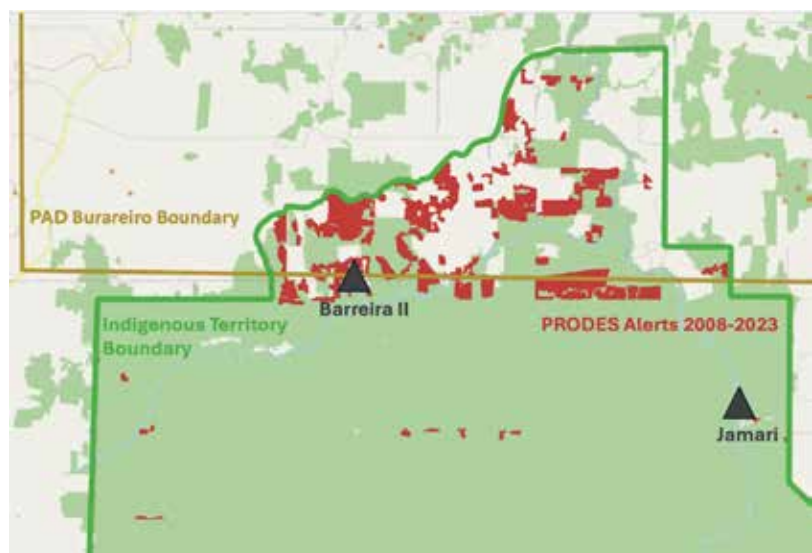


Deforestation (shown as red dots) outside the Uru-Eu-Wau-Wau Indigenous Territory and inside the PAD Burareiro area from 2008 to 2023 (PRODES, 2025).

¹⁵ https://climatecrimeanalysis.org/wp-content/uploads/2022/06/casino_case_-_portuguese.pdf

¹⁶ Deforestation in the Amazon reached higher rates in the early 2000s, leading to the development of different multi-stakeholder instruments aiming to prevent companies from doing business with deforested farms in the biome. In the cattle industry, for example, the **Conduct Adjustment Agreement (TAC)** was proposed by the Federal Public Prosecutors' Office (MPF) of the state of Pará in **2009**, later reaching other Amazon states, and signed by slaughterhouses; the **Public Livestock Commitment** was implemented by Greenpeace in **2009** with the four largest meatpackers then operating in the Amazon. Currently, both mechanisms are included in the **Beef on Track Protocol**. In the soy industry, the **Amazon Soy Moratorium**, implicating traders, civil-society organizations and governments, was signed in 2006 with a cut-off date to **2008**. The Brazilian Forest Code, which establishes that 80% of the area of a rural property located in the Amazon must be preserved, went into force in 2012.

region, which was a sacred cemetery where some of our ancestors' bones were buried. Today, 18,000 hectares of Burareiro have been deforested. The presence of invaders, their houses and cattle farms has prevented us from visiting places that are sacred to us, the Uru-Eu-Wau-Wau, and cattle trample our dear departed," he continues.



Deforestation from 2008 to 2023 in the PAD Burareiro area, inside the Uru-Eu-Wau-Wau territory in Rondonia, Brazil (PRODES, 2025).

The PAD Burareiro, an area of approximately 15,000 hectares occupied by cattle ranches within the Uru-Eu-Wau-Wau territory, is a significant source of conflict. The dispute traces back to the military dictatorship's territorial expansion project in the Amazon during the 1970s, when 115 families were settled by the government on land traditionally occupied by Indigenous people. Upon the establishment of the Uru-Eu-Wau-Wau Indigenous Territory by the Brazilian government in 1991, the land tenure held by non-Indigenous individuals through the National Institute for Colonization and Agrarian Reform (INCRA, the federal government authority administering land reform issues) became legally void. This led to a surge in confrontations between Indigenous and non-Indigenous communities, fueled by the support of local politicians for land occupation. Farmers question the physical boundaries of the Indigenous Territory, whose demarcation process started in the 1980s.¹⁷ In 2023, the National Indigenous People Foundation (FUNAI, the Brazilian government authority for the protection of Indigenous people interests) and INCRA recognized the area of the PAD Burareiro as an Indigenous Territory, but the conflicts did not end.¹⁸

¹⁷ <https://infoamazonia.org/2024/04/03/deputado-afirma-a-fazendeiros-ter-conseguido-revisao-dos-limites-da-ti-uru-eu-wau-wau-em-rondonia/>

¹⁸ <https://www.brasildefato.com.br/2023/05/07/funai-e-incra-reconhecem-pad-burareiro-em-rondonia-como-terra-indigena/>

New evidence of recent invasions in the PAD Burareiro region

Echoing the voices of Indigenous representatives, several reports from different organizations have alerted about the destruction of Indigenous land in Pad Burareiro.¹⁹ They also point to the direct or indirect responsibility of cattle farmers, meat-producing companies and supermarkets. After these public campaigns, some measures were taken at the corporate level, like the revision of Rondônia's direct suppliers' database by French-based retail group Carrefour²⁰. Additionally, on a governmental level, the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA) embargoed all the deforested areas located inside the Uru-Eu-Wau-Wau territory and the land property titles (Cadastro Ambiental Rural - CAR) were cancelled; INCRA recognized PAD Burareiro as an Indigenous Territory in 2023, as mentioned.

But the problem is far from being solved, with beef demand continuing to drive vegetation suppression. Recent monitoring activities in the Uru-Eu-Wau-Wau territory have uncovered the presence of non-Indigenous people in the PAD Burareiro area, as well as traces of fires and illegal cattle grazing.



Photos of a degraded area and of wire fences inside the Uru-Eu-Wau-Wau territory, January 2025.

Credit: Jupaú Association/Kanindé Association

The analysis of GPS coordinates²¹ indicates that the newly degraded areas are located on the border of a plot where 167 hectares of deforestation had already been detected

¹⁹ See: Center for Climate Crime Analysis (2022) *Casino Case*, Center for Climate Crime Analysis: The Hague, The Netherlands; Mighty Earth (2022) *Carrefour nous enfume*, Mighty Earth: Washington, DC, United States; Mighty Earth (2022) *Carrefour nous enfume... toujours !*, Mighty Earth: Washington, DC, United States; Infoamazonia, see: <https://infoamazonia.org/storymap/cercados-pelo-pasto/>

²⁰ <https://www.carrefour.com/en/csr/forest-transparency-platform>

²¹ GPS coordinates: -10.49963, -63.22105; -10.49956, -63.22102; -10.49985, -63.22091; -10.49953, -63.22100 and -10.49829, -63.21232.

from October 2018 to June 2019, linked to two identity numbers from SIGEF (INCRA's Land Management System), under the names Projeto de Assentamento Dirigido Burareiro (SIGEF 9500334771844) and Gleba Rio Alto (SIGEF 9500335010855). This plot is under embargo, but the recent degradation suggests that this could be an initial stage for expanding deforestation for cattle²².



GPS coordinates inside the PAD Burareiro area, in the Uru-Eu-Wau-Wau Indigenous territory, where degradation and the presence of non-Indigenous people were detected in January 2025. These coordinates border an area that was deforested between 2018 and 2019 (see detailed images below). Source: Mapbiomas, 2025.



Before and after images of the 167 ha of deforestation taking place in 2019 in the PAD Burareiro region in the Uru-Eu-Wau-Wau Indigenous territory in Rondonia (SIGEFs 9500334771844-RO and 9500335010855-RO). Source: Mapbiomas, 2025.

The area indicated in the images above is located at an average distance of 40 km from Indigenous communities living inside the Uru-Eu-Wau-Wau Indigenous territory. The constant pressure is causing psychological and physical exhaustion, as well as depression

²² The coordinates of the newly degraded area were shared with meatpackers and retailers under the identification "extra case" for the "Right of Reply" of this report.



The Jamari river, close to the PAD Burareiro in the Uru-Eu-Wau-Wau Indigenous territory, with visible rocks, indicating a lower water level in December 2024. Credit: Mighty Earth.

and widespread fear. Community members reported having trouble sleeping due to the noise from the chainsaws, which revealed the proximity of land grabbers in the area.

The leader of the Uru-Eu-Wau-Wau Indigenous community reports that water, essential for their culture and rituals, is being polluted by cattle ranching, and river levels are decreasing as a result of deforestation. "Water is also very important in our culture. The rivers are drying up because of deforestation," Bitate says. "With cattle farming, the cattle go to the banks of the Jamari River, inside the Burareiro, where the Floresta River and other streams also pass, [and then the cattle] trample everything, [they] destroy the riverbanks. People use water for more than just drinking and preparing food. It plays a role in rites and traditions, such as the "passage of the young girl", a celebration for the girl who is leaving childhood and beginning adulthood."

The state of Rondônia is entirely located in the Madeira River Basin and its main rivers originate in the Uru-Eu-Wau-Wau Indigenous Land: São Miguel, São Francisco, São Domingos, Cautário, Cautarinho, Pacaás Novos, Jamari, Urupá, Muqui, Candeias, Jarú, Jaci-Paraná, Ouro Preto. These rivers make up the great Amazon Basin and supply the entire state of Rondônia.

Bitate brings to light the devastating truth: the Uru-Eu-Wau-Wau population is dwindling, with many of its members fearing the encroachments and the loss of family members in conflicts. With the situation deteriorating further, he worries that his people may soon disappear, and their struggles become a distant memory. For Bitate and his people, the fight to protect their land goes beyond just preserving a physical space. It's about ensuring their survival, the continuation of their culture, and the well-being of future generations. He says:

"In the past five years, due to the pressures of invasions, our population has decreased. There have had premature deaths, even for [for people who were] defending the territory.²³ We live in a constant war, and few of us want to have children in the midst of a war over territorial disputes. Our people experienced genocide at the time of contact

²³ The fight of the Uru-Eu-Wau-Wau people is documented in the film «The Territory» (2022), directed by Alex Pritz: <https://films.nationalgeographic.com/the-territory>

[with non-Indigenous people, in the 1970s-1980s], and now, intruders are increasingly encroaching on our land, causing the death of wildlife. This leads us to wonder how our children grow up with this great fear of being attacked. We want to protect our territory to ensure that our people, our sons, daughters, grandsons and granddaughters, live in peace and continue to live according to our traditions and culture”.

Rondônia faces numerous challenges in halting deforestation related to cattle

The state of Rondônia in the Amazon in Brazil faces major challenges regarding cattle traceability. Specific issues include illegal cattle ranching in protected areas, widespread cattle “laundering” to hide illegal origins, gaps in the animal traceability system (GTA), and the presence of political forces that favor the livestock industry.

Local authorities, including the Rondônia Agricultural and Environmental Defense Inspection Agency (IDARON), have been criticized for their role in facilitating these illegal practices. Amnesty International²⁴ notes that public agencies effectively allow illegal commercial cattle farming by registering commercial cattle farms and issuing documents for the movement of cattle (GTAs), even when the operation is in an ecological reserve or Indigenous land. According to Amnesty International’s report, in 2019, the State’s Public Prosecutor Office filed a lawsuit against IDARON for issuing these documents, despite the fact that they were prohibited.

Furthermore, issues related to different farm names and less accessible GTAs hinder the monitoring of deforestation and conversion in this state. Brazil allows each state to decide on the amount of information to disclose about the land registration CAR system, and Rondônia lags behind in terms of transparency.

²⁴ Du bétail élevé illégalement dans des zones protégées dans la chaîne d’approvisionnement de JBS. Amnesty International, 15 July 2020. <https://www.amnesty.ch/fr/pays/ameriques/bresil/docs/2020/amazonie-betail-eleve-illegalement-approvisionnement-jbs>

The control of indirect suppliers is particularly difficult. According to a recent report by Unearthed, a cattle farmer in Rondônia who produces 6,000 head of livestock per year finds it unrealistic to ensure compliance with indirect suppliers in the state. The farmer estimates that 60-70% of the farmers commit environmental offenses in the state. Ranchers interviewed by Unearthed also described widespread ‘cattle laundering’ techniques to evade JBS’s monitoring systems in Rondônia and other states. They added that JBS slaughterhouses often knew but looked the other way.²⁵

The Retailers’ Action in the Area

Ranches located on Uru-Eu-Wau-Wau Indigenous territory have been implicated in supplying cattle to major slaughterhouses, such as those operated by Brazil’s JBS, the world’s largest meat processing company, and to supermarkets such as those affiliated with the French Casino Group, which currently faces a lawsuit in France for violations of Indigenous rights. The table below provides an overview of the main retailers’ actions in this state related to deforestation-risk beef supplies.

Table 8: Main retailers’ practices regarding beef sourcing from Rondônia during the 2021-2024 period. Source: Mighty Earth, based on Do Pasto ao Prato data.

	GPA/CASINO	Assaí/Sendas	Carrefour	Grupo Mateus
Main public action related to the retailer	A specific report from the Center for Climate Crime Analysis (CCCA, 2022) focused on the GPA/Casino sourcing from indirect suppliers in Rondônia and in the Uru-Eu-Wau-Wau territory. GPA/Casino has not taken any public mitigation action regarding the findings of the report.	No details regarding Assaí/Sendas, nor any specific communications concerning sourcing from Rondônia were provided.	Following the Mighty Earth campaign ‘Carrefour nous enfume’ (2023) highlighting non-compliant sourcing from Rondônia, Carrefour announced that it would cease purchasing from JBS Pimenta Bueno and Vilhena slaughterhouses in Rondônia. Carrefour announced to pressure JBS, which led the meat giant to ban 177 ²⁶ non-compliant farms in the state of Rondônia.	No specific information about Grupo Mateus, nor specific communication about sourcing from Rondônia.
Identified sourcing beef from Rondônia between 2021 and 2024	2021 : Yes 2022 : Yes 2023 : Yes 2024 : Yes	2021 : NA 2022 : Yes 2023 : Yes 2024 : Yes	2021: Yes 2022 : Yes 2023 : Yes 2024 : Yes	2021 : NA 2022 : NA 2023 : Yes 2024 : Yes
Percentage of the cattle supply coming from slaughterhouses in Rondônia	4%	8%	6%	1.6%
Percentage of the cattle supply coming from slaughterhouses in the Legal Amazon states	32%	37%	31%	34%
Number of slaughterhouses originating from Rondônia identified as sourcing from the retailer	9 (JBS, Minerva Foods, Marfrig, Big Charque, Irmãos Gonçalves Comércio e Indústria)	6 (JBS, Big Charque)	8 (JBS, Minerva Foods, Marfrig, Big Charque, Vale Grande Indústria e Comércio de Alimentos)	4 (JBS, Minerva Foods, Frigomil, Vale Grande Indústria e Comércio de Alimentos)

25 JBS is likely to fail to deliver on its Amazon deforestation promise, ranchers say. Unearthed, 17 April 2025. By Naira Hofmeister, Lucy Jordan, Daniel Camargos, Jonathan Watts, Ana Aranha. <https://unearthed.greenpeace.org/2025/04/17/jbs-amazon-deforestation-pledge-ranchers/>

26 https://www.carrefour.com/sites/default/files/2023-12/EN-Detailed-Information-Beef-21_12_2023.pdf

Using Do Pasto ao Prato data from August 18, 2021 to December 17, 2024, we identified a sample of 6,937 beef products (fresh, frozen and processed meat) sold by the four main retailers in Brazil: Carrefour, GPA/Casino, Grupo Mateus and Assaí/Sendas. Among them, 393 beef products (5.6%) were supplied by slaughterhouses located in Rondonia, the majority (78% or 307 of 393) coming from JBS's slaughterhouses,²⁷ 14% (54 of 393) produced by either Minerva or Marfrig,²⁸ and 32 beef products (8% of 393) produced by other meatpackers. From this sample of 393 fresh, frozen or processed meat originated in Rondonia in the period, half (194 beef products) were sold by Carrefour, 32% by Assaí, 17% by Casino/GPA.

In 2024 alone, a sample of 70 beef products coming from high-risk slaughterhouses located in Rondônia was identified in the stores we visited for the mentioned retailers. 83% of them were linked to JBS slaughterhouses, including those located at Pimenta Bueno and Vilhena, already flagged in previous reports²⁹ for buying cattle illegally raised in the Uru-Eu-Wau-Wau Indigenous lands.

Due to their geographical localization and the fragile monitoring of indirect suppliers in the beef supply chain, these plants are highly exposed to deforestation risks. Meatpackers and retailers should double the attention and reinforce the verification of compliance of farmers when trading in the state of Rondonia, requiring and implementing effective tools to monitor direct (tier 1) but especially indirect suppliers (tiers 2, 3), excluding from the supply chain those present in buffer zones or inside protected lands as Indigenous Territories or Conservation Units.

27 SIF codes: 43 - Colorado do Oeste, 175 - São Miguel do Guaporé, 2880 - Pimenta Bueno, 4149 - Porto Velho, 4333 - Vilhena

28 SIF codes: 791 - Rolim de Moura and 3250 - Chupinguaia.

29 Carrefour nous enfume (Mighty Earth, 2022), Casino Case (CCCA, 2022).

RIGHT OF REPLY REGARDING THE CASE STUDIES

Below are excerpts from the responses of the retailers and meatpackers contacted by Mighty Earth to our questions about their links and business relationship to the five case studies described above. Their full responses are [available here](#).

Retailers

Assaí/Sendas said on April 20, 2025:

"Regarding the meat trade in question, we inform you that we have not had any commercial relations with these CARs during the period indicated. Currently, all of them are blocked from supplying Assaí."

Carrefour said on April 16, 2025:

"Among the five cases analyzed, only two farms were identified as having a historical supply with the Group. However, the alerts have not been detected for these farms by MapBiomass or DETER, even retrospectively or Prodes. Carrefour systems will keep monitoring the alerts of fires and deforestation from these areas.

Moreover, Carrefour, since September 2024 are conducting experimental fire analysis and from our system there was identification of fire, however these fires have not resulted in vegetation conversion.

The remaining farms either have no supply history, were previously blocked, or – in two cases (5.1 - indicated as intermediate farm and Extra Case) – had no CAR information provided, which made detailed analysis impossible."

Casino/GPA said on April 30, 2025:

"Regarding the cases questioned by Mighty Earth, the Company informs that no non-conformities were identified during the reported period. GPA reiterates that it applies the criteria present in the Beef on Track Protocol and Voluntary Monitoring Protocol for Cattle Suppliers in the Cerrado in full for all purchases made."

Meatpackers

JBS said on April 22, 2025:

"Regarding the farms mentioned, either they do not supply animals to JBS or, in the case of suppliers, they comply with the Company's purchasing policy."

Marfrig said on April 22, 2025:

"All cases of potential deforestation related to farms, pointed out in the investigative report and questioned to Marfrig in April 2025 by Mighty Earth are dated after the last animal purchases made by Marfrig.

Regarding the cases cited by Mighty Earth, in its investigation through the third Mighty Earth Rapid Response – Cattle Report in April 2025, Marfrig clarifies:

- Case 5.1

Marfrig does not have a record in its indirect supplier database of either of the two CARs of the Santa Luzia and Esperança Farms, mentioned in the investigation, as potential indirect suppliers of animals to the company.

The Rio Alto farm, cited in the report as a direct supplier to Marfrig, last supplied animals in July 2023. Both at the date of purchase and currently, the property does not have any overlap with deforestation polygons or other irregularities, meeting all of the company's animal purchasing criteria.

- Case 5.2

The CAR (RO-1100189-BE25E937E7F64515BA3495ED2D491B72) indicated in case 5.2 as Fazenda Itapurã appears in the Marfrig database, however, registered under another name. Independently, it is blocked from supplying animals because it does not meet the company's socio-environmental criteria.

About the Recordação farm, indicated as a direct supplier of animals to Marfrig, had its last supply of animals in August 2019 and was compliant with the company's socio-environmental criteria on the dates of animal acquisition. The property is currently blocked for supply to the company.

- Case 5.3

Marfrig only has CAR RO-1100304-D24E4810BE2A44048B9B5C8320F21646 from Fazenda Pena Branca in its database and it is blocked for supply to the company.

The last supply of animals from this property to Marfrig occurred in April 2021, and was in compliance with the company's socio-environmental criteria on the dates the animals were acquired. The property is currently blocked for supply to Marfrig.

CAR RO-1100304-9ECE6A48A3704E80A1F364A76162058B is not on Marfrig's supplier database, nor does it overlap with any other supplier property of the company.

- Case 5.4

The CARs indicated in case 5.4 are not part of Marfrig's supplier database. There is an overlap with a property that supplied animals to the company in June 2019, but with a different CAR number and geometry, which is currently blocked from supplying the company, and was found to be compliant with the company's socio-environmental criteria on the dates the animals were acquired.

It is important to note that Marfrig closed its operations at the Paranatinga and Nova Xavatina units in March and December 2019, respectively, to which the CARs mentioned in the case are related and therefore are no longer part of the company's supply chain.

- Extra Case - only geographic coordinates were provided

The case only indicates geographic coordinates, and such geographic points do not overlap with any property that supplies animals (direct or indirect) to Marfrig."

Minerva Foods said on April 17, 2025:

According to the information provided, cases 5.1, 5.3, and 5.5 are not associated with Minerva Foods.

For case 5.2, Minerva Foods confirms that no business has been transacted with the direct supplier. However, business has been transacted with the reported indirect supplier, which, to the best of our knowledge, complies with the socio-environmental criteria set out in the Company's adopted protocols.

For case 5.4, the Company has maintained commercial relations with the direct supplier up to 2024 and meets the socio-environmental criteria established in the Company's protocols. For the other properties mentioned above, the Company has not engaged in any commercial activities.

To conduct a more precise analysis of the Extra Case, access to additional property-related information, such as the CAR and CPF numbers, is required.

METHODOLOGY:

Cattle ranching is Brazil's main driver of deforestation, and about 76% of beef production is consumed domestically. This report analyses Brazil's domestic cattle supply chain by linking deforestation, forest degradation, and fires in the Amazon, Pantanal, and Cerrado biomes to the main slaughterhouses and beef products found in the stores of the major retailers operating in Brazil.

Monitoring deforestation in Brazilian cattle supply chains



Step 1. In-store beef product scanning using the dPaP app

Data is gathered using the Do Pasto ao Prato (“From Pasture to Plate”, dPaP) mobile phone application, developed by Trase, the Stockholm Environment Institute, UCLouvain and Repórter Brasil. Consumers, volunteers and commissioned data collectors used the dPaP app to scan labels in store and record information about beef products found during three months in the retail stores of the four leading retail groups in Brazil - Carrefour, GPA/Casino, Assaí/Sendas and Grupo Mateus - located in five Brazilian regions that were previously defined according to their population and presence of the retailers.

Using the dPaP app, data collectors registered the supermarket locations, and the slaughterhouse registration numbers found on the labels on the beef products, such as the SIF, the SIE, and the CNPJ codes, among others. Whenever possible, pictures of the identified beef products were also taken. The aim is to identify the full range of origin of the different fresh, frozen and processed beef products. This data was then added to the dPaP database, processed and analysed using the same methods and criteria.

The DPaP app links the sanitary codes (SIF, SIE or others) or the tax code (CNPJ) associated with a slaughterhouse to the specific establishment where the user is located. Leveraging the user’s location data, the app generates a list of nearby retail stores, allowing users to select the one they are currently in. Following this selection, the application securely stores information about the slaughterhouses that supply beef products to the selected store in its database.

Step 2. Identification of slaughterhouses using SIF Codes

The slaughterhouse of origin is identified through official registration data from the Inspection Federal Services (SIF code) or any other form of registration data, such as CNPJ and SIE, connected to the Brazilian Ministry of Agriculture, the Tax Office or State databases. This allows for the identification of the slaughterhouses’ operators and their location (municipality, state).

Considering the list of the identified slaughterhouses, their location, and their operators, we selected only those operated by JBS, Marfrig, and Minerva Foods in seven key states – Pará, Rondônia, Mato Grosso, Mato Grosso do Sul, Tocantins, Goiás, Minas Gerais. The selection of meatpackers and states is shaped by sample of data on animal transportation retrieved through the GTAs. This step only retains entries that link to slaughterhouses operated by one of the three meatpackers in one of the seven states.

Step 3. Identification of the properties that directly or indirectly supply cattle to the selected slaughterhouses

Identifying these beef suppliers is possible through overlapping a sample of animal transport GTA data covering suppliers in seven Brazilian states with the official land tenure registration system SIGEF and SNCI.

The available GTA data is only a sample, since the number of GTA records we have access to does not cover the entire Brazilian territory and does not include all GTA records. Our sample includes data for only seven states from 2017 to 2023. It does not cover the whole meatpackers’ supply chain. To give an idea, JBS states that it has 73,000 direct cattle suppliers in Brazil without mentioning the number of indirect suppliers.³⁰ Minerva Foods reports more than 6,000 suppliers across Brazil.³¹ Marfrig reports 15,000 direct suppliers

30 JBS (2023) *People and Planet: The JBS Commitment to Eliminating Agriculture-Related Deforestation*, JBS: São Paulo, Brazil

31 Minerva Foods (2020) *Sustainability Report*, Minerva Foods: São Paulo, Brazil

registered in the Amazon biome,³² and estimates 25,000 indirect suppliers in the Amazon biome alone.³³ Because the data released by the meatpackers is not accurate (it may be outdated; some only covers direct suppliers, some only covers the Amazon biome), it is difficult to calculate the proportional coverage of the direct and indirect suppliers we found compared to the total meatpackers' suppliers. Furthermore, our sample only includes the 38 slaughterhouses linked to the beef products scanned in the visited stores. The sample of GTA data covers direct and indirect beef suppliers to the selected slaughterhouses of the three largest meatpackers in the states of Mato Grosso, Mato Grosso do Sul, Goiás, Minas Gerais, Rondônia, Pará and Tocantins. Only the direct (tier 1) and indirect (tier 2) suppliers to the targeted slaughterhouses were extracted from the GTA sample. Once a supply relationship has been established (regardless of the year it was identified), we consider that farm to be a potential direct or indirect supplier to the target slaughterhouses.

Step 4. Overlay official deforestation data from PRODES and MapBiomias Alerta platform with properties identified as potential direct and indirect suppliers to the targeted slaughterhouses

Once the supply chain link between the farm and the slaughterhouse has been established, regardless of the year the animals were transferred, the database recognizes it as a potential direct or indirect supplier to the targeted slaughterhouses. Deforestation data over the years can be then overlaid with the polygons of the suppliers' properties. The analysis considered two periods for calculating deforestation: between 2009 and 2020, and between 2021 and 2024. Both periods include legal and illegal deforestation.

The first period considers the deforestation cut-off date of the Brazilian Forest Code, which forbids only illegal deforestation that occurred after July 2008. The second period considers the European Union's Deforestation Regulation (EUDR) cut-off date of December 31, 2020. Since the annual PRODES data on deforestation covers only periods between August and July and it cannot be broken down by months, we use MapBiomias Alerta data to cover the period between August and December 2020 and January and July 2021. Deforestation data was overlapped with the supplier data to consider only deforestation that occurred within the property boundaries.

Periods and data sources used for the deforestation analysis

Timeline		Source	Details
August 2008	July 2020	PRODES 2009-2020	Identified deforestation indicates deforestation (legal and illegal) that occurred in a sample of direct and indirect suppliers between August 2008 and December 2020 . The Brazilian Forest Code does not allow illegal deforestation after July 2008.
August 2020	December 2020	MapBiomias Alerta	
January 2021	July 2021	MapBiomias Alerta	Identified deforestation indicates non-compliance with the EUDR (as of the cut-off date of 31 December 2020) in a sample of direct and indirect suppliers.
August 2021	July 2024	PRODES 2022-2024	

The identified properties may directly supply one slaughterhouse and indirectly supply another one or even supply more than one slaughterhouse; therefore, the simple totals

³² Marfrig (2020) *Landscape Protection Plan of Marfrig*, Marfrig: São Paulo, Brazil

³³ Marfrig (2020) *Landscape Protection Plan of Marfrig*, Marfrig: São Paulo, Brazil

may include one supplier more than once. To avoid double counting, a “total without overlap” is calculated by removing repetitive deforestation data of properties that directly and indirectly supply more than one slaughterhouse.

Step 5. Quantitative and qualitative case study research

The case studies are selected to illustrate the links between recent deforestation on properties that supply slaughterhouses and the origin of beef products sampled in retail stores across Brazil. Recent deforestation data from DETER deforestation alerts from October 2024 to February 2025 overlapped with properties that directly and indirectly supply the selected slaughterhouses. Once the case study is selected, satellite imagery visually confirms the deforestation alert, and the actual deforestation or conversion is calculated using high-resolution Planet GIS.

The criteria used to select case studies are based on key information, such as the amount of recent deforestation, remaining native vegetation, proximity to Indigenous Territories, the illegality of deforestation, and a variety of direct and indirect suppliers to the targeted slaughterhouses. Each case study includes quantitative and qualitative data on the farm and ownership, supply chain links to the targeted slaughterhouses, and before-and-after imagery to show evidence of the reported deforestation or conversion.

Step 6: Right of Reply for the Concerned Companies

Meatpackers that have had commercial relationships with the selected farms identified by GTAs since 2017 receive a letter from Mighty Earth inviting them to provide a Right of Reply on the cases identified. Retailers who have sold beef products in Brazil originating from the affected slaughterhouses also receive a Right of Reply letter before the report is released. Responses are published in the same report and as an attachment.

Step 7. Rapid Response report publication

Our investigation results are made public, and the reports remain available at <https://soyandcattlemonitor.mightyearth.org/report-new/>

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