

September 2023

Realtime Deforestation

Monitoring System

16



*Soy and cattle supply chains
Amazon and Cerrado Biomes - Brazil*

Updated
in
January 2024



aid
environment

Aidenvironment develops **Realtime Deforestation Monitoring (RDM)** reports to engage companies and urge action towards real-time deforestation events, as well as to support civil society and financial sector stakeholders in their efforts to halt deforestation linked to commodity production and trade. In Brazil, the recent increase in deforestation rates is mainly linked to the expansion of Soy and Cattle production within the Amazon and Cerrado biomes.




The RDM 16 report of September 2023 highlights 10 cases linked to the cattle and soy supply chains in the Cerrado and Amazon biomes. **The 10 cases present 20,165 hectares of deforestation and 431 fire alerts in Mato Grosso, Piauí, Bahia, Tocantins and Maranhão states.** The cases cover deforestation alerts detected in August 2023, with visually confirmed deforestation events between June 2022 and August 2023.

Together with the confirmed cleared area of native vegetation, the RDM also estimates the linked **CO₂ emissions (above-ground carbon emissions)** according to vegetation type. The 10 cases of the RDM 16 report represent an emission of **2,6 million tons of CO₂.**



The **European Union Deforestation Regulation (EUDR)** entered into force in June 2023, and this RDM report shows potentially non-compliant cases in the Amazon biome.

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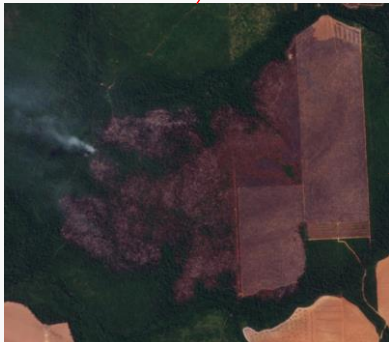
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Property			
Fazenda Promissão III (SIGEF) / Fazenda São José, Santa Ana, Santa Catarina (CAR, not validated)			
Porto Alegre do Norte, Mato Grosso		Amazon biome	
MT-5106778-4B9DEBBA7D8940DEBEE5E9B880036318, CAR: MT-5103353-603FFC2E76C0493CA9921081438A5EFA (Confresa - MT)		SIGEF/SNCI: 9011801044691	
Area property (ha): 2,920		Coordinates property: -10.56059, -52.03118	
Cleared Area			
Coordinates clearance:		-10.5596, -52.0346	
438 hectares		period clearance: Jan to Aug 2023	
96,681 tons of CO ₂			
65 fires alerts			
Inside Forest Code's protected areas: No		- -	
Type of vegetation: Forested Savanna		Priority for Biodiversity Conservation: Extremely high	
Conservation area(s) (overlapping or bordering):		-	
Indigenous Territories (overlapping or bordering):		-	
Imagery: limits of the property (green), limits of the cleared area (red)			
January 2023		August 2023	
			
Source: Imagery ©2023 Planet Labs Inc.		Source: Imagery ©2023 Planet Labs Inc.	
		Fires June 2023	
Source: European Union - EO Browser Copernicus Sentinel data 2023			

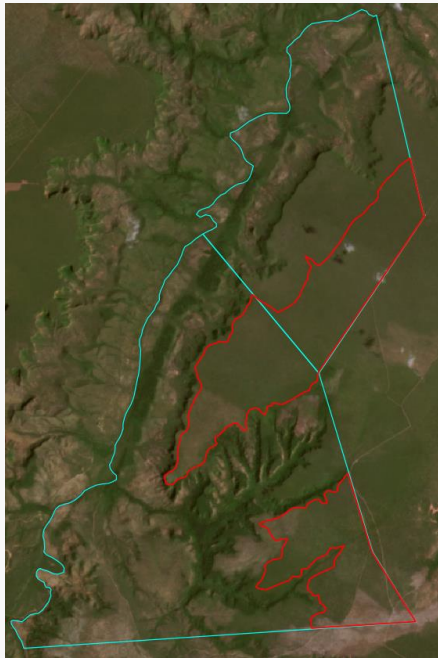
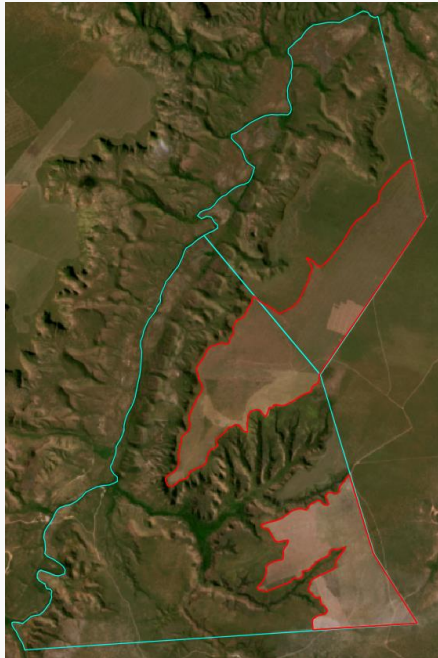
Environmental fines and embargoes				
Embargoes:	Yes	4 embargoed areas by SEMA-MT in Fazenda Santa Catarina (linked to Everaldo), for illegal clearance of native vegetation in 2021		
Environmental fines:	Yes	1 Environmental fine from SEMA-MT for illegal clearance of 58 ha of native vegetation in Fazenda Santa Catarina (linked to Everaldo) in 2021	unknown	
Ownership and other linked properties				
Ownership:	Sarah de Oliveira, Marcos Antonio Boaventura (SIGEF) / Everaldo Peres Domingues Junior, Ana Rosaria Medeiros Peres (CAR, not validated)			
Company group:	Linked to Everaldo and Ana Rosaria: Coali Indústria de Alimentos (Terezópolis de Goiás - GO)			
Linked properties:	2 linked properties to Everaldo and Ana Rosaria, totalling at least 3,320 ha. Bordering property in Porto Alegre do Norte (MT): Fazenda Nossa Senhora Aparecida (3,320 ha). In São Félix do Xingu (PA): Fazenda Santo Antônio (unknown area)			
Supply chain links				
Main Commodities		Beef and Soy		
Confirmed supply chain link, level of certainty, and soy trader/ beef processor		Yes	High / Medium	Bunge / JBS
Companies' reply		Amaggi [potential link removed]: "No commercial relationship was identified between AMAGGI with the mentioned property after the deforestation." Louis Dreyfus Commodities [potential link removed]: "In 2023, LDC did not receive products from the listed producers and CARs."		
Soy	Warehouses (50 km radius)	11 warehouses including 1 from Louis Dreyfus and 1 from Amaggi		
	Supply chain links & details:	Fazenda Santa Catarina I and II, and Fazenda II Irmãos II, supplied soy to Amaggi in São Félix do Xingu (MT) in 2018, to Louis Dreyfus in Confresa (MT) in 2019, and to Agrícola Alvorada (retailed to Bunge) in Confresa (MT) in 2020		
Beef	Slaughterhouses (sourcing from the municipality)	A linked property to Everaldo, Fazenda Promissão (Confresa - MT), indirectly supplied JBS (Confresa - MT) in 2018, through Fazenda Brahma (São José do Xingu - MT), operated by Ivonei Vilela Medeiros. A linked (unknown) property to Ana Rosaria in Confresa (MT) supplied JBS (Juara - MT) in 2019 through an unknown property operated by Robisson Eugênio Dorner in Ipiranga do Norte (MT)		
	Supply chain links & details:	A linked property to Everaldo, Fazenda Promissão (Confresa - MT), indirectly supplied JBS (Confresa - MT) in 2018, through Fazenda Brahma (São José do Xingu - MT), operated by Ivonei Vilela Medeiros. A linked (unknown) property to Ana Rosaria in Confresa (MT) supplied JBS (Juara - MT) in 2019 through an unknown property operated by Robisson Eugênio Dorner in Ipiranga do Norte (MT)		
Other supply chain links and details:		-		
General comments				
Fazenda São José has active authorizations for forest exploitation and clearance of 951 ha of native vegetation, both valid until January 2025 (1). Everaldo Domingues Peres (without "Junior"), probably a relative to Everaldo, is secretary of Coagril, a cooperative of crop producers in Unaí (MG) (2). Besides Fazenda Santa Catarina I e II, Fazenda II irmãos II e III (750 ha) and Fazenda São José (1,588 ha), the Peres family (Everaldo Peres Domingues Junior, Ana Rosaria Medeiros Peres, Ivete Vilela Medeiros Peres and Everaldo Peres Domingues) declared a CAR of other 4 properties bordering each other, totalling 5,570 ha: Fazenda Nossa Senhora da Abadia (1,180 ha), Fazenda Nossa Senhora Aparecida - Matrícula 17.223 (961 ha), Fazenda Promissão (1,076 ha), and Fazenda Nossa Senhora do Carmo (14,9 ha) (1)				
(1) https://geoportal.sema.mt.gov.br/				
(2) https://coagril.coop.br/wp-content/uploads/2021/03/RELATORIO-ANUAL-COAGRIL-2020-WEB.pdf				

Property			
Fazenda Rancharia, Fazenda Três Irmãos, Fazenda Mariana			
Bom Jesus do Araguaia, Mato Grosso		Amazon biome	
MT-5101852-7922A113B7FF4BD7A9B2D9E2B7AA5B89 (validated, where deforestation falls), MT-5101852-CAR: B9DEEBF76FA24962A12B50FDAD8B1FF6 (under analysis), MT-5101852-F07A4033FDD64BA6A498F97CE834F79B (under analysis)		SIGEF/SNCI: 9500681667402	
Area property (ha):	10,020	Coordinates property:	-12.11047, -51.98923
Cleared Area			
Coordinates clearance:	-12.1031, -52.0005		
965 hectares	period clearance: Jun to Aug 2023		
405,398 tons of CO ₂			
- fires alerts			
Inside Forest Code's protected areas:	No	--	
Type of vegetation:	Montane Semi Deciduous Seasonal Forest	Priority for Biodiversity Conservation:	No
Conservation area(s) (overlapping or bordering):		-	
Indigenous Territories (overlapping or bordering):		-	
Imagery: limits of the property (green), limits of the cleared area (red)			
June 2023		August 2023	
			
Source: Imagery ©2023 Planet Labs Inc.		Source: Imagery ©2023 Planet Labs Inc.	

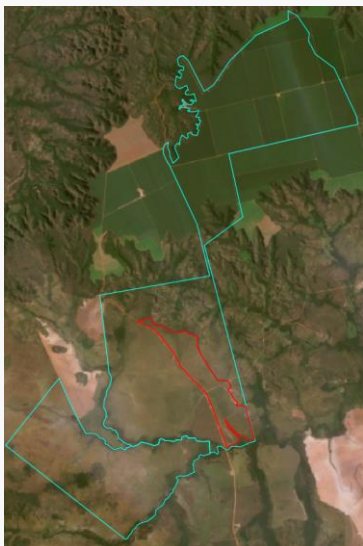

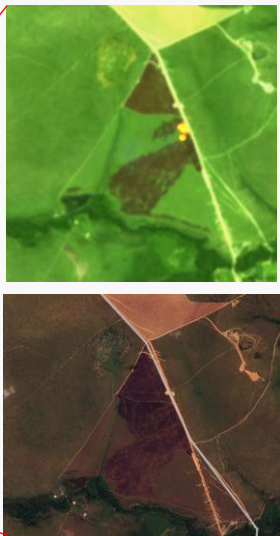
Environmental fines and embargoes				
Embargoes:	No	-		
Environmental fines:	Yes (other links)	1 fine for illegal clearance of 620 ha of native vegetation in Fazenda Bom Jesus (Bom Jesus do Araguaia - MT) in 2015	BRL 4,650,000	
Ownership and other linked properties				
Ownership:	Antônio Bizarro da Nave Neto (Femato Agropecuária)			
Company group:	Femato Agropecuária, AMF São Paulo Holding, ANN Participações			
Linked properties:	3 other properties, totalling at least 410 ha. In Nova Nazaré (MT): Fazenda Sonho Meu II (410 ha). In Bom Jesus do Araguaia (MT): Fazenda Bom Jesus (unknown area), Fazenda União (unknown area)			
Supply chain links				
Main Commodities	Beef and Soy			
Confirmed supply chain link, level of certainty, and soy trader/ beef processor	Yes	Medium	JBS, Bunge	
Companies' reply	Marfrig [potential link removed]: "Fazenda Rancharia [...] is blocked due to overlap with Prodes and Deter. Supplier Antonio Bizarro Nave Neto [has] no history of slaughter. There is no record of the supplier Willian Raimundo dos Santos. Fazenda Santa Clara, owned by supplier Lorenzo Busnello, [...], slaughtered for the last time in October 2019 at the Nova Xavantina - MT unit and met all the criteria of the commitments made by the company at the time. Marfrig has discontinued its operations at the Nova Xavantina facility (Mato Grosso state) in December 2019."			
Soy	Warehouses (50 km radius)	15 warehouses including one from Bunge		
	Supply chain links & details:	A linked property, Fazenda União (Bom Jesus do Araguaia - MT) supplied soy to Agrícola Alvorada (related to Bunge) in Querência (MT) in 2019		
Beef	Slaughterhouses (sourcing from the municipality)	Bom Jesus do Araguaia (MT) supplies cattle to 5 different meatpackers, including: JBS (Confresa - MT, Barra do Garças - MT, Água Boa - MT), and Marfrig (Paranatinga - MT, Nova Xavantina - MT)		
	Supply chain links & details:	Antônio Bizarro da Nave Neto indirectly supplied to JBS (Água Boa - MT) in 2018 and 2019 through Fazenda Pai Eterno (Ribeirão Cascalheira - MT), operated by Willian Raimundo dos Santos. Indirectly supplied JBS (Barra do Garças - MT), Marfrig (Nova Xavantina - MT and Paranatinga - MT), in 2018 and 2019 through Fazenda Santa Clara (Querência - MT), operated by Lorenzo Busnello		
Other supply chain links and details:		-		
General comments				
<p>The property, Fazenda Rancharia, is linked to horse breeding (1). Fazenda Rancharia has active authorizations for forest exploitation and clearance of 982 ha of native vegetation, valid until December 2026 (2). The same area has an AUTEX linked to a Sustainable Forest Management Plan (SFMP) valid until December 2023 (2). As an SFMP is supposed to keep the area with forest cover through a selective logging strategy, the same area is not expected to have authorization for clearance of native vegetation issued after the AUTEX. The Public Prosecutors of Mato Grosso are prosecuting Antônio Bizarro da Nave Neto for labour crimes (3), and he is being investigated in a Federal Public Prosecutor's process from 2021 for the suspicion of crimes such as tax evasion, money laundering and irregularities in the cattle trade (4).</p>				
<p>(1) https://www.mbaileioes.com.br/Animal.asp?IDAnimal=86031&IDLeilao=1075 (2) https://geoportal.sema.mt.gov.br/ (3) https://transparencia.mpmt.mp.br (process number 000039-101/2021 under legal confidentiality) (4) https://transparencia.mpmt.mp.br/includes/simpweb-det-view.php?action=consultar&protocolo=001113-078/2016</p>				

Property			
Fazenda Santo Expedito (Lote 01), Fazenda Santo Antônio (Lote 02)			
Itanhangá, Mato Grosso		Amazon biome	
CAR: MT-5104542-E75FEE659B604CD2BDD6A45C78378727, MT-5104542-024D605987344DA999B61EFFFF948ABB		SIGEF/SNCI: 9010750373117, 9500331299419	
Area property (ha):	1,959	Coordinates property:	-12.04939, -56.65763
Cleared Area			
Coordinates clearance:		-12.0642, -56.6602	
652 hectares		period clearance: Mar to Aug 2023	
359,128 tons of CO2			
94 fires alerts			
Inside Forest Code's protected areas:		Yes	652 ha inside declared Legal Reserve and APP
Type of vegetation:	Montane Semi Deciduous Seasonal Forest		Priority for Biodiversity Conservation: Very high
Conservation area(s) (overlapping or bordering):			-
Indigenous Territories (overlapping or bordering):			-
Imagery: limits of the property (green), limits of the cleared area (red)			
March 2023		August 2023	
			
Source: Imagery ©2023 Planet Labs Inc.		Source: Imagery ©2023 Planet Labs Inc.	
		Fires July 2023	
Source: European Union - EO Browser Copernicus Sentinel data 2023			

Environmental fines and embargoes				
Embargoes:	Yes	several embargoed areas in Fazenda Santo Antônio for illegal deforestation in July 2023		
Environmental fines:	Yes	3 fines for not complying with embargoes in Fazenda Santo Antonio and Fazenda Santo Expedito: 2 in April 2023 and 1 in July 2023, both in the name of Jair Paulo Vergutz	BRL 797,861	
Ownership and other linked properties				
Ownership:	João Moreno Romero, Antônio Moreno Romero (Jair Paulo Vergutz) / Luciano Aparecido Garne and Maurício Catapan			
Company group:	Linked to Jair Paulo Vergutz: Vagel Armazéns Gearis (União do Sul - MT), Vagel Fábrica de Ração (União do Sul - MT), Vagel Transportes (Sorriso - MT)			
Linked properties:	No other linked properties found			
Supply chain links				
Main Commodities		Soy		
Confirmed supply chain link, level of certainty, and soy trader/ beef processor		Yes	Low	Bunge
Companies' reply		Amaggi [potential link removed] “No commercial relationship was identified between AMAGGI with the mentioned property after the deforestation.”		
Soy	Warehouses (50 km radius)	55 warehouses including 1 from Bunge and 1 from Amaggi		
	Supply chain links & details:	-		
Beef	Slaughterhouses (sourcing from the municipality)	Itanhangá (MT) supplies cattle to 5 different meatpackers, including: JBS (Diamantino - MT, Juara - MT)		
	Supply chain links & details:	-		
Other supply chain links and details:		-		
General comments				
A small part of the area has a CAR registration under analysis by SEMA MT in the name of Daiane Cyrino da Silva Cattapan and Marcelo Cattapan, not where the deforestation falls. The rest of the property does have CAR declaration in the federal system but not in the SEMA - MT geoportal (1). The property Fazenda Santo Antônio (Lote 2) has recent embargoes and environmental fines by SEMA under the name of Jair Paulo Vergutz, which indicates that he might be the operator of the area. Jair is active in cattle breeding, as one of the fines is linked to the illegal clearance of native vegetation for pasture. Jair has been involved in a court case for environmental crimes since 2022 (2), but he claims that he sold the property to the Cattapan (or Catapan) family in 2020.				
(1) https://geoportal.sema.mt.gov.br/				
(2) https://www.mpmt.mp.br/transparencia/includes/simpweb-det-view.php?action=consultar&protocolo=001342-096/2022				


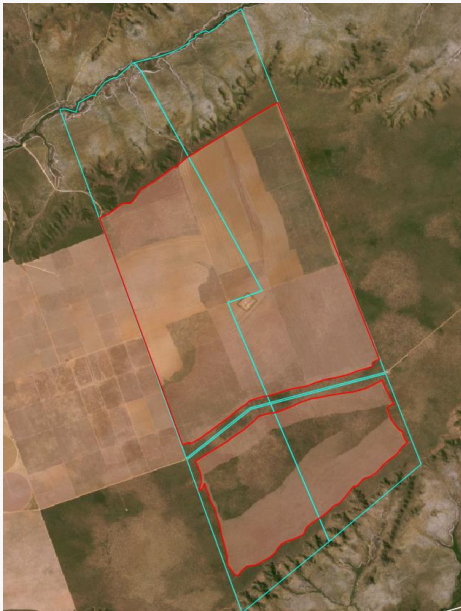
Property			
Fazenda Orobo Badejo e Sítio			
Alto Parnaíba, Maranhão		Cerrado biome	
CAR:	MA-2100501-99EE3BE182BD477984A8D9ECD68E1150, MA-2100501-7D97F1474DDC471880977F1D8BF1CF3B		SIGEF/SNCI: 1140140004502
Area property (ha):	3,970	Coordinates property:	-9.42280, -46.01521
Cleared Area			
Coordinates clearance:	-9.4061, -46.0114		
1,015 hectares	period clearance: Jan to Aug 2023		
123,894 tons of CO ₂			
13 fires alerts			
Inside Forest Code's protected areas:	Yes	70 ha inside declared Legal Reserve	
Type of vegetation:	Forested Savanna	Priority for Biodiversity Conservation:	Extremely high
Conservation area(s) (overlapping or bordering):		-	
Indigenous Territories (overlapping or bordering):		-	
Imagery: limits of the property (green), limits of the cleared area (red)			
January 2023		August 2023	
			
Source: Imagery ©2023 Planet Labs Inc.		Source: Imagery ©2023 Planet Labs Inc.	

Environmental fines and embargoes					
Embargoes:		No	-		
Environmental fines:		No	-	-	
Ownership and other linked properties					
Ownership:		Zenil Caetano Zacarias, Antônio Carlos Zacarias			
Company group:		No linked companies found			
Linked properties:		No other linked properties found			
Supply chain links					
Main Commodities		Soy			
Confirmed supply chain link, level of certainty, and soy trader/ beef processor			Yes	Low	Bunge
Soy	Warehouses (50 km radius)		8 warehouses including 1 from Bunge		
	Supply chain links & details:		-		
Beef	Slaughterhouses (sourcing from the municipality)		Alto Parnaíba (MA) supplies cattle to 4 different meatpackers in Alto Paranaíba, Benedito Leite, Itambém, and Mamanguape, all in Maranhão		
	Supply chain links & details:		-		
Other supply chain links and details:			-		
General comments					
<p>Zacarias family is from Santa Fé (Paraná), and Antônio Carlos Zacarias, married to Zenil Caetano Zacarias, deceased in 2021 (1). The boundaries of Fazenda Orobo were contested in Court in 2011. In this same year, Antônio Carlos Zacarias sued Luis Antônio Canuto Carvalho and a businessman known as "Chico Paraná" for land invasion and illegal deforestation. In 2017, the Maranhão courts ordered the repossession of Fazenda Orobo then occupied by Luis Antônio Canuto Carvalho and Chico Paraná (2). Chico Paraná was murdered in 2019, but the crime was unrelated to land disputes, according to the investigation by local police (3). In 2014, Antônio Carlos Zacarias sold Fazenda Orobo and Sítio to Belarmino Prado de Souza and his wife Maria Amélia Teles Fonseca Souza (4). In March 2023, the Maranhão courts agreed to unblock the registrations of the two farms at the registry office, benefiting the current owner of the properties, Belarmino de Souza. In the ruling, the judge explains that the repossession process from 2011 has already been completed (5). Belarmino Padro de Souza has two environmental fines for illegal deforestation in Campos Lindos (TO) in 1999 and 2001 (6) and is a cattle producer with farms in Tocantins and Maranhão (7).</p>					
<p>(1) https://www.jusbrasil.com.br/jurisprudencia/tj-ma/1315678938/inteiro-teor-1315678939 (2) https://www.jusbrasil.com.br/jurisprudencia/tj-ma/1315678938/inteiro-teor-1315678939 (3) https://g1.globo.com/ma/maranhao/noticia/2021/08/31/acusados-de-matar-empresario-chico-parana-sao-condenados-no-ma.ghtml (4) https://www.jusbrasil.com.br/jurisprudencia/tj-ma/1315677950/inteiro-teor-1315677951 (5) https://www.jusbrasil.com.br/jurisprudencia/tj-ma/1315677950/inteiro-teor-1315677951 (6) https://dadosabertos.ibama.gov.br/dataset/?q=auto+de+infra%C3%A7%C3%A3o (7) Undisclosed information</p>					

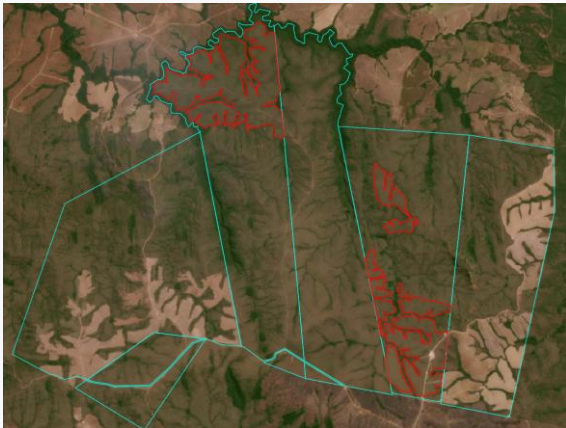
Property			
Fazendas Serra Branca e Sucuruju			
Balsas, Maranhão		Cerrado biome	
CAR:	MA-2101400-222239A0B5AC4D718A76AE80260D1B58	SIGEF/SNCI:	1610630280105
Area property (ha):	9,328	Coordinates property:	-8.90941, -46.88632
Cleared Area			
Coordinates clearance:	-8.9166, -46.8706		
591 hectares	period clearance: Apr to Jul 2023		
29,536 tons of CO2			
11 fires alerts			
Inside Forest Code's protected areas:	No	-	-
Type of vegetation:	Wooded Savanna	Priority for Biodiversity Conservation:	Extremely high
Conservation area(s) (overlapping or bordering):		-	
Indigenous Territories (overlapping or bordering):		-	
Imagery: limits of the property (green), limits of the cleared area (red)			
April 2023		August 2023	
			
Source: Imagery ©2023 Planet Labs Inc.		Source: Imagery ©2023 Planet Labs Inc.	
		Fires May 2023	
			
		Source: European Union - EO Browser Copernicus Sentinel data 2023	

Environmental fines and embargoes				
Embargoes:		No	-	
Environmental fines:		Yes	At least 4 environmental fines for clearance of native vegetation without proper authorization: 1 for 150 ha in Santa Filomena, in 2000; 1 for 1,737 ha in Fazenda Serra Branca (Balsas - MA), in 2006; 1 for 148 ha in Fazenda Baixão Fechado (Santa Filomena - PI), in 2009; and 1 for 386 ha in Fazenda Ponta da Serra (Balsas - MA), in 2011	BRL 197,750
Ownership and other linked properties				
Ownership:		Serra Branca Imobiliária e Agropecuária Ltda		
Company group:		Serra Branca Imobiliária e Agropecuária is registered in São Paulo, having real state as a primary activity. The company is linked to Raffaella Naccarella Bernini, Enzo Fabricio Casciello, and Euclides de Carli. Another linked company is Bravo Empreendimentos Imobiliários, linked to Raffaella and Enzo and also linked to Eco - Societe Civile, a company registered in Monaco (Italy). De Carli owns 16 different companies, among which: De Carli Empreendimentos e Participações, Codeca - Colonizadora de Carli, Agropecuária Caracol, Agropecuária Marimbondo, and Agropecuária Centauro		
Linked properties:		3 other linked properties to Serra Branca Imobiliária e Agropecuária, totalling 5,966 hectares. In Balsas (MA): Fazenda Riacho de Areia (67 ha), Fazenda São Marcos (92 ha), Fazenda Santa Edwiges (5,807 ha). 16 other linked properties to Euclides de Carli, totalling 50,712 ha. In Santa Filomena (PI): Fazenda Kajubar (9,377 ha), Fazenda Primavera (1,126 ha), Fazenda Salto (1,187 ha), Fazenda Tagi (2,579 ha), Fazenda Zodorica (413 ha), Fazenda Belo Monte (173 ha) and Fazendas Novas e Outras (4,996 ha); in Alto Parnaíba (MA): Fazenda Mangabeira (1,805 ha), Fazenda Gleba Serra (363 ha), Fazenda Altamira (1,021 ha), Fazenda Cristalina (3,611 ha) and Fazenda São Francisco (17,785 ha); in Riachão (MA): Fazenda Chapadinha Primeira do Norte (440 ha); in Balsas (MA): Fazenda Ponta da Serra (2,798 ha); in Itacajá (TO): Fazenda Telha (1,007 ha); in Santa Maria do Tocantins (TO): Fazenda Porto Alegre (2,301 ha)		
Supply chain links				
Main Commodities		Soy		
Confirmed supply chain link, level of certainty, and soy trader/ beef processor			Yes	-
Soy	Warehouses (50 km radius)	9 warehouses owned by individuals and local storage companies/cooperatives, including Agrex do Brasil, Agrinvest Brasil, Multigrain, and SLC Agrícola		
	Supply chain links & details:	-		
Beef	Slaughterhouses (sourcing from the municipality)	Balsas (MA) supplies cattle to 24 different meatpackers, all in Maranhão		
	Supply chain links & details:	-		
Other supply chain links and details:		-		


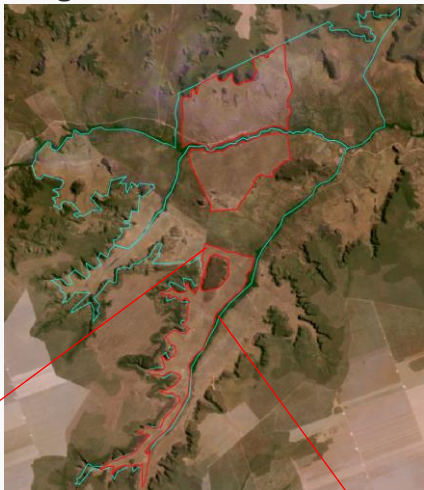

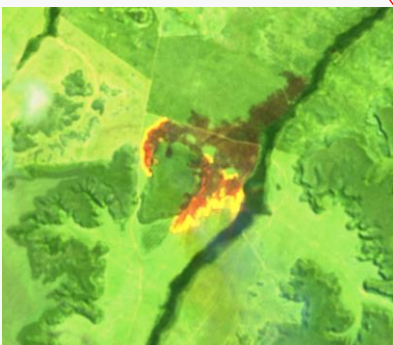
General comments	
<p>The case is indirectly linked to de Carli as he is one of the owners of Serra Branca Imobiliária e Agropecuária. De Carli is a conceived land grabber (1) who died in June 2019 (2). In May 2015, an investigation by the Federal Public Ministry and the Federal Police of Piauí unveiled a land-grabbing network connected to Euclides de Carli, pointed as the main land grabber in the Matopiba region, controlling over 1 million hectares (3, 4, 5). In 2016, a justice court in Piauí blocked the titles of 124,000 hectares in possession of De Carli (6). De Carli's company, CODECA, also connects to TIAA-CREF investments in Brazil, operated by Radar S/A, a joint venture with Cosan (7, 8). The local Agrarian Court estimates that 300,000 ha of land in Maranhão and Piauí states are linked to De Carli's land-grabbing crimes (9). De Carli is also accused of violence and threats connected to invasions of lands occupied by local communities (1, 8). He is still registered as the owner of 16 companies in Maranhão (10).</p>	
(1)	https://reporterbrasil.org.br/2018/09/empresario-euclides-de-carli-acusado-mortes-roubo-terras-nordeste
(2)	https://sindag.org.br/galeria_merito/medalha-06-euclides-de-carli-in-memoriain/
(3)	https://www.gp1.com.br/colunistas/deputado-manoel-ribeiro-denuncia-grileiro-e-assassinatos-no-sul-do-maranhao-186258.html
(4)	https://deolhonosruralistas.com.br/2018/02/21/especulacao-com-terras-no-matopiba-deixa-rastros-de-grilagem-e-violacoes-aos-direitos-humanos/
(5)	https://deolhonosruralistas.com.br/2018/09/20/historias-de-grilagem-e-venda-de-terras-publicas-marcam-candidaturas-no-piaui/
(6)	https://cidadeverde.com/noticias/225086/justica-bloqueia-acesso-a-mais-de-124-mil-hectares-do-maior-grileiro-do-piaui
(7)	https://www.nytimes.com/2015/11/17/world/americas/tiaa-cref-us-investment-giant-accused-of-land-grabs-in-brazil.html
(8)	https://chainreactionresearch.com/wp-content/uploads/2020/01/Radar-company-report-2.pdf
(9)	https://jornaldebrasil.com.br/noticias/brasil/alvo-de-pistoleiros-juiz-faz-cruzada-solitaria-contra-grileiros/
(10)	http://www.sintegra.gov.br/

Property			
Fazenda Grotão do Riacho do Meio, Fazenda Barreirinho			
Cocos, Bahia		Cerradobiome	
CAR: BA-2908101-BD45661FA2604C1481C564F344896B34, BA-2908101-C6F4AC42D5964AF4A7515E9037CAD80F		SIGEF/SNCI: 3020230000940, 9500257690453	
Area property (ha):	12,623	Coordinates property:	-14.56269, -45.10404
Cleared Area			
Coordinates clearance:	-14.5806, -45.0716		
8,801 hectares	period clearance: Dec 2022 to Aug 2023		
1,131,398 tons of CO ₂			
101 fires alerts			
Inside Forest Code's protected areas:	No	- -	
Type of vegetation:	Forested Savanna	Priority for Biodiversity Conservation:	Extremely high
Conservation area(s) (overlapping or bordering):		-	
Indigenous Territories (overlapping or bordering):		-	
Imagery: limits of the property (green), limits of the cleared area (red)			
December 2022		August 2023	
			
Source: Imagery ©2023 Planet Labs Inc.		Source: Imagery ©2023 Planet Labs Inc.	


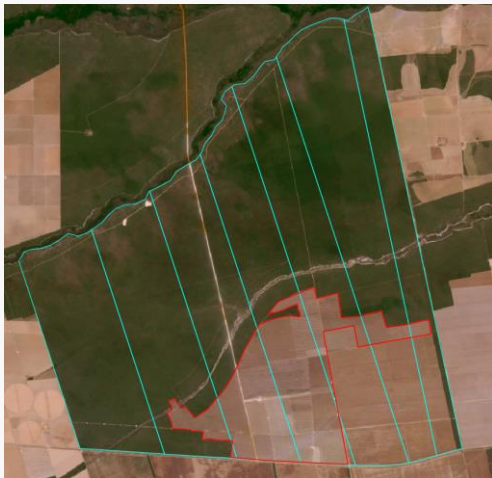
Environmental fines and embargoes				
Embargoes:	Yes (other links)	1 embargo for illegal clearance of 1,712 hectares in Fazenda Terra Boa (Arinos - MG) in 2018		
Environmental fines:	Yes (other links)	1 environmental fine for illegal clearance of 1,712 hectares in Fazenda Terra Boa (Arinos - MG) in 2018	BRL 1,712,390	
Ownership and other linked properties				
Ownership:	Total Projetos e Administração Ltda, Total Empreendimentos Florestais Ltda			
Company group:	Total Empreendimentos Agrícolas, Total Projetos e Administração, DJG Buriti (Dirceu Júlio Gatto and Greice Terezinha Gatto)			
Linked properties:	Other 6 linked properties, totaling 23,000 hectares. In Arinos (MG): Fazenda Terra Boa e Grande Vereda (6,754 ha), Fazenda Extrema do Riachinho e Fazenda Brejo ou Extrema (1,096 ha), Fazenda Ipoeira das Maravilhas (3,812 ha). In Unaí (MG): Fazenda Capim Branco (3.7 ha), Fazenda Buriti (9,407 ha), Fazenda Sítio ou Barreiro (unknown area), Fazenda Tamboril (unknown area). In Riachinhos (MG): Fazenda Confins (1,932 ha)			
Supply chain links				
Main Commodities	Soy			
Confirmed supply chain link, level of certainty, and soy trader/ beef processor		No	-	-
Soy	Warehouses (50 km radius)	1 warehouse owned by an individual		
	Supply chain links & details:	-		
Beef	Slaughterhouses (sourcing from the municipality)	Cocos (BA) supplies cattle to 9 different meatpackers, including: JBS (Itapetinga - BA)		
	Supply chain links & details:	The owner of Total companies, Dirceu Júlio Gatti, has received cattle from different farms in Minas Gerais no links to slaughterhouses		
Other supply chain links and details:		-		
General comments				
The property Fazenda Grotão do Riacho do Meio, has active authorization for the clearance of 4,839 hectares valid between September 2022 and October 2025 issued by the Bahia Institute of the Environment and Water Resources (Inema) in the name of Total Projetos e Administração (1). The owner of Total Projetos e Administração and Total Empreendimentos Agrícolas e Florestais, Dirceu Júlio Gatto, is a known producer in Unaí (MG) (2)				
(1) Inema, Bahia				
(2) https://www.youtube.com/watch?v=uOqSK5AK8II				

Property			
Fazenda Taquara Verde			
Paranatinga, Mato Grosso		Cerrado biome	
CAR:	MT-5106307- AC645B2E28814F1283EE9B99B7C051F2, MT-5106307-CE188F8AB24742EBB158A74E2AFE4D9D, MT-5106307-D32BC224079E44258EC193AD838D0B0F, MT-5106307-FF7936721C204B1DB581659AAC2A1F98, MT-5106307-D8FE0EACC43649CBA1333F7D6913A69C	SIGEF/SNCI:	9510218360107, 9510305590402, 8120300899077
Area property (ha):	14,190	Coordinates property:	-14.14334, -54.69099
Cleared Area			
Coordinates clearance:	-14.1107, -54.7124		
1,410 hectares	period clearance: Jun 2022 to May 2023		
27,815 tons of CO ₂			
- fires alerts			
Inside Forest Code's protected areas:	Yes	500 ha inside declared Legal Reserve and APP	
Type of vegetation:	Savanna Park	Priority for Biodiversity Conservation:	Extremely high
Conservation area(s) (overlapping or bordering):		-	
Indigenous Territories (overlapping or bordering):		Indigenous Territory of Bakairi (Indigenous people Bakairi)	
Imagery: limits of the property (green), limits of the cleared area (red)			
June 2022		May 2023	
			
Source: Imagery ©2023 Planet Labs Inc.		Source: Imagery ©2023 Planet Labs Inc.	

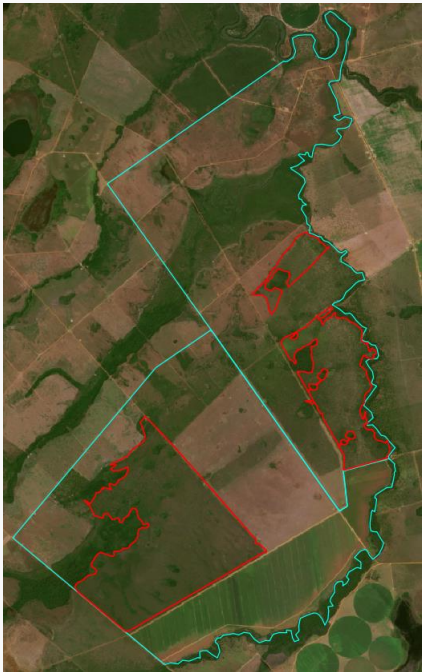
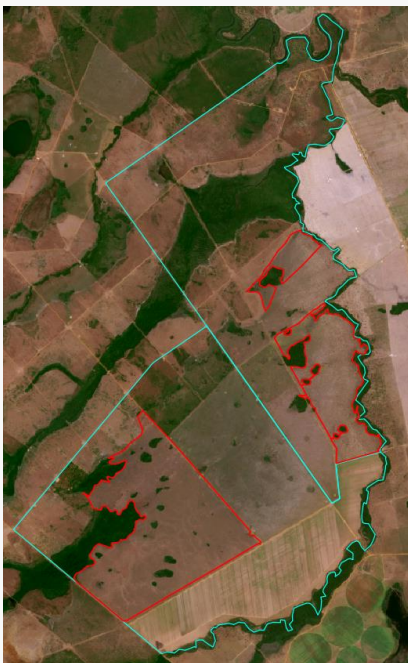
Environmental fines and embargoes				
Embargoes:	Yes	1 embargo by SEMA for illegal clearance of 5,9 ha of native vegetation in October 2021 in Fazenda Taquara Verde II (Nelson Padovani)		
Environmental fines:	No	-	-	
Ownership and other linked properties				
Ownership:	Marlusa Haide Thome Elias, Giorgia Catarina Thome, Carmen Lucia Thome Fabiani, Nelson Fernando Padovani (Taquara Verde 1 - 2,335 ha), Nelson Padovani (Taquara Verde II - 2,447 ha), Tio Ico Participações e Administração (Fazenda Santa Filomena - 2,489 ha), Carmen Lucia Thomé Fabiani, Valdemar Fabiani (Fazenda Taquara Verde IV - 2,821 ha), ZB Empreendimentos e Participações (Fazenda Taquara Verde - 3,545 ha)			
Company group:	Linked to Padovani family members: Victória Empreendimentos Imobiliários (Sorriso - MT), Nelson F. Padovani & Cia (Sinop - MT), and several other real state companies in Rio Grande do Sul and Santa Catarina. No active linked companies to Fabiani family members found			
Linked properties:	No other linked properties found			
Supply chain links				
Main Commodities		Soy		
Confirmed supply chain link, level of certainty, and soy trader/ beef processor		Yes	-	-
Soy	Warehouses (50 km radius)	11 warehouses owned by individuals and local storage companies/cooperatives, including 2 owned by Bom Furuto Agrícola		
	Supply chain links & details:	-		
Beef	Slaughterhouses (sourcing from the municipality)	Paranatinga (MT) supplies cattle to 12 different meatpackers, including: JBS (Água Boa - MT, Colider - MT, Diamantino - MT, Pedra Preta - MT), Marfrig (Paranatinga - MT, Nova Xavantina - MT, Várzea Grande - MT), and Minerva (Paranatinga - MT)		
	Supply chain links & details:	-		
Other supply chain links and details:		-		
General comments				
Deforestation falls in two properties of the cluster "Fazenda Taquara Verde" with validated CRAs. One is Fazenda Taquara Verde IV (2,821 ha), declared by Carmen Lucia Thomé Fabiani and Valdemar Fabiani, and the other is Fazenda Taquara Verde II (2,447 ha), declared by Nelson Padovani (1). Both areas where deforestation falls have active authorization for clearance of native vegetation: Fazenda Taquara Verde IV (996 ha), valid until 03rd October 2023, and Fazenda Taquara Verde II (980 ha), valid until 14th July 2025 (1). Nelson Padovani and Nelson Fernando Padovani are relatives and politicians from Paraná. Fernando Padovani is currently an elected deputy representing Paraná in the Federal Chamber (2).				
(1) https://geoportal.sema.mt.gov.br/				
(2) https://eleicoes.poder360.com.br/candidato/1134907#2008 / https://www.instagram.com/p/CwQ_uSwAwTX/?img_index=1 / http://www.quantocustaobrasil.com.br/pdfs/5relacao.pdf				

Property			
Fazenda Solta I, Fazenda Bananeira			
Baixa Grande do Ribeiro, Piauí		Cerrado biome	
CAR: PI-2201150-724321C2A45E4B8FAD0DA0761CFBD043, PI-2201150-0A82D4BA0DF44F2F9E1315341B20E331		SIGEF/SNCI: 9500413887696, 9500414759713	
Area property (ha): 5,846		Coordinates property: -8.58299, -44.99633	
Cleared Area			
Coordinates clearance:		-8.5455, -44.9874	
1,836 hectares		period clearance: May to Aug 2023	
91,757 tons of CO2			
18 fires alerts			
Inside Forest Code's protected areas: Yes		4.5 ha inside declared Legal Reserve	
Type of vegetation: Wooded Savanna		Priority for Biodiversity Conservation: No	
Conservation area(s) (overlapping or bordering):		-	
Indigenous Territories (overlapping or bordering):		-	
Imagery: limits of the property (green), limits of the cleared area (red)			
May 2023		August 2023	
			
Source: Imagery ©2023 Planet Labs Inc.		Source: Imagery ©2023 Planet Labs Inc.	
			
Source: European Union - EO Browser Copernicus Sentinel data 2023		Source: European Union - EO Browser Copernicus Sentinel data 2023	

Environmental fines and embargoes				
Embargoes:		No	-	
Environmental fines:		Yes	3 environmental fines: 1 in the name of Joacir Jorge Ottoni in Arinos (MG) for illegal clearing of native vegetation in 2002; 1 in the name of Jair Francisco Ottoni in Baixa Grande do Ribeiro (PI) for illegal clearing of native vegetation in 2005; and 1 in the name of Alzir Pimental Aguiar Neto for unknown reason in Fazenda Solta, Bananeira (Baixa Grande do Ribeiro (PI), in 2023.	
			BRL 10,500	
Ownership and other linked properties				
Ownership:		Alzir Pimentel Aguiar Neto (Joacir Jorge Ottoni, Jair Francisco Ottoni)		
Company group:		AZN Agropecuária, Emaflor Empreendimentos Rurais e Participações		
Linked properties:		No other linked properties found		
Supply chain links				
Main Commodities		Soy		
Confirmed supply chain link, level of certainty, and soy trader/ beef processor		Yes	Medium	Bunge, Cargill
Companies' reply		Cargill [potential link maintained]: "We negotiated some years ago with a farmer that is currently blocked, but we found evidence of the legality of the clearance. For 1 case, we negotiated with the farmer, but with a different farm mentioned. For 1 case, we are waiting to receive the ASV, if we do not receive it, we will act on it."		
Soy	Warehouses (50 km radius)	21 warehouses, including 3 owned by Bunge		
	Supply chain links & details:	Alzir Pimentel has supplied Bunge and Cargill from other linked properties in the Matopiba region in 2022		
Beef	Slaughterhouses (sourcing from the municipality)	No data		
	Supply chain links & details:	-		
Other supply chain links and details:		-		
General comments				
<p>In November 2022, the environmental impact report (EIA/Rima) for the implementation of Fazenda Bananeira, Solta I and Solta II showed that the planned clearance of native vegetation aimed at the establishment of 5,893 hectares of pasture. At the farm's full capacity, to be reached in 2025/2026, 5,000 head of cattle will be raised in the area (1). The environmental impact report is one of the steps required to obtain an environmental license for the establishment of production activities. According to the document, the farm is operated by Alzir Pimentel Aguiar Neto, president of the Piauí Soybean Producers Association (2), and notary documents confirm that he bought these farms in October 2022 (3). The company Emaflor Empreendimentos Rurais e Paticipações and Alzir Pimentel Aguiar Neto are the shareholders of the company AZN Participações (AZN group), currently responsible for managing, among others, Fazenda Emaflor, a project financed by Banco do Nordeste (4) and one of the recent deforestation cases reported in the RDM 13 published in June 2023 (5). Alzir Neto opposes the expansion of the Soy Moratorium to the Cerrado region and led the farmers' resistance against initiatives from Abiove and Bunge to include anti-deforestation clauses in contracts signed with producers in Piauí (6).</p>				
<p>(1) https://siga.semabr.gov.br/media/uploads/2022/11/28/5fcb8dc53fd-4b8f-b00c-ba45cdd31a3c.pdf (2) https://aprosojabrasil.com.br/comunicacao/blog/noticias-brasil/2020/10/02/aprosoja-piaui-elege-nova-diretoria-e-alzir-neto-e-reconduzido-a-presidencia/ (3) Undisclosed source (4) https://www.instagram.com/p/CcOxR9MFqS/?ref=tjournal.ru (5) https://bit.ly/RDM-JUNE-2023 (6) https://www.youtube.com/watch?v=pxlTmxTdl4</p>				

Property				
Fazenda Buriti (Gleba 02-07)				
Correntina, Bahia		Cerrado biome		
CAR:	BA-2909307-0982BB2448604746A406B88F0A4F4970, BA-2909307-F77D59EAEEB54BB78EB13475CFF6ADAF, BA-2909307-F17716B322534EA690EB05331933BBAF, BA-2909307-544B3DDBA7D44C01A6EB192446333029, BA-2909307-EE4FC4D93DD347318BE050F24D3C3A73, BA-2909307-FD79D2124531488E856C81B98DD18080		SIGEF/SNCI:	4030670105963
Area property (ha):		13,834	Coordinates property:	-13.59340, -45.52440
Cleared Area				
Coordinates clearance:		-13.6161, -45.5017		
2,052 hectares		Period clearance: Dec 2022 to Aug 2023		
263,791 tons of CO2				
129 fires alerts				
Inside Forest Code's protected areas:		No - -		
Type of vegetation:	Forested Savanna	Priority for Biodiversity Conservation:		No
Conservation area(s) (overlapping or bordering):		-		
Indigenous Territories (overlapping or bordering):		-		
Imagery: limits of the property (green), limits of the cleared area (red)				
December 2022		August 2023		
				
Source: Imagery ©2023 Planet Labs Inc.		Source: Imagery ©2023 Planet Labs Inc.		

Environmental fines and embargoes				
Embargoes:	No	-		
Environmental fines:	No	-	-	
Ownership and other linked properties				
Ownership:	Planta 7 S.A. Empreendimentos Rurais			
Company group:	Planta 7 Empreendimentos Rurais is registered in Minas Gerais, Bahia and Brasília as an Eucalyptus producer company (owners are Claudio Trincanato and Giuseppe Trincanato). The company is inactive. Both have more than 20 other companies together, including partnerships with finance corporations (Savannah Finance Corporation, Brascorp Investimentos) in the mining (Italmagnesio) and agribusiness (Coagro Indústria e Comércio de Produtos Agroindustriais) sectors. Coagro is active in charcoal production from forest plantations in Minas Gerais			
Linked properties:	One other linked property in Cocos (BA): Fazenda Reunidas (11,453 ha)			
Supply chain links				
Main Commodities	Soy			
Confirmed supply chain link, level of certainty, and soy trader/ beef processor		Yes	-	-
Soy	Warehouses (50 km radius)	17 warehouses owned by individuals and local storage companies/cooperatives, including Agrícola Xingu and SLC Agrícola		
	Supply chain links & details:	-		
Beef	Slaughterhouses (sourcing from the municipality)	Correntina (BA) supplies cattle to 26 different meatpackers, including: JBS (Itapetinga - BA)		
	Supply chain links & details:	-		
Other supply chain links and details:		-		
General comments				
<p>The Trincanato family is active in the mining sector (magnesium) and in charcoal production from forest plantations in Minas Gerais. In 2017, the Justice Court of São Paulo accepted the judicial reorganization plan presented by the Trincanato family for the bankruptcy of 7 of the group's companies, including Planta 7 Empreendimentos Agrícolas (1), the registered owner of Fazenda Buriti according to Sigef (2). The reorganization plan presents an assessment of the sale value of Fazenda Buriti (BRL 178 million), which is included among the company group's real estate assets that can be sold to pay off debts. In the plan, Fazenda Buriti, then owned by the Trincanato family, was divided into 10 small parcels (glebas 1, 2, 3, 4, 5, 11, 12, 13, 14 and 15) (1). Glebas 11, 12, 13, 14 and 15 are currently controlled by Pegoraro Agro (CNPJ: 48.804.547/0001-76), based in São Pedro do Ivaí (Paraná). In July 2023, the company applied to Inema in Bahia for authorization for the controlled burning of 6,252 hectares in these areas. However, the authorization appears in the system with a "pending validation" status (2). The deforestation reported in this case falls in the parcels gleba 2, 3, 4, and 5 of Fazenda Buriti.</p>				
(1)	https://lasproconsultores.com.br/admin/download.php?file=../_upload/0.7.A%20-%20Aditivos%20ao%20plano%20de%20RJ.pdf			
(2)	Inema, Bahia			

Property			
Fazenda Rio Verde			
Araguaçu, Tocantins		Cerrado biome	
CAR:	TO-1702000- EB1C5CDAC40D4407A35F0E50BB40677C	SIGEF/SNCI:	9260190061579
Area property (ha):	10,735	Coordinates property:	-12.80962, -50.25970
Cleared Area			
Coordinates clearance:	-12.8196, -50.2512		
2,405 hectares	period clearance: May to Aug 2023		
120,194 tons of CO ₂			
- fires alerts			
Inside Forest Code's protected areas:	No	-	-
Type of vegetation:	Wooded Savanna	Priority for Biodiversity Conservation:	No
Conservation area(s) (overlapping or bordering):		-	
Indigenous Territories (overlapping or bordering):		-	
Imagery: limits of the property (green), limits of the cleared area (red)			
May 2023		August 2023	
			
Source: Imagery ©2023 Planet Labs Inc.		Source: Imagery ©2023 Planet Labs Inc.	

Environmental fines and embargoes				
Embargoes:	No	-		
Environmental fines:	No	-	-	
Ownership and other linked properties				
Ownership:	Marcelo Henrique Limirio Gonçalves			
Company group:	Agropecuária Limírio Gonçalves (registered in GO, MT and TO as corn producer) Nova Piratininga Empreendimentos, participações e Incorporações (registered as cattle producer in São Miguel do Araguaia - GO and Araguaçu - TO)			
Linked properties:	6 other linked properties, totalling at least 2,160 hectares. In Campo Limpo de Goiás (GO): Fazenda Conceição (unknown area). In Lagoa do Tocantins (TO): Fazenda Serra Azul (unknown area), Fazenda Serra Dourada (unknown area). In São Miguel do Araguaia (GO): Retiro Recanto - Fazenda Piratininga (unknown area), Retiro Cerradão(unknown area). In Silvânia (GO): Fazenda Barreiro (2,158 ha)			
Supply chain links				
Main Commodities		Beef		
Confirmed supply chain link, level of certainty, and soy trader/ beef processor		Yes	High	JBS
Soy	Warehouses (50 km radius)	2 warehouse owned by local storage companies/cooperatives		
	Supply chain links & details:	-		
Beef	Slaughterhouses (sourcing from the municipality)	Araguaçu (TO) supplies cattle to 7 different meatpackers, including: JBS (Mozarlândia - TO)		
	Supply chain links & details:	Fazenda Rio Verde directly supplied JBS (Mozarlândia, GO) in 2020 and 2021. A linked property, Fazenda Barreiro (Silvânia, GO) directly supplied JBS (Senador Canedo, GO) in 2020, JBS/Friboi (Mozarlândia - GO) in 2020, and JBS/Friboi (Goinânia - GO) in 2023.		
Other supply chain links and details:		-		
General comments				
<p>Marcelo Henrique Limirio Gonçalves is a known entrepreneur in the farmaceutical sector in Anápolis (GO) (1). He was listed as one of Brazil's top 10 cattle producers in 2022 (2). The linked property, Fazenda Piratininga, is known as being larger than New York (3). Besides the fact of not having any embargoes or environmental fines since it was bought by Marcelo Henrique Limirio, he was investigated for corruption in the health sector in Brazil (4). In September 2023, Marcelo Gonçalves asked the Tocantins Nature Institute (Naturatins) to analyze the CAR for Fazenda Rio Verde. However, no requests for authorization to clear native vegetation on the property were identified (5).</p>				
<p>(1) https://www.dmanapolis.com.br/noticia/43364/alego-deputado-propoe-titulo-de-cidadania-goiana-a-empresario-anapolino-do-ramo-farmaceutico (2) https://revistaforum.com.br/economia/2022/12/1/quem-so-os-10-maiores-pecuaristas-do-brasil-que-isso-tem-ver-com-amaznia-seu-churrasco-128020.html (3) https://www.mightyearth.org/wp-content/uploads/Rapid-Response_soy-and-cattle_report-5.pdf (4) https://www.gentedeopiniao.com.br/colunista/lucio-flavio-pinto/os-donos-do-gado-e-de-muito-mais-em-rondonia-e-no-pais (5) https://sigam.to.gov.br/cadastrousuarioexterno/detalhe_documento_processo.aspx?cod_documento=801267 (number 2023/40319/180500)</p>				

Deforestation and fire alert data are the starting point of the analysis for each case study. After confirming the clearance of native vegetation through satellite imagery, each of the cases is analyzed through the Aidenvironment database crossing data from different sources and datasets as described below. Finally, the data is validated by a local partner, and a qualitative analysis of each case is developed using publicly available data.

Deforestation & Fire

We processed deforestation alert data from the INPE/Deter program for both biomes, Amazon and Cerrado. The Global Forest Watch (GLAD alerts) and the Mapbiomas Alertas platforms are alternative sources. The fire alerts are checked in the NASA/Firms platform and processed using the EO Browser Copernicus Sentinel platform. For each selected case, the deforestation is confirmed through satellite images.

Landownership (SIGEF/SNCI/SNCR) and the Environmental Cadastre self-declaration (CAR)

The landownership data is from the Federal Tenure Land systems SIGEF and SNCI, crossing it with SNCR to identify the owner. The land ownership registration on local notary offices is not checked and might differ from the federal systems. The self-declaration for the Environmental Cadastre (CAR) is checked in the Federal System SICAR, including the Legal Reserves and Permanent Preservation Areas (APP), according to the Brazilian Forest Code. For some states, such as Mato Grosso and Pará, it is possible to check the CAR declarant name through the Environmental State Agencies' CAR platforms. It is essential to highlight that CAR is not recognized as official ownership data.

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 in private properties varies according to the biome [80% Amazonia biome, 35% Cerrado biome inside Legal Amazon, and 20% other areas]. Permanent Preservation Areas (APP) are those linked to water and soil conservation areas (close to river bases, wetlands, slopes, and high hills.) The Legal Reserve and APP areas considered in this report are those self-declared within the Cadastro Ambiental Rural (CAR) system – Brazil's environmental registration system. In some cases, the CAR was also used to find information on ownership because even if it is a self-declared document, in some cases, it still provides the most recent information on who is operating in a property.

Conservation Areas and Indigenous Territories

Conservation Areas data is from the ICMBio, responsible for monitoring and managing the 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, or local government or private owner – and how the natural resources may be used by whom in each of the natural reserves' categories. Indigenous Territories data is from FUNAI, the National Foundation for Indigenous Populations. Indigenous Territories are officially recognized and determine areas where local Indigenous populations have customary rights to access and use the land.

Type of Vegetation and Priority for Biodiversity Conservation

The type of vegetation data is from the IBGE (Brazilian Institute of Geography and Statistics) and Embrapa, consulted through the INPE website. The classification according to the Priority for Biodiversity Conservation is from a study elaborated by the Brazilian Ministry of the Environment, updated in 2018.

Environmental Embargoes and Fines

Embargoed areas and Environmental fines are checked in the database from IBAMA, the Federal Environment Agency. Embargoes are areas where any activity is suspended or unauthorized by IBAMA, oftentimes due to environmental degradation or other crimes such as slavery labor. Properties can be removed from the list of embargoed areas after addressing the problem. Environmental fines are usually linked to regulation infractions and are addressed to the property owner.

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 this individual or group of individuals' names. If a company already registers the ownership, we also check the corporate structure of the company through open-source websites. Once the ownership, linked companies, and corporate structure are defined, we search for other properties registered under the same or similar ownership in the Federal Tenure Land systems SIGEF and SNCI.

Level of certainty of links to soy traders and beef processors

Soy – High: the trading relationship between the owner of the property and the trader is confirmed by traders or by the National Supply Company (Conab) trading subsidy programs, or traders have assets (warehouses) within the boundaries of the property; Medium: trading relationship with the corporate group, not necessary with the specified property is confirmed by traders or by Conab's subsidy programs; Low: the trader is the leading soy exporter in the municipality (Trase platform), or traders have assets (warehouses) within a radius of 50 km from the property.

Cattle – High: animal transportation data (GTA) confirm the direct trading relationship between the property and beef processors; Medium: animal transportation data (GTA) confirm the indirect trading relationship between the property and beef processors; Low: the beef processor is the leading meat exporter in the municipality (Trase platform), or beef processors have assets (slaughterhouse) within a radius of 50 km from the property.

Leading exporters (municipality), warehouses, and slaughterhouses

The data on main soy and beef exporters per municipality is from the Trase platform. The warehouses' location is from the SICARM, and the slaughterhouses' location is from the Ministry of Agriculture. The municipalities' export data and companies' assets' location only indicate a potential trading link, not being used as proof of trading links as explained in the previous item (level of certainty of links to soy traders and beef processors).

CO₂ Emissions

The calculation of CO₂ emissions refers to the "above-ground carbon emissions" according to the cleared vegetation type(s) [Source: [Nogueira et al. \(2015\)](#). *Carbon stock loss from deforestation through 2013 in Brazilian Amazonia*]. The tons of CO₂ emission is calculated per type of vegetation times the ratio of molecular weight of carbon dioxide to carbon (44/12) times the number of hectares cleared.

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