



 **RAPID RESPONSE #2**

[SOY]

# Monitoring deforestation in Brazilian supply chains

# CONTENTS

<b>EXECUTIVE SUMMARY</b> .....	<b>2</b>
<b>METHODOLOGY</b> .....	<b>4</b>
<b>DEFORESTATION ANALYSIS</b> .....	<b>6</b>
<b>SOY TRADE TO EUROPE: Strong connections to the Amazon and Cerrado biomes</b>	<b>10</b>
<b>CASE STUDIES</b> .....	<b>13</b>
<b>CASE #1 ▪ Fazenda Senhor Jesus A, B and G - Brasnorte (Mato Grosso)</b> .....	<b>14</b>
<b>CASE #2 ▪ Fazenda Mata Verde – Nova Santa Helena (Mato Grosso)</b> .....	<b>16</b>
<b>CASE #3 ▪ Fazenda Sete Barras – Ribeirão Cascalheira (Mato Grosso)</b> .....	<b>18</b>
<b>CASE #4 ▪ Fazenda Rio de Janeiro – Barreiras (Bahia)</b> .....	<b>20</b>
<b>CASE #5 ▪ Fazenda Vale do Urso – Barreiras (Bahia)</b> .....	<b>23</b>
<b>CASE #6 ▪ Fazenda Gasparino – Santa Filomena (Piauí)</b> .....	<b>25</b>
<b>CASE #7 ▪ Fazenda Faveira – Santa Filomena (Piauí)</b> .....	<b>27</b>
<b>Update - FAZENDA SANTA ISABEL (Barreiras - West Bahia)</b> .....	<b>30</b>
<b>RESPONSES FROM COMPANIES</b> .....	<b>35</b>
<b>APPENDIX 1 - METHODOLOGY</b> .....	<b>38</b>

## Abbreviations

<b>APP:</b>	Área de Preservação Permanente / <i>Permanent Preservation Area</i>
<b>CAR:</b>	Cadastro Ambiental Rural / <i>Rural Land Registry</i>
<b>CNPJ:</b>	Cadastro Nacional da Pessoa Jurídica / <i>Brazilian National Registry of Legal Entities</i>
<b>DETER:</b>	Detecção de Desmatamento em Tempo Real / <i>Deforestation Detection in Real Time</i>
<b>EUDR:</b>	European Union Deforestation Regulation
<b>FUNAI:</b>	Fundação Nacional dos Povos Indígenas / <i>National Indigenous Peoples Foundation</i>
<b>GLAD:</b>	Global Land Analysis and Discovery laboratory, Department of Geographical Sciences at the University of Maryland, United States
<b>IBAMA:</b>	Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis / <i>Brazilian Institute of Environment and Renewable Natural Resources</i>
<b>IBGE:</b>	Instituto Brasileiro de Geografia e Estatística / <i>Brazilian Institute of Geography and Statistics</i>
<b>ICMBio:</b>	Instituto Chico Mendes de Conservação da Biodiversidade / <i>Chico Mendes Institute for Biodiversity Conservation</i>
<b>INPE:</b>	Instituto Nacional de Pesquisas Espaciais / <i>National Institute for Space Research</i>
<b>MAPA:</b>	Ministério da Agricultura e Pecuária / <i>Ministry of Agriculture, Livestock and Food Supply</i>
<b>PRODES:</b>	Projeto de Monitoramento do Desmatamento na Amazônia Legal por Satélite / <i>Project for Monitoring Deforestation in the Legal Amazon by Satellite</i>
<b>SICARM:</b>	Sistema de Cadastro Nacional de Unidades Armazenadoras / <i>Brazilian's National Cadaster of Storage Units</i>
<b>SIGEF:</b>	Sistema de Gestão Fundiária / <i>Land Tenure Management System</i>
<b>SINTEGRA:</b>	Sistema Integrado de Informações sobre Operações Interestaduais com Mercadorias e Serviços / <i>Integrated Information System on Goods and Services Interstate Transactions</i>
<b>SNCI:</b>	Sistema Nacional de Certificação de Imóveis Rurais / <i>National Rural Property Certification System</i>
<b>SNCR:</b>	Sistema Nacional de Cadastro Rural / <i>Brazilian National Rural Registration System</i>
<b>SNUC:</b>	Sistema Nacional de Unidades de Conservação da Natureza / <i>National System of Nature Conservation Units</i>



# EXECUTIVE SUMMARY

This report analyzes recent deforestation linked to soy that took place from September to December 2023 in the Amazon and Cerrado biomes in Brazil. It focuses on properties that produced soy in the 2022 harvest and that are located within 50 kilometers of the warehouses of major soy exporters, namely Amaggi, Cargill, Bunge, ADM, Cofco, LDC, and ALZ Grãos. During this period, the deforestation and degradation alerts totaled 30,031 hectares in the Amazon, despite the Amazon Soy Moratorium that prevents traders from buying soy coming from areas deforested after 2008 in this biome. Deforestation alerts highlighted a total of 26,901 hectares in the Cerrado, taking into account only the destruction of native vegetation that occurred on soy properties located within a 50 kilometers radius of the traders' silos. The Brazilian Amazon is more than twice the total area of the Cerrado —respectively 4.2 million km<sup>2</sup> and 2.0 million km<sup>2</sup>. Our report shows that the Cerrado has a higher area of deforestation proportionately to the much bigger Amazon, highlighting the threats that this new frontier poses to people, biodiversity and the environment.

Notably, the highest rates of recent deforestation were found in the municipality of Barreiras, Bahia state, in the Cerrado biome, an area that exported soy to France, Germany, the Netherlands, Spain and the United Kingdom in 2023. The second-highest rate of deforestation alerts identified was in the municipality of Nova Santa Helena, Mato Grosso, in the Amazon biome, which exported soy to the Netherlands, Spain and the UK in 2023. The forthcoming EU Deforestation Regulation (EUDR) has confirmed that soy linked to deforestation and forest degradation that occurred after December 31, 2020, will not be accepted into the European Union market. It is expected to take effect from December 31, 2024. Known as the deforestation “cut-off date,” UK retailers have committed to ‘not buy soy from areas deforested after January 1, 2020, via the UK Soy Manifesto — an industry-led initiative to eliminate deforestation. In the case of the United Kingdom, none of the cases in this report would be in compliance with its industry commitment.

## About Rapid Response

Mighty Earth, in partnership with AidEnvironment and Repórter Brasil, publishes this report as part of the second phase of its Rapid Response program, which aims to monitor recent deforestation in cattle and soy supply chains in Brazil. It follows the launch of Rapid Response #1 in December 2023, which focused on cattle. The goal of this program is to proactively halt deforestation in its early stages by urging companies to cease trading with farms involved in recent fires or clearing that are visually confirmed. By rapidly ending business with actors contributing to deforestation, we can avoid further environmental destruction and prevent hundreds of hectares of deforestation becoming thousands.

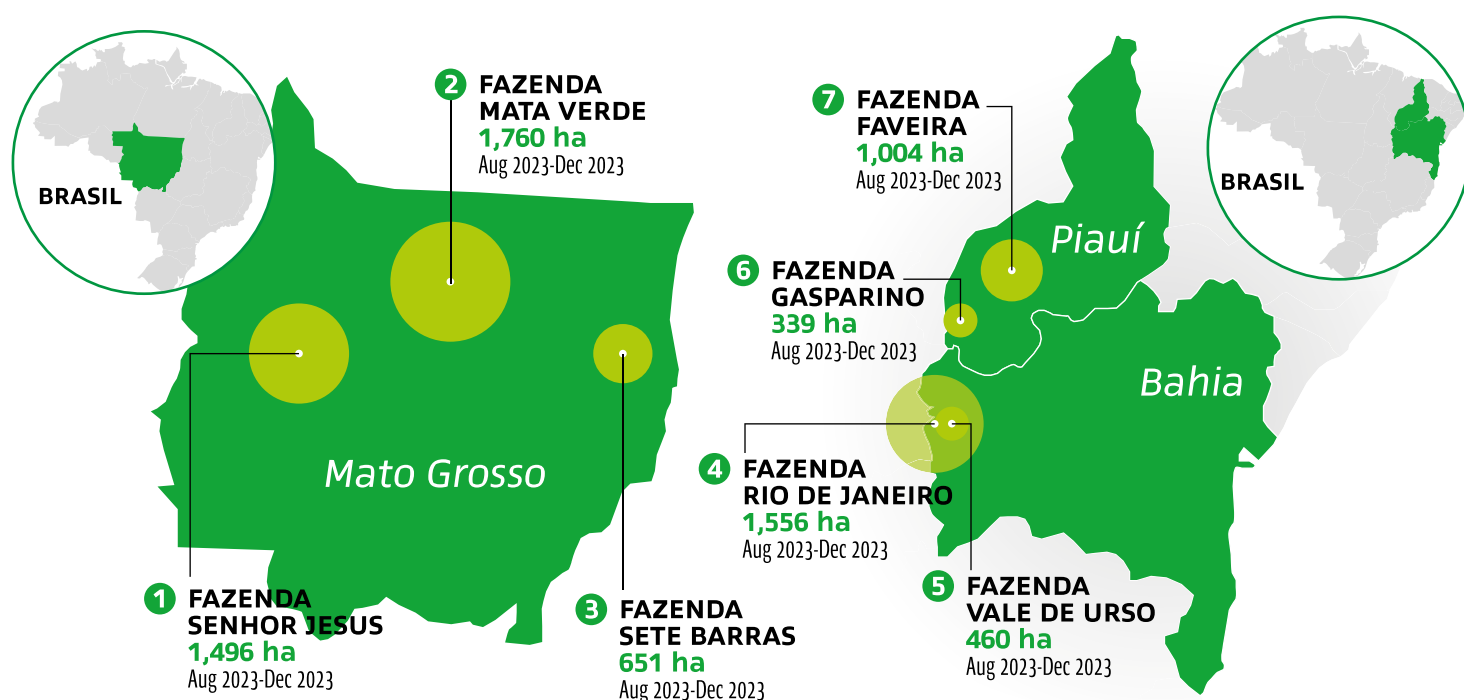
The reports are published on a quarterly basis and are used to pressure national and international traders operating in Brazil to act by sending a rapid response to stop the deforestation. The program will also be used to alert international retailers, animal feed manufacturers, financial institutions that fund these companies, and other market players to the deforestation risks found in the Brazilian beef and soy supply chains and encourage them to take action. Mighty Earth also conducted a field investigation in February 2024 to verify cases identified by satellite imagery in the states of Mato Grosso and Bahia. 🌍

This report includes seven case studies encompassing a total of 7,266 hectares of recent deforestation or degradation that occurred between September and December 2023. The seven farms involved still have 37,401 hectares of remaining native vegetation in urgent need of protection. For this reason, after the detection of deforestation or degradation alerts on these farms, Mighty Earth contacted the major soy trading groups potentially associated with them, asking them to identify and monitor these cases in their supplier database. In addition, Amaggi, Cargill, Cofco and LDC have initiated further investigation or are monitoring some cases, while affirming that they have no commercial relationships with the others. In addition, ADM, ALZ and Bunge also did not acknowledge trade connections with the farms to which they could be potentially linked. Whether these farms could be indirect suppliers to these traders is unclear, as they still do not have integral monitoring over their supply chains.

We therefore urge Amaggi, Cargill, Bunge, ADM, Cofco, LDC, and ALZ Grãos to promptly disclose the origin of their soy products from Brazil on a public platform, including lists of all their direct and indirect suppliers, with the proportion of soy sourced from a verified Zero Deforestation and Conversion-free (ZDC) supply chain. Additionally, we call on them to submit deforestation and conversion cases to a public grievance mechanism and suspend purchases from direct or indirect suppliers and farms involved in deforestation or native vegetation clearing. Urgent action is needed, particularly, in the municipalities with the highest deforestation rates illustrated in our report between September and December 2023.

The feed, meat and dairy and retail sectors will have to comply with the EUDR and with Schedule 17 of the UK's Environment Act 2021, in the coming months. The latest UN Comtrade data (2022) shows that a total of nearly 11 million tons of soy were imported by Spain, the Netherlands, Germany, France and the UK from Brazil. This new report shows that the meat and dairy sector in Europe, the sector with the most embedded soy deforestation, is still connected to the worst recent deforestation practices in the world.

### Location of the seven case studies identified in this report.



# METHODOLOGY

Our analysis draws on a range of publicly available datasets to assess the soy sector's exposure to recent deforestation and conversion, and then identify case studies that illustrate deforestation or conversion events linked to soy producers and traders in Brazil's Amazon and Cerrado biomes.

## 1) Deforestation alerts

The starting point for this analysis is the deforestation alerts from the Deforestation Detection in Real Time System (DETER—Sistema de Detecção de Desmatamento em Tempo Real) coordinated by the National Institute for Space Research (INPE—Instituto Nacional de Pesquisas Espaciais). INPE affirms that the DETER data cannot be interpreted as a deforestation rate, but it is a robust system that serves government strategies for the real-time monitoring and control of deforestation. For this purpose, DETER is a deforestation alert system that is updated daily and is specifically used in this report's analysis to identify hotspots of recent deforestation, ranked by municipality in the Amazon and Cerrado biomes.

The DETER alerts differ by biomes, so there are different classes or types of alerts for the Amazon and Cerrado biomes. For this report, we considered DETER deforestation alerts in the Amazon and Cerrado biomes that were detected between September and December 2023. For the Amazon biome, the DETER system divides alerts into three main categories:

- **Deforestation:** including alerts on clearcutting, deforestation mixed with remaining vegetation, and mining (*Desmatamento Corte Raso*, *Desmatamento Vegetação*, and *Mineração*)
- **Forest Degradation:** including alerts on fire events (fire scar) and degradation (*Degradação* and *Cicatriz de Incêndio Florestal*)
- **Logging:** including alerts on symmetrical selective logging and asymmetrical selective logging (*Corte Seletivo Geométrico* and *Corte Seletivo Desordenado*).

For the **Amazon biome** the analysis in this report considered only alerts in the categories of “clearcutting” and “deforestation with vegetation,” referred to as **deforestation**, and the “fire scar” and “degradation” alerts, referred to as **forest degradation** in this report.

For the **Cerrado biome**, the DETER system only issues “clearcutting” alerts (*Desmatamento Raso*), which in some cases, are later classified as native vegetation clearing (deforestation) or degradation (including fire). Those are the alerts taken into account in this report for the Cerrado biome.

DETER deforestation alerts may or may not later be confirmed as deforestation or clearing of native vegetation by the official deforestation monitoring program (PRODES — *Projeto de Monitoramento do Desmatamento na Amazônia Legal por Satélite*), also operated by the INPE. For this reason, in the case studies section, all clearing or degradation of native vegetation was visually verified, and the reported areas are identified as either “deforestation” or “forest degradation” in both biomes, including degradation by fire. Some cases of conversion of native vegetation, identified by satellite analysis, were also assessed on the ground to determine whether they constituted deforestation or degradation.



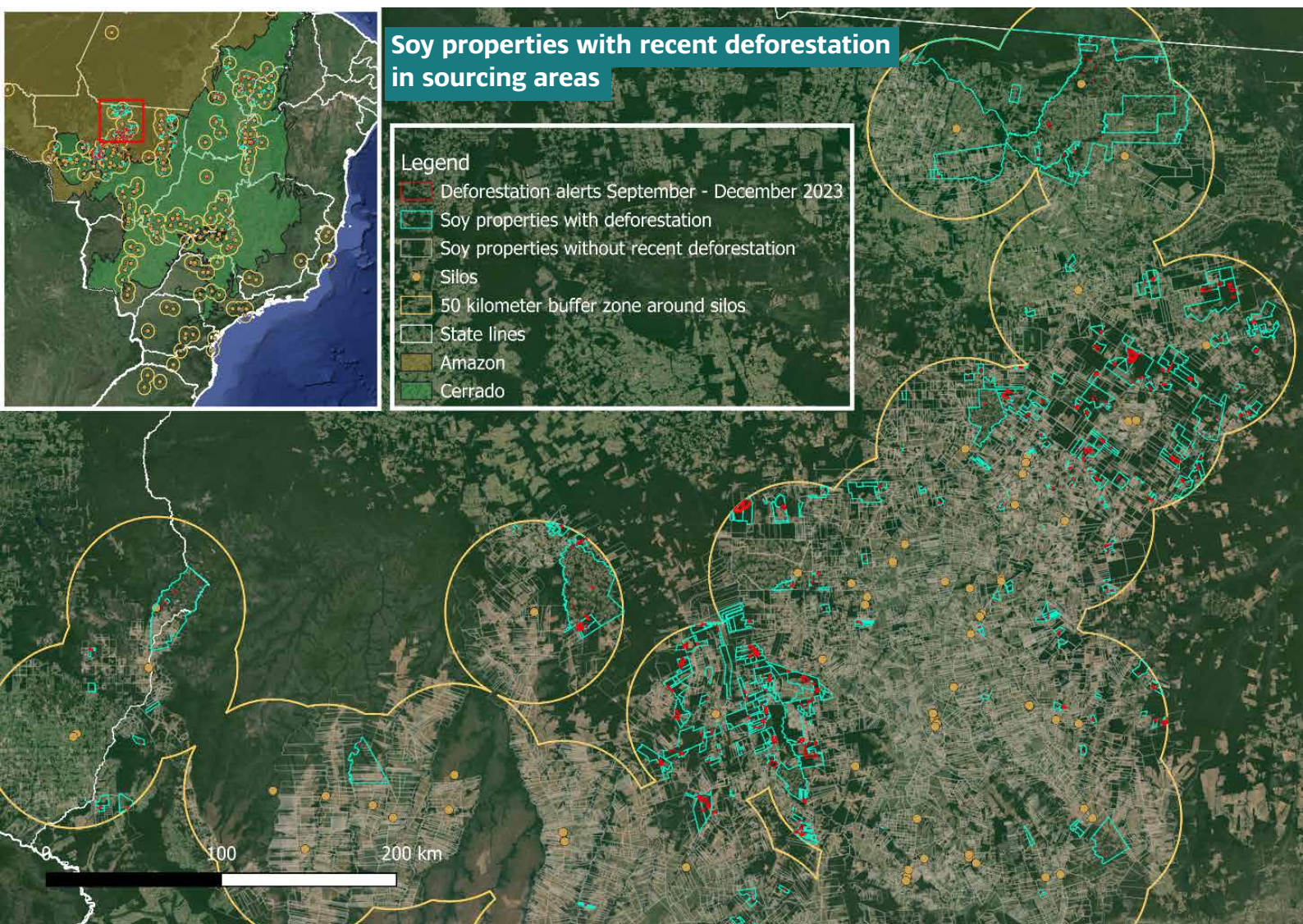
## 2) Soy traders' assets on the ground: the 50-kilometer radius approach

To better understand whether the deforestation alerts were linked to global soy traders, we considered those located within a 50-kilometer radius of the assets of the seven targeted soy traders on the ground. The 50-kilometer radius approach is based on Cargill's methods<sup>1</sup> to monitor deforestation risk which considers a sourcing area between 30 and 50 kilometers from their storage or processing units. This methodology is consistent with the geographic organization of the value chain.

## 3) Properties with soy production areas

Of the deforestation alerts that occurred within the 50-kilometer radius of the traders' on-the-ground assets, we considered only those that fell within properties with soy production areas in 2022. This data is available through the Global Forest Watch platform and is based on a study conducted by the Global Land Analysis and Discovery (GLAD) Lab of the University of Maryland, United States.<sup>2</sup>

Visualization of the methodology with an example in Mato Grosso, Brazil



Source : Prepared by AidEnvironment (2024) with data from INPE, SICARM, SIGEF/SNCI/SNCR, and GLAD Lab

1 <https://www.cargill.com/doc/1432081204529/cargill-forests-report-2017.pdf>

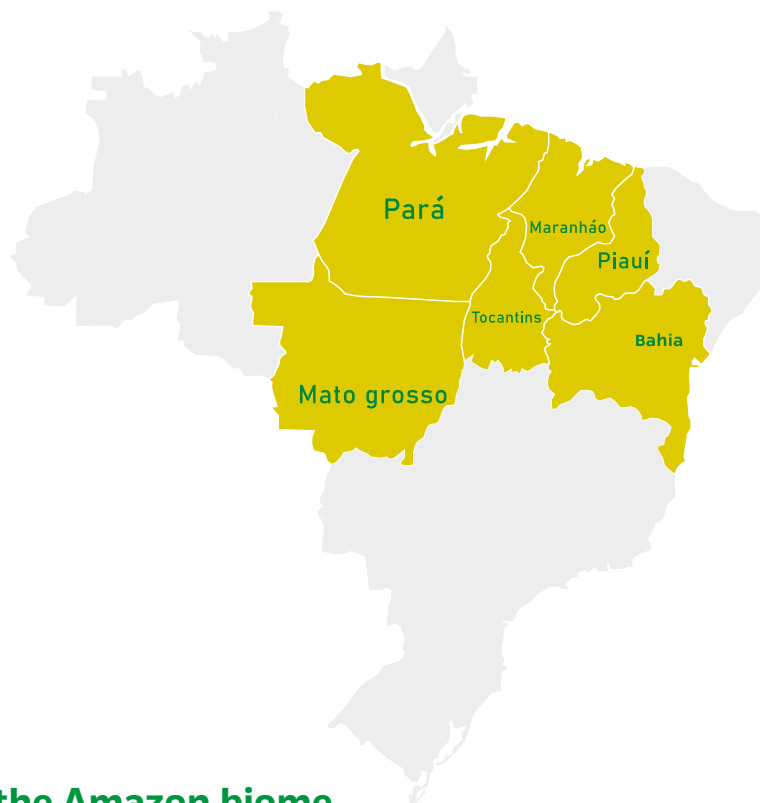
2 GLAD, Commodity Crop Mapping and Monitoring in South America, see: <https://glad.umd.edu/projects/commodity-crop-mapping-and-monitoring-south-america>

# DEFORESTATION ANALYSIS

## Hotspots of deforestation alerts linked to soy production in silos surrounding areas

### States in Brazil with the highest recent soy-related deforestation and degradation alerts

Source: Prepared by Mighty Earth (2024) with data from DETER.



### Results for the Amazon biome

In the Amazon region, the state of Mato Grosso accounted for 77% of the deforestation alerts identified by DETER between September and December 2023—or approximately 23,064 hectares—in properties with a history of soy cultivation within the 50-kilometer radius of the largest grain traders (see Table 1). Mato Grosso is the largest soy-producing state in Brazil, accounting for 27.1% of the Brazilian soy cultivated area in the 2023 season, according to the Brazilian Institute of Geography and Statistics (IBGE, 2024). Ahead of new international due diligence regulations, the opening of new soy fields over native forest is very risky for market players operating in this state. Mato Grosso exported 2.46 million tons of soybean and 1.29 million tons of soybean meal to France, Germany, Spain, the Netherlands, and the UK in 2023.

Pará is the second-largest state in the Amazon region in terms of deforestation alerts in farms with a history of soy cultivation, totaling 23%, while the soy planted area in the state accounted for only 2.3% of Brazil's total soy area in 2023 (IBGE, 2024). Market players should pay attention to these figures, which point to the most sensitive areas for soy supply.



**Table 1. Amazon biome: soy-related deforestation and degradation alerts detected per Brazilian states (September-December 2023)\***

State	Deforestation and degradation alerts area (ha)**	% of total
Mato Grosso (MT)	23,064	77%
Pará (PA)	6,831	23%
Rondônia (RO)	137	0.5%
<b>Total</b>	<b>30,031</b>	<b>100%</b>

\* Only alerts concerning properties with a history of soy cultivation in 2022 and located within a 50-kilometer radius of the silos/warehouses/assets registered under the name of the seven targeted companies (Amaggi, Cargill, Bunge, ADM, Cofco, LDC, and ALZ Grãos) were taken into account. This table is based on more detailed figures. For clarity's sake, we published rounded figures. For this reason, slight differences may appear in the totals.

\*\*The “deforestation alerts” category includes DETER data (Amazon) under the categories of “clearcutting” and “deforestation with vegetation” (*Desmatamento Corte Raso, Desmatamento Vegetação*). The “forest degradation” category includes DETER data (Amazon) under the categories of “degradation” and “fire scar” (*Degradação and Cicatriz de Incêndio Florestal*).

The five municipalities (see Table 2) with the highest deforestation alerts (in ha), are all located in the state of Mato Grosso, highlighting the need for closer monitoring of suppliers in the region.

**Table 2. Amazon biome: top five municipalities with soy-related deforestation and degradation alerts (September-December 2023) \***

Municipality (State)	Deforestation alerts (ha)**	Forest Degradation alerts (ha)**	Area (ha)
#1 Nova Santa Helena (Mato Grosso)	2,462	76	2,538
#2 Porto dos Gaúchos (Mato Grosso)	1,042	5,055	6,096
#3 Cláudia (Mato Grosso)	798	142	939
#4 Brasnorte (Mato Grosso)	601	-	601
#5 Nova Maringá (Mato Grosso)	569	1,912	2,480
Other 34 municipalities (clearcutting)	3,021	-	
Other 26 municipalities (fire scars)	-	14,355	
<b>Total</b>	<b>8,492</b>	<b>21,539</b>	<b>30,031</b>

\* Only alerts concerning properties with a history of soy cultivation in 2022 and located within a 50-kilometer radius of the silos/warehouses/assets registered under the name of the seven targeted companies (Amaggi, Cargill, Bunge, ADM, Cofco, LDC, and ALZ Grãos) were taken into account. This table is based on more detailed figures. For clarity's sake, we published rounded figures. For this reason, slight differences may appear in the totals.

\*\*The “deforestation alerts” category includes DETER data (Amazon) under the categories of “clearcutting” and deforestation with vegetation (*Desmatamento Corte Raso, Desmatamento Vegetação*). The “forest degradation” category includes DETER data (Amazon) under the categories of degradation and fire scars (*Degradação and Cicatriz de Incêndio Florestal*).



## Results for the Cerrado biome

In the Cerrado region, the state of Bahia accounted for 23% of the deforestation alerts identified by DETER between September and December 2023, on properties with a history of soy cultivation in 2022 and located within a 50-kilometer radius of the assets of the largest grain traders operating in Brazil. The state's participation in the Brazilian soy planted area amounted to 4.3% for the 2023 season, according to the IBGE (2024). The states of Tocantins and Piauí come next, with respectively 18% and 16% of the deforestation alerts and only 3% and 2.1% of the Brazilian soy planted area. This information highlights the alarming pace of natural vegetation conversion (deforestation or degradation) in the states of the Matopiba region (Maranhão, Tocantins, Piauí and Bahia), the main deforestation frontier of the country. It also reinforces the urgency of increasing the protection of savanna vegetation in Brazilian (domestic) and international environmental or trade regulations.

**Table 3. Cerrado biome: soy-related deforestation and degradation alerts detected per Brazilian states (September-December 2023)\***

State	Deforestation and degradation alerts Area (ha)**	% of total
Bahia (BA)	6,192	23%
Tocantins (TO)	4,961	18%
Piauí (PI)	4,243	16%
Mato Grosso (MT)	3,966	15%
Maranhão (MA)	3,049	11%
Mato Grosso do Sul (MS)	1,471	5%
Minas Gerais (MG)	1,440	5%
Goiás (GO)	1,322	5%
Rondônia (RO)	214	1%
Distrito Federal (DF)	43	0%
<b>Total</b>	<b>26,901</b>	<b>100%</b>

\*Only alerts concerning properties with a history of soy cultivation in 2022 and located within a 50-kilometer radius of the silos/warehouses/assets registered under the name of the seven targeted companies (Amaggi, Cargill, Bunge, ADM, Cofco, LDC, and ALZ Grãos) were taken into account. This table is based on more detailed figures. For clarity's sake, we published rounded figures. For this reason, slight differences may appear in the totals.

\*\*DETER data (2024, Cerrado) under the category of "clearcutting" (*Desmatamento Corte Raso*).

In this scenario, some municipalities stand out, such as Barreiras, which registered more than half of the deforestation alerts (in ha) of the state of Bahia (see Table 4). This municipality is an important exporter of soybeans and soybean meal to European countries.<sup>3</sup> In late February 2024, Mighty Earth researchers were on site to verify for fieldwork and identified that some alerts categorized as "deforestation" alerts could be considered as "degradation" due to the qualitative decrease in the natural vegetal condition. Knowing that forest and savanna degradation often leads to full-scale deforestation or conversion, degradation alerts are very important for monitoring future clearings.

<sup>3</sup> Brazilian Ministry of Development, Industry, Trade and Services, 2024 Comex Stat, see: <http://comexstat.mdic.gov.br/en/municipio>

**Table 4. Cerrado biome: top five municipalities with soy-related deforestation and degradation alerts (September-December 2023)\***

Municipality (State)		Deforestation and degradation alerts Area (ha)* *
#1	Barreiras (Bahia)	3,890
#2	Riachão (Maranhão)	1,369
#3	Guaraí (Tocantins)	1,330
#4	Brasnorte (Mato Grosso)	1,097
#5	Sebastião Leal (Piauí)	995
	Other 135 municipalities	18,220
<b>Total</b>		<b>26,901 ha</b>

\* Only alerts concerning properties with a history of soy cultivation in 2022 and located within a 50-kilometer radius of the silos/warehouses/assets registered under the name of the seven targeted companies (Amaggi, Cargill, Bunge, ADM, Cofo, LDC, and ALZ Grãos) were taken into account. This table is based on more detailed figures. For clarity's sake, we published rounded figures. For this reason, slight differences may appear in the totals.

\*\*DETER data (Cerrado) under the category of “clearcutting” (*Desmatamento Corte Raso*). 2024

# SOY TRADE TO EUROPE: STRONG CONNECTIONS TO THE AMAZON AND CERRADO BIOMES

According to the latest trade data available on UN Comtrade (2022), Brazilian soybeans and soybean meal remain a major source of imports for the five major European countries below (see Table 5).

**Table 5. Quantity of soy imported, in metric tons, in 2022 and proportion from Brazil by the top five European importers\***

	Netherlands	Spain	France	United Kingdom	Germany	Total 5 countries
All Soybean imported HS code 1201 (tons)	2,686,199	3,234,210	466,151	907,312	3,436,245	10,730,118
Quantity (and %) originating from Brazil	<b>1,424,550</b> (53%)	<b>2,127,015</b> (66%)	<b>296,833</b> (64%)	<b>607,563</b> (67%)	<b>977,141</b> (28%)	<b>5,433,104</b> (51%)
All Soybean meal imported HS code 2304 (tons)	2,379,740	2,712,133	2,847,515	1,877,018	2,325,707	12,142,115
Quantity (and %) originating from Brazil	<b>1,424,250</b> (60%)	<b>1,067,106</b> (39%)	<b>1,614,912</b> (57%)	<b>225,633</b> (12%)	<b>1,219,555</b> (52%)	<b>5,551,457</b> (46%)
<b>All soy origin imports from the 5 countries (metric tons)</b>						<b>22,872,233</b>
<b>Quantity (and %) originating from Brazil</b>						<b>10,984,561</b> (48%)

\*Data refer to trade volumes provided by UN Comtrade for the year 2022; some countries may not have reported their trade volumes yet. Source: UN Comtrade, 2024. Last accessed: 5 March 2024.

An analysis of the main soy traders exporting soy from Brazil to these five main European importing countries (Table 6) highlights major exporters such as Bunge and Cargill, followed by ADM and LDC.

**Table 6. Share of soy trade volume (in metric tons) from Brazil to five European countries, by selected trader-exporter group, in 2020**

SOY EXPORTER GROUP FROM BRAZIL	Netherlands	Spain	France	Germany	United Kingdom
Bunge	3%	16%	32%	22%	2%
Cargill	6%	25%	9%	3%	67%
LDC	1%	5%	13%	1%	1%
Cofco	1%	6%	6%	0.1%	1%
Amaggi	1%	3%	4%	4%	0.3%
ADM	22%	5%	N/A	11%	6%
ALZ	N/A	1%	N/A	N/A	N/A
Others	31%	20%	36%	31%	11%
Unknown	34%	20%	0%	28%	12%

Source: Trase, 2020. Last accessed March 6, 2024



These exporters (shown in Table 6) are the ones who have a commercial relationship with the soy farms and are also often the importers of soybeans and soybean meal into Europe.

The **Netherlands**: ADM is the only company listed for a number of shipments to the Netherlands in 2023 in Panjiva shipping database. Bunge, Cofco, Cargill, Glencore and Amaggi are listed as shippers. Soybean cargoes come primarily from the ports of Vila Do Conde, Santarem and Itacoatiara in Brazil. Soybean meal comes mostly from Paranaguá in the state of Paraná, which is a less risky source. There is also a wide range of soy origins, with logistics hubs in Mato Grosso and even in Rondônia and Pará in the Amazon, putting Dutch soy supplies at high risk of deforestation contamination.

**Spain**: Bunge and Cargill remain the main soy operators in Spain, according to the latest Panjiva shipping trade data (2024). The latest shipments of soybeans and soybean meal imported by Spain come from the states of Mato Grosso, Bahia and Piauí. These shipments mainly depart from the ports of Paranaguá (Paraná), Rio Grande (Rio Grande do Sul), São Luis (Maranhão), Vila do Conde (Pará), Itabuna (Bahia), Salvador (Bahia) and the inland ports of Manaus (Amazonas) and Santarem (Pará) and enter Spain through the ports of Barcelona, Cartagena, Bilbao and Huelva, where both Bunge and Cargill have facilities.

**France**: Bunge was the top exporter and the largest soy importer for France in 2023 (Panjiva, 2024). Most cargoes depart from the port of Salvador, state of Bahia, Brazil, and are related to the municipality of Luís Eduardo Magalhães, which hosts a Bunge crushing facility. This facility is the main origin for soy in France with exports of over 270,000 tons of soybean meal per year over the last five years, including 2023.<sup>4</sup> With Bunge's crushing facility in Brest, western France, the company is also the main crusher of imported soybeans. The French market also has a specific importer player (the fourth largest in France) called Solteam (Avril Group) which works with many soy exporters in Brazil and has implemented specific non-GM soy imports.

**Germany**: According to Panjiva's shipping data (2024), Bunge was an important soybean importer from the port of Salvador to the port of Brake in 2023. For soybean meal, Coamo accounted for a significant share. According to Trase, Germany's soy footprint in 2020 was strongly linked to three ports in Brazil: the first one, Paranaguá (Paraná) may be less risky because it mostly supplies from the already deforested southern Brazil. In this respect, the other two are more sensitive geographically, since the port of Salvador is likely connected to Western Bahia, and the port of Manaus to the Amazon.

**United Kingdom**: Cargill plays a predominant role in the soy trade between Brazil and the UK. Panjiva shipping records show that Cargill shipped 11 of the 14 shipments from Brazil to the United Kingdom between January 1, 2023, and November 30, 2023, totaling 472,214 metric tons of soybeans.<sup>5</sup> The UK's 2023 shipments came from the ports of Vila do Conde, Itaqui, Tubarao and Santarem. Between January 2020 and July 2022, 75% of Cargill soy imports to the UK originated from the export port of Santarem in northern Brazil.<sup>6</sup> The UK is highly connected to deforestation-risk soy coming from Mato Grosso in the Amazon, as Mighty Earth described in a previous report on Tesco in 2023.<sup>7</sup>

---

4 For: Trase data 2019-2020, see: <https://trase.earth/>; Brazil 2023 export data, see: <http://comexstat.mdic.gov.br/en/home> Customs Brazil in 2023 and Trase data from 2019 till 2020

5 Compiled and analyzed by Mighty Earth. Panjiva provides samples of export data and cannot be considered exhaustive. See: <https://panjiva.com/data/brazil-trade-data>

6 Mighty Earth (2023) *Tesco: A basket of problems for the Amazon*, Mighty Earth: Washington, D.C., United States

7 Mighty Earth (2023) *Tesco: A basket of problems for the Amazon*, Mighty Earth: Washington, D.C., United States



Bunge's crushing facility in Luís Eduardo Magalhães in Bahia accounts for more than 10% of France's soy supply. It is also a key logistics hub for the EU (Germany, Spain and Romania). The EU represents three quarters of the soy destination of this crushing plant (Trase 2020).

Source: Analysis from Mighty Earth with data from Trase, Panjiva and Comex Credit : Mighty Earth, February 2024

**Table 7. Share of critical biomes in the volume of soy traded from Brazil to five European importing countries in 2020**

	Netherlands	Spain	France	United Kingdom	Germany
<b>Amazon</b>	23.1%	22.7%	3.6%	26.2%	7.5%
<b>Cerrado</b>	33.5%	41.8%	37.3%	52.7%	48.9%
<b>Unknown</b>	21.3%	26.4%	20.7%	18.8%	29.3%

Source: Trase (2020) Last accessed February 28, 2024<sup>8</sup>

Most of the Brazilian soy exported to the top five European countries comes from the most threatened biomes by soy expansion, namely the Amazon and the Cerrado (Table 7).

**Table 8. Soybean and soybean meal products (HS codes 1201 and 2304) exported in 2023 by Brazilian states where recent deforestation occurred, to the top five European importing countries.**

State w. recent deforestation events	Importing country				
	France	Germany	Netherlands	Spain	United Kingdom
<b>Mato Grosso</b>	1201, 2304	1201, 2304	1201, 2304	1201, 2304	1201, 2304
<b>Bahia</b>	1201, 2304	1201, 2304	1201, 2304	1201, 2304	1201
<b>Piauí</b>	2304	2304	1201	1201	1201

Source: Comex (2024)

Table 8 shows that the top five European destinations for Brazilian soy are linked to states where recent deforestation or degradation events occurred, as seen in the case studies presented in the next section.

<sup>8</sup> This share is calculated in relation to the total volume of soy traded for each country, including the Amazon, Cerrado, Mata Atlântica, other biomes and unknown biomes.

# CASE STUDIES

Considering the top five municipalities in the Amazon and Cerrado by recent deforestation and forest degradation alerts per biome, the seven case studies were selected only if the clearing or degradation of native vegetation could be confirmed visually through daily high-resolution satellite imagery from Planet (Planet Labs PBC, 2023/2024). After visually confirming the clearing or degradation of forests or native vegetation through satellite imagery, each case was analyzed using AidEnvironment’s internal database, crossing data from different sources and datasets as described in the “Data Sources & Methodology” section. Lastly, the data was validated by a Brazilian partner, the investigative journalism group Repórter Brasil, and a qualitative analysis of each case was included using publicly available data.

## AMAZON

**CASE #1 ▪ Fazenda Senhor Jesus A, B and G - Brasnorte (Mato Grosso) . . . . . 14**

**CASE #2 ▪ Fazenda Mata Verde – Nova Santa Helena (Mato Grosso) . . . . . 16**

**CASE #3 ▪ Fazenda Sete Barras – Ribeirão Cascalheira (Mato Grosso) . . . . . 18**

## CERRADO

**CASE #4 ▪ Fazenda Rio de Janeiro – Barreiras (Bahia) . . . . . 20**

**CASE #5 ▪ Fazenda Vale do Urso – Barreiras (Bahia) . . . . . 23**

**CASE #6 ▪ Fazenda Gasparino – Santa Filomena (Piauí) . . . . . 25**

**CASE #7 ▪ Fazenda Faveira – Santa Filomena (Piauí) . . . . . 27**



# CASE #1 - Property: Fazenda Senhor Jesus A, B and G Amazon biome

**Brasnorte, Mato Grosso (MT) - Farm Area (ha): 9,983 - Soy area (ha): 200**

Farm Coordinates: -12.56, -57.80

CAR: MT-5101902-254DC8897E8345DA95D30494704FC327 (validated) (B) MT-5101902-309A8E1B63DF42799DB9C72D8050EFB8 (validated) (G) MT-5101902-09F204F84EC843ECBA265249C45C3712 (validated) (A) SIGEF 9010400210673

**Ownership:** José Eugênio Bonjour (A, B) / Schaedler family (G)

**Recent deforestation (ha): 1,496 - Deforested areas within Forest Code protected areas (ha) : 1,159  
14 fire alerts - CO<sub>2</sub> equivalent emissions (tons): 520,287**

**Surrounding natural conservation areas:** - **Surrounding Indigenous territories:** Next to the Manoki indigenous territory (Irántxe people) **Estimated % of remaining native vegetation:** 78% **Type of vegetation:** Contact between savannah and seasonal forest **Priority for biodiversity conservation:** Extremely high

## Identified deforestation 2020 to 2023 (ha)

MapBiomas Alerta (January 2020 to July 2020)	Prodes 2021 (August 2020 to July 2021)	Prodes 2022 (August 2021 to July 2022)	Prodes 2023 (August 2022 to July 2023)	Visually confirmed native vegetation degradation (August 2023 to December 2023)	Total (January 2020 to December 2023)
-	-	-	634	1,496	2,130

### Embargoes & Environmental fines:

José Eugênio Bonjour has two active embargoes issued by IBAMA: one in an unknown property in Guiratinga (MT) covering 20 hectares issued in 2006, and one in Fazenda Bonjour in Brasnorte (MT) covering 1,000 hectares issued in 2003. José Eugênio Bonjour incurred 10 environmental fines issued by IBAMA from 2006 to 2013, for the illegal clearing of native vegetation and unauthorized use of fire in Guiratinga (MT); for polluting activities in Alto Garças (MT); for the illegal clearing of native vegetation and illegal storage of timber in Brasnorte (MT); for illegal clearing of native vegetation and non-compliance with an embargoed in Brasnorte (MT). Mauro Fernando Schaedler has one active embargo issued by IBAMA in 2023 on 593 hectares at Fazenda Três Coqueiros II in Gaúcha do Norte (MT). Schaedler also incurred four environmental fines issued by IBAMA from 2008 to 2023, for unauthorized use of fire for clearing in Gaúcha do Norte (MT); for the illegal clearing of native vegetation in Brasnorte (MT); for polluting activities in Gaúcha do Norte (MT); and recently, in 2023, for polluting activities in Fazenda Três Coqueiros II inside the Pequizal do Naruvotu Indigenous Territory, amount: BRL 1,510,000 (USD\$ 303,468). The amount of all Bonjour-related fines is BRL 3,787,533 (USD\$ 761,190).

### Trader's silos within a 50km radius:

Amaggi and Bunge

### Supply chain Details

Mauro Fernando Schaedler and Ieda Webler Schaedler supplied soy to ADM, Amaggi, Cargill, Cofco, Cutrale and Louis Dreyfus in 2019 through Fazenda Três Coqueiros and Três Coqueiros I (both in Brasnorte, MT). Amaggi informed AidEnvironment that "No commercial relationship was identified between Amaggi with the mentioned property after the deforestation date," as reported in AidEnvironment's Realtime Deforestation Monitoring (RDM) report 18 in December 2023.

### Company Group

Bonjour Administração e Participações (Cuiabá, MT), registered as a real estate company/Agropecuária Três Coqueiros (Gaúcha do Norte, MT), ITFD Agrícola (Brasnorte, MT) are both registered as soy-producing companies.

### Other linked properties

Three properties totaling 6,249 hectares are linked to José Eugênio Bonjour. In Guiratinga (MT): Fazenda Novo Horizonte (3,478 ha); in Alto Graças (MT): Fazenda Brasília (2,665 ha), Parque Vereador José Guimarães Alves (106 ha). Two properties, totaling 3,863 hectares, are linked to Mauro Fernando Schaedler. In Brasnorte (MT): Fazenda Boa Vista III and IV (1,478 ha). In Gaúcha do Norte (MT): Fazenda Três Coqueiros (2,385 ha).

### General comments

José Eugênio Bonjour, who passed away in September 2022, was a pioneer in soy production in Rondonópolis (MT).<sup>(1, 2)</sup> Bonjour also owned the company Sementes Bonjour, which is no longer operating. The cluster of properties at Fazenda Senhor Jesus has different validated CARs declared by Bonjour Administração e Participações (owned by Marcia Cristina Ramos Bonjour Machado, Julia Almeida Bonjour, Mara Cristina Ramos Bonjour Mendes, José Eugênio Bonjour Neto and Fernanda Cristina Ramos Bonjour Pereira) and by Mauro Fernando Schaedler and Ieda Webler Schaedler. Both are active in cattle ranching with direct and indirect ties to Marfrig and JBS.

Mauro Fernando Schaedler and Ieda Webler Schaedler own Agropecuária Três Coqueiros (Gaúcha do Norte, MT) and ITFD Agrícola (Brasnorte - MT), which are declared soy-producing companies. The deforestation happened in Fazenda Bom Jesus (registered in SIGEF under José Eugênio Bonjour's name) and in Fazenda Senhor Jesus with validated CAR declared by Mauro Fernando Schaedler, who is active in crop production (e.g., cotton soy) and cattle ranching and who financially supported the election of several politicians in 2022.<sup>(3)</sup> Fazenda Senhor Jesus B, E and G have a deforestation permit for logging in 2,195 hectares issued by Sema (MT) valid between March and July 2023.<sup>(4)</sup>

(1) <http://www.tjmt.jus.br/noticias/70645>, (2) <https://www.atribunamt.com.br/estado/2022/09/em-cuiaba-aos-81-anos-morre-o-pioneiro-jose-eugenio-bonjour/>  
(3) <https://oeco.org.br/reportagens/toma-la-da-ca-quem-sao-os-eleitos-com-dinheiro-do-agronegocio-desmatador/> (4) <https://geoportal.sema.mt.gov.br/#/>



August 2023

**Fazenda Senhor Jesus, ABG ▪ Recent Deforestation: 1,496 ha**

Source:Planet Labs LBC, 2023/2024



January 2024

limits of the property ———

limits of the deforestation ———

# CASE #2 ▪ Property: **Fazenda Mata Verde Amazon biome**

**Nova Santa Helena, Mato Grosso (MT) ▪ Farm area (ha): 9,112 ▪ Soy area (ha): 400**

Farm coordinates: -11.16, -54.88

CAR: MT-5106190-D1FEA2E36BCF4812BA07FB75F42750A8 (validated)

**Ownership:** Daniele Pozzobon

**Recent deforestation (ha): 1,760 ▪ Deforested areas within Forest Code protected areas (ha): 1,697  
8 fire alerts ▪ CO2 equivalent emissions (tons): 781,774**

**Surrounding natural conservation areas: - ▪ Surrounding Indigenous territories: -**

**Estimated % of remaining native vegetation: 75% ▪ Type of vegetation:** Contact between rainforest and seasonal forest ▪ **Priority for biodiversity conservation:** Very high

## Identified deforestation 2020 to 2023 (ha)

MapBiomas Alerta (January 2020 to July 2020)	Prodes 2021 (August 2020 to July 2021)	Prodes 2022 (August 2021 to July 2022)	Prodes 2023 (August 2022 to July 2023)	Visually confirmed native vegetation degradation (August 2023 to December 2023)	Total (January 2020 to December 2023)
6	-	-	999	1,760	2,765

### Embargoes & Environmental fines:

The property Fazenda Mata Verde, registered under the name of Alexander Pozzobon, has one embargo on 100 hectares issued by SEMA/MT in 2022 due to illegal wood exploitation. Alexander Pozzobon incurred five environmental fines: two were issued by IBAMA in 2017 due to the non-compliance to an embargo on 4,257 hectares in Fazenda Mata Verde in Itaúna (MT) and Nova Santa Helena (MT), with a total amount of BRL 1,490,000 (USD\$ 299,449); two were issued by IBAMA in the linked property of Fazenda Atlântica in Nova Santa Helena (MT) due to the illegal deforestation of 162 hectares and 192 hectares in 2014, with a total amount of BRL 1,775,000 (USD\$ 356,726); and one was issued by SEMA (MT) in Fazenda Mata Verde V in 2022.

### Trader's silos within a 50km radius:

Cargill and Cofco

### Supply chain Details

In 2019, the linked property Fazenda WDP III (Cláudia, MT) supplied soybeans to Amaggi

### Company Group

MM Pecuária (registered as a cattle producer in Nova Bandeirantes, MT, and as an animal feed producer in Itaúba, MT)

### Other linked properties

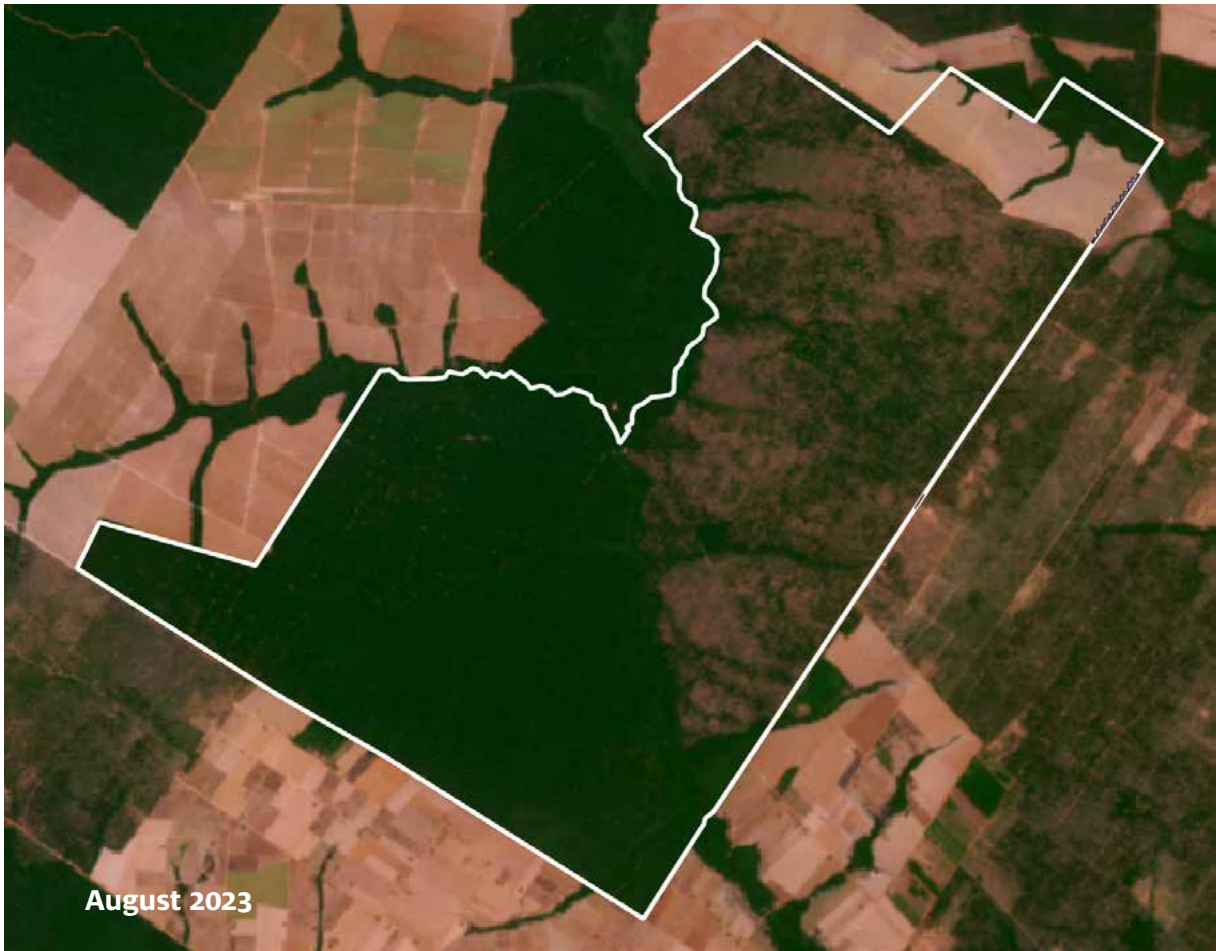
Four linked properties, unknown area. In Nova Santa Helena (MT): Fazenda Formosa (unknown area), Fazenda Atlântica (unknown area). In Sinop (MT): Fazenda Perdizes (unknown area). In Cláudia (MT): Fazenda WDP III (unknown area).

### General General comments

Since 2013, Daniele, Alexander and Wilson Roque Pozzobon have owned Fazenda Mata Verde, a 19,918 hectares complex divided into several CARs.<sup>(1)</sup> Although the property has a Sustainable Forest Management Plan authorizing the sustainable use of forest resources, valid until December 14, 2023, and covering 277 hectares outside the Legal Reserve [7004338/2022], the area is located in a soy expansion region, and its clearing might be linked to crop cultivation. Daniele Pozzobon is cited as one of the sponsors of Former President Bolsonaro's presidential campaign in 2022 with a donation of BRL 5,000 (USD\$ 1,004).<sup>(2)</sup> Daniele Pozzobon was mentioned as a supplier of Fiagril (2021) and Engelhardt—a company linked to BTG Pactual (2022)—in documents related to the Agribusiness Receivables Certificates (CRA).<sup>(3)</sup> Daniele Pozzobon is implicated in an ongoing investigation for illegal timber trading in 2016 in Itaúba (MT).<sup>(4)</sup> Fazenda Mata Verde is also part of a land conflict scenario that is still under investigation, but in January 2024, the owners received a court decision in favor of the removal of potentially illegal invaders on the property.<sup>(5)</sup>

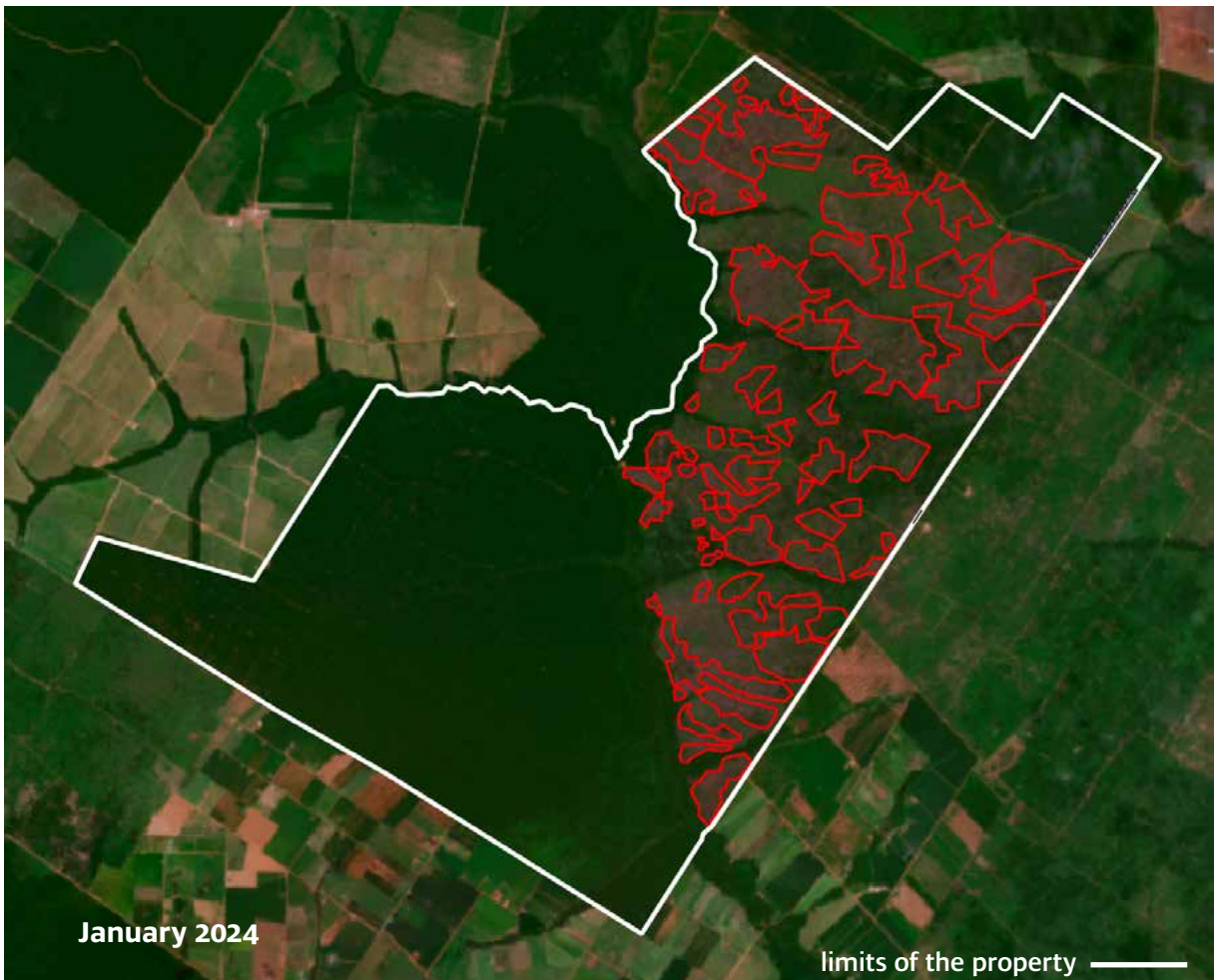
(1) <https://www.jusbrasil.com.br/jurisprudencia/trf-1/1156909331/inteiro-teor-1156909332/> (2) <https://jornaluniversoonline.com.br/donos-de-caminhoes-no-qg-do-exercito-no-df-doaram-r-15-mi-a-bolsonaro/> (3) [https://files.guide.com.br/ofertas\\_publicas/2023/BTG%20Pactual%20Commodities/Prospecto\\_Preliminar\\_CRA\\_VERT\\_BTG\\_Commodities\\_83\\_Emissao.pdf](https://files.guide.com.br/ofertas_publicas/2023/BTG%20Pactual%20Commodities/Prospecto_Preliminar_CRA_VERT_BTG_Commodities_83_Emissao.pdf) (4) <https://www.mpmt.mp.br/transparencia/includes/simpweb-det-view.php?action=consultar&protocolo=000824-060/2016> (5) <https://www.folhamax.com/economia/justica-proibe-grileiros-invadirem-fazenda-de-2-1-mil-hectares-em-mt/421478>





**Fazenda Mata Verde ▪ Recent Deforestation: 1,760 ha**

Source: Planet Labs LBC, 2023/2024



January 2024

limits of the property —

limits of the deforestation —

# CASE #3 - Property: Fazenda Sete Barras Amazon biome

**Ribeirão Cascalheira, Mato Grosso (MT) - Farm area (ha): 16,545 - Soy area (ha): 1,700**

Farm coordinates: -12.57, -51.64

CAR: MT-5107180-BCB226913E4D4A0C99AB3932E16457DA (declared, under analysis) SNCI: 9011130008253

**Ownership:** Companhia Agropecuária Sete Barras

**Recent deforestation (ha): 651 - Deforested areas within Forest Code protected areas (ha) : 651  
24 fire alerts - CO2 equivalent emissions (tons): 292,330**

**Surrounding natural conservation areas: - - Surrounding Indigenous territories: -**

**Estimated % of remaining native vegetation: 51 % - Type of vegetation:** Contact between savannah and seasonal forest **- Priority for biodiversity conservation:** High

## Identified deforestation 2020 to 2023 (ha)

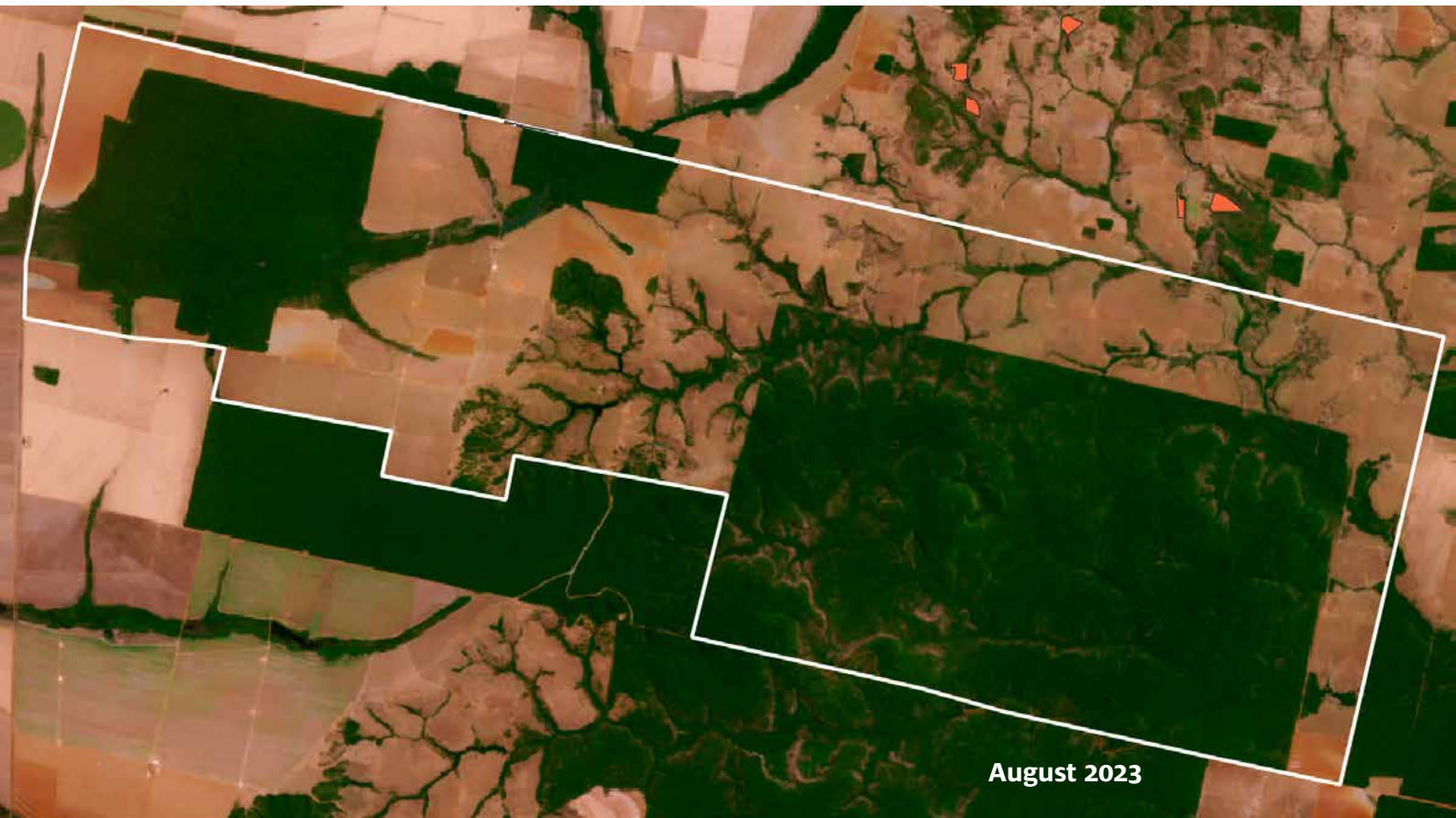
MapBiomas Alerta (January 2020 to July 2020)	Prodes 2021 (August 2020 to July 2021)	Prodes 2022 (August 2021 to July 2022)	Prodes 2023 (August 2022 to July 2023)	Visually confirmed native vegetation degradation (August 2023 to December 2023)	Total (January 2020 to December 2023)
-	-	-	-	651	651

<b>Embargoes &amp; Environmental fines:</b>	A linked property, Fazenda Três Garças in Ribeirão Cascalheira (MT) has two environmental embargoes issued by IBAMA in the name of Vera Cristina Costa Villela and Fábio Roosen Runge Villela (partners at Cia Agropecuária Sete Barras) due to illegal deforestation of 950 hectares in 2005, and the non-compliance of the embargo in 2013. Vera Cristina Costa Villela incurred one environmental fine of BRL 95,000 (USD\$ 19,092) due to the illegal deforestation at Fazenda Três Garças in 2005. Fabio Runge Villela incurred three fines issued by IBAMA: one in 2005 due to the illegal deforestation of 900 hectares in Fazenda Três Garças in Ribeirão Cascalheira (MT) and two in 2011 for not allowing natural regeneration of the area and the non-compliance of the embargo on the same property, with a total amount of BRL 5,190,000 (USD\$ 1,043,048).
<b>Trader's silos within a 50km radius:</b>	Amaggi, Cargill, Bunge, ADM, and LDC
<b>Supply chain Details</b>	In 2019, the linked property Fazenda WDP III (Cláudia, MT) supplied soybean to Amaggi
<b>Company Group</b>	Members of the Villela family own the Companhia Agropecuária Sete Barras, registered in Ribeirão Cascalheira (MT) and Barra do Garças (MT) as a cattle ranching company. Linked companies are FSRV Agropecuária, Agropecuária Ventura, Agro Pecuaría Três Marias, Agropecuária Rancho Curiango, Agropecuária Curiango, FCMJ Agropecuária, Agropecuária Rancho Villela, all registered in São Paulo, Mato Grosso and Mato Grosso do Sul as cattle ranching and crop-producing companies.
<b>Other linked properties</b>	One linked property in Ribeirão Cascalheira (MT): Fazenda Três Garças I (1,569 ha)
<b>General comments</b>	The Villela family is active in cattle ranching and grain production in Mato Grosso, Mato Grosso do Sul and São Paulo. <sup>(1)</sup> Fazenda Sete Barras has records of supplying JBS/Friboi since 2016. <sup>(2)</sup>

(1) [https://www.instagram.com/grupo\\_villela/reels/](https://www.instagram.com/grupo_villela/reels/)

(2) <https://girodoboi.canalrural.com.br/pecuaria/toca-o-berrante-1507/>, <https://girodoboi.canalrural.com.br/pecuaria/confira-as-fazendas-em-destaque-do-dia-22-de-fevereiro-de-2019/>

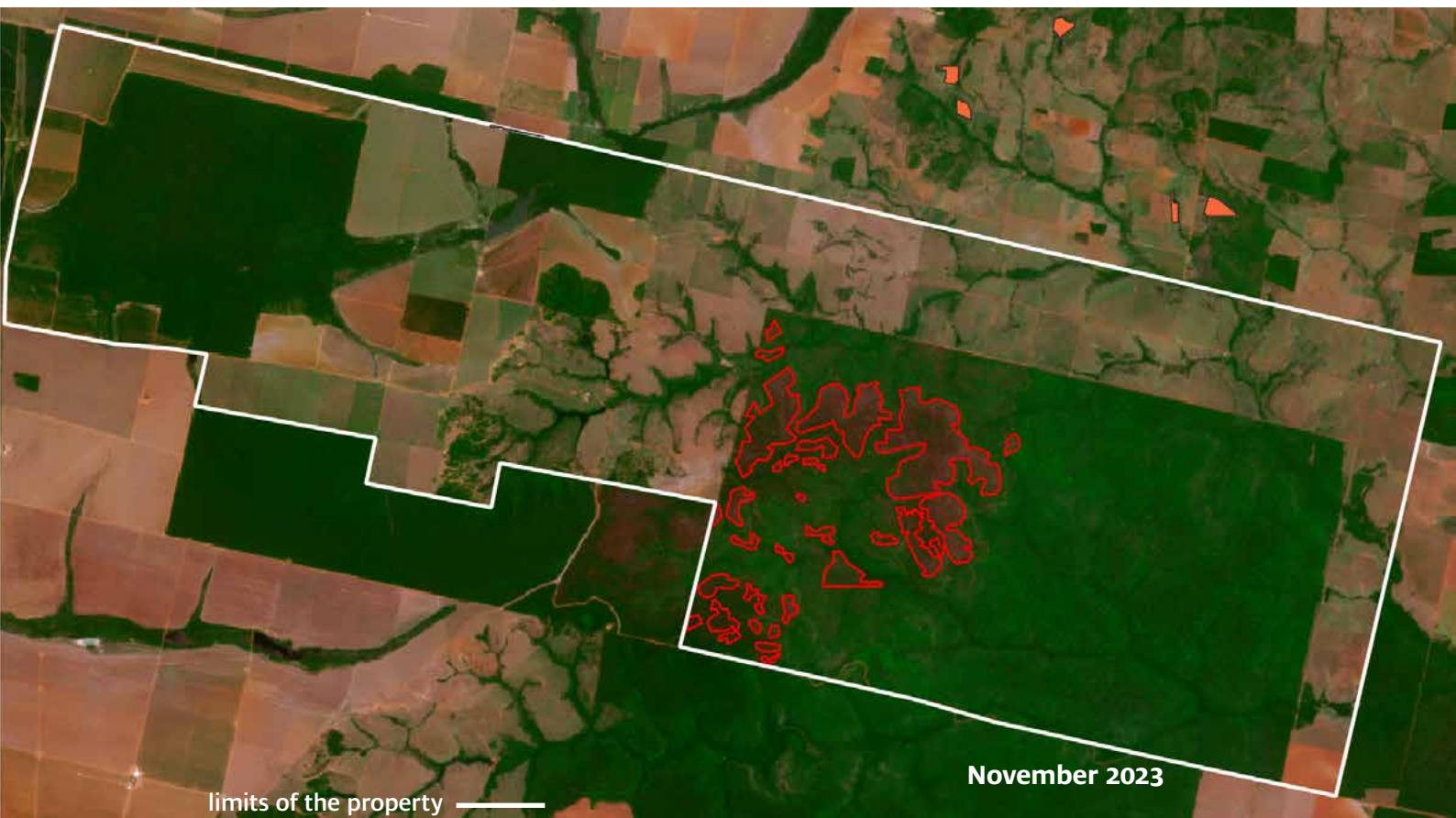




August 2023

**Fazenda Sete Barras ▪ Recent Deforestation: 651 ha**

Source: Planet Labs LBC, 2023/2024



November 2023

limits of the property ———

limits of the deforestation ———



# CASE #4 - Property: Fazenda Rio de Janeiro Cerrado biome

**Barreiras, Bahia (BA) - Farm area (ha): 10,095 - Soy area (ha): 6,800**

Farm coordinates: -11.92, -46.00

CAR: BA-2903201-606FC32E3A3040859C313BF619FF28D2 SNCI: 9060850149823

**Ownership:** Q045 Negócios Imobiliários

**Recent deforestation (ha): 1,556 - Deforested areas within Forest Code protected areas (ha) : 651  
2 fire alerts - CO2 equivalent emissions (tons): 78,019**

**Native vegetation cleared inside Forest Code protected areas (ha): 1,303**

**Surrounding natural conservation areas:** Overlapping with the Área de Proteção Ambiental Bacia do Rio de Janeiro conservation area - **Surrounding Indigenous territories:** - **Estimated % of remaining native vegetation:** 14 % - **Type of vegetation:** Woody-grass savannah, savannah park - **Priority conservation area:** No -

## Identified deforestation 2020 to 2023 (ha)

MapBiomas Alerta (January 2020 to July 2020)	Prodes 2021 (August 2020 to July 2021)	Prodes 2022 (August 2021 to July 2022)	Prodes 2023 (August 2022 to July 2023)	Visually confirmed native vegetation degradation (August 2023 to December 2023)	Total (January 2020 to December 2023)
-	1	-	-	1,556*	1,557

### Trader's silos within a 50km radius:

Amaggi, Cargill, Bunge, and ALZ Grãos (Amaggi, Louis Dreyfus, Zen-Noh)

### Supply chain Details

Radar Propriedades Agrícolas has trading relationships with Cargill and Bunge, mainly through properties leased to SLC Agrícola.

### Company Group

Janus Brasil Participações and Radar Propriedades Agrícolas are shareholders of Q045 Negócios Imobiliários, registered in Barreiras (BA). Other shareholders of the company are Debora Ferreira, Henrique Americano Carvalho de Freitas and Pedro Piason Breglio Pontes. The group owns more than 100 companies registered as real estate companies, most of them registered in São Paulo.

### Other linked properties

Radar and other subsidiaries own some 15 properties in the states of Maranhão, Piauí and Bahia, totaling at least 95,000 hectares.

### General comments

Radar Propriedades Agrícolas was originally formed as a joint venture between Mansilla Participações and Cosan (a Brazilian energy company with a joint venture with Shell-Raízen). Mansilla Participações is one of the 14 subsidiaries of TIAA (Teachers Insurance and Annuity Association of America and College Retirement Equities Fund, formerly TIAA-CREF).<sup>(1, 2)</sup> TIAA's farmland portfolio management has connections with Nuveen and Westchester, also owned by shareholders of Q045 Negócios Imobiliários.<sup>(2)</sup> Radar and its subsidiaries have trading relationships with Bunge and Cargill,<sup>(3, 4)</sup> primarily through leasing its properties to big soy producers such as SLC Agrícola.<sup>(2)</sup> TIAA has also been linked to CODECA, owned by the De Carli family, a known land grabber in the Matopiba region.<sup>(2)</sup> TIAA manages the TCGA farmland investment vehicles whose investor portfolio includes global pension fund companies such as AP2 (Sweden), BCI (Canada), and ABP (Netherlands), among others.<sup>(2)</sup> The estimated land portfolio linked to TIAA (through Radar and other subsidiaries) includes about 15 properties in the states of Maranhão, Piauí and Bahia, totaling at least 95,000 hectares, of which at least nine properties (approximately 28,000 ha) are leased to SLC Agrícola.<sup>(2)</sup> In 2018, Q045 Negócios Imobiliários leased the property Fazenda Rio de Janeiro to the Almeida Schmidt brothers (Moises, David, Tobias and Paulo). The Almeida Schmidt family produces crops and cotton on 6,285 hectares of Fazenda Rio de Janeiro.<sup>(3)</sup> Moises, one of the brothers, is vice president of the Aiba (Bahia Farmers and Irrigators Association).<sup>(4)</sup> The family owns Schmidt Agrícola, a soy, cotton, beans, cocoa and banana producing company in Barreiras (BA).<sup>(5)</sup> The company is certified by Algodão Brasileiro Responsável, which is affiliated with the Better Cotton Initiative (BCI).<sup>(6)</sup> In August 2022, INEMA (BA) issued an authorization valid until 2024 for the clearing of 0.09 hectares of native vegetation in Fazenda Rio de Janeiro for the construction of a bridge.<sup>(7)</sup>

(1) [https://www.social.org.br/files/pdf/PT\\_FINAL\\_PDF\\_TIAA/Nuven/WestChester/Radar.pdf](https://www.social.org.br/files/pdf/PT_FINAL_PDF_TIAA/Nuven/WestChester/Radar.pdf) (2) <https://chainreactionresearch.com/wp-content/uploads/2020/01/Radar-company-report-2.pdf> (3) undisclosed information (4) <https://aiba.org.br/a-aiba/> (5) Fiscal number: 31.463.006/0001-29, <https://www.linkedin.com/in/mois%C3%A9s-schmidt-8b05358b>, <https://schmidtagricola.com.br/> (6) <https://revistacultivar.com.br/noticias/certificacao-abrbci-supera-a-expectativa-da-abapa-para-a-safra-20212022> (7) <https://www.barreiras.ba.gov.br/diario/pdf/2022/diario3738.pdf>

\*Visually identified by satellite. It corresponds to 100% degraded area (significant reduction of savannah cover and recent fire evidence) not yet cleared after on the ground verification by Mighty Earth in late February 2024.



August 2023

**Fazenda Rio de Janeiro ■ Recent Deforestation: 1,556 ha**

Source:Planet Labs LBC, 2023/2024



January 2024

limits of the property

limits of the deforestation





### Processed Image

Source: European Union - EO Browser Copernicus Sentinel data 2023



Source: European Union - EO Browser Copernicus Sentinel data 2023



Source: European Union - EO Browser Copernicus Sentinel data 2023



# CASE #5 - Property: Fazenda Vale do Urso Cerrado biome

**Barreiras, Bahia (BA) - Farm area (ha): 3,477 - Soy area (ha): 1,000**

Farm coordinates: -11.83, -45.67

**CAR:** BA-2903201-EFA73205208D4C6FB04286BAF534D74C, BA-2903201-DABD5C2A8BDF4FF0B52285B717833610, BA-2903201-30A522CB766D4AC691D96F9DCBBBCCCF - **SNCI:** 3010350284105

**Ownership:** Maria Celia Sampaio Kumagai

**Recent deforestation (ha): 460 - 5 fire alerts - CO2 equivalent emissions (tons): 22,979**

**Native vegetation cleared inside Forest Code protected areas (ha): 6**

**Surrounding natural conservation areas:** Overlapping with the Área de Proteção Ambiental Bacia do Rio de Janeiro conservation area - **Surrounding Indigenous territories:** - **Estimated % of remaining native**

**vegetation:** 48 % - **Type of vegetation:** Wooded and grass savannah, park savannah -

**Priority conservation area:** No -

## Identified deforestation 2020 to 2023 (ha)

MapBiomas Alerta (January 2020 to July 2020)	Prodes 2021 (August 2020 to July 2021)	Prodes 2022 (August 2021 to July 2022)	Prodes 2023 (August 2022 to July 2023)	Visually confirmed native vegetation degradation (August 2023 to December 2023)	Total (January 2020 to December 2023)
-	-	50	139	460*	649

**Trader's silos within a 50km radius:**

Cargill, Bunge, and ALZ Grãos (Amaggi, Louis Dreyfus, Zen-Noh)

**Company Group**

Agropecuária Vale do Urso, registered in Barreiras as a soy production company

**Other linked properties**

One linked property in Correntina (BA): Fazenda Buriti III (2,834 ha)

**General comments**

Maria Célia Sampaio Kumagai is a member of the Business Association of Barreiras (BA).<sup>(1)</sup> The Fazenda Vale do Urso property, along with Fazenda Buriti III and Buriti IV, had an environmental license for agriculture and extensive livestock farming issued in 2016, valid for 5 years.<sup>(2)</sup>

(1) <https://www.cdlbarreiras.com.br/> (2) <https://www.barreiras.ba.gov.br/diario/pdf/2015/diario1933.pdf>

\*Field confirmation of recent clearing by Mighty Earth researchers. Dead trees still with green leaves, burned trunks grouped together. See the picture below

**Charred trunks and stumps, uprooted and moved into remaining pockets of native vegetation.**

**Photo taken during the field investigation in the Vale Do Urso farm (Barreiras).**

Credit: Mighty Earth, France24 Brazil







**Piles of limestone to be spread on the cleared land. This limestone comes from mines and is used to reduce the acidity of the soil, which is too acidic in the region for soy crops. Photo taken during the field investigation in the Vale Do Urso farm (Barreiras).**

Credit: Mighty Earth, France24 Brazil



July 2023



January 2024

limits of the property

limits of the deforestation

**Fazenda Vale do Urso • Total Deforestation: 460 ha**

Imagery: limits of the property (white). Source: Drone pictures of the cleared area in Vale do Urso. Source: Mighty Earth, Chambre avec vue. February 2024

# CASE #6 ▪ Property: Fazenda Gasparino Cerrado biome

**Santa Filomena, Piauí (PI) ▪ Farm area (ha): 1,285 ▪ Soy area (ha): 1,120**

Farm coordinates: -9.41, -45.47

CAR: PI-2209203-B3A9B8704E6 64B1491B599DAF9A73B5F, PI-2209203-9CDA6BC1DAB641D49AB41CD313873EF5 ▪ SIGEF: 9500333127976

**Ownership:** Avelar de Castro Ferreira

**Recent deforestation (ha): 339 ▪ 3 fire alerts ▪ CO2 equivalent emissions (tons): 16,942**

**Native vegetation cleared inside Forest Code protected areas (ha): 3**

**Surrounding natural conservation areas:** Overlapping with the Área de Proteção Ambiental Bacia do Rio de Janeiro conservation area ▪ **Surrounding Indigenous territories:** - ▪ **Estimated % of remaining native vegetation:** 50 % ▪ **Type of vegetation:** Wooded savannah ▪ **Priority conservation area:** Very High

## Identified deforestation 2020 to 2023 (ha)

MapBiomas Alerta (January 2020 to July 2020)	Prodes 2021 (August 2020 to July 2021)	Prodes 2022 (August 2021 to July 2022)	Prodes 2023 (August 2022 to July 2023)	Visually confirmed native vegetation degradation (August 2023 to December 2023)	Total (January 2020 to December 2023)
<b>34</b>	-	<b>50</b>	<b>41</b>	<b>339</b>	<b>414</b>

**Trader's silos within a 50km radius:**

Bunge

**Other linked properties**

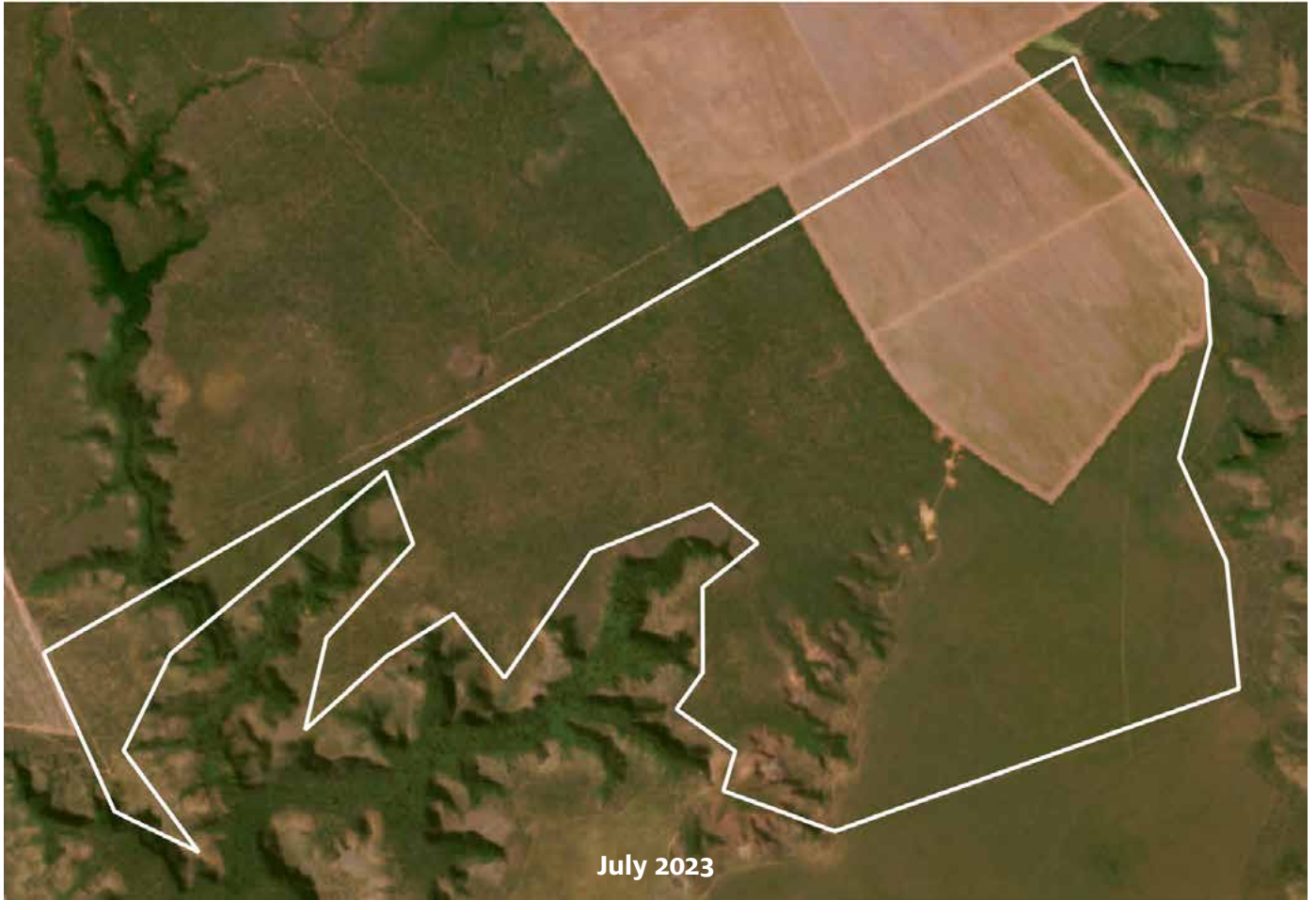
No other linked properties found

**General comments**

Avelar de Castro Ferreira was the Mayor of São Raimundo Nonato (PI) for three terms.<sup>(1)</sup> In July 2021, Ferreira requested an authorization to clear 746.5 hectares in Fazenda Gasparino to carry out agricultural activities.<sup>(2)</sup> He also declared ownership of Fazenda Nova Horizonte in Santa Filomena (PI).<sup>(3)</sup> In July 2022, Avelar de Castro Ferreira applied to the Environmental Agency of Piauí for licenses to implement agricultural activities at Santa Filomena (PI), but the name of the farm is not mentioned.<sup>(4)</sup> In July 2023, Fazenda Gasparino received a permit from the Environmental Agency of Piauí to clear 703.2 hectares, valid until July 2024.<sup>(5)</sup>

(1) <https://lupa1.com.br/blogs/gustavo-almeida/ex-prefeito-avelar-ferreira-se-filia-ao-progressistas-no-dia-1-ordm-12295.html> (2) <https://siga.semar.pi.gov.br/media/uploads/2022/05/26/23931d04-bc9e-40cd-a6a2-5937d44a8b5b.pdf> (3) <https://divulgacandcontas.tse.jus.br/divulga/#/candidato/2020/2030402020/12114/180001044922/bens> (4) [http://www.diariooficial.pi.gov.br/diario/202112/DIARIO23\\_84484110c0.pdf](http://www.diariooficial.pi.gov.br/diario/202112/DIARIO23_84484110c0.pdf) (5) National System for Control of the Origin of Forestry Products (SINAFLOR, Piauí)





**Fazenda Gasparino ■ Recent Deforestation: 339 ha**

Imagery: limits of the property (white), limits of the deforestation (red). Source: Planet Labs LBC, 2023/2024



# CASE #7 ▪ Property: Fazenda Faveira Cerrado biome

**Sebastião Leal, Piauí (PI) ▪ Farm area (ha): 11,669 ▪ Soy area (ha): 1**

Farm coordinates: -8.22, -44.22

CAR: PI-2210631-1D7A6338FF63468EAD61B550AEE5A1E1 ▪ SIGEF: 9501144687703

Ownership: GBE Fazendas

**Recent deforestation (ha): 1,004 ▪ 3 fire alerts ▪ CO2 equivalent emissions (tons): 69,349**

**Native vegetation cleared inside Forest Code protected areas (ha): 1,001**

Surrounding natural conservation areas: - ▪ Surrounding Indigenous territories: - ▪ Estimated % of remaining native vegetation: 28 % ▪ Type of vegetation: Wooded savannah and forested savannah ▪

Priority conservation area: Very High

## Identified deforestation 2020 to 2023 (ha)

MapBiomias Alerta (January 2020 to July 2020)	Prodes 2021 (August 2020 to July 2021)	Prodes 2022 (August 2021 to July 2022)	Prodes 2023 (August 2022 to July 2023)	Visually confirmed native vegetation degradation (August 2023 to December 2023)	Total (January 2020 to December 2023)
-	-	-	6,172	1,004	7,176

### Trader's silos within a 50km radius:

Bunge and ALZ Grãos (Amaggi, Louis Dreyfus, Zen-Noh)

### Company Group

GBE Fazendas (Sebastião Leal, PI) is registered as a real estate agency by Augusto Barros de Macedo and VN Mundo Novo Patrimonial S/A. Linked companies are FWA Industria de Alimentos (poultry, Cuiabá, MT), Campo Verde Alimentos (meat company, Campo Verde, MT), VT Logística e Transporte (Lucas do Rio Verde, MT), FWA Empreendimentos e Participações (real estate, Cuiabá, MT), and FWA São Vicente Energia (Lucas do Rio Verde, MT).

### Other linked properties

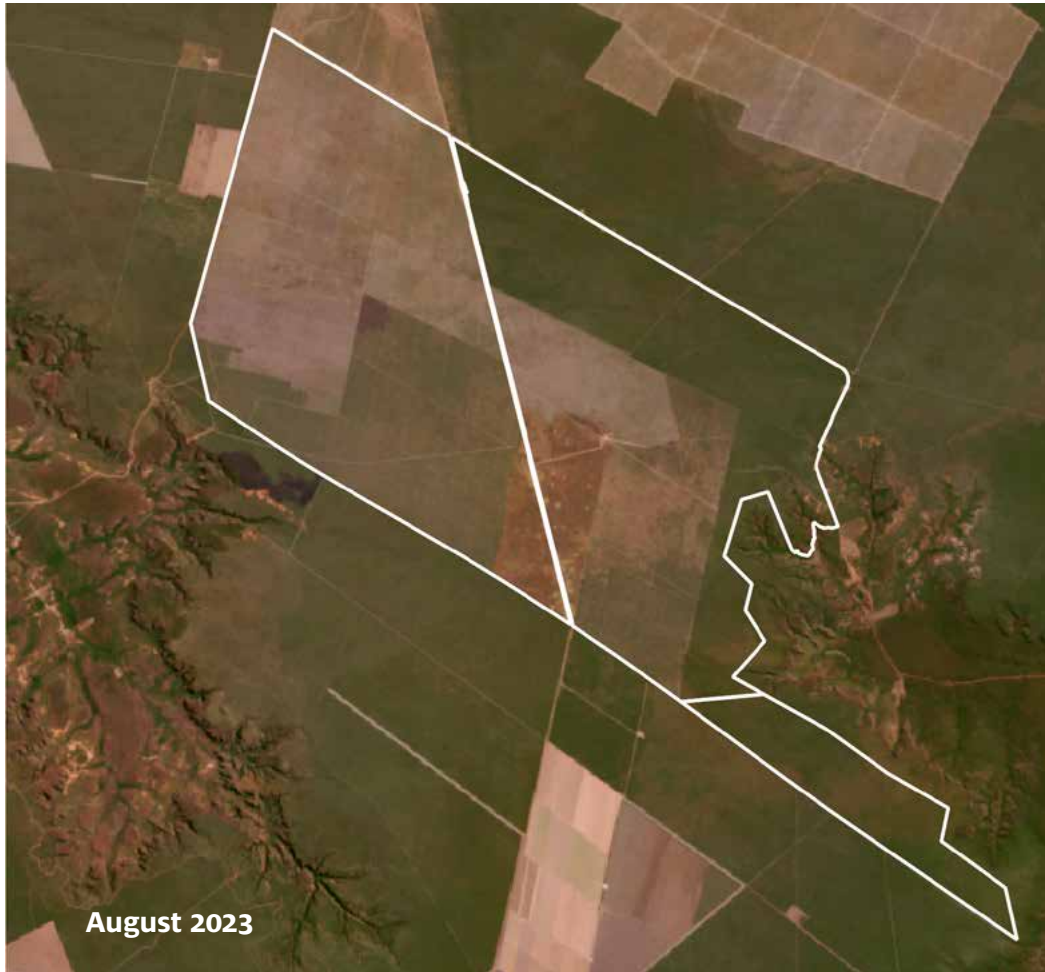
One linked property in Sebastião Leal (PI): Fazenda Mundo Novo (11,000 ha)

### General comments

There is a lot of soy produced in the surrounding areas. In August 2021, GBE Fazendas applied for a permit to clear native vegetation in Sebastião Leal (PI).<sup>(1)</sup> Detailed information about this permit or whether it is linked to Fazenda Faveira is unavailable. GBE Fazendas was established in 2008 and is linked to a scandal involving Harvard University's endowment fund and a series of negative social and environmental impacts in Piauí, reported by Chain Reaction Research,<sup>(2)</sup> Grain,<sup>(3)</sup> and Rede Social de Justiça e Direitos Humanos.<sup>(4)</sup> GBE is linked to Gordian Bioenergy, a private equity investment firm managed by Diomedes Christodoulou. In 2007, Christodoulou was linked to North American and European investors through a USD\$150 million sugarcane plantation and ethanol refinery project that GBE planned to implement in Brazil. With Terracal, GBE purchased more than 30 properties in five states in Brazil, specifically linked to the Harvard University endowment fund totaling 168,000 hectares. Between June 2008 and June 2015, the Harvard University endowment fund transferred more than USD \$246 million to GBE for the purchase of farmland in Brazil. After the scandal, another company linked to Harvard, InSolo, was bought by Ricardo Farias in November 2021, who, with this acquisition, created Terrus S.A., becoming Brazil's fifth-largest grain producer in terms of planted area.<sup>(5)</sup>

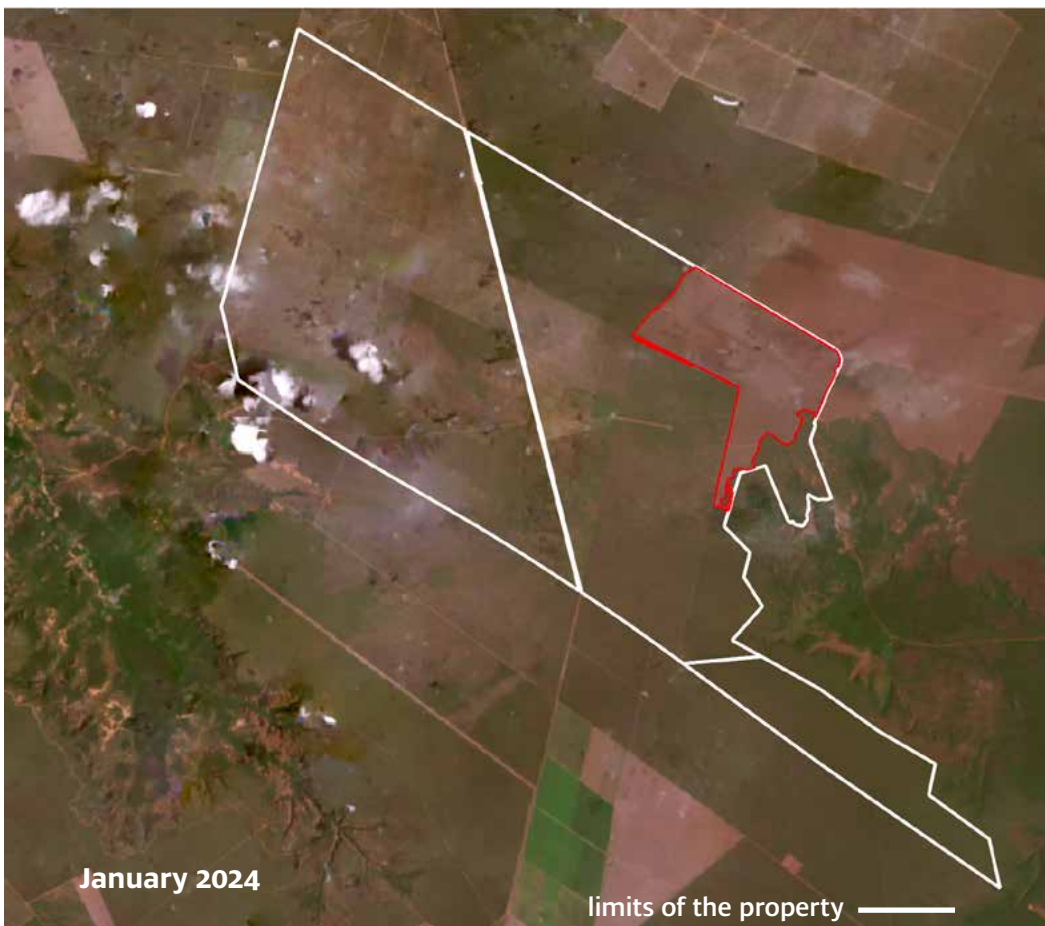
(1) <https://www.jusbrasil.com.br/diarios/1142473611/doepi-19-08-2021-pg-73> (2) <https://chainreactionresearch.com/report/foreign-farmland-investors-in-brazil-linked-to-423000-hectares-of-deforestation/> (3) <https://grain.org/en/article/6006-harvard-s-billion-dollar-farmland-fiasco> (4) [https://www.social.org.br/files/pdf/EN\\_FINAL\\_PDF\\_Harvard.pdf](https://www.social.org.br/files/pdf/EN_FINAL_PDF_Harvard.pdf) (5) <https://exame.com/agro/apos-comprar-insolo-por-r-18-bi-ricardo-faria-e-maior-emergente-agro/>





**Fazenda Faveira ▪ Recent Deforestation: 1,004 ha**

Imagery: limits of the property (white), limits of the deforestation (red). Source: Planet Labs LBC, 2023/2024



limits of the property —  
limits of the deforestation —



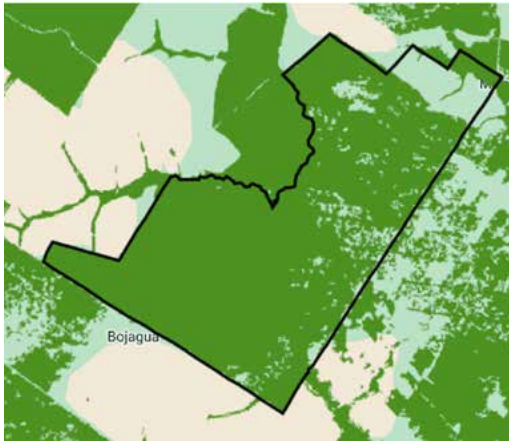
**Case studies' areas combined to the Global Map of Forest Cover for year 2020.\*** The dark green areas in these maps represent the forest cover area in 2020, according to the European Commission. With the operationalization of the EUDR, agricultural commodities such as soy, planted in areas which were “green” in the maps by 2020, cannot be exported to European Union countries. The maps below show cleared areas in “forest” zones, but also the difficulty of separating what is forest and savannah in some cases. This is why all the native vegetation including OWL should be included in the EUDR.

Source: EU observatory on deforestation and forest degradation<sup>9</sup>

\* Forests shown in dark green.



**Fazenda Senhor Jesus**  
Brasnorte (Mato Grosso) - Amazon



**Fazenda Mata Verde**  
Nova Santa Helena (Mato Grosso) - Amazon



**Fazenda Sete Barras**  
Ribeirão Cascalheira (Mato Grosso) - Amazon



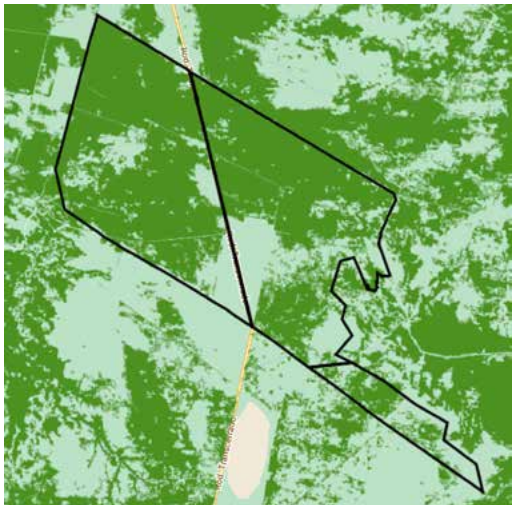
**Fazenda Rio de Janeiro**  
Barreiras (Bahia) - Cerrado



**Fazenda Vale do Urso**  
Barreiras (Bahia) - Cerrado



**Fazenda Gasparino**  
Santa Filomena (Piauí) - Cerrado



**Fazenda Rio de Janeiro**  
Barreiras (Bahia) - Cerrado

<sup>9</sup> EU observatory on deforestation and forest degradation, Global forest monitoring, Global Map of Forest Cover for year 2020, see: <https://forest-observatory.ec.europa.eu/forest/gfc2020>

# UPDATE - FAZENDA SANTA ISABEL (BARREIRAS - WEST BAHIA)

In Mighty Earth’s report on soy trader Bunge, published in June 2023, we described the case of Fazenda Santa Isabel as having already established relationships with Bunge for 2,752 hectares of partially illegal deforestation in 2021.<sup>10</sup> On June 6, 2023, Bunge replied to Mighty Earth on this specific case that *“our due diligence process identified four farms with whom we have direct relationships. (...) We note that although land clearing occurred, soybeans have not necessarily been planted after clearing.”*

However, during a field mission in West Bahia in late February 2024, Mighty Earth conducted an investigation to determine the boundaries of the Fazenda Santa Isabel in Barreiras, West Bahia, and to verify that this farm was indeed producing soy. The investigation was carried out by Mighty Earth, a Brazilian CSO and two journalists from France 24 Brazil, and drone footage further confirmed our findings.

The results of this investigation were conclusive, and we found additional evidence:

- We were able to visually verify that Fazenda Santa Isabel produces mainly soy on this farm, and often alternates between cotton and soy crops on each of its plots.
- Testimonies from local community members confirmed that soy is the main production on Fazenda Santa Isabel. The deforested areas identified in 2021 by Mighty Earth were planted with soy in the year following the deforestation.
- In the Fazenda Santa Isabel boundary,<sup>11</sup> we identified the conversion of an additional 516.82 hectares of native vegetation (not included in our previous report). According to MapBiomas, they were converted in February 2023.<sup>12</sup> We assessed that 52% of this deforestation did not comply with the Forest Code, according to MapBiomas information:
  - ◊ 16.25 hectares of cleared land were located in a Permanent Preservation Area (APP), in violation of the Brazilian Forest Code (according to MapBiomas Alert);
  - ◊ 252.25 hectares of cleared land were located in a Legal Reserve, which is also in violation of the Brazilian Forest Code too (according to MapBiomas Alert).

<sup>10</sup> Mighty Earth (2023) *Saving the Cerrado: Why Bunge, supermarkets and governments must act fast*, Mighty Earth: Washington, D.C., United States

<sup>11</sup> The “original CAR” of Fazenda Santa Isabel has been divided over time into several different CARs, which are currently registered under different names. The case described here (Specific CAR BA-2919553-576CE02493044A13977209DDF6A58D04) is located within the property boundaries, as a sign prohibited entry into Fazenda Santa Isabel.

<sup>12</sup> MapBiomas Alerta, see: <https://plataforma.alerta.MapBiomas.org/alerta/875491>



**Fazenda Santa Isabel conglomerate with pivots, retention basins and the recently cleared property described here in the background**  
Credits: Mighty Earth, February 2024



**Sign at the entrance of Fazenda Santa Isabel, Barreiras, west Bahia**  
Credits: Mighty Earth, February 2024



## Before and after deforestation in the property of the Fazenda Santa Isabel conglomerate



**Before - August 2022**  
(Planet Imagery August 2022)



**After - December 2022**  
(Planet Imagery December 2022)

- This deforested and converted area belonged 100% to the Rio de Janeiro Basin Environmental Protection Area (305 ha)
- According to the 2020 EU Forest map, 60% of this area was forested.

**Forested areas and native vegetation in Fazenda Santa Isabel using the new EU Forest map. Some of 60% of this deforested area was classified as forest (dark green) by the EU Forest Map.** Therefore, the soy exported to the EU from this property would not meet the EUDR deforestation criteria. Analysis: Mighty Earth based on Forest Observatory EC Europa GFC 2020. Forest is shown in dark green.



- Mighty Earth conducted an interview in the community of Vila Buriti located within the Fazenda Santa Isabel complex and an interviewee stated that the soybeans from the Fazenda Santa Isabel were destined for Bunge for export. The French journalist team also followed soybean trucks from Fazenda Santa Isabel, and documented that the truck went to Bunge’s grain silo and crushing facility in Luís Eduardo Magalhães, some 17 kilometers away, as described below.

**A truck leaving from Fazenda Santa Isabel to go to Bunge’s Luís Eduardo Magalhães facility.**

Credits: Mighty Earth and France24 Brazil



**Soy truck within the Fazenda Santa Isabel conglomerate**



**Soy truck close to the Fazenda Santa Isabel entrance**



**Soy truck going to the Bunge facility**



**Followed soy truck at the entrance of Bunge’s crushing facility in Luís Eduardo Magalhães**

## SOCIAL ISSUES

Residents of nearby local communities reported that the region (bordering the Fazenda Santa Isabel complex) “is finished since the arrival of industrial soy” (interviewed close to Cachoeira Acaba Vida, February 2024). In the community of Vila Buriti, which is now surrounded by soybeans and crops from the Fazenda Santa Isabel, the situation is even worse.<sup>13</sup>

<sup>13</sup> “Famílias são retiradas de área onde vivem após terreno ser vendido para empresa no oeste da Bahia,” *G1*, September 10, 2021





**The Vila Buriti village, inside Fazenda Santa Isabel with most of the infrastructure destroyed, with only six families left (out of 90) due to the pressure from the surrounding soy crops.**

Credits: Mighty Earth and France 24 Brazil

One resident, William (name was modified), who still lives there, explained: *“It is no longer possible to harvest fruit or graze cows. It was still a forest reserve a few years ago.”* (interviewed in Vila Buriti, February 2024).

Around him, only six out of 90 families remain. The community was forced to leave, and the local school was reportedly destroyed four months ago. Interviewees said that Fazenda Santa Isabel (formerly known as Agronol) was offering only BRL 50,000 (USD\$ 10,440) to buy the last houses in the village. This was a ridiculous sum for William, who says he called in a lawyer: *“I can’t build a house with this money. Just the walls, not the roof.”* He added: *“Pesticides are everywhere. It’s bad for birds and bees.”*

## EXPORTATION TO EUROPE

Based on Brazilian soy export data from Trase and Panjiva export shipment data, Mighty Earth has also found that the French, German and Spanish markets are highly reliant on Bunge soybean meal from the Luís Eduardo Magalhães crushing plant in West Bahia, and thus on deforestation-risk soy from Fazenda Santa Isabel, one of the largest farms near the Bunge crushing plant with multiple evidence of current commercial relationships.

In June 2023, when we published our report on Bunge, various retailers indicated that they were launching investigations into this case and Bunge.<sup>14</sup> Despite the EUDR law, business as usual seems to prevail, and there has been no change in the EU market’s reliance on this region, which remains massive. For example, the last three largest shipments of soybean meal to France from Bunge’s Luís Eduardo Magalhães crushing facility totaled 85,000 tons in November 2023 (Panjiva 2024).

<sup>14</sup> “Les supermarchés français commencent enfin à enquêter sur les liens entre le géant américain du soja Bunge et la récente déforestation du Cerrado,” *Mighty Earth*, June 2023



As for the Fazenda Santa Isabel, the French retailer Carrefour announced that it will investigate and include this farm complex in its new deforestation alert platform.<sup>15</sup> But so far, Carrefour has not taken strong commercial action, and Bunge continues to source deforestation-risk soy from this area and farm, despite evidence of its huge deforestation and conversion footprint.

## RESPONSES FROM COMPANIES

Excerpts from the traders responses regarding their business relationships with the aforementioned suppliers (case studies)

You can read the full response sent by the traders [here](#).

### ADM

“Thanks for reaching out to ADM. We have checked our systems and we do not have Fazenda Sete Barras in Ribeirao Cascalheira (MT- BRAZIL), or the CAR you provided, as a supplier of ADM.”

### ALZ

“ALZ Grãos would like to inform that it does not have commercial relationships with the referenced properties. (...) Finally, the company informs that its due diligence process to confirm the regularity of its purchases is continual. Thus, if there is evidence of non-compliance with ALZ Grãos policies in its business, the company will take appropriate measures, such as blocking or suspending the commercial relationship.”

### Amaggi

“About the farms linked with Amaggi, the summary of our evaluation is:

Fazenda Senhor Jesus A, B and G (Brasnorte-MT): No commercial relationship was identified between Amaggi with the mentioned property after the deforestation date.  
Fazenda Sete Barras (Ribeirão Cascalheira-MT): No commercial relationship was identified between Amaggi with the mentioned property after the deforestation date.(...)  
If there any kinds of restrictions are identified during purchase, the commercialization registration is automatically blocked by the system, and it can only be released upon confirmation from the Sustainability area that the purchase meets the company’s socio-environmental demands. (...) We reinforce that the areas mentioned in the cases above are currently blocked in Amaggi’s purchasing system until we have the guarantee that they will meet Amaggi’s social-environmental criteria again.”

<sup>15</sup> “Informations détaillées concernant l’alerte suivante : Déforestation et culture du soja dans le Cerrado,” Carrefour, note, May 30, 2023

## BUNGE

“At this time we have not identified any commercial relationship with the farms in your report. (...) As a result of our efforts, over 97% of our soybean volumes from Brazil are deforestation and conversion-free. (...) The majority of our sourcing in Brazil is direct, for which 100% of the volumes are traceable and monitored. This process is also audited every year by a third-party. Our focus is now on reaching 100% traceability and monitored soybean volumes acquired indirectly through third-party resellers. Last year we announced that we overperformed our interim target for indirect traceability: 82% of the purchased volumes in key regions such as the Cerrado are traceable (...).”

“For the new allegation regarding Santa Isabel, we kindly request you submit this through our grievance process so that we may investigate appropriately.”

## CARGILL

“It is important to note that of the four properties you identified, we do not do business with three of them. For the one property that is in our supply chain, we are investigating the allegations in accordance with our soy grievance process. If a violation of our South America Soy Policy or any of Cargill’s policies is found, we will block the farm. Information about grievances and blocked farms in our South America soy supply chain are published on Cargill.com and in our ESG report.”

## COFCO

“COFCO International’s do not have purchase contracts or agriculture financing for this plot. No commercial relationship, past or currently, was found with this declared area (MT-5106190-D1FEA2E36BCF4812BA07FB75F42750A8) according to the area declared in the Brazilian database on April 4, 2023. COFCO International confirms that this CAR was immediately inserted into the company socio-environmental monitoring system and will be monitored daily to avoid non-compliance with our sustainable purchasing policy and our public commitments. (..) As previously stated, the company immediately inserted this CAR into its socio-environmental monitoring base to ensure compliance with internal policies and commitments.”

## LDC

“We are monitoring the Fazenda Sete Barras, however, our system does not indicate deforestation in the indicated CAR according to PRODES methodology, whereas for the DETER system we see an overlap in 2023, though over degraded area with a date prior to the alert, not native vegetation. Please let us know if you disagree with this analysis and advise the data source used in your assessment, so we can further investigate. Considering our analysis above, we had a soybean origination contract in the last harvest with Fazenda Sete Barras.”

# APPENDIX 1 - METHODOLOGY

## Case studies – data sources & methodology

### Deforestation and Fire alerts

We processed deforestation alert data from the INPE/DETER program for both the Amazon and Cerrado biomes. The Global Forest Watch (GLAD alerts) and the MapBiomas Alerta satellite imaged-based platforms provide alternative sources. Fire alerts are checked on the NASA/Firms platform and are processed using the EO Browser Copernicus Sentinel platform. Deforestation is confirmed for each selected case by high-resolution satellite imagery from Planet (®Planet Labs Inc.).

- INPE (DETER and PRODES): <http://terrabrasilis.dpi.inpe.br/>
- GFW: <https://www.globalforestwatch.org/>
- MapBiomas Alerta: <https://plataforma.alerta.MapBiomas.org/>
- NASA Fires: <https://firms.modaps.eosdis.nasa.gov/>
- Copernicus Sentinel: <https://www.sentinel-hub.com/>
- Planet Lab Inc.: <https://www.planet.com/>

### Landownership (SIGEF/SNCI/SNCR) & Environmental Rural Cadaster (CAR)

Landownership data comes from the federal land tenure management systems SIGEF and SNCI and is crossed with SNCR to identify the most recent registered owner. The registration of landownership on local notary offices is not checked and may differ from the federal systems. According to the Brazilian Forest Code, the self-declaration of the Rural Environmental Cadaster (CAR - Cadastro Ambiental Rural) is verified in the SICAR federal system, including the Legal Reserves and Permanent Preservation Areas (APP). For some states, such as Mato Grosso, Pará and Tocantins, it is possible to verify the CAR declarant name through the Environmental State Agencies' CAR platforms. It is essential to emphasize that the CAR declaration is not recognized as an official land tenure or ownership document, since it is a self-declaration required under the Brazilian Forest Code.

- SIGEF/SNCI: [http://certificacao.incra.gov.br/csv\\_shp/export\\_shp.py](http://certificacao.incra.gov.br/csv_shp/export_shp.py)
- SNCR: [https://snccr.serpro.gov.br/snccr-web/](https://sncr.serpro.gov.br/snccr-web/)
- SICAR (federal): <https://www.car.gov.br/publico/imoveis/index>
- CAR Mato Grosso: <https://geoportal.sema.mt.gov.br/#/>
- CAR Pará: <https://car.semas.pa.gov.br/>
- CAR Tocantins: [http://sigcar.semarh.to.gov.br/pesquisa\\_publica/inicio.jhtml](http://sigcar.semarh.to.gov.br/pesquisa_publica/inicio.jhtml)

### Brazilian Forest Code protected areas

The Brazilian Forest Code defines Legal Reserves and Permanent Preservation Areas (APP) as having mandatory conservation status on private properties. The size of Legal Reserves on private properties varies according to the biome —80% for the Amazon biome, 35% for the Cerrado biome inside the Legal Amazon, and 20% for other biomes—. APPs are zones associated with water and soil conservation areas (close to river beds, wetlands, slopes, and high hills). The Legal Reserves and APPs considered in this report are those self-declared in the Rural Environmental Cadaster (CAR). In some cases, the CAR has also been used to find ownership information because even though it is a self-declared document, it can provide the most recent information on the “declared” operator of the property.



- Brazilian Forest Code: [https://www.planalto.gov.br/ccivil\\_03/\\_ato2011-2014/2012/lei/l12651.htm](https://www.planalto.gov.br/ccivil_03/_ato2011-2014/2012/lei/l12651.htm)
- SICAR (federal): <https://www.car.gov.br/publico/imoveis/index>

## Conservation areas and Indigenous territories

The data on Conservation areas comes from the ICMBio, which is responsible for the monitoring and management of officially recognized natural reserves, according to the National System of Natural Reserves (SNUC – Sistema Nacional de Unidades de Conservação). The SNUC determines the jurisdiction of the area - federal, state, local government or privately owned – and how the natural resources can be used and by whom in each category of the natural reserves. Indigenous territory data comes from the National Foundation for Indigenous Populations (FUNAI). Indigenous territories are officially recognized areas where local indigenous populations have customary rights to access and use the land and natural resources.

- Conservation areas (ICMBio): <https://dados.gov.br/dados/conjuntos-dados/unidadesdeconservacao>
- Indigenous territories (FUNAI): <https://www.gov.br/funai/pt-br/atuacao/terras-indigenas/geoprocessamento-e-mapas>

## Vegetation type and priority for biodiversity conservation

The vegetation type data comes from the Brazilian Institute of Geography and Statistics (IBGE). The priority for biodiversity conservation data comes from a study conducted by the Brazilian Ministry of Environment and Climate Change, updated in 2018.

- Vegetation type (BGE): <https://www.ibge.gov.br/geociencias/informacoes-ambientais/vegetacao/22453-cartas-1-250-000.html?=&t=downloads>
- Priority for biodiversity conservation (Amazon): <https://www.gov.br/mma/pt-br/assuntos/biodiversidade-e-ecossistemas/ecossistemas/conservacao-1/areas-prioritarias/arquivos/amazonia.zip>
- Priority for biodiversity conservation (Cerrado): [https://www.gov.br/mma/pt-br/assuntos/biodiversidade-e-ecossistemas/ecossistemas/conservacao-1/areas-prioritarias/arquivos/cerrado\\_pantanal.zip](https://www.gov.br/mma/pt-br/assuntos/biodiversidade-e-ecossistemas/ecossistemas/conservacao-1/areas-prioritarias/arquivos/cerrado_pantanal.zip)

## Environmental embargoes and fines

Embargoed areas and environmental fines are checked in the database of the federal environmental agency IBAMA. Embargoes are areas where any activity is suspended or not authorized by IBAMA, often due to environmental degradation. Properties can be removed from the list of embargoed areas after the problem has been resolved. Environmental fines are usually linked to environmental violations and are addressed to the property owner.

- Environmental embargoes (IBAMA): <https://servicos.ibama.gov.br/ctf/publico/areasembargadas/>
- Environmental fines (IBAMA): <https://dados.gov.br/dados/conjuntos-dados/fiscalizacao-auto-de-infracao>

## Company group and linked properties

Once the ownership of the property is linked to an individual, we use the SINTEGRA database to check all the registered companies under the name of the individual or group of individuals. If a company has already registered its ownership, we also check

its corporate structure through open source websites. Once the ownership, the linked companies, and the corporate structure are identified, we search for other properties registered under the same or similar ownership in the federal tenure land systems SIGEF and SNCI.

- SINTEGRA: <http://www.sintegra.gov.br/>

## Warehouses and soy traders' assets on the ground

The data on the location of the warehouses comes from the SICARM application, operated by the National Food Supply Company (CONAB). We only consider warehouses and assets registered in the SICARM app under the name of the targeted soy traders. These results underestimate the footprint of their operations, since we do not include intermediary companies operating their warehouses, which could be indirect suppliers to the targeted traders.

- SICARM: <https://consultaweb.conab.gov.br/consultas/consultaArmazem.do?method=acaoCarregarConsulta>

## CO<sub>2</sub> Emissions

The calculation of CO<sub>2</sub> emissions linked to deforestation refers to the “above-ground carbon emissions” according to the cleared vegetation type(s) [Source: 1) Nogueira et al. (2015). *Carbon stock loss from deforestation through 2013 in Brazilian Amazonia*, *Global Change Biology*, 1271–1292, March 2015; 2) United Nations Framework Convention on Climate Change (2016) *Brazil's Forest Reference Emission Level for Reducing Emissions from Deforestation in the Cerrado biome for Results-based Payments for REDD+ under the United Nations Framework Convention on Climate Change*, UNFCCC: Bonn, Germany]. The tons of CO<sub>2</sub> emissions are calculated per vegetation type times the ratio of molecular weight of carbon dioxide to carbon (44/12) times the number of hectares cleared.

1. <https://onlinelibrary.wiley.com/doi/epdf/10.1111/gcb.12798>
2. [https://redd.unfccc.int/media/documento\\_1012639\\_brazil\\_national\\_frel.pdf](https://redd.unfccc.int/media/documento_1012639_brazil_national_frel.pdf)

## Remaining native vegetation

To determine the remaining native vegetation of a property, we cross-reference two different data sources: First, the self-declared CAR, which includes the amount of remaining native vegetation at the time of the declaration, and second, the latest collection of the MapBiomias platform (8.0), which identifies the remaining vegetation in the entire national territory in 2022.

- SICAR (federal): <https://www.car.gov.br/publico/imoveis/index>
- MapBiomias: <https://plataforma.brasil.MapBiomias.org/>

### Acknowledgements:

The Rapid Response – Soy Report is published by Mighty Earth, in partnership with AidEnvironment, and with additional research from Repórter Brasil



Mighty Earth

March 2024

1701 Rhode Island Avenue NW

Suite 3-123

Washington, D.C. 20036

[mightyearth.org](http://mightyearth.org)