

Rainforest Foundation Norway

Driving deforestation:

The European automotive industry's contribution to deforestation in Brazil

A report prepared by Aidenvironment for Rainforest Foundation Norway

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Rainforest Foundation Norway

Rainforest Foundation Norway is one of the world's leading organisations in the field of rights-based rainforest protection. We are working for a world where the environment is protected and human rights are fulfilled.

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Executive summary

Cattle raising is the one activity causing the most deforestation in the Brazilian Amazon.

Cattle raising is the one activity causing the most deforestation in the Brazilian Amazon. Last year, deforestation reached a 12-year high, with over 1.1 million hectares of rainforest cut compared to 0.5 million hectares in 2012. The figures follow a dramatic trend of rising deforestation for more than a decade.

Brazil has the largest cattle herd in the world, 214.7 million animals, followed by India (193.5 million) and the United States (94.8 million). Almost half of the Brazilian cattle herd is raised in the Legal Amazon, a region that also concentrates the largest slaughtering capacity in the country.

Between 2018 and 2020, Brazil exported a total of 1.26 million tons of leather. Most Brazilian leather is exported to China and Italy, the main hubs for the leather processing industry globally, before it is exported as finished leather or further refined products.

THE LEATHER INDUSTRY: HIGH DEFORESTATION RISK AND LITTLE CONTROL

While links between beef and deforestation are increasingly gaining international attention, 80 per cent of Brazilian beef remains in the domestic market. In stark contrast, as much as 80 per cent of the bovine leather production in Brazil is exported. This makes Brazil the biggest exporter of bovine leather in the world, with a trade balance of US$ 1 billion, predominantly focused on export markets, as the domestic market has limited capacity to absorb the volumes produced. Yet very little attention has been drawn to the deforestation risk resulting from the production of leather from cows that have grazed in the Amazon.

Around half of the leather exported from Brazil is used in the automotive sector, the other half is distributed mainly in the footwear and upholstery sectors. This report focusses on the leather supply chain linked to the European automotive sector. Unfortunately, the car industry has very little control over where its leather originates, yet there is a very high risk that its products are deeply associated with deforestation in one of the world's most valuable and vulnerable ecosystems.

In the past ten years, a pattern of illegal land occupation and deforestation, human rights violations and even slavery has been exposed in the Brazilian cattle industry. Despite commitments to implementing traceability tools for a more transparent supply chain, the industry has seen few marked improvements.

Bovine leather has one of the most complex supply chains in the global commodity market, starting with several indirect and direct suppliers of cattle to the slaughterhouses, followed by a large range of companies and trade routes from the slaughterhouses, through tanneries and leather manufacturers, to the manufacturers of the final product and – in the end – the consumers. This report makes use of a range of data that exposes the links between cattle and deforestation and the associated links with the leather sector.

THE EUROPEAN RESPONSIBILITY IN STIMULATING DEFORESTATION

The report analyses 2019 and 2020 deforestation data in the buying zones of slaughterhouses and tanneries in Brazil that are supplying leather to the European market. The amount of deforestation within a slaughterhouse's "buying zone" is defined as its deforestation exposure risk. Being exposed to deforestation means that the slaughterhouses and tanneries are most likely linked to – and stimulating – this deforestation, unless there is a robust and verifiable monitoring system in placecovering both direct and indirect supplying ranches of the meatpackers.

In addition to identifying the deforestation risk of the slaughterhouses and exporting tanneries, the report includes a sample of case studies that document deforestation taking place on properties of direct and indirect cattle suppliers to the slaughterhouses, and reveals how cattle laundering, i.e. cattle moved from a farm embargoed for illegalities to a farm with no such restrictions, is used for circumventing environmental legislation.

The report also explores specific trading flows between Brazil and automotive leather manufacturers in Europe, and documents how European car manufacturers are exposed to deforestation.

The report analyses the leather value chain, the main volumes, the lack of policies to address these questions in place in this industry on an overall and company by company basis. It provides a fresh look at the daily operations through selected emblematic case studies that underline the problems in this sector and highlights the responsibility and opportunity for European companies to clean up their supply chains and drive changes within the Brazilian cattle industry.

Key findings

European car manufacturers are contributing towards deforestation in the Brazilian Amazon. Currently, no one buying leather from the major Brazilian leather suppliers can be sure that the leather they buy does not come from recently deforested areas.

On the contrary, this report shows a high probability that deforestation is a factor in the leather supply chain. All of the big five car manufacturers in Europe are sourcing leather from big clients of Brazilian companies linked to deforestation. None of them has adequate policies or measures in place to avoid being complicit in deforestation. Continuing buying from suppliers that are sourcing deforestation leather makes the car industry responsible for contributing to deforestation in the Amazon.

EUROPEAN CAR MANUFACTURERS ARE EXPOSED TO LARGE AMOUNTS OF DEFORESTATION THROUGH THEIR SUPPLY CHAINS.

The **Brazilian suppliers** of leather are at a very high risk of using leather from cows that have grazed on recently deforested lands in the Amazon. In the buying zones of the largest meatpackers' slaughterhouses linked to the seven exporting tanneries analysed in this study, a total of 1,345,118 million hectares of forest was destroyed in the past two years. JBS Couros was exposed to 1.15 mill ha of deforestation, which by far is the biggest deforestation exposure. Vancouros was exposed to 0.80 mill ha of deforestation, Durlicouros to 0.56 mill ha, Fuga Couros to 0.47 mill ha, Minerva Couros to 0.48 mill ha, Viposa to 0.12 mill ha and for Mastrotto Brasil it was not possible to calculate the deforestation risk exposure. (note that the buying zones of the slaughterhouses linked to the tanneries are partially overlapping).

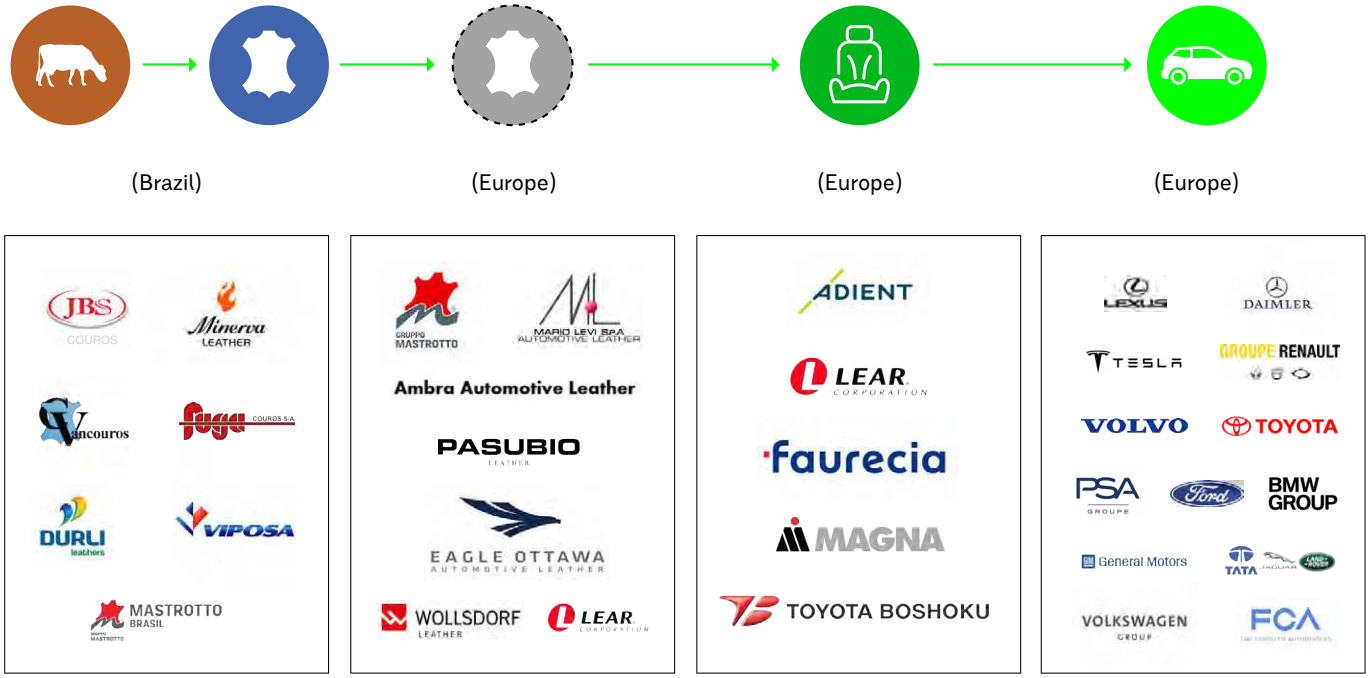
This deforestation risk is further projected throughout the supply chain and to the car manufacturers.

MOST OF THE LEATHER EXPORTED FROM BRAZIL COMES FROM THE AMAZON

Most of the leather exported from Brazil comes from tanneries located in the Legal Amazon, sourcing leather from cattle raised and slaughtered there. Six (out of the top ten) exporting tanneries analysed by this study (JBS Couros, Minerva Couros, Vancouros, Fuga Couros, Durlicouros and

Figure 0
Stakeholders involved in the Brazil-Europe leather supply chain, linked to the European automotive industry, from leather exporters to car manufacturers.

Elaborated by Aidenvironment



Viposa), have all their tanneries specialising in wet blue (the main type of leather export) in the Legal Amazon states.

LIMITED TRACEABILITY SYSTEMS IN THE BRAZILIAN CATTLE INDUSTRY DIRECTLY IMPACT THE AUTOMOTIVE LEATHER SUPPLY CHAIN

The lack of traceability systems and poor supply chain governance is the biggest challenge to adequately monitor and avoid deforestation linked to cattle ranching in Brazil. None of the Brazilian meatpackers are able to trace their cattle back to their birth farm.

Further down the supply chain, tanneries, leather producers, car component manufacturers and car manufacturers do not have sufficient tools to trace the hides back to their origin, in many cases not even back to the slaughterhouse. Tanneries and certification bodies have to rely on traceability information provided by slaughterhouses.
As a consequence, none of the current certification bodies in the leather industry, like the Leather Working Group (LWG), are capable of ensuring traceability back to the indirect suppliers of cattle – where most of the deforestation in the Amazon takes place. A tannery might very well have deforestation cattle in its supply chain, and still be highly ranked in the leather certification systems..

Added to that, leather changes import codes when it is refined in the first import country. Thus, Brazilian leather imported to Italy and refined there can be re-exported as Italian leather, adding an additional layer of complexity to maintaining information integrity.

EXPORTING TANNERIES DEFORESTATION EXPOSURE	JBS COUROS	VANCOUROS	FUGA COUROS	MINVERVA COUROS	MASTROTTO BRASIL
CAR MANUFACTURERS	1.15 mill ha	0.80 mill ha	0.47 mill ha	0.48 mill ha	Unknown
Volkswagen Group	▼	▼	▼	▼	▼
BMW Group	▼	▼	▼	▼	
Daimler	▼	▼			
PSA Groupe	▼		▼	▼	
Groupe Renault ▼					

Table 0
Supplying tanneries (with deforestation exposure) with strong potential links to top five car manufacturers

*The methods and data used in the study did not identify a proven link between Groupe Renault and the Brazilian leather exporters although it is known that Groupe Renault has links to Adient and Magna, two of the top five car seat manufactures supplying the European Automotive market and with a high risk of using Brazilian leather

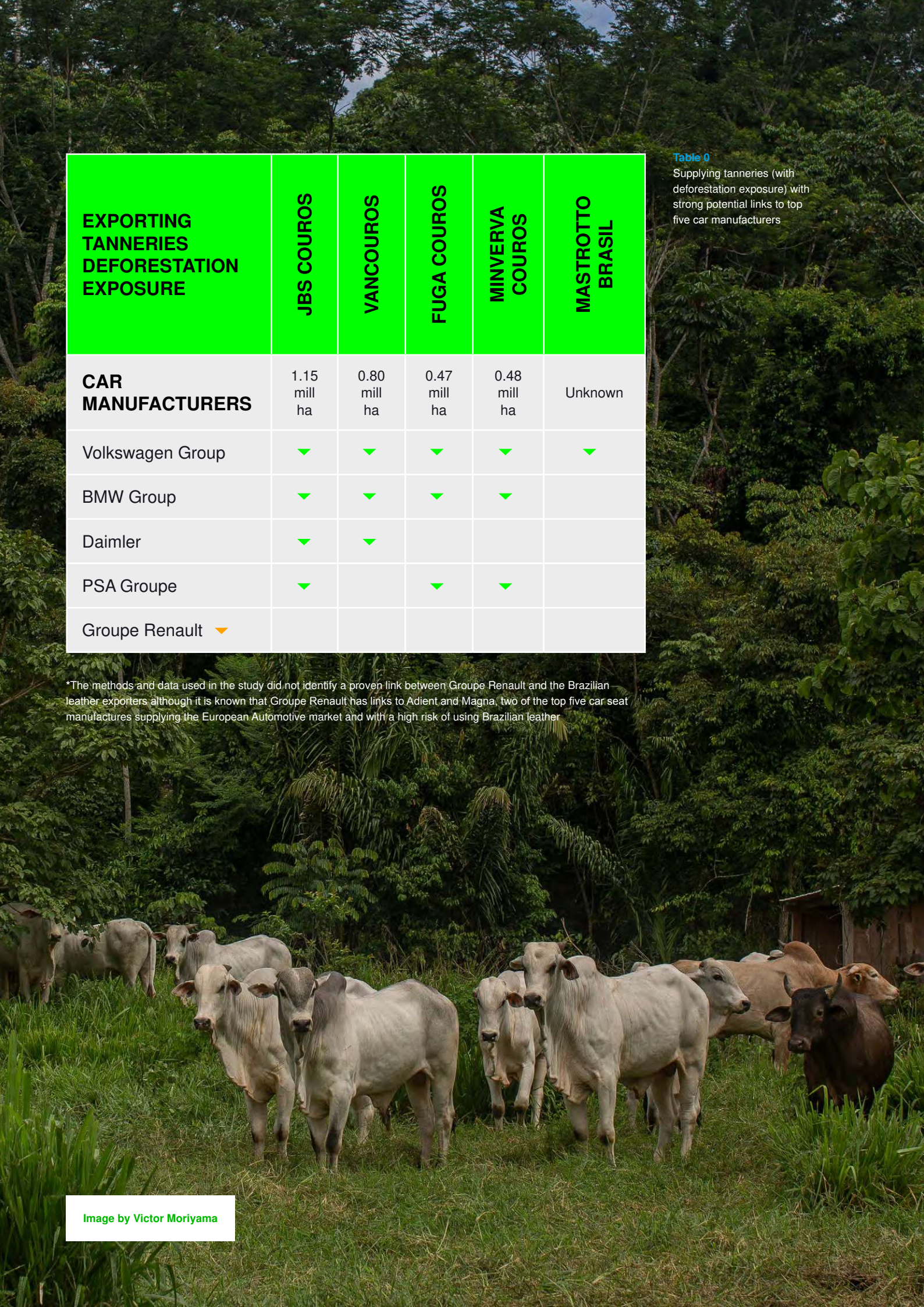


Image by Victor Moriyama

LACK OF TRANSPARENCY THROUGHOUT THE SUPPLY CHAIN CONCEALS TRACES OF DEFORESTATION AND MAKES VERIFICATION HIGHLY CHALLENGING FOR COMPANIES AND THIRD PARTIES

None of the major actors along the automotive leather supply chain are fully transparent or can provide their customers with complete information about their products' origins.

European leather manufacturers sourcing from Brazil suffer from lack of transparency from their suppliers and are unable to provide it to their customers. Car seat and interior manufacturers also lack transparency on who their leather suppliers are. This all emanates from the limited traceability capabilities provided by the Brazilian cattle sector.

Nor is it possible to trace the leather between the leather manufacturers and the car manufacturers.

NO COMPANY ALONG THE SUPPLY CHAIN HAS ADEQUATE POLICIES IN PLACE TO AVOID USING DEFORESTATION LEATHER

None of the top five European car manufacturers, Volkswagen Group, BMW Group, Renault Group, PSA Group and Daimler, or their car brands, have adequate policies and systems in place to monitor their supply chains to avoid using deforestation leather in their manufacturing processes.

Among the four companies that share 90 per cent of the global automotive seat market (Adient, Lear, Faurecia, and Toyota Boshoku), only Lear has a recent launched "No Deforestation Policy" (August 2020). This policy does not specify, however, any sourcing criteria or monitoring mechanisms focused on identifying and mitigating deforestation within their supply chains.

Neither do the five most important Italian leather manufacturers supplying the automotive industry: Gruppo Mastrotto, Rino Mastrotto Group, Pasubio, Gruppo Dani, and Mario Levi.

The three Brazilian meatpackers discussed in this report have all committed to reduce their contribution to deforestation, however none of them have presented adequate policies or measures to eliminate deforestation from their supply chains.

CASE STUDIES SHOW CONCRETE EXAMPLES OF DEFORESTATION AND HUMAN RIGHTS VIOLATIONS IN THE SUPPLY CHAIN

The case studies in this report document that the three largest meatpackers buy deforestation cattle. We identified 13,000 hectares of recent deforestation in a small sample of direct and indirect cattle suppliers to the three large meatpackers, with either joint operations and/or in immediate vicinity to exporting tanneries. The cases also document examples of illegal "cattle laundering" and presents examples of land grabbing and a high level of conflict between large cattle ranchers and local communities. Peasant farmers in the vicinity of cattle farms report of having been shot at and having their homes burned to the ground.

Recommendations

As this report shows, urgent action is needed to address deforestation from the cattle sector in Brazil and globally.

The European automotive industry is closely connected to deforestation through its suppliers of leather for vehicle interiors. But it is also well positioned to be part of the solution, by presenting clear demands to its suppliers and sub-suppliers and engaging with initiatives focused on promoting deforestation free leather. There are clear opportunities for the car industry to be part of the solution to help Brazil decouple deforestation from the production of beef and leather.

The responsibility and construction of the solutions to this problem lies with the companies, consumers and with governments.

Companies at all stages of the leather supply chain, including car manufacturers and Brazilian meatpackers, must eliminate deforestation and conversion of native vegetation in their supply chains. To achieve this, they are strongly recommended to:

- Adopt a zero deforestation supply chain policy by the end of 2021 at the latest, covering all deforestation risk commodities, with a clear commitment to eliminate all deforestation (legal and illegal), conversion of native vegetation and human rights violations from their supply chains. Companies must require that their suppliers are fully deforestation-free in all their operations, including their sub-suppliers. Policies should be aligned with the Accountability Framework Initiative.
- For cattle related products, the policy must have a cutoff date for deforestation of no later than 2020, include requirements that cattle are not sourced from farms involved in slave labor, invasion of indigenous territories, protected areas or public lands, or that have any governmental embargoes, covering indirect supplying ranches back to birth farm.
- Get involved with multi-stakeholder initiatives that focus on solutions for traceability, monitoring and transparency in the cattle value chain, such as the Working group for indirect suppliers (GTFI), Global Roundtable of Sustainable Beef (GRSB), Brazilian Roundtable on Sustainable Livestock (GTPS/BRSL), and others.
- Ensure that there are robust systems for supply chain traceability, to identify origins of all deforestation risk commodities used, including land tenure and the fiscal and environmental situation of the supplying farms. For cattle related products, companies must demand traceability that include all indirect suppliers of cattle, back to birth farm. The companies should receive full reports on progress and verify results.
- Engage with suppliers to communicate expectations and help monitor their efforts to become deforestation-free across their entire supply base.

- Temporarily block non-compliant suppliers but continue to engage to allow reintroduction of suppliers once they are in compliance.
- Report annually and transparently on progress, preferably using platforms connected to other actors in the marketplace, including investors, such as CDP and Forest 500.
- Engage with governments and law-makers in demand-side countries to introduce due diligence laws. Due diligence legislation needs to have clear requirements and sanctions, covering standardised reporting, conversion of all ecosystems and human rights.
- Engage with governments and law-makers in supply-side countries to introduce systems for transparency and full traceability of commodity supply chains, all the way to the origin of the commodities.
- Support EU and national regulatory processes aiming to reduce the amount of imported deforestation.

The European Union and EU Member States should implement strong due diligence legislation to progressively eliminate products deriving from deforestation from entering the European market. The legislation must contain clear requirements and sanctions; covering standardised reporting, conversion of all threatened ecosystems (not limited to legal deforestation) and human rights, and apply to all industry segments, company types and sizes.

Institutional investors should engage with companies trading in or using deforestation-risk leather and require them to decouple their ties to deforestation, as described in the recommendations to companies above.

Banks should require client companies to demonstrate deforestation-free supply chains in order to qualify for financial services. Banks should also provide incentives for strong supply chain governance and deforestation free production, with special lines of credit, sustainability-linked loans etc.

Industry and business associations should promote and prioritise discussions about zero deforestation and human rights violations in the leather supply chains, and work to establish efficient tools and guidelines to eliminate deforestation from members' supply chains.

They should also support EU and national regulatory processes aiming to reduce the amount of imported deforestation-risk leather into Europe.

Consumers should demand that companies placing products on the European market stop purchasing leather from suppliers linked to deforestation in any part of their operations.

Furthermore, consumers should call on the EU and national governments to implement strong due diligence laws, requiring companies to prove that products placed on the European market have not contributed to environmental destruction or human rights violations.

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Image by Victor Moriyama

Introduction

The tropical rainforest is the most biodiverse ecosystem on earth and it's teeming with life. Up to 80 percent of all land-based animal and plant species and millions of indigenous peoples live here.

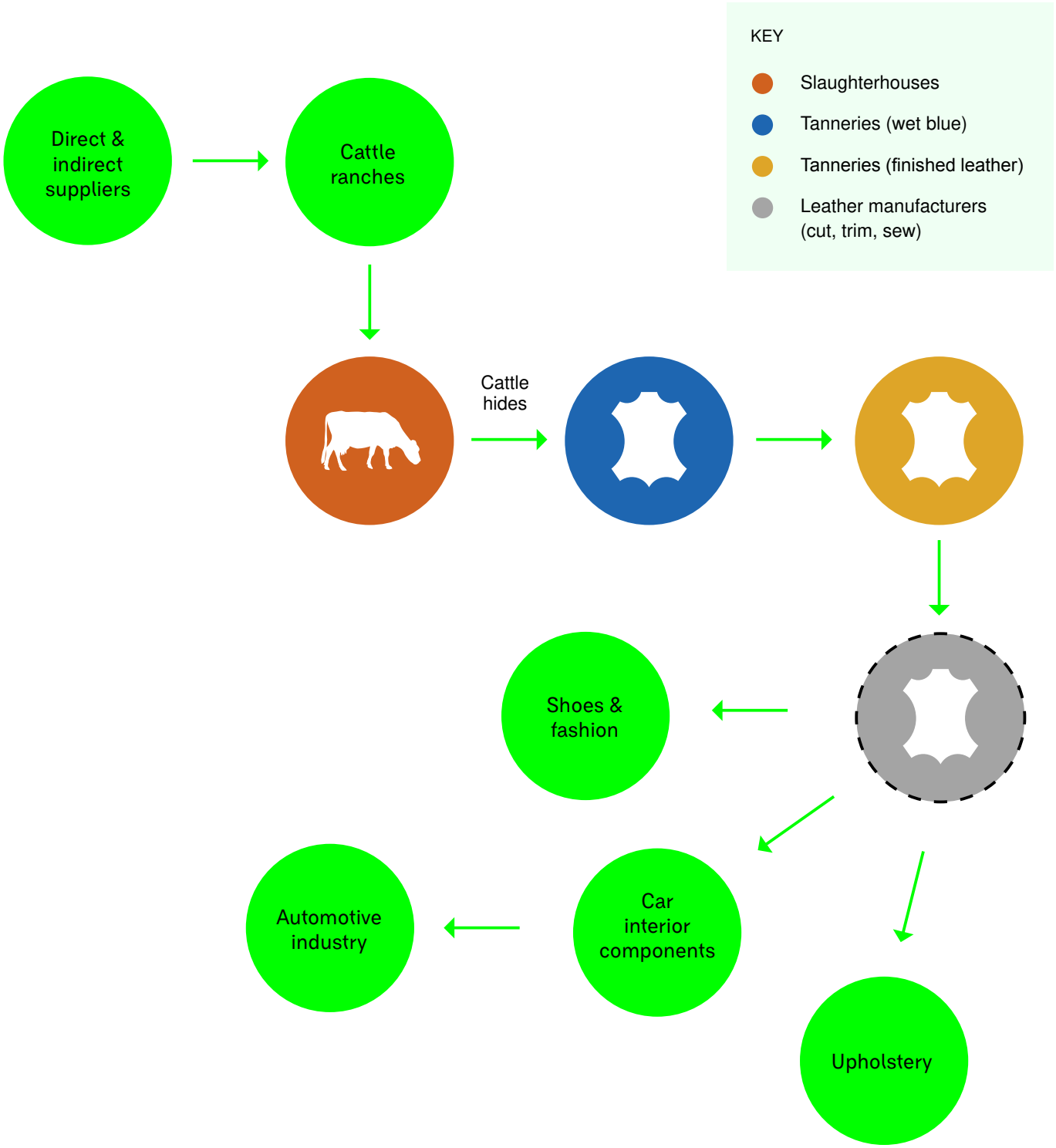
Unfortunately, the world's rainforests are severely threatened and rapidly disappearing because of human activity. A recent study shows that only one third of the original rainforest remains intact.

When the rainforest is destroyed, not only its valuable cultural and biological diversity are lost, we are also losing one of our most effective tools in the fight against catastrophic climate change, as an intact forest is nature's own technology for capturing and storing carbon dioxide, preventing it from being released into the atmosphere.

Commodity supply chains have been the focus of several efforts to tackle deforestation of tropical forests. Among these commodities, palm oil, soy and beef have been receiving significant attention.

Cattle is the main driver of deforestation in Brazil. While we have seen significant attention to the links between beef and deforestation, information about the responsibility of the leather industry and their customers, including the automotive, footwear, fashion, and upholstery industries has been almost absent. Brazil exports around 80 per cent of its bovine leather production, in contrast to the beef sector where around 80 per cent stays in the domestic market. With this, it is more likely that the exported leather is also 'exporting' more deforestation than the exported beef.

The main argument from the leather industry in terms of dealing with deforestation within the supply chains is claiming that leather is just a waste product from the beef industry, and thus to be considered a by-product, placing the responsibility for sustainability measures with the beef and cattle sectors. However, even if skin-hide does not represent a higher value compared to beef for the slaughterhouses, the global leather export does not stand behind the beef in terms of global sales value, around USD 28 billion. Slaughterhouses would not sell the hides if it was not more profitable than disposing of them.



There is a lack of transparency on tanneries' direct and indirect suppliers when trying to map deforestation linked to the leather supply chain

The present study contributes to the debate on supply chain transparency and deforestation exposure of the leather supply chain, from cattle ranching to its final application, specifically in the automotive industry. Almost half of the leather exported from Brazil in terms of value is used in the automotive sector: the other half is distributed mainly in the footwear (20 per cent) and upholstery sectors (21 per cent). The leather supply chain does not only involve tanneries, producers of final products and final consumers, but also includes cattle producers, slaughterhouses, and specialised manufacturers.

Bovine leather shares with the beef supply chain the steps from animal breeding and fattening to slaughtering. From the slaughterhouses, the bovine hides go to tanneries, where the first treatment results in what is known as wet blue or semi-finished leather, the main exported leather product from Brazil. After the wet blue, the leather is processed to become finished leather, which can then be used by different industries, from fashion and footwear to upholstery and automotive.

The traceability of the largest cattle herd in the world, from its birth until slaughtering, is the biggest challenge to address deforestation linked to cattle ranches in Brazil. More than ten years ago, the biggest Brazilian meatpackers signed a legally binding agreement with public prosecutors for the implementation of traceability systems within their supply chains. However, the systems implemented by these meatpackers so far are limited to their direct suppliers, not addressing deforestation that happens mostly in their indirect suppliers' properties. Recent research shows that there are at least double the number of indirect suppliers compared to direct suppliers, and they are exposed to 2.5 times more deforestation than slaughterhouses' direct suppliers.

In addition to the traceability challenge from cattle ranches to slaughterhouses, there is a lack of transparency on tanneries' direct and indirect suppliers when trying to map deforestation linked to the leather supply chain.

The present study contributes to the debate on transparency and deforestation risk exposure of the leather supply chain, from cattle ranching to its final application, specifically in the automotive industry.

The first part of the report analyses the Brazilian side of the leather supply chain, first linking the distribution of the cattle herd and tanneries within the national territory to the production of different types of exported leather. The study then discusses the deforestation exposure of tanneries that are potentially linked to slaughterhouses operating in the Legal Amazon, an area covering nine Brazilian states, including the entire Amazon biome, part of Cerrado biome and the transition zones between both. The report focuses its analysis on tanneries operated by seven companies that are among the top ten Brazilian leather exporters: JBS Couros, Minerva Couros, Vancouros, Fuga Couros, Durlicouros, Mastrotto Brasil, and Viposa. The first part also presents eight case studies linking recent deforestation to cattle producers, slaughterhouses and tanneries.

The second part of the report discusses the European automotive sector deforestation risk exposure through the leather supply chain. First, the section explores the car manufacturers and brands in Europe, including both regular and luxury brands, both of which make use of leather components in their vehicles. The study then analyses a second actor within the leather supply chain: car seat manufacturers, who usually operate close to car manufacturing and assembly facilities. The report discusses the trading flows from Brazil to automotive leather manufacturers (tanneries) in Italy, which is the main importer of Brazilian leather in Europe. Finally, the report explores four specific trading flows from Brazilian leather exporters up to car brands as case studies of the deforestation risk exposure of the European automotive sector through leather.

Part One –

Brazilian bovine leather exports' exposure to deforestation

This part of the report analyses the deforestation exposure of seven of the top ten leather exporters in Brazil (JBS Couros, Minerva Couros, Vancouros, Fuga Couros, Durlicouros, Mastrotto Brasil, and Viposa; the other three are logistic companies difficult to trace). It also presents eight case studies linking recent deforestation and human right violations in cattle ranches to exporting tanneries.



Image by Victor Moriyama

1.1

Brazilian leather exports in numbers

Italy and China are the main destination of wet blue hides, United States of finished leather.

Between 2015 and 2019, China, Brazil, and Italy were the largest exporters of wet blue or semi-finished leather by weight, and together represented 47 per cent of global exports. At the same time, Italy and China were together the destination of 76 per cent of Brazilian wet blue leather in addition to concentrating most of the tannery industry involved in processing wet blue into finished leather ready to be used by other industries.

This suggests that although they do not have such large cattle herds as Brazil they are still a major focus of the leather industry as well as re-exporting leather originating in Brazil. Meaning Brazilian leather imported to Italy, and refined there, can be re-exported, and branded, as Italian leather.

Between 2018 and 2020, Brazil exported a total of 1.26 million tons of leather[1] for the footwear, fashion, upholstery, and automotive sectors. In addition to China (including Hong Kong) and Italy, Vietnam, Taiwan, and India are among the top five destinations of bovine wet blue leather hides. The top five destinations of Brazilian finished leather are the United States, China, Italy, Germany, and Vietnam.

Total leather exports from Brazil represent 80 percent of its leather production by value. Between 2018 and 2020, 86 per cent of Brazilian leather hides exported by weight was wet blue leather, 11 per cent was finished leather, and the other three per cent were raw salted hides.

Brazilian leather hides exports per value (USD) shows a different figure, with 42 percent originating from wet blue leather hides and 58 percent from finished leather hides, which have a higher aggregated value.

1 Harmonization System codes 4101/4104/4107

Figure 1
Top 10 Brazilian leather exporters, type of leather, and destination by weight (ton) and value (USD)

Elaborated by Aidenvironment with Panjiva and Comexstat

	EXPORTER	WEIGHT (TON)	%
#1	Euro America (logistic)	444,510	35.31
#2	JBS Couros	187,278	14.88
#3	Border Free (logistic)	90,092	7.16
#4	Minerva Couros	59,925	4.76
#5	Directa Line (logistic)	51,199	4.07
#6	Vancouros	59,424	4.72
#7	Fuga Couros	50,517	4.01
#8	Durlicouros	39,189	3.11
#9	Mastrotto Brasil	26,620	2.11
#10	Viposa	23,926	1.90
	Total	**1,032,683**	**82.02**
	Other 237 exporters	226,323	17.98
	Total	**1,259,007**	**100**

This suggests that although they do not have such large cattle herds as Brazil, they are still a major focus of the leather industry

This study only includes Brazilian exports of bovine wet blue (or semi-finished leather) and bovine finished leather as the exports of raw salted hides represent only three per cent by weight and have practically no share in the total exports by value.

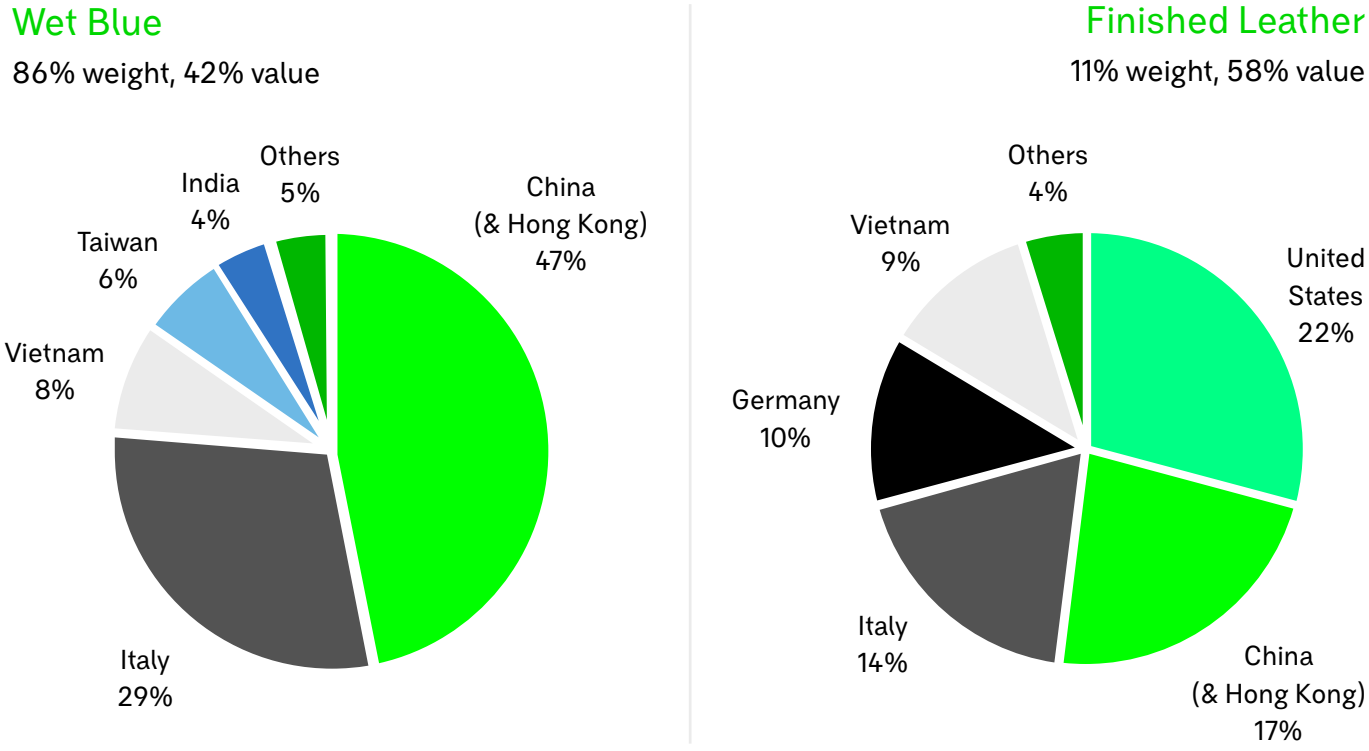
Wet blue leather (or semi-finished leather):
China (including Hong Kong), Italy, Vietnam, Taiwan, and India correspond to 95 percent of Brazilian exports.

Finished leather:
United States, China and Hong Kong, Italy, Germany, and Vietnam correspond to 96 percent of Brazilian exports of bovine finished leather.

Almost half of the leather exported from Brazil in terms of value is used in the automotive sector, the other half is distributed mainly in the footwear (20 per cent) and upholstery sectors (21 per cent). The Brazilian bovine leather used by the automotive industry can be either finished leather, which requires less processing before its application in car seats and interiors, or wet blue leather, which still needs to be processed / manufactured before being used in car seats and interiors.

The top 10 Brazilian leather exporters, including leather manufacturers and logistic companies, represent 81.4 per cent of the total export shares between 2018 and 2020. Among the top 10 exporters, seven are known leather manufacturers and represent 34.8 per cent of the export share (Figure 1). The remaining three exporters are logistic and trading companies, for which it is hard to determine the leather suppliers and customers due to lack of transparency. Figure 1 shows data on the top 10 exporters and the top five destinations of Brazilian leather by type. This report considers data covering seven of the 10 largest known leather exporters: JBS Couros, Minerva Couros, Vancouros, Fuga Couros, Durlicouros, Mastrotto Brasil, and Viposa. The leather exported by the three logistic companies among the top 10 exporters is likely supplied by these known leather exporters.

Figure 1 Cont...
Top 10 Brazilian leather exporters, type of leather, and destination by weight (ton) and value (USD)



1.2

Origin of Brazilian leather exports

The production of wet blue, the largest export leather product, is concentrated in the Amazon.

Brazil has the largest cattle herd in the world, 214.7 million animals, followed by India (193.5 million) and the United States (94.8 million). Almost half of the Brazilian cattle herd is raised in the Legal Amazon[1], a region that also concentrates the highest slaughtering capacity in the country. The municipality in Brazil with the largest cattle herd is São Félix do Xingu, in Pará state, with 2.24 million animals. Mato Grosso is the state concentrating the largest cattle herd, 31 million animals (Figure 2).

Within the Legal Amazon, Mato Grosso, Pará and Rondônia states concentrate 80 per cent of the cattle. These are same states where 74 per cent of the deforestation within the Amazon biome took place in the last two years. These three states are known as the "agribusiness expansion frontier" moving from south to north. This frontier expands clearing native vegetation and displacing local communities and indigenous populations, who mainly depend on forest resources for their livelihoods.

In the Amazon biome deforestation is mainly linked to the cattle sector, evidenced by the land use change pattern of the agribusiness frontier (timber-cattle-crops). Between 2018 and 2019, for instance, 83 per cent of native vegetation (mainly forest) conversion was directly linked to pasture and only five per cent to agriculture, while in Cerrado, native vegetation (forest and savannah) conversion directly to pasture was 57 per cent and to agriculture 27 per cent. In the Cerrado, forest recently converted into pasture is often relatively quickly followed by conversion into crops.

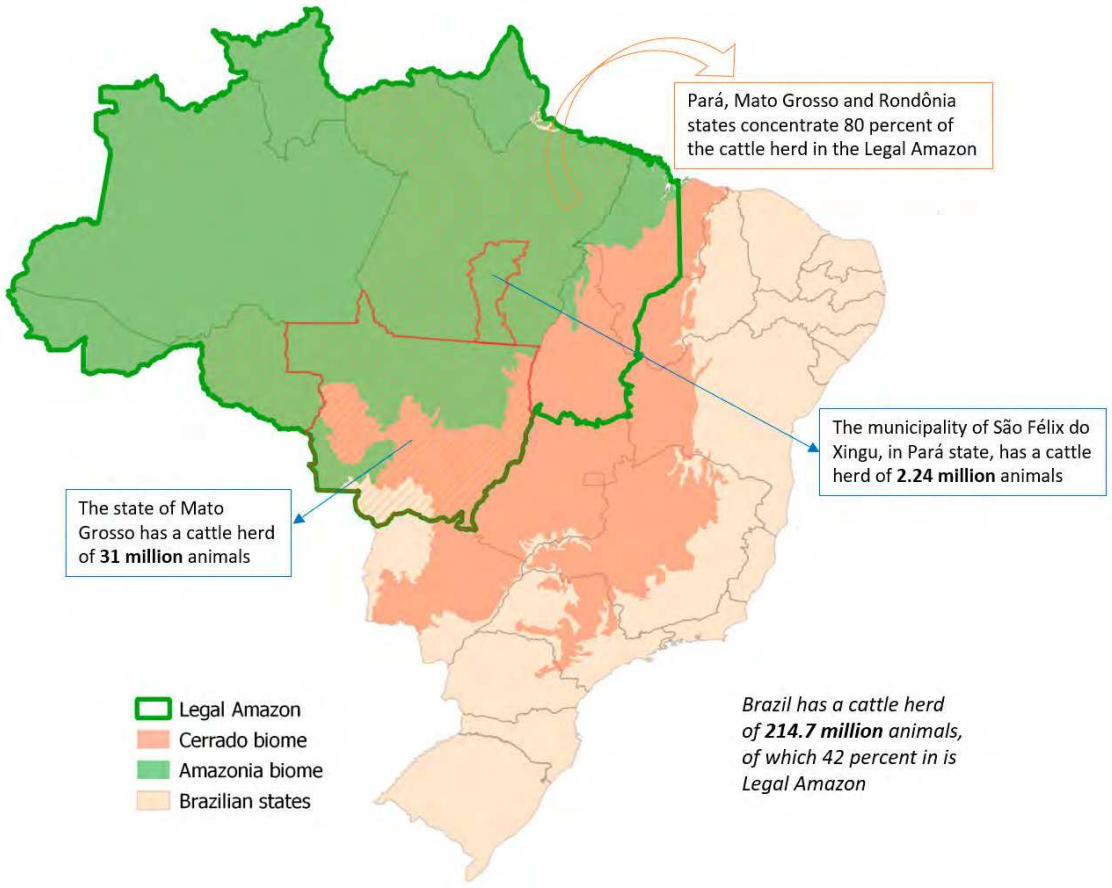
The leather and beef supply chains share the same steps from animal breeding and fattening to slaughtering.

1 The Legal Amazon is an administrative area comprising the entire Amazon biome and its transition areas with Cerrado biome. The Legal Amazon covers the entire territory of eight Brazilian states (Acre, Amapá, Amazonas, Mato Grosso, Pará, Rondônia, Roraima, and Tocantins) and part of the state of Maranhão.

Figure 2
Brazilian cattle herd distribution

Elaborated by Aidenvironment.

Brazilian states: Rio Grande do Sul (RS), Santa Catarina (SC), Paraná (PR), São Paulo (SP), Rio de Janeiro (RJ), Minas Gerais (MG), Espírito Santo (ES), Mato Grasso do Sul (MS), Goiás (GO), Mato Grosso (MT), Tocantins (TO), Maranhão (MA), Rondônia (RO), Acre (AC), Amazonas (AM), Roraima (RR), Amapá (AP), Pará (PA), Piauí (PI), Ceará (CE), Rio Grande do Norte (RN), Paraíba (PB), Pernambuco (PE), Alagoas (AL), Sergipe (SE), Bahia (BA).



After the leather is separated from the cow at the slaughterhouse, the other main processes that take place before the leather is exported are:

1. animal skinning and cutting of raw skins, which produces **raw hides**
2. salting raw hides for conservation, which results in raw **salted hides**
3. chrome tanning to produce wet blue leather
4. other tanning and processing to produce crust or **semi-finished leather**
5. other tanning and processing to produce **finished leather**

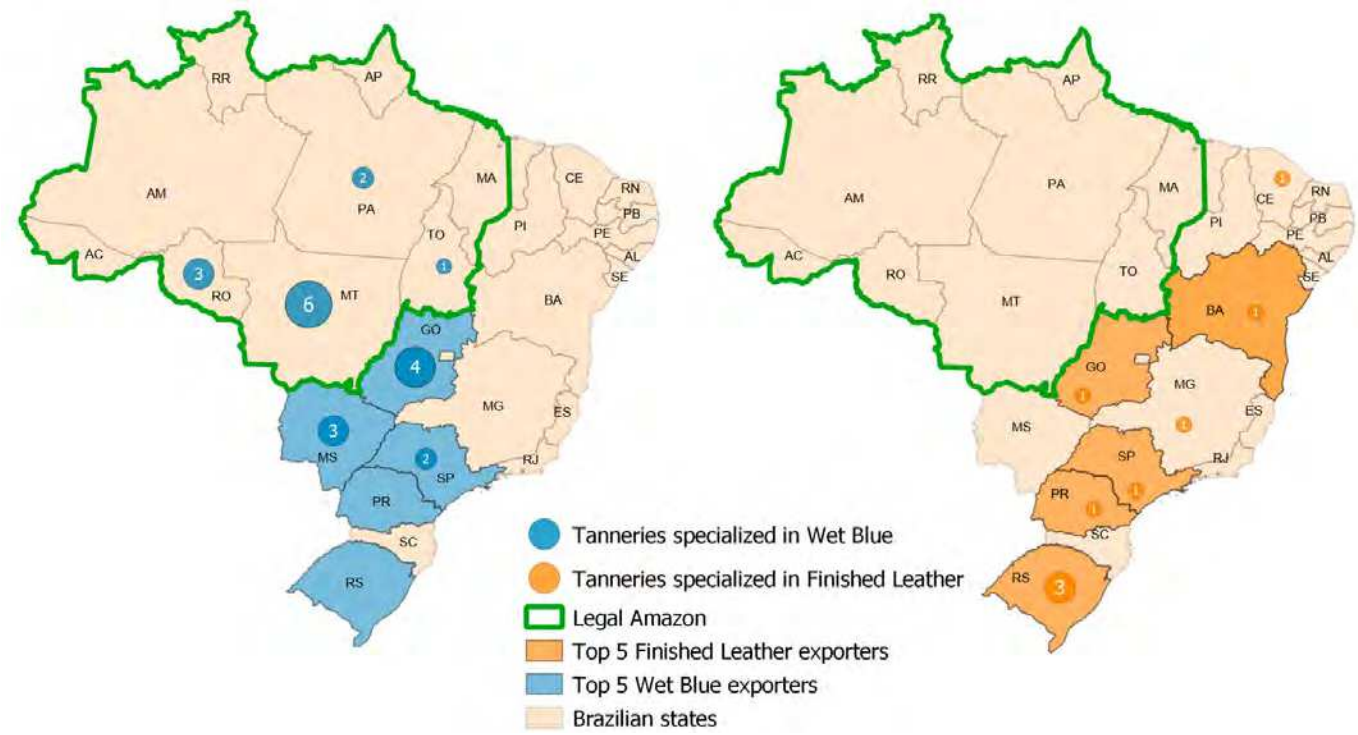
Usually, salting for leather conservation needs to take place within four hours of slaughter, and this is mostly done in the slaughterhouse. With salting, slaughterhouses usually add 25 per cent to the price of the final raw salted hides compared to the raw skin hides. Raw salted hides can be stocked for three to five months before chrome tanning, depending on the weather and stocking conditions. Although salting of the hides allows for long distance transportation from slaughterhouses to tanneries that produce wet blue leather through chrome tanning, most of the tannery facilities specialising in wet blue are also based in the Legal Amazon (Figure 3).

Brazil has a total of 244 tanneries, 106 are registered for exporting leather (under the Federal Inspection Certificate, “Selo de Inspeção Federal - SIF”), of which 34 are based in the Legal Amazon. The seven largest known leather exporters in Brazil jointly operate 39 tanneries spread across the country.

Figure 3
Brazilian cattle herd distribution

Elaborated by Aidenvironment.

*Three out of the top ten exporters are logistic companies, not included in this study. The other seven exporters among the top ten operate a total of 39 tanneries in Brazil: JBS Couros (15), Minerva Couros (1), Vancouros (6), Fuga Couros (7), Durlicouros (6), Mastrotto Brasil (1), and Viposa (3). Brazilian states: Rio Grande do Sul (RS), Santa Catarina (SC), Paraná (PR), São Paulo (SP), Rio de Janeiro (RJ), Minas Gerais (MG), Espírito Santo (ES), Mato Grasso do Sul (MS), Goiás (GO), Mato Grosso (MT), Tocantins (TO), Maranhão (MA), Rondônia (RO), Acre (AC), Amazonas (AM), Roraima (RR), Amapá (AP), Pará (PA), Piauí (PI), Ceará (CE), Rio Grande do Norte (RN), Paraíba (PB), Pernambuco (PE), Alagoas (AL), Sergipe (SE), Bahia (BA).



Twenty-one of these tanneries specialise in wet blue leather, of which twelve are in the Legal Amazon. Nine of them specialise in finished leather and are outside the Legal Amazon and ten have an unknown specialisation. Figure 3 shows the geographical distribution of the tanneries included in this study by specialisation, all of them are SIF-certified, which is mandatory for leather exporting.

The production of wet blue and finished leather is spread across Brazil in comparison to the origin of exports. This means that even if wet blue is produced mostly in tanneries in states in the Amazon, it is exported through other states. While most of the tanneries specialising in wet blue are in the Amazon, the largest exporters of wet blue are in Goiás and Mato Grosso do Sul, bordering the Legal Amazon, followed by three states towards the south. The tanneries specialising in finished leather are mostly located in the south and none are found in the Amazon. Most of the exporters have their headquarters or main facilities located in the south and south-east of Brazil, explaining the ranking of these states as the major exporting states.

The tanneries are not transparent on the production capacity of their facilities; out of the 39 tanneries considered in this report only 11 have known capacity (Appendix 2). Knowing the production capacity would be the best way to understand, for instance, where the largest volume of wet blue is being produced. Still, the facilities that are known to specialise in wet blue production, the largest exported leather product from Brazil between 2018 and 2020, are concentrated in the Legal Amazon (12) and the bordering states of Mato Grosso do Sul and Goiás (seven), and only two of them are in São Paulo state. Because of that, there is a high risk that most of the exported wet blue leather by the largest known exporters is linked to cattle raised in areas where there has been an increasing exposure to deforestation, including the Amazon and Cerrado biome.

1.3

Sustainability policies and traceability tools within the leather supply chain do not tackle deforestation

Parts of the European leather industry have invested efforts in intelligence, tools and instruments addressing transparency and traceability, but progress is slow.

Recent efforts from certification bodies and platforms in the leather industry, working in close collaboration with collaborative NGOs, have incorporated traceability in their auditing protocols. The Leather Working Group (LWG, UK) and The Institute of Quality Certification for the Leather Sector (ICEC, Italy) for example recently launched a new version of their audit standard with traceability as more critical section.

They have also increased the scope and requirements for material sourced from areas at risk of illegal deforestation. Still there is a long way to go to ensure traceability in the leather supply chains.

Brazilian legislation, in many cases, prohibits access by third parties to the existing documentation that follows the movement of animals from farm to farm, up to the slaughterhouse (GTA).

Consequently, tanneries, leather stakeholders and certification bodies have to rely on traceability information provided by slaughterhouses. And none of the current certification bodies in the leather industry can ensure full traceability all the way back to the indirect supplying ranches of cattle.

The Leather Working Group (LWG), a group of the most widely accepted global leather certification organization, aims to establish protocols for environmental compliance and performance assessments for their associated members and clients.

The LWG audits include a traceability parameter in percentage, meaning that the tannery's facility has how to prove a percentage of the origin of their leather. In Brazil, around 70 tanneries are audited members of the LWG, and the seven largest leather exporters analysed in this study have at least one of its facilities audited by the LWG. Among these leather exporters, we found that a total of 22 facilities states 100 percent of traceability, including: JBS (15), Vancouros (3), Durlicouros (2), Fuga Couros (1), and Viposa (1). Still the audits do not disclose the slaughterhouses that supply bovine leather to these tanneries. Also, it is not clear how this traceability system is integrated or not with the tools used by slaughterhouses to monitor their cattle sources.

Traceability strategies for leather relies on the monitoring systems of the slaughterhouses from where bovine hides are sourced by tanneries. Although the three meatpackers included in this study, JBS, Minerva, and Marfrig are signatories of the agreement with the Brazilian Prosecutors Office since 2009 (TAC – 'Termo de Ajustamento de Conduta'), a legally-binding instrument to improve the sustainability of their supply chain, their implemented monitoring system only includes direct suppliers. Nevertheless, monitoring indirect suppliers is seen as the only way to guarantee deforestation-free products linked to cattle raising.

In the last year, the three largest Brazilian meatpackers were pressured by civil society and financial sector to respond to the need for monitoring their indirect suppliers, although this public commitment is not new as it was also part of their agreement with the Brazilian Prosecutors Office signed in 2009.

Marfrig's Green Plan (Plano Verde+), launched in September 2020, states that they will start using Visipec, an online system that can integrate the traceability of indirect suppliers to their already existing monitoring system. Even if the Marfrig's plan covers Amazon and Cerrado biomes, the deadline for monitoring their entire supply chain including indirect suppliers is 2025 in Amazon and 2030 in Cerrado, criticised as too long considering the irreversible impact that the sector may have through its links to deforestation in the next 10 years.

Following Marfrig, JBS also launched a Green Platform and a net zero emission strategy with 2030 as the deadline to monitor the direct and indirect suppliers (2025 for the Amazon), and 2035 to eliminate deforestation across its global supply chain. Huge amounts of rainforests will be lost within that time, and JBS's plan is too vague on the monitoring of indirect suppliers as they state this will be based on a 'voluntary' disclosure of the cattle moving records among their indirect suppliers. Minerva did not present a recent update of its strategies to improve the traceability of its indirect and direct suppliers although they are, together with JBS and Marfrig, signatories of the agreement with the Brazilian Public Prosecutors Office.

JBS Couros, Minerva Couros and Fuga Couros state that they supply leather from their own slaughterhouses, which could be positively used to link their leather traceability to the slaughterhouses' supply chain monitoring tools.

JBS has an online system, the JBS-360, that allows the traceability of their leather by slaughterhouse of origin, also identifying direct cattle suppliers to that slaughterhouse in the specific date when the hide was processed.

JBS' plan is too vague on the monitoring of indirect supplies as they state this will be based on 'voluntary' disclosure of the cattle moving records...

Even if this system is apparently linked to the monitoring strategy of JBS slaughterhouses' suppliers, it does not include the traceability of indirectly suppliers, where most of the deforestation is within the cattle supply chain. In addition to their statements on sourcing leather from their own slaughterhouses, Minerva Couros (owned by Minerva Foods) and Fuga Couros (owner of Frigosul) do not have a specific tool for the traceability of its sourced leather. Vancouros, Durlicouros, Viposa and Mastrotto Brasil also do not have any strategy for tracing back the origin of its leather.

1.4

Tanneries' exposure to deforestation

Methods

Linking deforestation to tanneries is not straightforward due to the lack of traceability and transparency on tanneries' direct and indirect suppliers.

While the significance of and attention to deforestation monitoring in the beef supply chain has increased, systematic monitoring of tanneries' supply chains is still in its infancy. The perception of leather as a secondary cattle product does not help in prioritising and understanding the tanneries' exposure to deforestation - it is, of course, the same animal slaughtered for meat production that has its skin processed for leather production.

Therefore, the starting point for understanding tanneries' exposure to deforestation is to 1) assess the deforestation exposure of beef slaughterhouses, and 2) comprehend the potential links between these slaughterhouses and tanneries. For the analysis of the exposure to deforestation of the leather supply chain in Brazil, this study starts by projecting the deforestation exposure of the major beef processors' slaughterhouses (JBS, Marfrig, and Minerva). It is important to note that all the slaughterhouses considered in this study signed an agreement in 2009 with the Brazilian Public Ministry, known as '"TAC da Carne" in Portuguese, committing to increase transparency and traceability of their own supply chains as part of a strategy to decrease deforestation linked to cattle raising. Although there has been evidence that this has not happened even more than 10 years after signing of the agreement, to reflect on more recent deforestation linked to cattle raising the study focused on deforestation over the last two years.

Step One

Methods used for calculating the slaughterhouses' exposure to deforestation.

- **Deforestation was calculated** separately for the Amazon and Cerrado biomes and was limited to deforestation occurring in the Legal Amazon (including the states Amazonas, Acre, Amapá, Roraima, Rondônia, Pará, Tocantins, Mato Grosso, and part of Maranhão). The analysis of both biomes was based on 2019 and 2020 deforestation data from Prodes (INPE), which includes confirmed clearing of native vegetation: between August 2018 and July 2019 (Prodes 2019 deforestation data) and between August 2019 and July 2020 (Prodes 2020 deforestation data).

- **Slaughterhouses' 'cattle-buying zones'** were used to project the exposure to deforestation of slaughterhouses operating in the Legal Amazon. The slaughterhouses' 'cattle-buying zones' used in the analysis were developed by the Institute of People and the Environment of the Amazon (Imazon). Imazon is a non-profit organisation based in Pará, Brazil, dedicated to conserving the Amazon rainforest. The Imazon study looks as infrastructure, such as roads, and research on the ground to map the area from where each of the operating slaughterhouses within the Legal Amazon buy cattle. First, the study first considers the maximum distances for purchase of cattle informed by interviewees and by possible access routes. If needed, these 'cattle-buying zones' were adjusted to allow for factors that restricted or expanded the purchasing zones in a particular area. For instance, in the case of a river physically restricting access between a cattle ranch and a slaughterhouse. Or the zone may need to be expanded to new municipalities when the assumed zone for purchasing cattle of a given meatpacking plant originally extended only to municipalities that were in fact not suppliers. Subsequently, the slaughterhouse buying zones were overlaid with Prodes deforestation data within the Legal Amazon in both biomes, Amazon and Cerrado, to calculate the potential deforestation exposure of each slaughterhouse.

- **Direct and Indirect Suppliers** were mapped through a sample of direct and indirect suppliers of the slaughterhouses of JBS, Minerva, and Marfrig. This allowed us to map deforestation occurring in the properties of confirmed suppliers to slaughterhouses of these three meatpackers and helped to frame the selection of potential case studies. To map the direct and indirect suppliers (1st and 2nd tier) we cross-checked information from the public Animal Transportation Permit (GTA) database and land ownership official register systems (SIGEF and SNCI). The GTA is obligatory for veterinary health reasons and allows for tracking cattle movements between suppliers' ranches and meatpacker plants.

The perception of leather as a secondary cattle product does not help in prioritising and understanding the tanneries' exposure to deforestation

Step Two

Methods used for linking tanneries to slaughterhouses.

- First, we plotted the **locations of all tanneries** linked to the largest leather companies in the Amazon and Cerrado biomes. Apart from the company's websites, we relied on the Leather Working Group (LWG) website and government files as sources for identifying these locations. We used satellite imagery to confirm the locations of the tanneries as they often show blue plastic-wrapped objects outside the buildings (Figure 4).

- We assumed a 250km radius to establish the **link between a slaughterhouse and a tannery**. The 250 km radius assumes three to five hours transport time of raw skin hides from the slaughterhouse to the tannery after the slaughtering of the animal, time in which the bovine hide needs to be salted for the next processing steps. Nevertheless, using the same radius for each tannery allows for comparison of the deforestation exposure of each tannery.

- The links **between slaughterhouses and tanneries** were established using three different parameters (Figure 5): (1) when a meatpacker operates both a slaughterhouse and a tannery, and the slaughterhouse is within a 250 km distance radius of the tannery, we defined the link between both as a "high" level of certainty; (2) when the same company operates a slaughterhouse and a tannery but the slaughterhouse is not within a 250 km radius of the tannery, or when a slaughterhouse of a different company is close to the tannery, we defined the link between both as a "medium" level of certainty; and (3) for all slaughterhouses that are not operated by the same company as the tannery, but that are within a radius of 250 km of the tannery, we defined the link between both as a "low" level of certainty.



Figure 4
Satellite images of JBS tannery in Colorado do Oeste, Rondônia state

Source
Google maps, coordinates: -13.11198309225987, -60.494314596927545

Step Three

Projecting the leather sector's exposure to deforestation.

- In this third step, we ranked all tanneries based on the largest total of areas that were recently deforested in the 'buying zones' of the potentially linked slaughterhouses (between August 2018 and July 2020). These slaughterhouses were all based in the Legal Amazon.

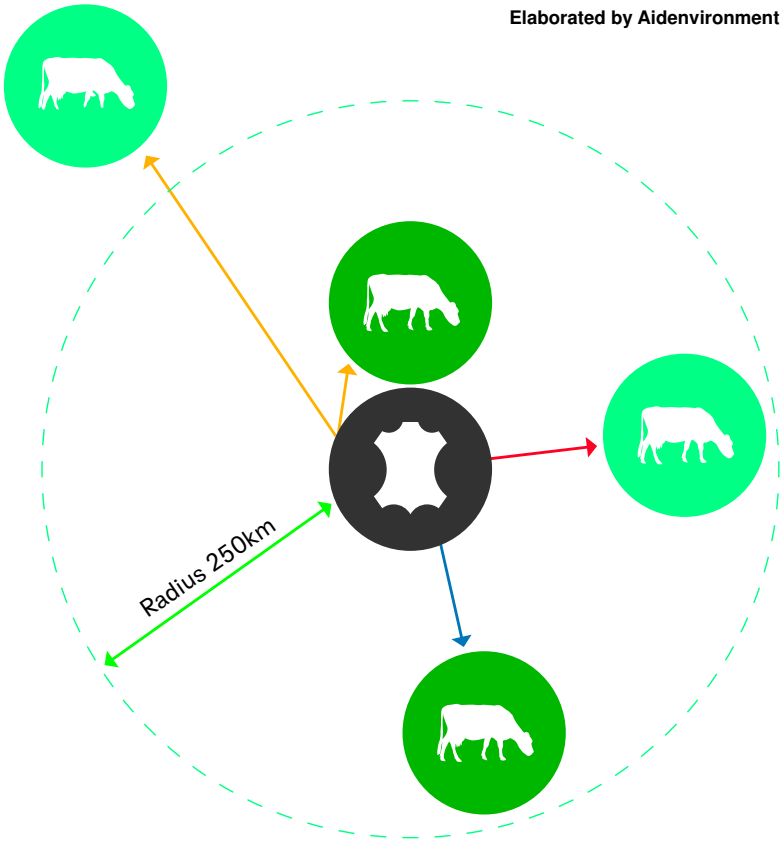
- **To avoid double counting** of deforestation, we merged the 'buying zones' of slaughterhouses linked to a specific tannery. These calculations are referred to as 'Total (excluding overlapping)' in Tables 2 to 7. These are also the numbers used to rank the tanneries by deforestation exposure in Table 1.

- Also considered in the ranking is the **proximity between tanneries and slaughterhouses** that were classified as a high, medium, and low level of certainty of connection (see above).

Also considered in the ranking is the proximity between tanneries and slaughterhouses

Figure 5
Method for establishing the links between slaughterhouses and tanneries

Elaborated by Aidenvironment



KEY

- Tannery
- Slaughterhouse owned/operated by the **same** company as the tannery
- Slaughterhouse owned/operated by a **different** company than the tannery

Certainty level of connection between the slaughterhouse and the tannery:

- High
- Medium
- Low

Vertical integration

Levels of connection with reference to deforestation exposure of largest meatpackers in the leather supply chain.

The three largest Brazilian meatpackers, JBS, Marfrig and Minerva, also known as the G3, concentrate between 20 and 33.5 per cent of the cattle slaughtering capacity in Brazil (JBS - 33k animals per day, Marfrig - 13k , and Minerva - 12k) . Two of them, JBS and Minerva, are also among the top 10 leather exporters (Figure 1). Marfrig is the world's second-largest beef company by production capacity, however, shipping data seems to suggest that the company does not play a direct key role in leather exports. But the raw materials from animals slaughtered in their facilities are, nevertheless, processed by tanneries set up for exporting leather. The larger meatpackers generally operate vertically integrated supply chains, either operating all the processes and steps or outsourcing some of these steps before exporting the wet blue or finished leather.

In a study published in 2020, JBS's beef operations were found to have the highest exposure to deforestation of all the Brazilian meatpackers, operating 20 slaughterhouses in the Amazon biome.

Marfrig and Minerva were both found to have considerable exposure to deforestation via their indirect and direct suppliers, although Marfrig, second in slaughtering capacity, is not listed as one of the 10 largest leather exporters. However, considering the size of its operation Marfrig is likely supplying bovine hides to other tanneries as explained further in the analysis. JBS Couros and Minerva Couros, subsidiaries of the meatpackers JBS and Minerva Foods, respectively, are directly linked to their own slaughterhouses and, consequently, their own tanneries have a more direct exposure to deforestation.

It is important to note that 46 out of the 64 per cent of leather exports between 2018 and 2020 'excluded' from this analysis are linked to three logistics companies (first, third and fifth largest exporters – Figure 1). While it is not possible to identify the producer behind the products exported by these logistic companies, if we distribute their exports proportionally to the tanneries included and excluded from this report, we would be covering around 67 percent of the leather exports.

Image by Victor Moriyama



LEATHER EXPORTER	EXPORTS (TONS)	EXPORT SHARE (% AND RANK #)	AMAZON (HA)	CERRADO (HA)	TOTAL (HA)
JBS Couros	187,278	14.87 • (#2)	896,033	257,266	1,153,299
Vancouros	59,424	4.72 • (#6)	640,266	161,403	801,669
Durlicouros	39,189	3.11 • (#8)	333,432	228,330	561,762
Fuga Couros	50,517	4.01 • (#7)	237,266	233,584	470,850
Minerva Couros	59,925	4.76 • (#4)	263,591	219,440	483,031
Viposa	23,926	1.90 • (#10)	48,396	77,611	126,007
Mastrotto Brasil*	26,620	2.11 • (#9)	N/A	N/A	N/A
Other 225 exporters	812,334	64.52	–	–	–
Total	**1,259,213**	**100%**	**–**	**–**	**–**

Table 1
Tanneries' exposure to deforestation

Source
Aidenvironment

Table shows the maximum deforestation that a tannery could be exposed to, based on deforestation between August 2018 and July 2020 in potentially linked slaughterhouses in the Legal Amazon. *As the only tannery owned by Mastrotto Brasil is in Cachoeira (Bahia), distant from the Cerrado and Amazon biomes, it was not possible to calculate its deforestation exposure through the methods adopted in this report. However, Mastrotto Brasil is owned by Gruppo Mastrotto, an Italian leather company that also imports leather from JBS, Minerva and Vancouros (see Part 2 of this report).

Marfrig and Minerva were both found to have considerable exposure to deforestation via their indirect and direct suppliers

1.5

JBS Couros' tanneries most exposed to deforestation

Assessing which tanneries are most exposed to deforestation inevitably has JBS Couros ranked as number one (Table 1).

This is largely since they are the largest meatpacker in Brazil with the most developed infrastructure of slaughterhouses and tanneries, and because the company has a high involvement in deforestation, especially in the Legal Amazon. In the assessment of deforestation exposure per slaughterhouse (Appendix 1), for instance, the JBS facility in Colíder (MT) has the highest exposure to deforestation within the Amazon biome, with a total of 251,558 ha of deforestation found in its buying zone between August 2018 and July 2020, followed by JBS's slaughterhouses in Alta Floresta (Mato Grosso), in Pimenta Bueno (Rondônia), and in Tucumã (Pará).

Out of JBS's 15 tanneries in Brazil, six are potentially directly linked to slaughterhouses located in the Legal Amazon (Table 2).

The other seven JBS's tanneries, although not included in this study, might be exposed to deforestation as well since 90 per cent of the JBS Couros hides come from JBS slaughterhouses.

The six JBS's tanneries included in this analysis have a high level of certainty of being connected to 10 JBS-owned slaughterhouses in the Legal Amazon, and a low certainty about their connection to three Marfrig-owned slaughterhouses and one Minerva-owned slaughterhouse in the Legal Amazon. Moreover, the six tanneries have a medium level of certainty of connection to 11 JBS-owned slaughterhouses with deforestation exposure in the Legal Amazon, but for which no specific tannery could be assigned.

JBS tanneries most directly exposed to deforestation are those in the areas where the company has a slaughterhouse close to the tannery. Since JBS operates a vertically integrated supply chain, the animals being slaughtered in the JBS-owned slaughterhouse will very likely end up in the nearest JBS-owned tannery. Nine JBS slaughterhouses in the Legal Amazon have a high level of certainty of connection to six JBS tanneries in the same or adjacent municipalities. Therefore, the JBS tanneries in Marabá (PA), Colíder (MT), Cacoal (RO), Barra do Garças (MT), Pedra Preta (MT), and Colorado do Oeste (RO) are more likely to pose a definite deforestation link rather than a exposure to deforestation.

All these six tanneries are wet blue (chrome tanning) producers that will largely serve the export market and potentially serve the automotive industry. Wet blue is the chief type of exported leather from Brazil (86 per cent), and nearly 50 per cent of exported Brazilian leather goes to the automotive industry. JBS's tanneries that specialise in finished leather are based in São Paulo, Minas Gerais and Rio Grande do Sul states. Considering only the JBS Couros' tanneries with these 'high' level of certainty of connections to JBS slaughterhouses, JBS Couros was exposed to 410,356 ha of deforestation in the Amazon biome in 2019, and 425,973 ha in 2020; while the same JBS Couros' tanneries were exposed to 151,939 ha of deforestation in the Cerrado biome in 2019, and 152,662 ha in 2020.

All 15 JBS tanneries are certified by the Leather Working Group (LWG) and JBS has a traceability platform for its leather hides, the JBS 360, but these systems do not guarantee deforestation free leather supply chains.

The ranking system of the LWG and its traceability criteria, for instance, only traces the leather from the tannery back to the slaughterhouses, not back to the farms, and does not include any criteria to provide information on whether that slaughterhouse is or is not linked to deforestation. The JBS 360 platform states that it traces the leather hide back to slaughterhouse and slaughtering date, also listing the group of direct suppliers to that slaughterhouse on that date, but with no transparency for third parties. But neither of these two traceability systems guarantee deforestation-free leather supply chains, since most of the deforestation that JBS's slaughterhouses are exposed to happens in its indirect suppliers' properties that are not part of any of these traceability systems.

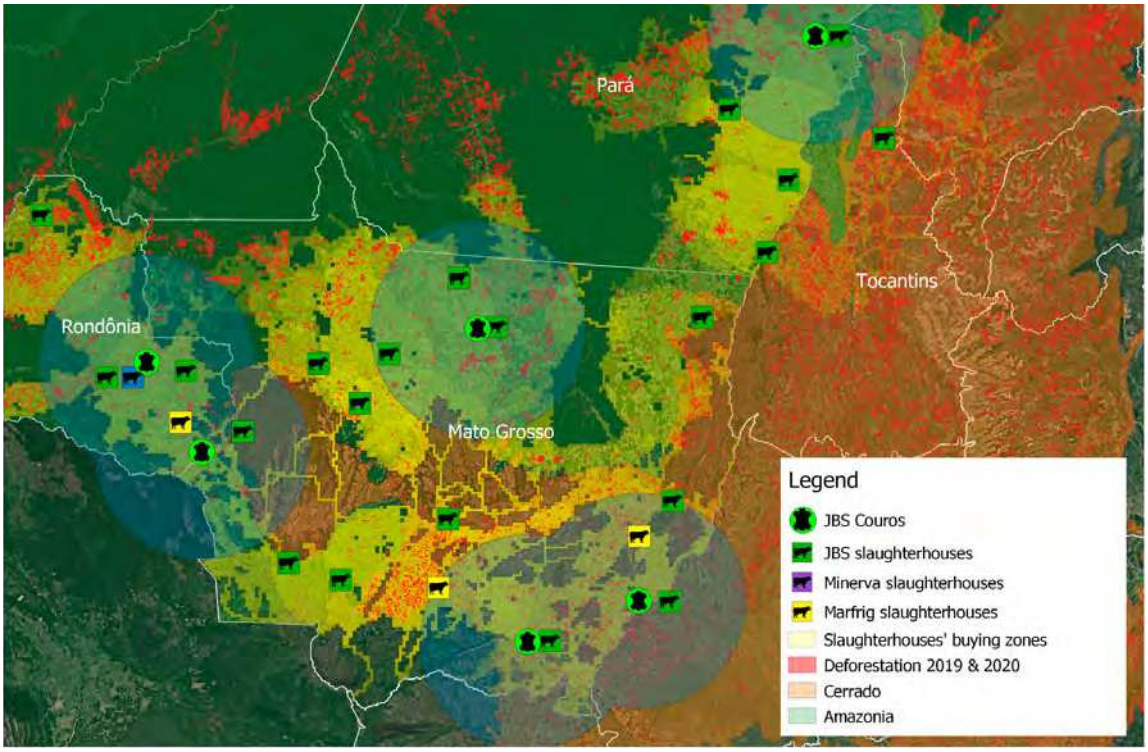


Figure 6
BS Couros tanneries and linked slaughterhouses

Elaborated by Aidenvironment

Table 2
JBS Couros – Tanneries' exposure to deforestation

JBS COUROS - TANNERIES' EXPOSURE TO DEFORESTATION

Tannery	Level of certainty of connection to the slaughterhouse		Amazon		Cerrado		Total (excluding overlapping areas)
			Prodes 2019	Prodes 2020	Prodes 2019	Prodes 2020	
JBS Marabá (PA)	**High**	JBS Marabá (PA)	72,031	77,035	–	–	**334,561**
	Medium	JBS Araguaína (TO)	48,255	47,795	73,221	80,540	
	Total (excluding overlapping areas)		87,587	93,213	73,221	80,540	
JBS Colíder (MT)	**High**	JBS Colíder (MT)	124,361	127,197	1,210	683	**291,240**
	High	JBS Alta Floresta (MT)	121,464	119,773	74	256	
	Low	JBS Juara (MT)	90,053	59,183	1,673	1,095	
	Total (excluding overlapping areas)		142,220	145,632	1,953	1,435	
JBS Cacoal (RO)	**High**	JBS Pimenta Bueno (RO)	115,876	107,984	15	6	**252,680**
	High	JBS São Miguel do Guaporé (RO)	78,169	68,132	–	–	
	Low	Minerva Rolim de Moura (RO)	71,241	57,397	41	95	
	Total (excluding overlapping areas)		131,097	121,448	41	94	
JBS Barra Do Garças (MT)	**High**	JBS Barra Do Garças (MT)	1,252	411	22,007	19,997	**115,600**
	High	JBS Água Boa (MT)	15,267	29,901	36,779	31,634	
	Low	Marfrig Nova Xavantina (MT)	5,740	15,061	30,242	25,615	
	Total (excluding overlapping areas)		15,452	29,901	37,672	32,575	
JBS Pedra Preta (MT)	**High**	JBS Pedra Preta (MT)	4,315	12,353	37,070	33,640	**91,010**
	Low	Marfrig Várzea Grande (MT)	1,930	2,159	24,051	22,622	
	Total (excluding overlapping areas)		5,328	13,571	37,535	34,576	

Continued >>

>> Continued

Table 2
JBS Couros – Tanneries' exposure to deforestation

Tannery	Level of certainty of connection to the slaughterhouse		Amazon		Cerrado		Total (excluding overlapping areas)
			Prodes 2019	Prodes 2020	Prodes 2019	Prodes 2020	
JBS Colorado Do Oeste (RO)	**High**	JBS Vilhena (RO)	17,352	12,536	1,517	3,484	**55,839**
	Low	Marfrig Chupinguaia (RO)	24,588	19,578	682	2,554	
	Total (excluding overlapping areas)		28,672	22,208	1,517	3,442	
JBS - No specific tannery assigned to the JBS-owned slaughterhouses that are located > 250 km away	Medium	JBS Tucumã (PA)	88,838	86,349	–	–	**567,810**
	Medium	JBS Redenção (PA)	14,464	16,842	76	21	
	Medium	JBS Santana do Araguaia (PA)	10,659	18,379	76	21	
	Medium	JBS Confresa (MT)	11,894	20,065	9,606	9,124	
	Medium	JBS Juína (MT)	63,312	54,223	1,328	800	
	Medium	JBS Brasnorte (MT)	18,062	17,945	7,367	2,696	
	Medium	JBS Diamantino (MT)	12,337	15,914	21,356	19,585	
	Medium	JBS Pontes e Lacerda (MT)	4,602	2,776	16,951	17,566	
	Medium	JBS Araputanga (MT)	13,689	8,319	21,421	21,551	
	Medium	JBS Porto Velho (RO)	77,838	70,334	–	–	
	Medium	JBS Anastácio (MS)	–	–	10,601	7,870	
	Medium	JBS Campo Grande (MS)	–	–	6,462	9,385	
	Total (excluding overlapping areas)		255,438	245,775	33,357	33,240	
		Total	**1,107,589**	**1,067,640**	**306,763**	**293,858**	**2,775,850**
		Total (excl overlapping areas)	**439,681**	**456,352**	**127,067**	**130,199**	**1,153,299**

1.6

Minerva Couros' exposure to deforestation through Minerva Foods operations

While Minerva Couros only ranks fifth in terms of tanneries' exposure to deforestation (Table 1), it is more likely to be a real link than only an exposure due to vertical integration.

Minerva Couros operates only one tannery in Barretos, a municipality in São Paulo state, with a reported production capacity of 'more than 14,000 pieces of bovine hides per day, selling them as salted hides, wet blue and crust leather to worldwide companies from various segments such as automotive, furniture, footwear and leather goods'. The company declares that this leather all originates from Minerva Foods' slaughterhouses, ensuring compliance with Minerva's cattle traceability and sourcing policy. While Minerva is a member of the LWG, their tannery in Barretos does not seem to be audited.

Our findings suggest that Minerva's tannery in Barretos may be exposed to 483,031 ha of deforestation in the Amazon and Cerrado biomes between August 2018 and July 2020 (Table 3). Despite the significant distances (> 250 km) between the tannery and four of Minerva's slaughterhouses located in the Legal Amazon, it is likely that there is deforestation exposure for its tannery since Minerva operates a vertically integrated leather supply chain. Salting the hides at Minerva's slaughterhouses will allow the company to transport the hides over longer distances, to finally prepare them in Barretos as wet blue, crust leather, and finished leather for export from São Paulo state.

Figure 7
Minerva Couros tannery and Minerva Foods slaughterhouses in the Legal Amazon

Elaborated by Aidenvironment

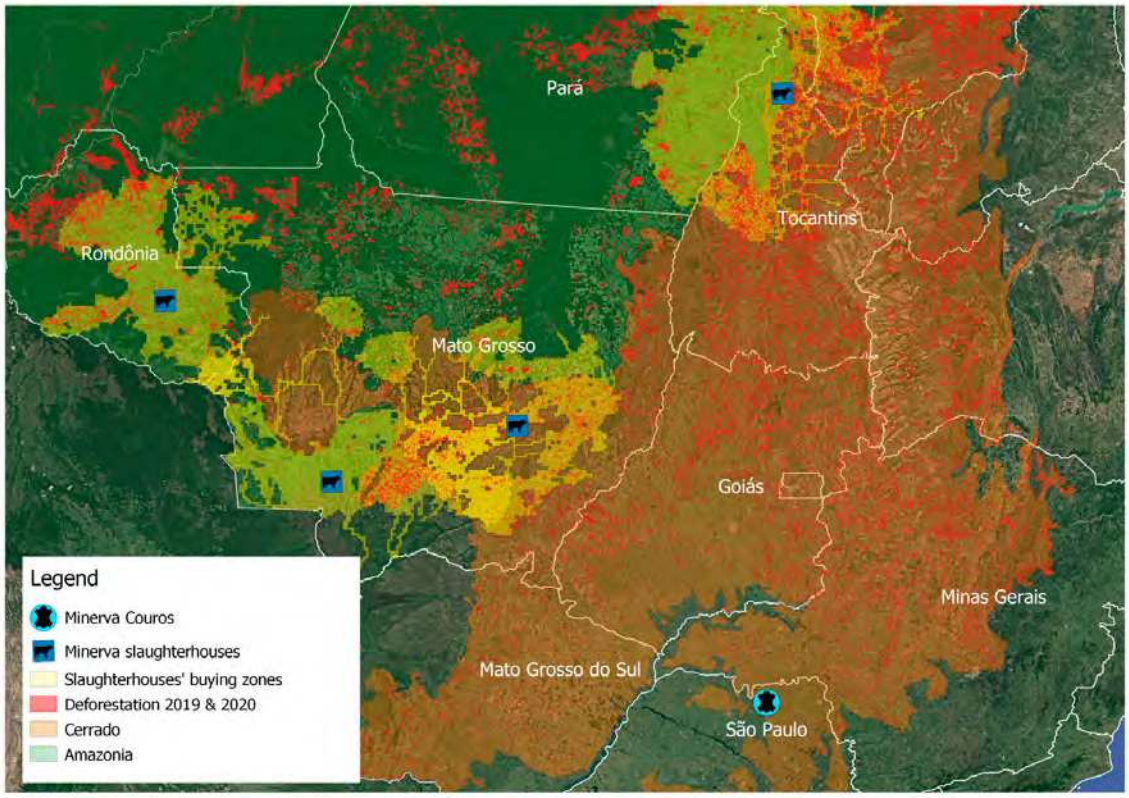


Table 3
Minerva Couros - Tanneries' exposure to deforestation

MINERVA COUROS - TANNERIES' EXPOSURE TO DEFORESTATION							
Tannery	**Level of certainty of connection to the slaughterhouse**		**Amazon**		**Cerrado**		**Total** (excluding overlapping areas)
			Prodes 2019	**Prodes 2020**	**Prodes 2019**	**Prodes 2020**	
Minerva Couros Barretos (SP)	Medium	Minerva Araguaína (TO)	44,631	44,111	71,654	79,370	**483,031**
	Medium	Minerva Mirassol D'Oeste (MT)	15,115	9,878	21,702	21,946	
	Medium	Minerva Rolim de Moura (RO)	71,241	57,397	41	95	
	Medium	Minerva Paranatinga (MT)	8,595	18,751	24,147	20,903	
	Total		139,582	130,137	117,544	122,314	**509,577**
	Total (excluding overlapping areas)		135,078	128,513	106,691	112,749	**483,031**

1.7

Joint operations of Vancouros, Durlicouros and Viposa, potential link to Marfrig

Ranked second and third in the list of tanneries with the most exposure to deforestation are Vancouros and Durlicouros (Table 1).

Viposa is ranked #6 and has links to Vancouros and Durlicouros through joint leather operations. Vancouros and Durlicouros both operate six tanneries in total, and for both companies three of them are in the Legal Amazon. Viposa operates three tanneries, with one of them located in the Legal Amazon. Vancouros appears to co-own tanneries Curtume Blubras in Sinop (MT) and Curtidora Tocantins in Colinas do Tocantins (TO) with Viposa. Moreover, Vancouros and Viposa seem to jointly operate Bluamerica Indústria de Couros in Presidente Médici (RO), and Blubrasil Indústria e Comércio de Couros in Bataguassu (MS) in a joint venture with Durlicouros. For the calculations in this report, we listed these three jointly operated tanneries under Vancouros' tanneries as they are listed as facilities belonging to Vancouros on the company's website. The tanneries of Vancourous, Durlicouros, and Viposa may be exposed, through the slaughterhouses' buying zones from which they potentially source, to deforestation of respectively 801,669 ha, 561,762 ha, and 126,007 ha of native vegetation in the Amazon and Cerrado biomes between August 2018 and July 2020 (Table 4, 5 and 6).

While Vancouros, Durlicouros and Viposa tanneries' exposure to deforestation are high, it is more difficult to establish their direct links to slaughterhouses. This is because the companies likely operate horizontally integrated leather supply chains, i.e., source raw materials (hides) from other companies' slaughterhouses.

Therefore, the connections between the tanneries and slaughterhouses can be only considered of 'low' (distance < 250 km) or 'medium' (distance < 25 km) level of certainty and are therefore harder to prove.

Table 4

Vancouros - Tanneries' exposure to deforestation

VANCOUROS - TANNERIES' EXPOSURE TO DEFORESTATION

Tannery	Level of certainty of connection to the slaughterhouse		Amazon		Cerrado		Total (excluding overlapping areas)
			Prodes 2019	Prodes 2020	Prodes 2019	Prodes 2020	
Curtume Blubras Sinop (MT)	Low	JBS Juara (MT)	90,053	59,183	59,183	1,095	**286,642**
	Low	JBS Colíder (MT)	124,361	127,197	127,197	683	
	Total (excluding overlapping areas)		141,941	141,313	1,953	1,435	
Curtidora Tocantins Colinas do Tocantins (TO)	Low	JBS Redenção (PA)	14,464	16,842	76	21	**258,559**
	Low	JBS Araguaína (TO)	48,255	47,795	73,221	80,540	
	Low	Minerva Araguaína (TO)	44,631	44,111	71,654	79,370	
	Total (excluding overlapping areas)		51,633	52,893	73,750	80,283	
Bluamerica Indústria de Couros Presidente Médici (RO)[1]	Low	JBS São Miguel do Guaporé (RO)	78,169	68,132	–	–	**256,463**
	Low	JBS Pimenta Bueno (RO)	115,876	107,984	15	6	
	Low	Minerva Rolim de Moura (RO)	71,241	57,937	41	95	
	Low	Marfrig Chupinguaia (RO)	24,588	19,578	682	2554	
	Total (excluding overlapping areas)		131,621	121,606	682	2,554	
	Total		611,638	548,759	148,572	164,364	**1,473,333**
	Total (excluding overlapping areas)		324,906	315,360	76,171	85,232	**801,669**

1 The tannery Bluamerica in Presidente Médici (RO) has also a low level of certainty to a Marfrig slaughterhouse in Ji-Paraná (RO), not included in the analysis for not being operating in the time of the Imazon study on slaughterhouses' buying zones, part of the methods of the present study.

DURLICOUROS - TANNERIES' EXPOSURE TO DEFORESTATION

Tannery	Level of certainty of connection to the slaughterhouse		Amazon		Cerrado		Total (excluding overlapping areas)
			Prodes 2019	Prodes 2020	Prodes 2019	Prodes 2020	
Durlicouros Wanderlândia (TO)	Medium	JBS Araguaína (TO)	48,255	47,795	73,221	80,540	**336,833**
	Medium	Minerva Araguaína (TO)	44,631	44,111	71,654	79,370	
	Low	JBS Marabá (PA)	72,031	77,035	–	–	
	Total (excluding overlapping areas)		89,587	93,213	73,750	80,283	
Durlicouros Xinguara (PA)	Low	JBS Tucumã (PA)	88,838	86,349	–	–	**277,633**
	Low	JBS Redenção (PA)	14,464	16,842	76	21	
	Low	JBS Marabá (PA)	72,031	77,035	–	–	
	Low	Marfrig Tucumã (PA)	88,504	86,193	375	283	
	Total (excluding overlapping areas)		133,199	143,683	451	300	
Durlicouros Cuiabá (MT)	Medium	Marfrig Várzea Grande (MT)	1,930	2,159	24,051	22,622	**109,939**
	Low	Frigosul Várzea Grande (MT)	1,983	2,389	24,113	22,685	
	Low	JBS Diamantino (MT)	12,337	15,914	21,356	19,858	
	Low	JBS Pedra Petra (MT)	4,315	12,353	37,070	33,640	
	Total (excluding overlapping areas)		15,892	27,194	32,329	34,524	
	Total		449,319	468,175	251,916	259,019	**1,428,429**
	Total (excluding overlapping areas)		156,146	177,286	112,079	116,251	**561,762**

Table 5

Durlicouros - Tanneries' exposure to deforestation

VIPOSA - TANNERIES' DEFORESTATION EXPOSURE

Tannery	Level of certainty of connection to the slaughterhouse		Amazon		Cerrado		Total (excluding overlapping areas)
			Prodes 2019	Prodes 2020	Prodes 2019	Prodes 2020	
Viposa Várzea Grande (MT)	Medium	Marfrig Várzea Grande (MT)	1,930	2,159	24,051	22,622	126,007
	Medium	Frigosul Várzea Grande (MT)	1,983	2,389	24,113	22,685	
	Low	JBS Diamantino (MT)	12,337	15,914	21,356	19,858	
	Low	JBS Pedra Preta (MT)	4,315	12,353	37,070	33,640	
	Low	Marfrig Tangará da Serra (MT)	11,802	8,577	21,049	20,982	
	Total (excluding overlapping areas)		19,515	28,881	39,862	37,749	
	Total		32,367	41,392	127,639	119,787	**321,185**
	Total (excluding overlapping areas)		19,515	28,881	39,862	37,749	**126,007**

Table 6

Viposa - Tanneries' exposure to deforestation

While Vancouros, Durlicouros and Viposa tanneries' exposure to deforestation are high, it is more difficult to establish their direct links to slaughterhouses

Considering the proximity of the tanneries of Viposa, and Durlicouros to the slaughterhouses operated by Marfrig (Figure 8), it is likely these leather producers (partially) source raw materials from Marfrig. This would imply that the considerable deforestation exposure of Marfrig's operations might be transferred to the tanneries of these leather producers. However, these linkages are difficult to prove since Durlicouros and Viposa are not publicly transparent on the suppliers of their raw materials.



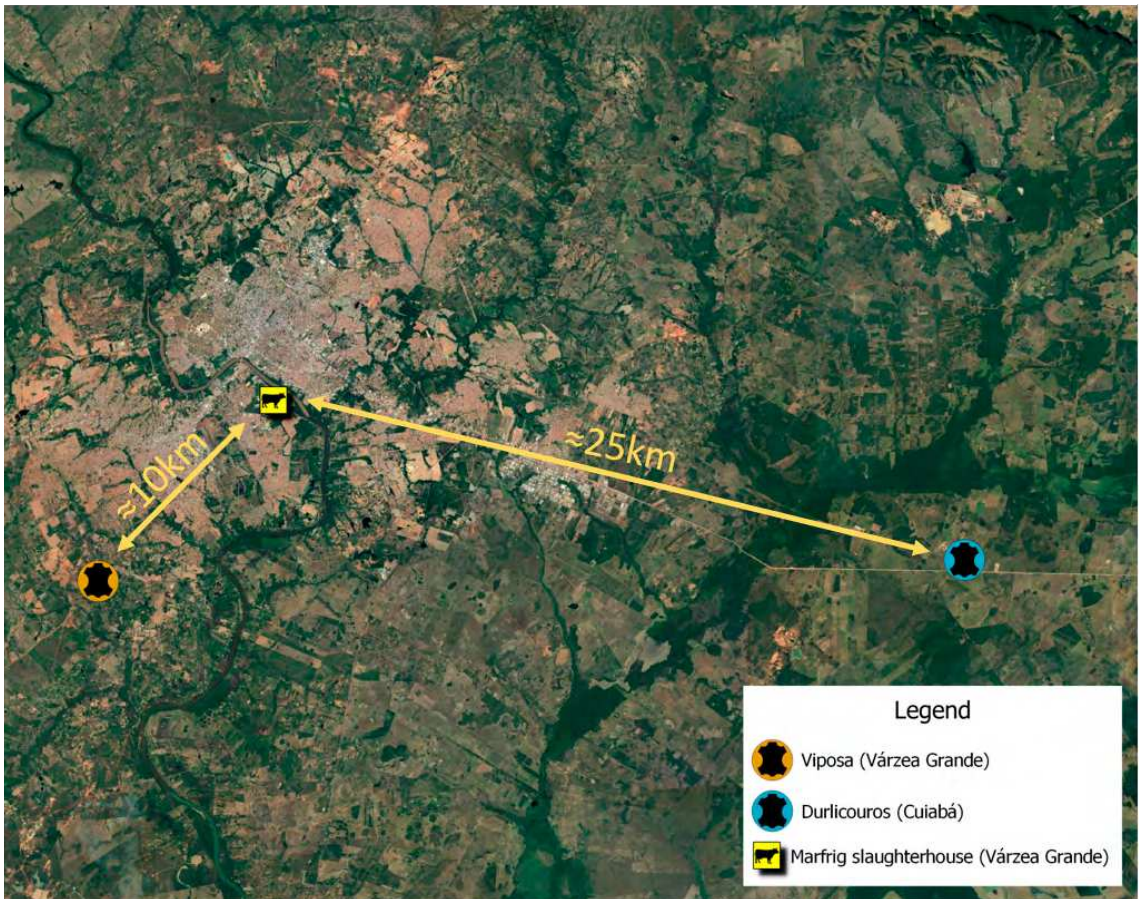


Figure 8 (above and left) Vancouros and Viposa tanneries close to Marfrig slaughterhouses

Elaborated by Aidenvironment

Finally, it can be argued that Durlicouros has a greater exposure to deforestation than Vancouros since its tanneries are geographically closer to several high-risk slaughterhouses. For instance, the slaughterhouses of JBS Araguaína (TO), Minerva Foods Araguaína (TO), and Marfrig Várzea Grande (MT) are less than 25-30 km in distance from the tanneries of Durlicouros (Figure 9). Since we assumed that the closer proximity between both likely implies a higher level of certainty of connection, Durlicouros is likely more linked than Vancouros, that has only 'low' levels of certainty between linkages.

The three tanneries of Durlicouros with potential links to slaughterhouses in the Legal Amazon, based in Cuiabá (MT), Xinguara (PA), and Wanderlândia (TO), are all LWG certified. They produce respectively 4,000, 4,500, and 3,000 leathers/day, all of the wet blue type.

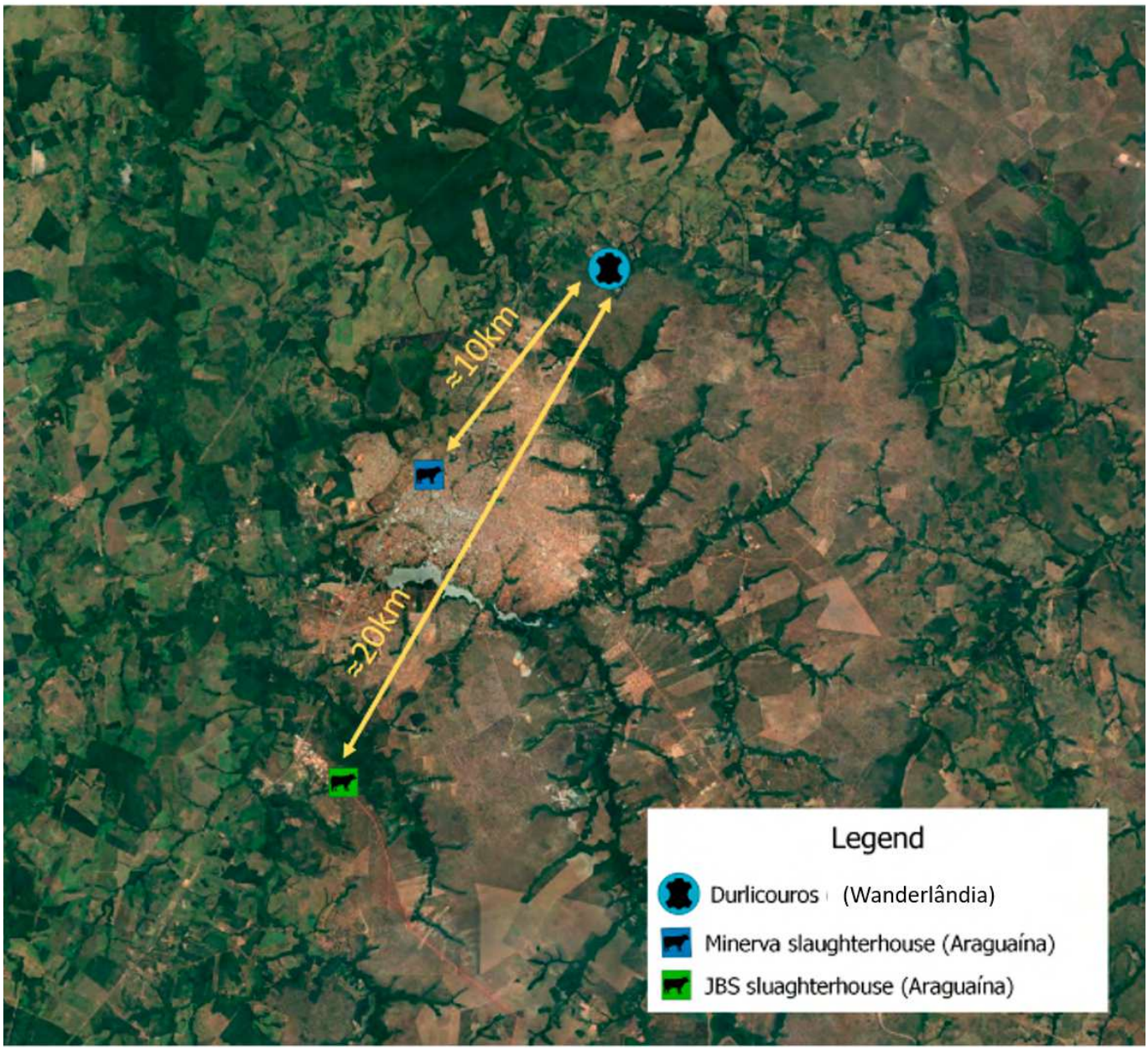


Figure 9
Durlicouros' tannery in Wanderlândia (Tocantins) nearby Minerva Foods and JBS slaughterhouses in Araguaína (Tocantins)

Elaborated by Aidenvironment

1.8

Fuga Couros receives raw materials from Frigosul

Fuga Couros operates seven tanneries, of which three are in the Legal Amazon, with a combined exposure to 470,850 ha of deforestation (Table 7).

This puts the company in the fourth rank of tanneries' exposure to deforestation. This would be through the potentially linked slaughterhouses of all the main meatpackers, but also particularly through the slaughterhouse of Frigosul in Várzea Grande (MT), owned by Fuga Couros. According to an Earth Sight study in partnership with Repórter Brasil, Frigosul's slaughterhouse in Várzea Grande was proved to be sourcing cattle from properties with environmental embargoes and fines for deforestation in 2019.

Frigosul has four other slaughterhouses, two in Mato Grosso do Sul and two in São Paulo state, not included in the calculations of deforestation exposure because they are all outside the Legal Amazon. Nevertheless, Frigosul slaughterhouses in Mato Grosso do Sul state might also be sourcing cattle from the Legal Amazon and have a direct link to Fuga Couros tanneries, increasing its exposure to deforestation.

FUGA COUROS - TANNERIES' EXPOSURE TO DEFORESTATION

Tannery	Level of certainty of connection to the slaughterhouse		Amazon		Cerrado		Total (excluding overlapping areas)
			Prodes 2019	Prodes 2020	Prodes 2019	Prodes 2020	
Maranhão Ind. de Couros Governador Edison Lobão (MA)	Low	JBS Marabá (PA)	72,031	77,035	–	–	**336,833**
	Low	JBS Araguaína (TO)	48,255	47,795	73,221	80,540	
	Low	Minerva Araguaína (TO)	44,631	44,111	71,654	79,370	
	Total (excluding overlapping areas)		89,587	93,213	73,750	80,283	
Fuga Couros Várzea Grande (MT)	**High**	Frigosul Várzea Grande (MT)	1,983	2,389	24,113	22,685	**107,939**
	Low	Marfrig Várzea Grande (MT)	1,930	2,159	24,051	22,622	
	Low	JBS Diamantino (MT)	12,337	15,914	21,356	19,858	
	Low	JBS Pedra Petra (MT)	4,315	12,353	37,070	33,640	
	Total (excluding overlapping areas)		15,892	27,194	32,329	32,524	
Fuga e Panorama Indústria de Couros Cáceres (MT)	Low	JBS Araputanga (MT)	13,689	8,319	21,421	21,551	**71,736**
	Low	JBS Pontes e Lacerda (MT)	4,602	2,776	16,951	17,566	
	Low	Minerva Mirassol D'Oeste (MT)	15,115	9,878	21,702	21,946	
	Low	Marfrig Tangará da Serra (MT)	11,802	8,577	21,049	20,982	
	Total (excluding overlapping areas)		16,449	11,499	21,963	21,825	
	Total		230,690	231,306	332,588	340,760	**1,135,344**
	Total (excluding overlapping areas)		113,320	123,946	113,875	119,709	**470,850**

Table 7

Fuga Couros - Tanneries' exposure to deforestation

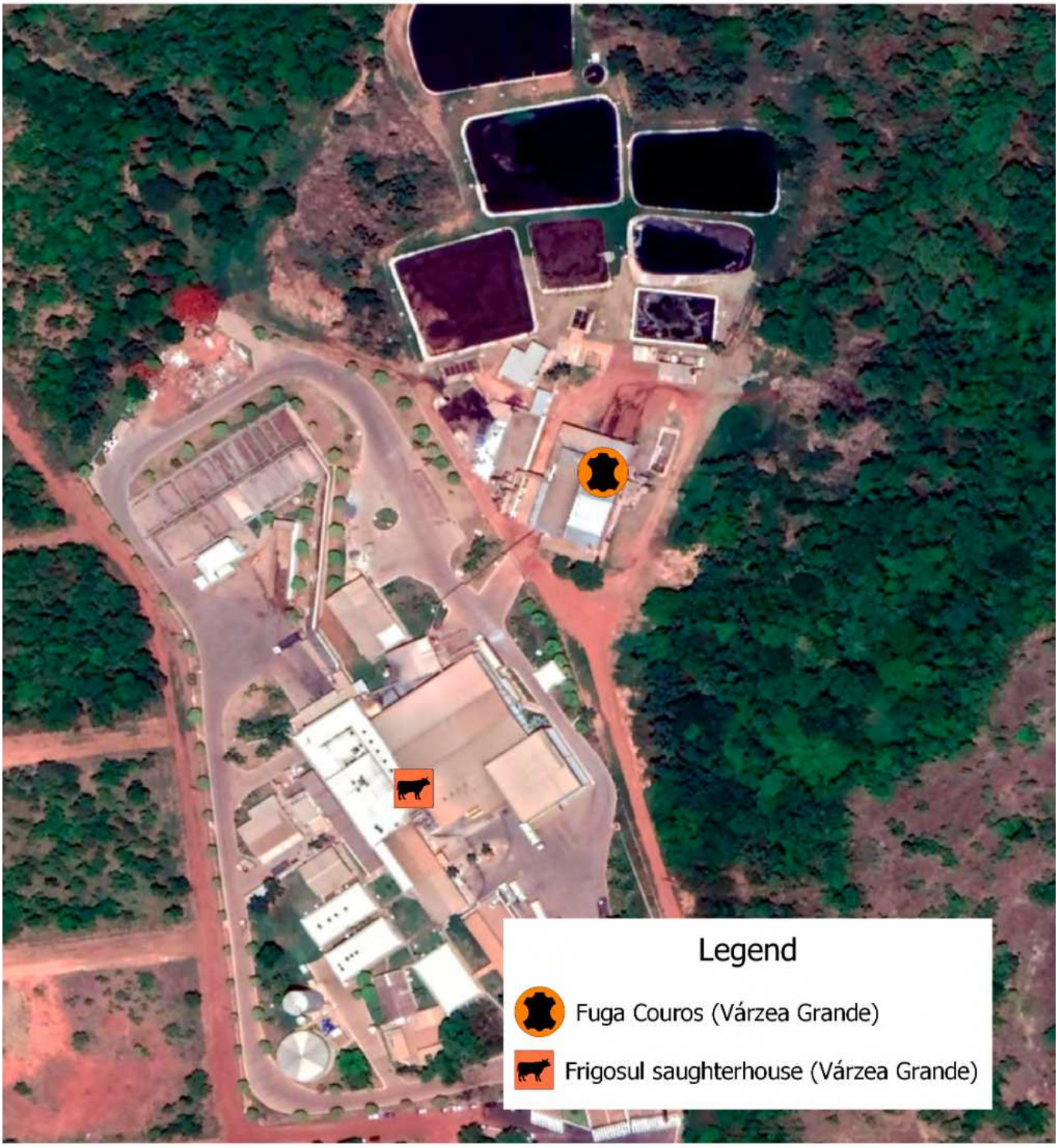


Figure 10
Fuga Couros' tannery and Frigosul's slaughterhouse in Várzea Grande, Mato Grosso

Elaborated by Aidenvironment



Image by Victor Moriyama

1.9

Case studies of deforestation and conflicts in the Legal Amazon linked to leather exporters

The case studies presented in this section link recent deforestation on farms that are indirect and direct suppliers to slaughterhouses as well as identify potential links to leather exporters' tanneries that are exposed to this deforestation.

These corporate operations facilitate 'cattle laundry': moving it from one property with irregularities to a property without regularities...

First, the cases show that, using a small sample from the Animal Transportation Guide ("Guia de Transporte Animal" - GTA), it is possible to understand how complex the traceability of cattle production can be, especially when tracing cattle coming from indirect suppliers. Some cases also show that cattle producers usually operate on more than one farm, including those with and without irregularities. These corporate operations facilitate 'cattle laundry': moving it from one property with irregularities to a property without irregularities that is directly supplying a slaughterhouse, showing the importance of monitoring the indirect suppliers. The cases also show that the cattle supply chain is often linked to illegal land occupation and the targets of operations against modern slavery; indeed, most such crimes brought to light recently in Brazil are linked to cattle raising.

The case studies were selected from overlapping 2019 and 2020 deforestation data from Prodes (August 2018 to July 2020) in Amazon and Cerrado biomes with a sample of direct and indirect suppliers to the three main meat packers operating in the Legal Amazon (JBS, Minerva and Marfrig). The selected cases show deforestation at farms that are direct or indirect suppliers of slaughterhouses along with a potential link to tanneries, and to leather exporters following the study's methods to establish these links (previously explained in the report). The case studies include five cases in Pará state and three in Mato Grosso state (Figure 11). The aim of the case studies is to show how recent deforestation is directly linking cattle raising companies and groups in Brazil to leather supply chains.

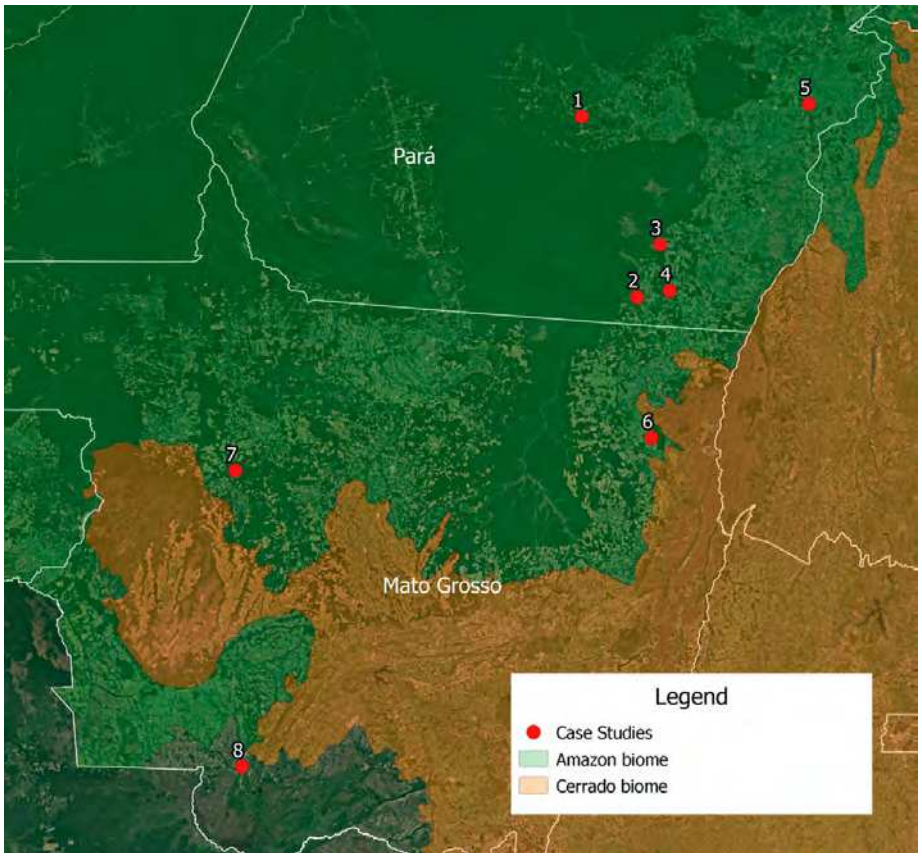


Figure 11
Map with the location of the case studies linking deforestation to leather exporters' tanneries

Elaborated by Aidenvironment

Table 8

Confirmed deforestation in the Brazilian Legal Amazon (Amazon and part of the Cerrado biome) in 2019 and 2020 and its potential links to Brazilian leather exporters

CONFIRMED DEFORESTATION IN THE BRAZILIAN LEGAL AMAZON (AMAZON AND PART OF THE CERRADO BIOME) IN 2019 AND 2020 AND ITS POTENTIAL LINKS TO BRAZILIAN LEATHER EXPORTERS			
	Case Studies	**Confirmed Deforestation in the Legal Amazon** **Prodes 2019 and 2020**	**Leather exporters with potential links to deforestation**
Case 1	Agropecuária Santa Bárbara Xinguara (AgroSB)	2,447 hectares	JBS Couros
			Durlicouros
	São Félix do Xingu (Pará state)		Fuga Couros
			Viposa
Case 2	Grupo Umuarama	1,154 hectares	JBS Couros
			Vancouros
	São Félix do Xingu (Pará state)		Durlicouros
Case 3	Sociedade Agropecuária Imaculada Conceição (Somicol)	1,365 hectares	JBS Couros
			Vancouros
	Cumaru do Norte (Pará state)		Durlicouros
			Viposa
Case 4	Agropecuária Sabran	2,249 hectares	JBS Couros
			Vanouros
	Cumaru do Norte (Pará state)		Durlicouros
			Viposa

Continued >>

Continued >>

	Case Studies	Confirmed Deforestation in the Legal Amazon Prodes 2019 and 2020	Leather exporters with potential links to deforestation
Case 5	Fazenda Surubim	No recent deforestation	JBS Couros
	Eldorado do Carajás (Pará state)		Durlicouros
Case 6	Fazenda Rio Preto I and II	9,570 hectares	JBS Couros
	Canabrava do Norte (Mato Grosso state)		Fuga Couros
			Minerva Couros
Case 7	STX Agropecuária	850 hectares	JBS Couros
			Vancouros
			Durlicouros
	Brasnorte (Mato Grosso state)		Fuga Couros
			Minerva Couros
			Viposa
Case 8	Agropecuária Grendene	4,455 hectares	JBS Couros
			Durlicouros
	Cáceres (Mato Grosso state)		Fuga Couros
			Viposa

The aim of the case studies is to show how recent deforestation is directly linking cattle raising companies and groups in Brazil to leather supply chains

Case One

Agropecuária Santa Bárbara Xinguara (AgroSB), São Félix do Xingu (Pará state).

In 2019, fire outbreaks were detected in Lagoa do Triunfo farm cluster (Fazenda Lagoa do Triunfo I, II, III, IV, V, and VI, totaling 145,000 ha) owned by Agropecuária Santa Bárbara Xinguara (AgroSB). Fires set on Fazenda Lagoa do Triunfo IV and V were also detected by NASA on August 16, 2020. These fire outbreaks resulted in the clearance of 2,447 hectares of native vegetation in the property Lagoa do Triunfo (Figure 12).

AgroSB is involved in cattle, soy, and corn production. Between 7 July and 10 September 2020 365 hectares of native vegetation were cleared in Fazenda Lyra, for which AgroSB claimed ownership in the rural environmental registry (CAR). In the Federal Environmental Agency's (Ibama) environmental fines database, AgroSB, appears as the second largest deforester in Brazil in the last 25 years, with a total of BRL 325 million in fines.

December 2018



December 2019



The company is also accused of slave labour and money laundering. A 2019 investigation by Repórter Brasil, The Guardian and the Bureau of Investigative Journalism shows that AgroSB raises cattle in embargoed areas on the Lagoa do Triunfo farm and that the farm supplies cattle to JBS. Embargo is a legally binding suspension issued by the Federal Environmental Agency (Ibama) prohibiting any commercial activity in a specific area due to a series of different crimes, including illegal deforestation and slavery. In 2020, cattle from Fazenda Lagoa do Triunfo was still transferred for fattening to Fazenda Espírito Santo (also owned by AgroSB), which directly supplied slaughterhouses of JBS, Minerva, Frigol, Marfrig, Masterboi, and Frigorífico Valêncio in 2019 and 2020. In this same period, Ibama fined the farm cluster four times for illegal clearance of native vegetation, amounting to BRL 22 million. This case shows how "cattle laundering" (cattle moved from a farm embargoed for illegalities to a farm with no such restrictions) is an efficient tool for getting round environmental legislation, and how important it is to have traceability systems in place that include all indirect suppliers.

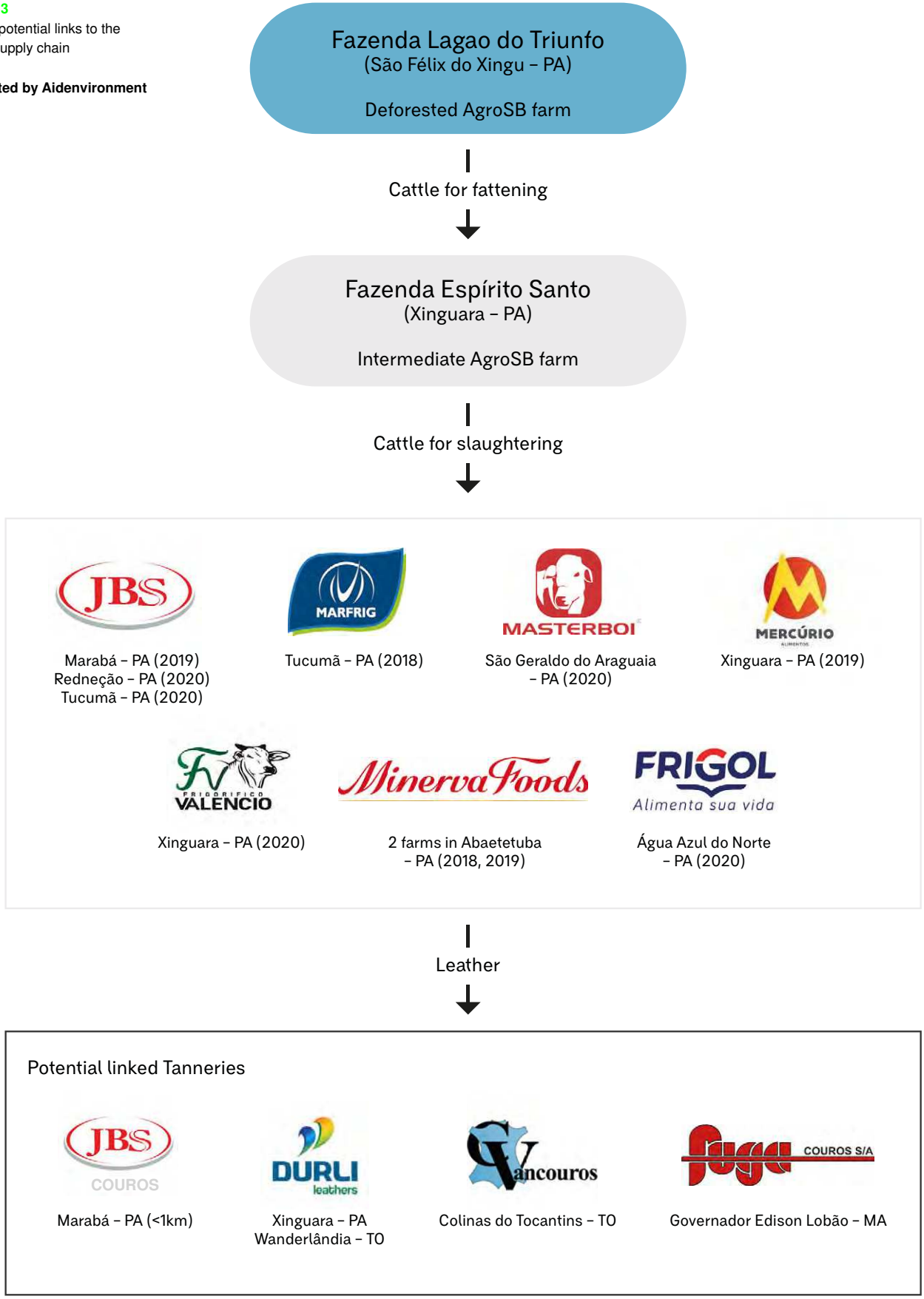
A direct linked tannery is JBS leather's tannery in Marabá (Pará), which is located less than 1 km from the linked JBS slaughterhouse in Marabá (Figure 13).

Figure 12
Deforestation in the property Fazenda Lagoa do Triunfo (São Félix do Xingu, Pará)

Imagery
© Planet Labs Inc.

Figure 13
AgroSB potential links to the leather supply chain

Elaborated by Aidenvironment



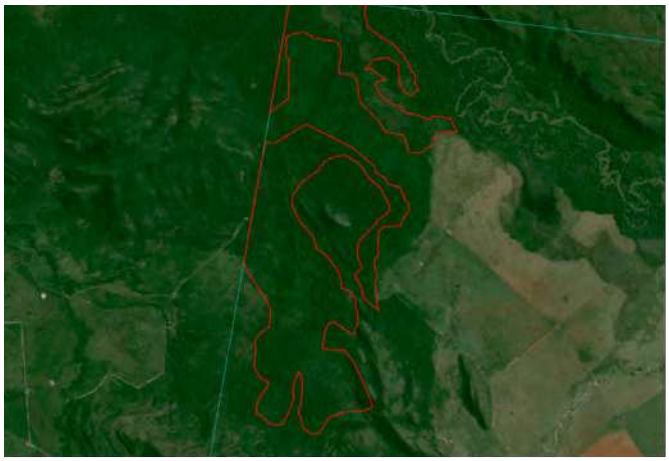
Case Two

Grupo Umuarama, São Félix do Xingu (Pará state).

The property Fazenda Gamela is 10,870 hectares in size. Between July and October 2020, it was possible to observe 1,154 hectares of illegal deforestation linked to fire occurring within Fazenda Gamela's declared Legal Reserve (Figure 14). Fazenda Gamela is one of the properties owned and operated by Grupo Umuarama that controls at least seven other agribusiness companies: Agropecuária Umuarama, Agropecuária Novo Norte, Agropecuária Barra do Triunfo, Agropecuária Pôr do Sol, and LPMP Agropecuária.

The group has farms in São Felix do Xingu (PA), Canaã dos Carajás (PA), Xinguara (PA), Jacareacanga (PA), Vila Bela de Santíssima Trindade (MT), Nova Bandeirantes (MT), Nova Santa Helena (MT), and Ananás (TO), totalling at least another 160,000 hectares. Deforestation by fire was also found in two properties operated by Grupo Umuarama: Fazenda Brusque do Xingu (1,000 hectares between August and September 2019) and Fazenda Ceita Corê do Xingu (4,900 hectares between July and September 2020).

December 2019



October 2020



Figure 14
Deforestation in the property Fazenda Gamela (São Félix do Xingu, Pará)

Imagery
© Planet Labs Inc.

In total, 381 workers have been rescued from slave labour conditions in properties linked to Grupo Umuarama. In 2017, the most recent operation rescued 23 workers from Fazenda Santa Laura, in Santa Helena, Mato Grosso. The Public Prosecutors Office of Mato Grosso recommended a fine of BRL 100 million for the violation of the Labour Law in the case of the farm in Nova Santa Helena. In 2018, the group had been already sentenced to pay a BRL 6 million fine in a court decision regarding violations of the Labour Law. Luiz Pereira Martins Pires, one of the shareholders of Grupo Umuarama, is under investigation for a slave-work scheme linked to violent crimes in the Southeast region of Pará, the hearings of this court case started in April 2020. Luiz Pereira Martins Pires is also involved in a Federal Police investigation (Operação Reis do Gado), started in 2016, for suspicion of participation in a corruption and money laundering scheme in Tocantins state. The prosecution indicates that two farms (value BRL 60 million) were donated to local politicians to benefit the Umuarama group in public tenders.

In October 2019, the Federal Court in the State of Pará released the federal government from paying an undue indemnity of more than BRL 1.2 million for the expropriation of Fazenda Umuarama, a 33,000 hectares property also located in the municipality of São Félix do Xingu (PA).

Federal agents verified, during the survey of land data for the payment of compensation, that 'the property records had been defrauded'. Umuarama group's shareholders were also owners of the Frigorífico Quatro Marcos, a beef processor with links to violations of labour laws in different plants.

Quatro Marcos declared bankrupt in 2008, after which it sold some of its plants to JBS. Luiz Pereira Martins Pires is number 101 on a Federal Environmental Agency's (Ibama) document listing the largest deforesters since 1995. He has already received BRL 31 million in fines all in properties in São Félix do Xingu (PA). Figure 15 shows the potential links of properties owned by Grupo Umuarama and leather exporters.

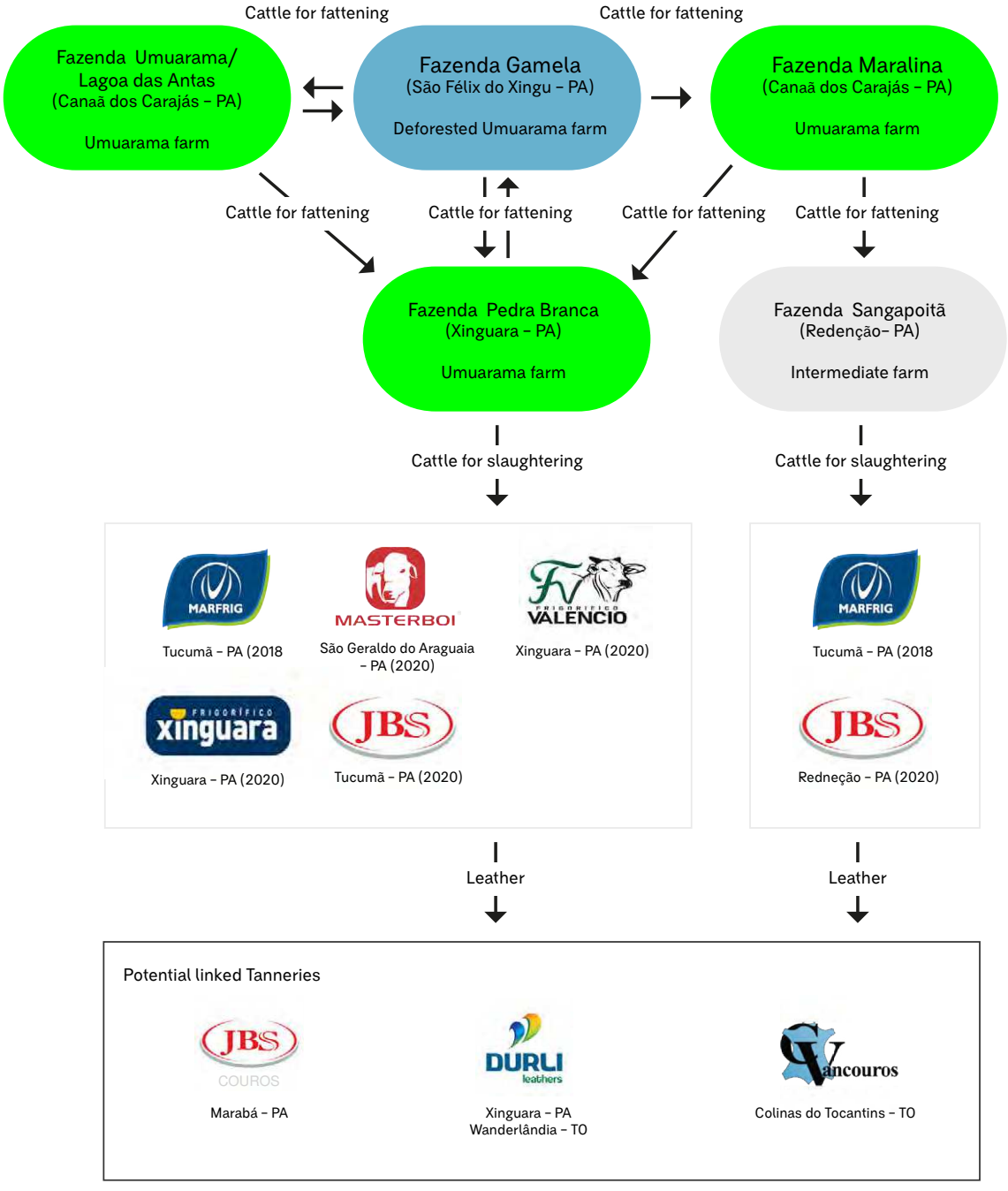


Figure 15
Grupo Umuarama potential links to the leather supply chain

Elaborated by Aidenvironment

Case Three

Sociedade Agropecuária Imaculada Conceição (Somicol), Cumaru do Norte (Pará state).

Between August and September 2019, a total of 1,365 ha of native vegetation was illegally cleared in the declared Legal Reserve and APP of Fazenda Cabocla, an area of 30,811 ha. This deforestation is a result of fires outbreaks detected by NASA in the property Fazenda Cabocla (Figure 16). The Brazilian Forest Code states that all private properties need to maintain a certain percentage of the area with native vegetation cover, which varies per biome, this being in Amazon biome 80 per cent, Cerrado biome 20 per cent and 35 percent in transition areas between both biomes.

The same law also defines APP areas (Permanent Preservation Areas) as areas close to bodies of water, hill tops and steep slopes that should also retain native vegetation cover. The declared owner of Fazenda Cabocla is Sociedade Agropecuária Imaculada Conceição (Somicol). Somicol is part of Grupo Amil, one of the largest health insurance companies in Brazil. The United Health Group bought the conglomerate in 2012. Three of the four owners of Somicol are on the list of Brazilian billionaires published by Forbes magazine in 2019.

December 2018



June 2020



After the deforestation in 2019, JBS slaughterhouses in Rendenção (PA) and Santana do Araguaia (PA) continued to directly source from the Cabocla farm up to 2020. Apart from Fazenda Cabloca, Somicol also owns adjacent farms Fazenda Vale Formoso (22,156 ha) and Fazenda Jaguari (12,998 ha) in Camaru do Norte. The latter farm also showed direct supply linkages with JBS's slaughterhouse in Rendenção (PA) in 2019, while Fazenda Vale Formoso is indirectly linked (through Fazenda Jaguari).

In September 2019, approximately 445 ha of native vegetation was cleared on Fazenda Jaguari.

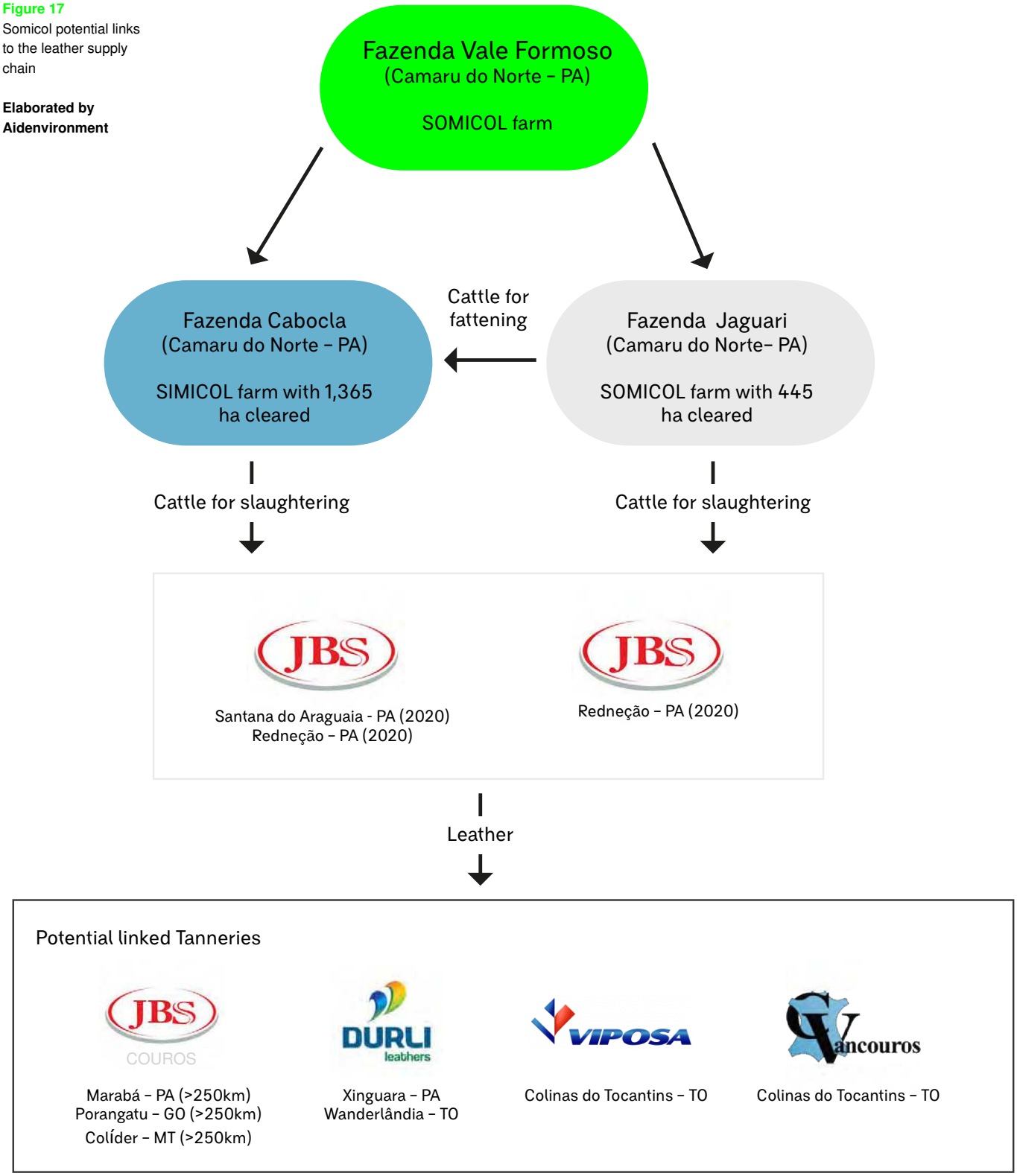
All potentially linked JBS tanneries are located more than 250 km away from the linked slaughterhouses. Closer to the linked JBS slaughterhouses are the tannery 'Curtidora Tocantins' in Colinas do Tocantins (TO), which is a Joint Venture of Vancouros and Viposa, and the two tanneries of Durlicouros in Xinguara (PA) and Wanderlândia (TO) (Figure 17).

Figure 16
Deforestation in the property Fazenda Cabocla (Cumaru do Norte, Pará)

Imagery
© Planet Labs Inc.

Figure 17
Somicol potential links to the leather supply chain

Elaborated by Aidenvironment



Case Four

Agropecuária Sabran, Cumaru do Norte (Pará state).

Fazenda Sabran, of 13,692 ha, illegally cleared a total of 2,249 ha of native vegetation inside a declared legal reserve and APP between August 2, 2019 and September 16, 2019 (Figure 18). Simultaneously, NASA detected fires at the farm on September 11, 2019, set for preparing the land for livestock and/or agricultural use.

Agropecuária Sabran, the owner of the farm, is listed by CPT (Comissão Pastoral da Terra), a national civil society organization that defends rural population rights, as linked to labour conditions analogous to the slavery of 60 workers. The complaint from CPT was not inspected by the Labour Ministry.

Figure 18
Deforestation in the property Fazenda Sabran (Cumaru do Norte, Pará)

Imagery
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December 2018



September 2019

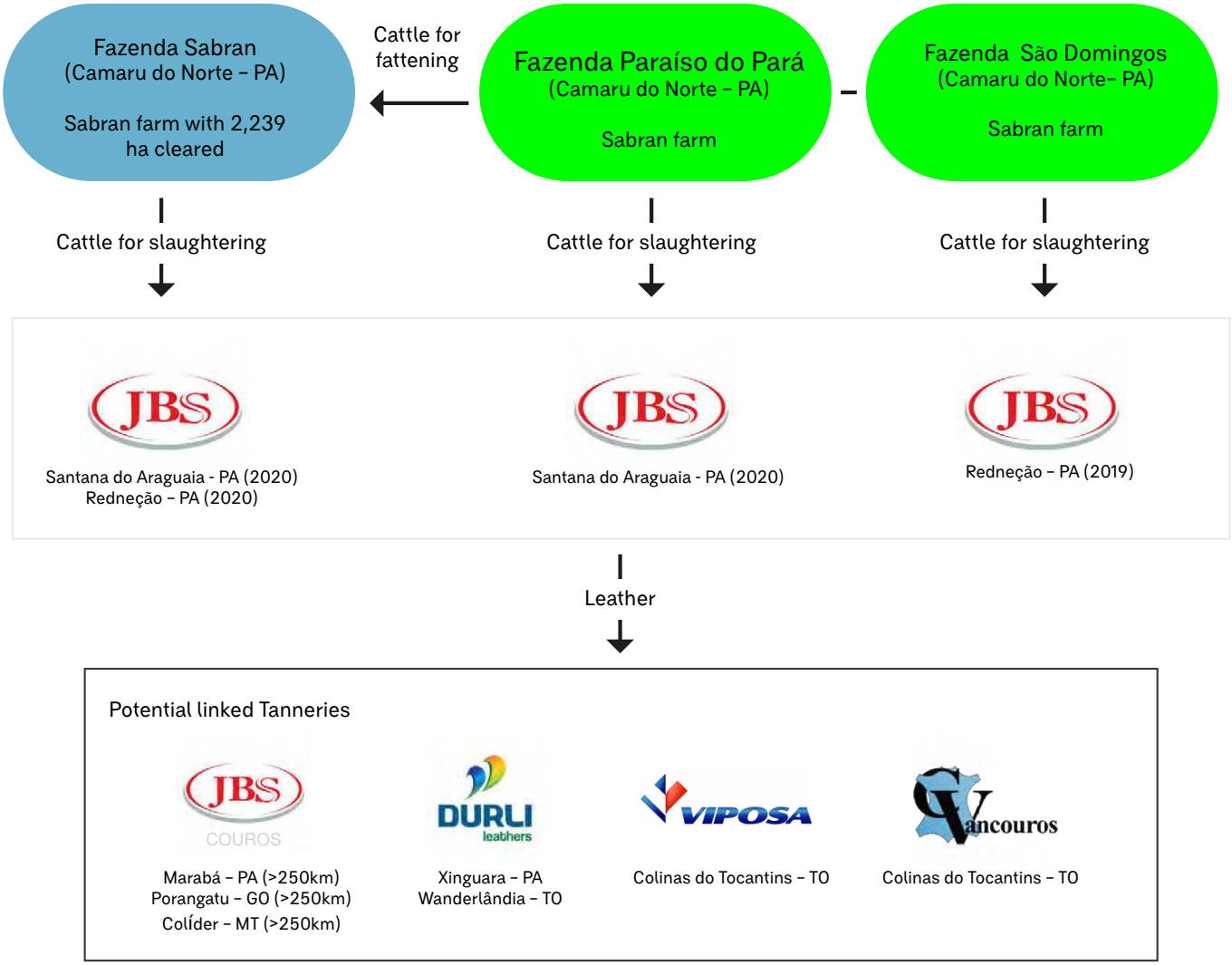


Simultaneously, NASA detected fires at the farm on September 11, 2019, set for preparing the land for livestock and/or agricultural use

Fazenda Sabran directly supplied JBS's slaughterhouses in Santana do Araguaia (between 2018-2020) and Redenção (both in Pará) between 2019 and 2020. Two linked farms with the same owners, in the same municipality, Fazenda São Domingos and Fazenda Paraíso do Pará, have also supplied cattle to these JBS slaughterhouses. The links with JBS also become apparent from the award that JBS handed to Fazenda Sabran in October 2020 for the quality of its cattle. There are no JBS tanneries within a 250 km radius of the linked JBS slaughterhouses. Like Fazenda Cabocla (see previous case), the tannery 'Curtidora Tocantins' in Colinas do Tocantins (TO), which is a Joint Venture of Vancouros and Viposa, and the two tanneries of Durlicouros in Xinguara (PA) and Wanderlândia (TO) are closer and have therefore higher potential to be linked to this case (Figure 19).

Figure 19
Agropecuária Sabran potential links to the leather supply chain

Elaborated by Aidenvironment



Case Five

Fazenda Surubim, Eldorado do Carajás (Pará state).

Although there is no recent deforestation linked to Fazenda Surubim, this is a relevant case concerning land grabbing, agrarian conflicts, and violence against local communities. Fazenda Surubim is registered under the name of Amilcar Farid Yamin, a well-known cattle producer in the region. The farm has 13,580 hectares and sits alongside another area of around 7,000 hectares that a group of rural workers are demanding be included in the National Agrarian Reform program via the implementation of a rural settlement. This group lives in a provisory area waiting for their demand to be analysed by the government and have a court authorization to make sustainable use of the forest resources of the demanded area (Figure 20); the harvesting of Amazon nuts is their main strategy for income generation.

The owner of Fazenda Surubim is also demanding the ownership of the same public area. According to CPT (Comissão Pastoral da Terra), the setting up of Fazenda Surubim is the result of a land grab of public lands.

In December 2020, an armed group attacked the location where the rural workers were living, the 'Acampamento Osmir Venuto da Silva', setting fires, shooting towards people, and destroying the homes and belongings of 35 families. Four people were arrested for the attacks and there is an undergoing investigation. Although there is currently no proof of links between this attack and the owners of Fazenda Surubim, other attacks and threats from people working for the company's owner against the group of rural workers were registered in the past year, including the murder of one individual, Eudes Veloso Rodrigues, in 2018.

Fazenda Surubim is a direct supplier of local and regional slaughterhouses, such as Frigorífico Valêncio, in Redenção and in Xinguara, and Mercúrio, in Xinguara. The slaughterhouses in Xinguara likely supply leather to a Durlicouros facility also in Xinguara (Pará).
The property is also an indirect supplier to slaughterhouses owned by JBS (in Marabá and Redenção, both in Pará state). These JBS slaughterhouses have a direct link to the JBS Couros facility in Marabá (Pará) (Figure 21).

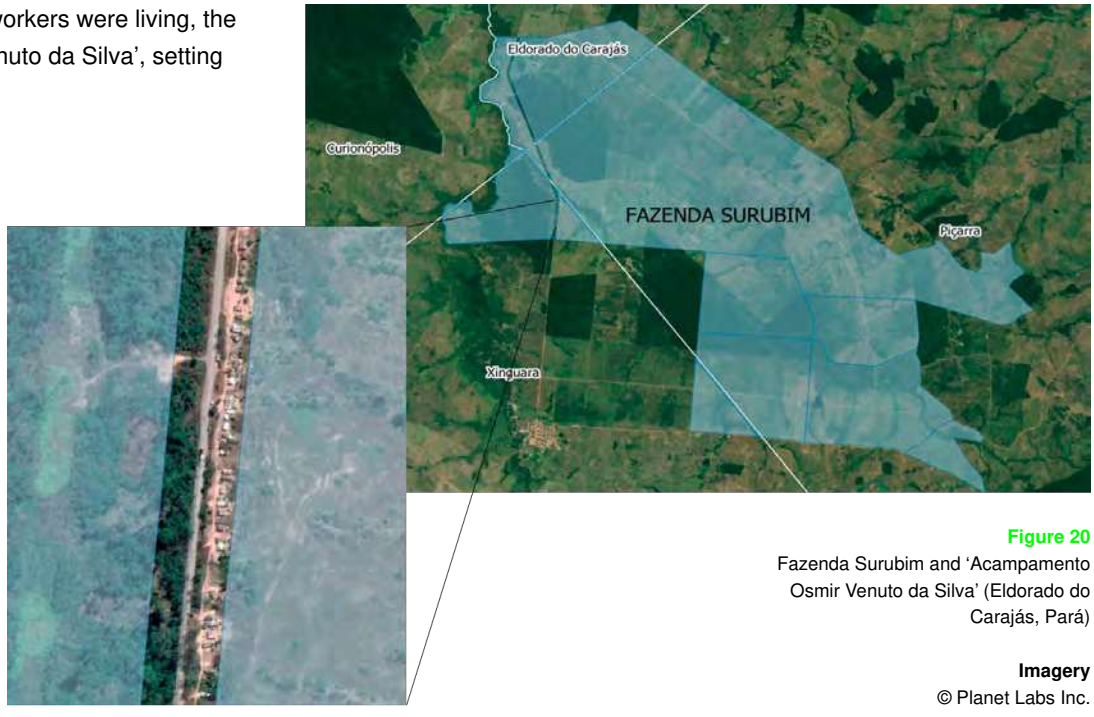


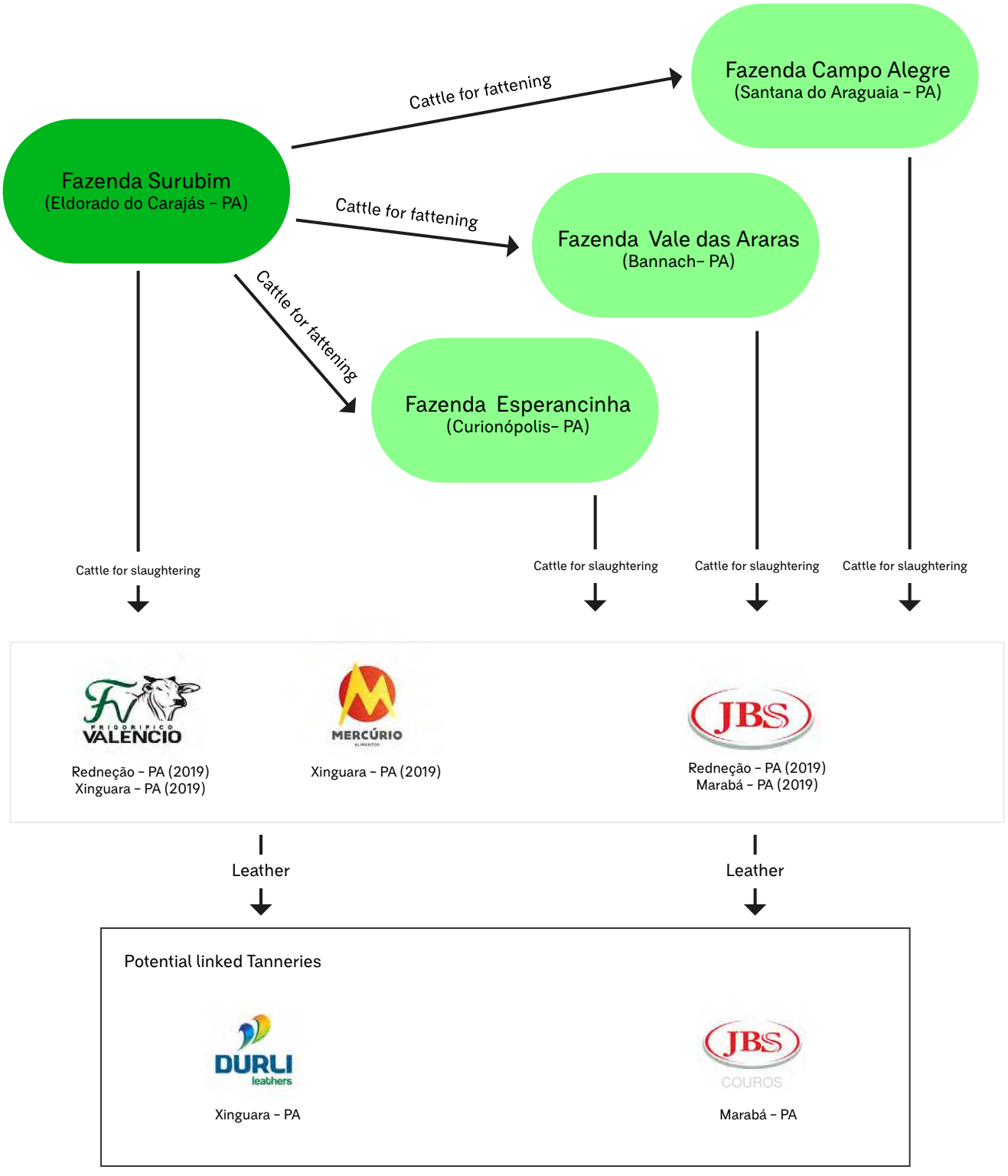
Figure 20
Fazenda Surubim and 'Acampamento Osmir Venuto da Silva' (Eldorado do Carajás, Pará)

Imagery
© Planet Labs Inc.

... this is a relevant case concerning land grabbing, agrarian conflicts and violence against local communities

Figure 21
Fazenda Surubim potential links to the leather supply chain

Elaborated by Aidenvironment



Case Six

Fazenda Rio Preto I and II, Canabrava do Norte (Mato Grosso state).

The property Fazenda Rio Preto I and II has a total area of 143,000 hectares. NASA detected fires starting within the boundaries of Fazenda Rio Preto I and II on 08 September 2019, in the following days the fire spread clearing 9,570 hectares of native vegetation in the property and around 1,000 hectares of native vegetation inside the neighbouring Indigenous territory Maraiwatsede (Figure 22). The property Fazenda Rio Preto I and II has a suspended CAR registration, and as such will not be screened by companies who rely on the CAR as a source of input for their monitoring systems.

Figure 22
Deforestation in the property Fazenda Rio Preto I and II (Canabrava do Norte, Mato Grosso)

Imagery
© Planet Labs Inc.

December 2018



September 2019



The Ribeiro Flor family owns and operates Fazenda Rio Preto I and II and at least other three intermediate smaller properties totalling 5,000 hectares in Mato Grosso and Goiás states. The Ribeiro Flor family corporation is a known supplier of JBJ Agropecuária, a beef company established by the eldest brother of the JBS family-owned business. JBJ farms are an important local JBS supplier. Romão Ribeiro Flor, one of the Ribeiro Flor family's members, is allegedly linked to numerous environmental and social crimes.
In 2004, 18 workers were rescued under slave-labour conditions in Fazenda Rio Preto I and II.
In 2009, the Federal Police accused the owner of being involved in land grabbing in Araguaia region, including areas inside the Indigenous Territory Maraiwatsede. In addition, as part of the Operação Pluma he was accused by federal prosecutors of hiring lawyers to illegally obtain land tenure titles.

Fazenda Rio Preto I and II indirectly supplied three JBS slaughterhouses in Goiânia, Mozarlândia and Senador Canedo (all in the state of Goiás), and two Minerva Foods slaughterhouses in Palmeiras de Goiás (Goiás state) and José Bonifácio (state of São Paulo). These slaughterhouses are potentially linked to tanneries owned by Fuga Couros, Minerva Couros and JBS Couros (Figure 23).

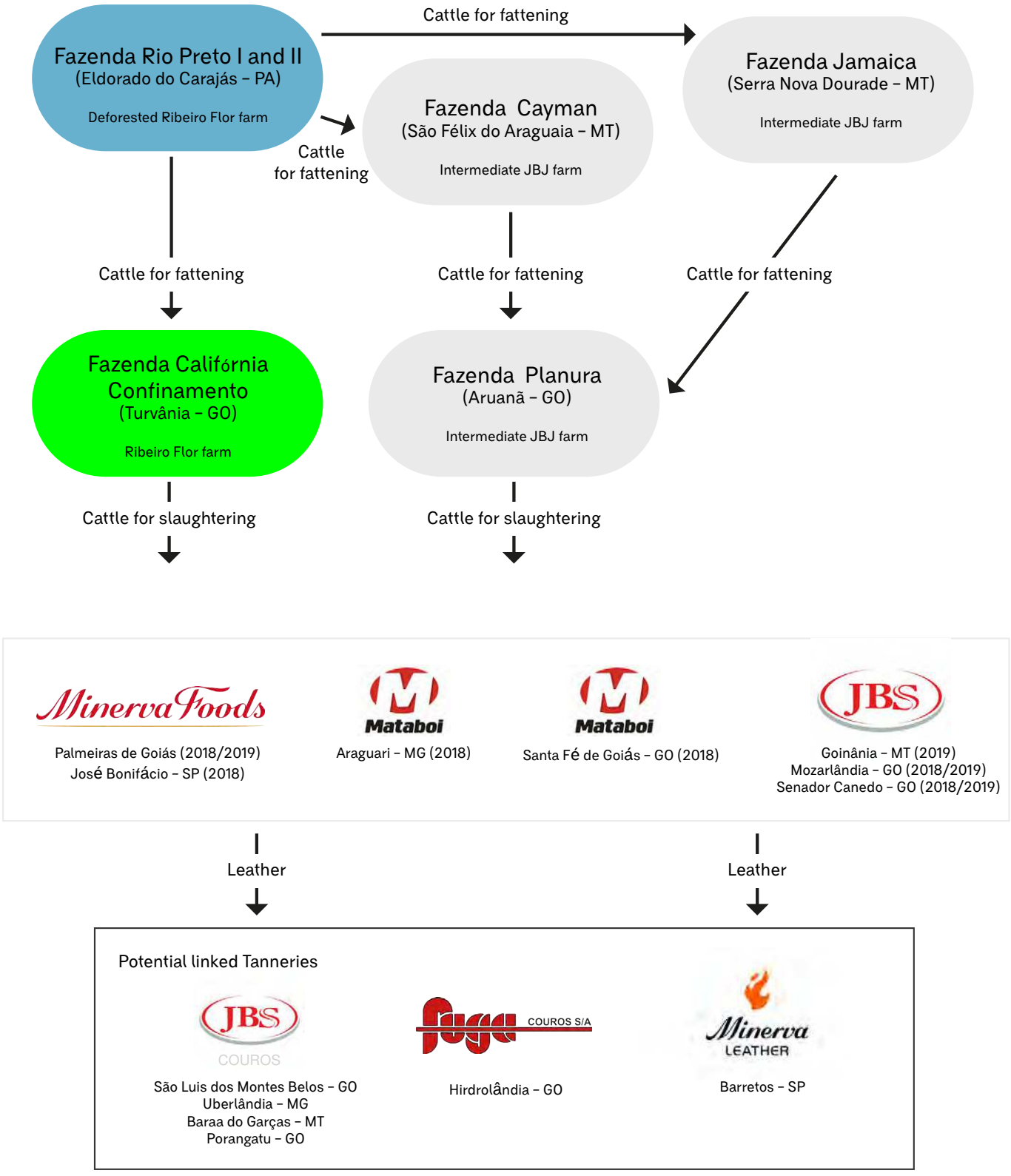


Figure 23
Fazenda Rio Preto I and II potential links to the leather supply chain

Elaborated by Aidenvironment

Case Seven

STX Agropecuária, Brasnorte (Mato Grosso state).

Fazenda Ingaí and Umburana have, together, a total of 4,040 hectares, and had 850 hectares of native vegetation cleared between September 2018 and January 2019 (Figure 24).

STX Agropecuária is the owner and operator of the properties and is active in the cattle and timber sectors. The company, together with other linked companies such as RT-X Empreendimentos e Incorporações and Agropecuária São Marcos, owns a total of 15 other properties, totaling at least 70,870 ha in Juara, Vila Bela de Santíssima Trindade, Comodoro, Nova Bandeirantes, Brasnorte and Aripuanã, all in Mato Grosso state. Twelve of these properties are cattle ranches directly supplying slaughterhouses owned by JBS.

One of the shareholders of STX Agropecuária, Luiz Carlos Tavares is linked to the ownership/management of another 43 different companies. In 2014, Luiz Carlos Tavares signed a Conduct Adjustment Term (translated from Termo de Ajustamento de Conduta - TAC) with the Environment Agency of Mato Grosso that defined the payment of BRL 5,000 per hectare for the compensation of degradation of part of the Area for Permanent Conservation (APP) in Fazenda Boa Vista II, in Aripuanã (MT). He had already signed two other TACs in 2011 and 2013 regarding activities without the proper authorization in farms in Aripuanã and Vila Bela da Santíssima Trindade. He also received an environmental fine of BRL 155,000 for use of fire without permit in 2011 in a property in Brasnorte. Fazenda Imburana is directly linked to the JBS slaughterhouse in Juina (MT) and indirectly linked to Marfrig's and Minerva's slaughterhouses and another two JBS slaughterhouses in Mato Grosso (Figure 25). All of them have potential links to tanneries operating in Mato Grosso state from JBS Couros, Viposa, Fuga Couros, Vancouros, Minerva Couros and Durlicouros.

Figure 24
Deforestation in the properties Fazenda Ingaí and Fazenda Umburana (Brasnorte, Mato Grosso)

Imagery
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June 2018

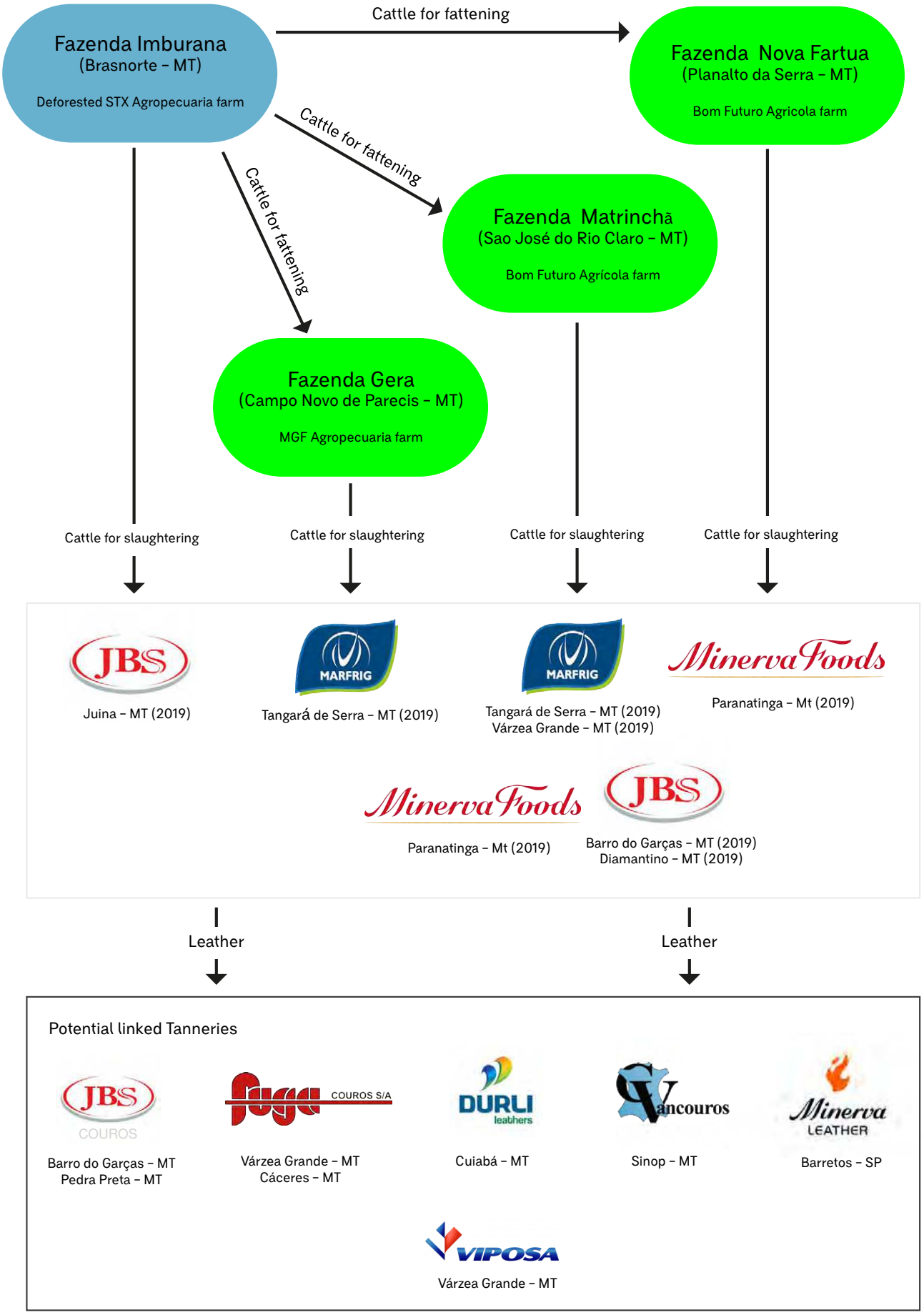


July 2019



Figure 25
STX Agropecuária potential links to the leather supply chain

Elaborated by Aidenvironment



Case Eight

Agropecuária Grendene, Cáceres (Mato Grosso state).

Fazenda Ressaca is a 25,996-ha ranch owned by Agropecuaria Grendene. NASA detected fires on the ranch on September 28, 2020, burning down a total of 4,455 ha of native vegetation (Figure 26). The company's primary activity is cattle raising, next to soy, sugar, and corn production. It is linked to the large São Paulo-listed company Grendene SA that is mainly engaged in the production and sale of footwear for domestic and foreign markets. One of its founders, Pedro Grendene Bartelle, was listed in the 2019 Forbes list of Brazilian billionaires.

Agropecuária Grendene's farm Fazenda Ressaca directly supplied cattle to JBS's slaughterhouse Araputanga (MT) in 2018 and 2019, and a Frical Frigorifico slaughterhouse in Várzea Grande (MT) in 2019 (Figure 27). Moreover, the farm indirectly supplied, through Fazenda Morada do Sul (different ownership) in Cáceres, cattle to Marfrig's slaughterhouse in Pontes e Lacerda (MT) in 2018, Minerva's slaughterhouse in Mirassol D'Oeste (MT) in 2019, and JBS's facility in Diamantino (MT) in 2019. In 2006, the company received an environmental fine of BRL 15,958 million for cutting trees (species Angico, Ipê, and Cumaru) without authorization. Moreover, through its direct link with Frical's slaughterhouse in Várzea Grande (MT), cattle from the farm potentially ended up in the tanneries of Viposa and Fuga Couros in Várzea Grande (MT), as well as Durlicouros' tannery in Cuiabá (MT); all are located within a 25-30 km straight line distance from the slaughterhouse. Tanneries of JBS are all located more than 250 km away from the linked JBS slaughterhouse Araputanga (MT). Minerva Couros and Marfrig Couros are exposed to deforestation in their leather supply chain through their indirect supply chain links with the farm.

June 2020



November 2020



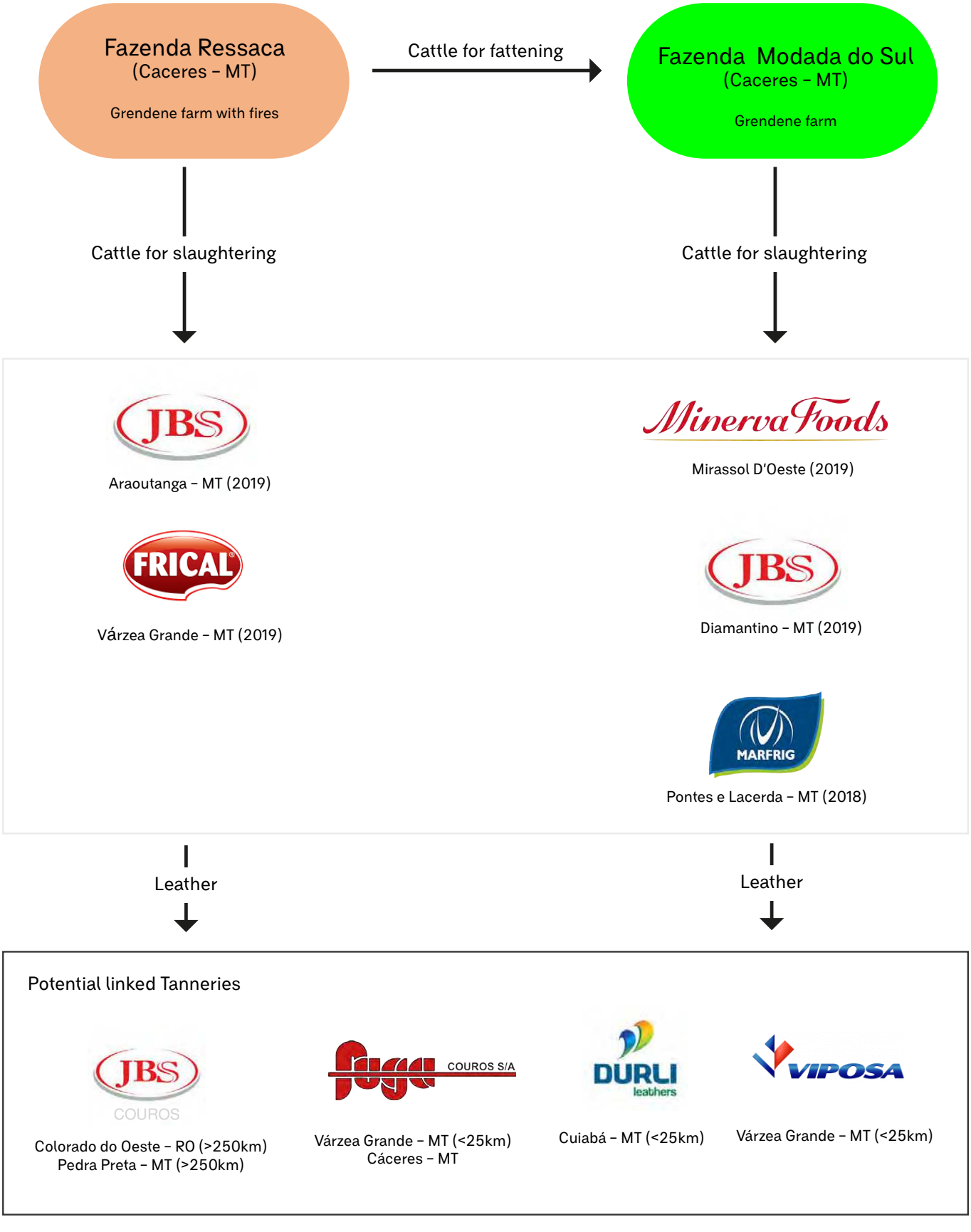
Figure 26
Deforestation in Fazenda Ressaca (Cáceres, Mato Grosso)

Imagery
© Planet Labs Inc.

In 2006, the company received an environmental fine of BRL 15,958 million for cutting trees without authorization

Figure 27
Grendene Agropecuária potential links to the leather supply chain

Elaborated by Aidenvironment



Part Two –

European automotive industry exposure to deforestation through Brazilian leather

This second part of the study traces the links between deforestation, Brazilian leather used by the European leather manufacturers specialising in the automotive sector, car seat and interior components manufacturers, and the European automotive industry.

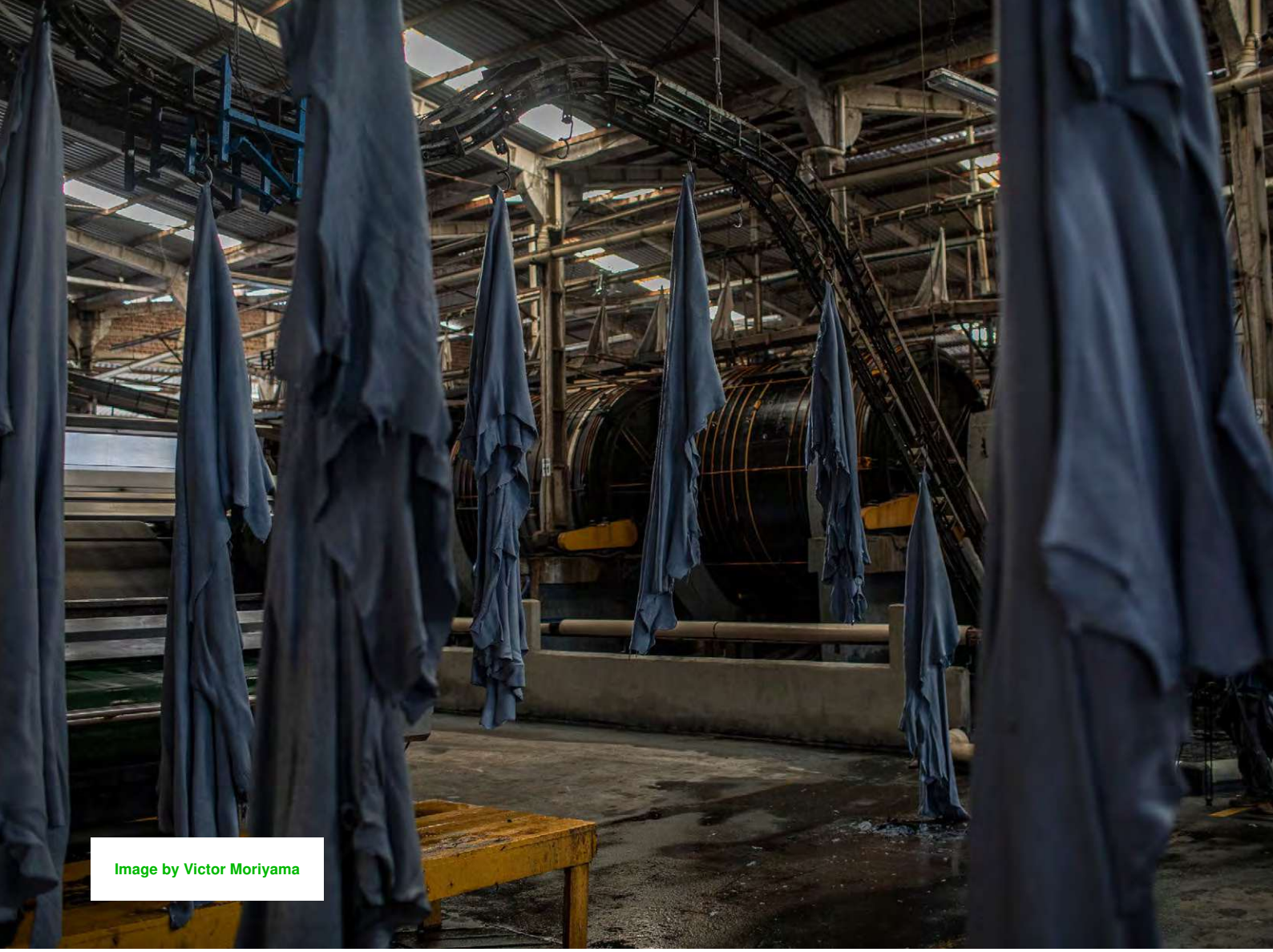


Image by Victor Moriyama

Around 30 per cent of the leather produced in the world, and nearly 50 per cent of the leather exported from Brazil, is used in car interiors. After the bovine hide is removed from the slaughtered animal, and before being applied in a car seat or other car interior components, the leather passes through at least three other supply chain steps.

First, from the slaughterhouse the leather is processed by tanneries specialising in producing wet blue leather from raw hides, which can be stored and transported over longer distances. The wet blue leather is then treated through different tanning processes to become what is known as finished leather. The production of finished leather from wet blue can either be done in tanneries in the production country or in tanneries nearby specialising in leather manufacturer.

Second, the finished leather can be then prepared by specialised leather manufacturers before being used in specific products such as car seats or other car interior components. Italy is not only the second global importer of Brazilian leather and the largest importing country in Europe but is also where 82 per cent of European leather manufacturers are based. This industry includes tanneries that produce finished leather from wet blue and those manufacturers specialising in footwear, fashion, upholstery, and automotive sectors.

Third, the prepared leather can then be applied and used by the car seats and interiors components industry before being installed in vehicles. Four companies share 90 per cent of the global automotive seating market: Adient, Lear, Faurecia, and Toyota Boshoku. These companies usually do not produce only seats, but a range of different car components and operate near to the car manufacturers. This second part of the study traces the links between deforestation, Brazilian leather used by the European leather manufacturers specialising in the automotive sector, car seat and interior components manufacturers, and the European automotive industry.

2.1

Car manufacturers and brands most present in the European market

In 2019, China (including Hong Kong) and Taiwan led global passenger car production with 28 per cent of the market, followed by Europe with 25 per cent and by North America with 16 percent.

Europe produced 18.6 million passenger cars in 2019 and there were 15.7 million new passenger cars registered in Europe in 2019. The top five car manufacturers putting new cars into circulation in Europe in 2019 were **PSA Group** (recently renamed as Stellantis through a joint venture with Fiat-Chrysler)[1], **Volkswagen Group**, **Groupe Renault, BMW Group** and **Daimler**, who together represented 50 per cent of new passenger cars registrations in Europe.

Car manufacturers groups are often confused with their own brands.

Figure 28 lists all brands linked to the top five European car manufacturers. Other car manufacturers that are present in Europe and also exposed to deforestation involving leather production are: Fiat-Chrysler, Toyota Motors, Volvo, General Motors, Ford Motors, and Jaguar-Land Rover (Tata Motors). Leather can be found either in luxury brands, produced in smaller quantities or in cheaper car models, produced in larger quantities, in different car interiors components such as seats, steering wheels, door panels, head, and arm rests.

1 This study is based on PSA Group operations before it became Stellantis through a joint venture with Fiat-Chrysler, as the merging of the two companies happened posterior to the period studied in this report.

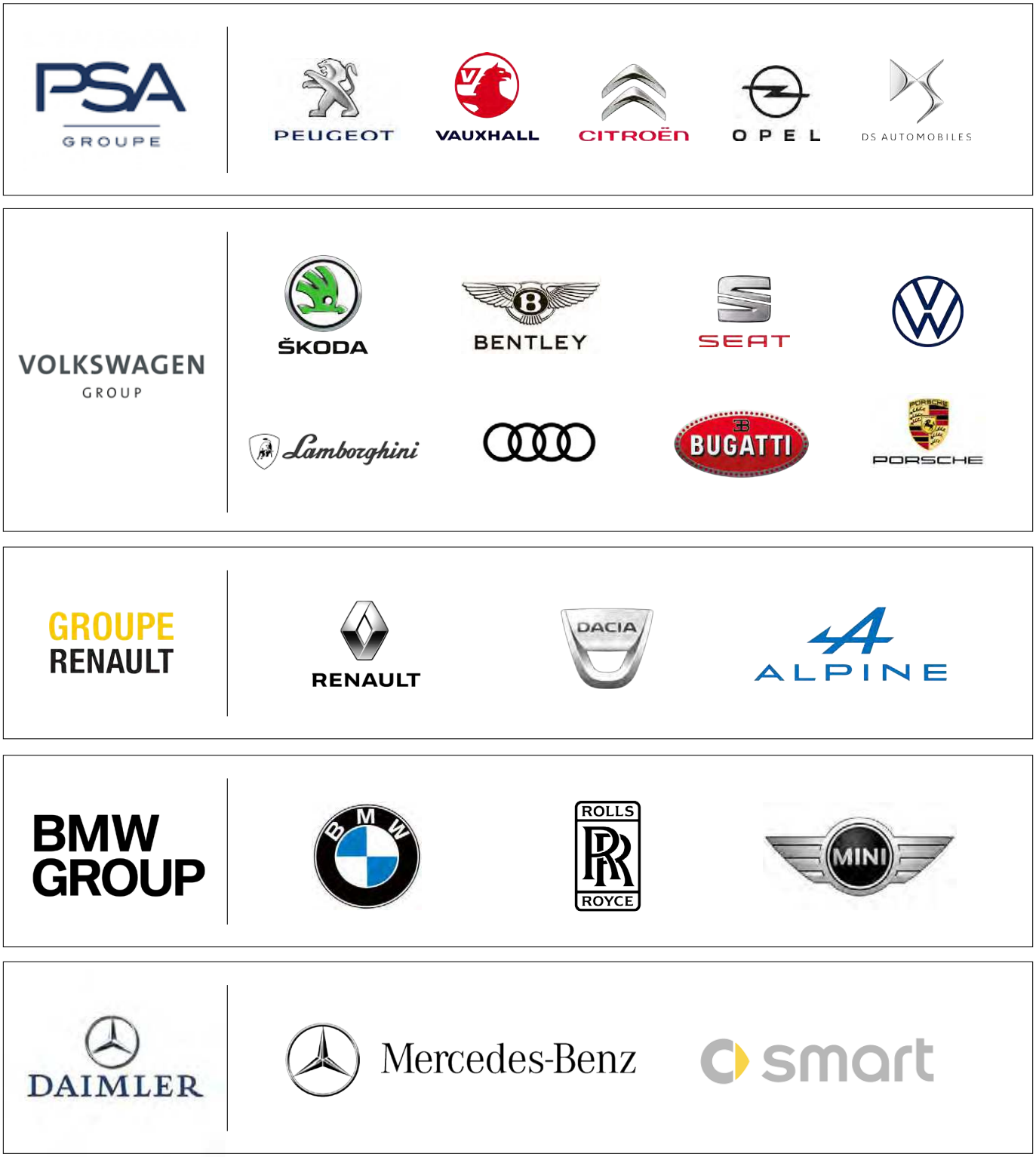


Figure 28

Car brands of the top five European car manufacturers*

Elaborated by Aidenvironment

*the green outlined area of the figure includes other car manufacturers that are present in the European market: Fiat-Chrysler, Toyota Motors, Volvo, General Motors, Ford Motors, and Jaguar-Land Rover (Tata Motors).

2.2

The European Automotive industry lacks sustainability policies to deal with deforestation linked to leather

Sustainability policies of car manufacturers usually relate to the reduction of greenhouse gas emissions from their own industrial facilities, car use (in the form of fossil fuels), and recycling cars components, and rarely specify commitments to reduce their links to deforestation via their suppliers.

In its 'Responsible Purchasing Policy', PSA Group, which recently merged with Fiat-Chrysler to form the Stellantis Group, states that all of its suppliers are assessed by a third party on their sustainability and social performance. Regarding the protection of the environment, the document only states an 'expectation that its suppliers reduce their own CO2 emissions'. The document does not specify any commitment to understand or address deforestation links or to support the implementation of monitoring systems to understand its suppliers' environmental impacts, including those related to bovine leather used in car seats and interiors.

It is worth mentioning that Stellantis Group still does not present an integrated sustainability policy but relies on the Corporate and Social Responsibility (CSR) Disclosures of both groups, PSA Group and Fiat-Chrysler. Stellantis also states that they work 'in partnership [with their suppliers] to implement responsible procurement practices, to ensure sustainable ensure sustainable progress throughout the entire supply chain, with specific emphasis on respect for human rights, wise use of natural resources and reduced environmental impacts, while contributing to development of local activities in new territories'. However, there is no official available document or platform explaining how they implement such work in partnership with their suppliers and no mention on strategies for the traceability of the leather used in their cars, for instance.

In a recent report published by Earthsight, the **Volkswagen Group** declared that it does not have a strategy for tracing back the leather used in its cars. Instead, they stated that the company requests a supplier's declaration stating that the leather does not come from the Amazon region. Considering the lack of transparency and traceability within the leather supply chain, the self-declaration by suppliers requested by Volkswagen just transfers the responsibility about leather traceability to a different stakeholder but does not guarantee that leather is indeed not coming from deforested areas. A self-declaration, in this case, should be presented together with enough traceability data that guaranteeing that the leather can be traced back until the cattle production properties where the linked cattle were raised. The group also claimed that they would develop and implement a specific policy to exclude leather that could be linked to illegal deforestation, but at the time of the research for the present study there is no publicly available information on this policy.

Renault Group does not have a deforestation policy or any publicly available document on the traceability strategy of leather suppliers. In Renault's 'Green Purchasing Guideline' document there is no mention of forests, deforestation or leather.

BMW Group also have a 'Supplier Sustainability Policy'. The policy does not mention leather, but states that their suppliers '*shall protect natural ecosystems and halt conversion, deforestation and forest degradation based on identification and management of natural forests and other natural ecosystems*'. The policy includes a due diligence process through a self-declaration assessment questionnaire, third-part audits and onsite assessments. It is not clear what are the criteria of the third-part audits and if the onsite assessments, for instance, include facilities from where they source leather products. And, again, a self-declaration tool seems inadequate for a supply chain where the leather does not have traceability until the cattle producer, where deforestation is happening.

In **Daimler's** 'Resource Conservation' report, there is no mention of leather and they state an 'expectation' that their suppliers operate with an environmental management system standard. It is not clear what would be a traceability strategy for the leather used in Daimler's cars. In the same report above mentioned published by Earthsight, Mercedez, the main brand of Daimler, stated that they are considering banning leather coming from Brazil in their supply chain. However, there is no publicly available information that we could find that show the implementation of this plan.

The organization Global Canopy also recently assessed the sustainability policies of car manufacturers and brands, including those mentioned in this report. The criteria used in the study was adapted from Global Canopy's Forest 500 2020 company assessment methodology based on best practice guidelines established by the Accountability Framework Initiative. The assessment showed that none of the car manufacturers mentioned in the present report has a solid deforestation commitment, and only Volvo had a traceability system for attempting to understand or address deforestation risk associated with leather in their supply chains.

There was, however, some limited evidence of awareness of the issue and initiatives to address it. Examples include a pilot project by Volkswagen's Porsche brand aiming to achieve full traceability of materials such as leather cockpit parts, as well as announcements by BMW's Mini brand, and Geely's Polstar and Volvo, indicating moves towards leather-free models. Tesla states that its models are now all leather-free. Indeed, most efforts appeared to focus on avoiding leather rather than attempting to engage with suppliers, improve traceability systems, and help develop sustainable leather supply chains.



Image by Victor Moriyama

2.3

The first tier: Car seat manufacturers supplying the European automotive industry

Car seat manufacturing companies can either operate vertically, covering the manufacturing of all car seats components, or horizontally, sourcing the components from other specialized Original Equipment Manufacturers (OEMs).

Having a horizontal or a vertical supply chain, car seat manufacturing companies are usually geographically near car industry plants and assembling facilities. Lear, for instance, states that their manufacturing facilities are '*typically located adjacent or near to our customers' manufacturing and assembly sites*'. The European car industry is, then, likely sourcing car seats mostly from manufacturing facilities that are also in Europe. Germany and France, for instance, import around 80 per cent of car seats from European countries.
Following is a profile of the top five car seat manufacturers, including the size of their operations in Europe, and their largest customers (Figure 29).

Adient

A North American company headquartered in Ireland with a revenue of EUR 13.5 billion (2019), is present in 32 countries.

Adient produces mainly complete car seats and allegedly shares 33 per cent of the global car seat market, whilst the European market represents 27 per cent of Adient's revenue. Adient has around 200 manufacturing facilities globally, of which 61 are in Europe, with Germany, Czech Republic (Czechia) and Spain being the primary locations with seven facilities each. Other countries where Adient has manufacturing facilities in Europe are Belgium, Italy, Poland, Romania, UK, France, Slovakia, Hungary, Turkey, Serbia, Slovenia, Austria, Macedonia, and Sweden. Adient states that its most important customers are **Fiat-Chrysler** and **Volkswagen Group** representing 11 per cent and nine per cent of its sales respectively. Adient also states that it has "longstanding" relationships with, among others, **BMW Group, Daimler, Ford, General Motors, Jaguar Land Rover, PSA Group, Groupe Renault, Toyota Motor**, and **Volvo**. Adient also cite **Tesla** as a new customer.

In Adient's 2020 Sustainability Report, there is no mention of the terms "leather", "forest", nor "deforestation". An investor meeting document from March 2020 states, however, that " (Adient) Develop products that have minimal negative impact on the global or local environment, society, economy or wellness".

Lear Corporation

A US company headquartered in Michigan with a revenue of EUR 17.4 billion (2018).

Lear produces complete automotive seat and electrical distribution systems. Eagle Ottawa is the leather component of Lear, and it claims to be the leading company in automotive seating systems. European and African markets represent 41 per cent of its sales followed by North America with 36 per cent. Lear is present in 39 countries and has 261 facilities. In Europe Lear has 44 seat manufacturing facilities, in: Belgium, Czech Republic, France, Germany, Hungary, Italy, Macedonia, Moldova, Poland, Portugal, Romania, Slovakia, Spain, and UK. The top five Lear customers are: **General Motors** (18 per cent of its sales), **Ford** (16 per cent of its sales), **Daimler, Fiat-Chrysler**, and **Volkswagen Group**. Lear supplies seat systems for luxury cars such as **Alfa Romeo, Audi, BMW, Cadillac, Jaguar, Land Rover, Lamborghini, Lincoln, Maserati, Mercedes-Benz**, and **Porsche**.

In August 2020, Lear released a No Deforestation Policy. The document states that their suppliers are expected to operate in compliance to all governmental laws, regulations and guidelines related to deforestation, not use illegal fires to clear forest areas, and to not purchase products or produce in areas with illegal deforestation or in indigenous or protected areas. The Lear's policy states that it "may conducts audits and require third-party verifications" on its suppliers, but do not present a robust strategy or monitoring mechanisms to guarantee the implementation of the policy.

Faurecia

A French company with a revenue of EUR 17.8 billion (2019) and present in 37 countries.

Faurecia produces different car components including car seats and interiors (on-board panels, computer systems and software), fuel systems (electric and hydrogen based) and other electronic components. **PSA Peugeot Citroen** holds an equity ownership position in Faurecia. Car seats represent 39 per cent of Faurecia's revenue. Globally, Faurecia has 47 car seat manufacturing facilities of which 31 are in Europe: France, Spain, Portugal, UK, Germany, Poland, Romania, Czech Republic, and Hungary. The two car seat industry facilities in Czech Republic, Nýřany u Plzně and Písek, supply car seats to **BMW, Mini, Porsche, Volkswagen**, and others. Other brands sourcing car seats from Faurecia are **Peugeot, Audi**, and **Opel**.

Faurecia does not have a publicly available No Deforestation Policy. Regarding the use of leather, they plan to decrease its linked CO2 emissions in 95% replacing leather with bio-sourced materials (R-BioSkin and hemp-based material). Faurecia also states that screens its direct leather suppliers regarding its social and environmental responsibility.

Toyota Boshoku

A Japanese company with a revenue of EUR 10.8 billion (2019) and present in 26 countries.

Car seat manufacturing represents almost 75 per cent of its revenue, but the company also produces car interiors, air, filter and fuel systems components, and seats for aircraft and trains. In Europe, Toyota Boshoku has four seat manufacturing facilities: France (Somain) – supplying car seats to **Toyota Yaris**; Poland (Nowogrodziec) – supplying car seats to **Mini** and **BMW i3 and i8**; Slovakia (Košťany and Turcom) – unknown customers; and Russia (St. Petersburg) – supplying car seats to **Toyota Camry** and **Toyota RAV 4**. Allegedly, Toyota Boshuku also supplies car seats to **Lexus**, the luxury brand from Toyota Motors. **Toyota Motors** holds an equity ownership position in Toyota Boshoku.

Toyota Boshoku has a "Basic Policy of Biodiversity" (November 2011) where it states the goal of "Make an effort to understand the impacts of our business activities, and continuously reduce these impacts". However, its 2025 Environmental Action Plan is mainly focused on the reduction of its CO2 emissions by strengthening the sustainable use of energy, improving the use of water sources and reducing waste increasing the use of recycled material. There is no mention of improving the traceability of leather and reducing its links to deforestation in tropical countries within its supply chain. In its Environmental Report, Toyota Boshoku states that they are signatory of the Task Force on Climate-related Financial Disclosure (TCFD) and that they are a A-list company by the Disclosure Insight Action (CPD) regarding the use of water sources.

Magna

A Canadian company headquartered in Ontario and present in 27 countries.

The car seat segment of Magna has a revenue of EUR 4.6 billion (2019), representing 14 per cent of its sales in 2019. Magna also produces automotive security and assistance systems, body structures, chassis, exteriors, powertrain, electronics, mechatronics, mirrors and electronic components, lighting and roof systems, with a total revenue of EUR 32.5 billion (2019). Its presence in Europe includes 115 manufacturing facilities in 15 countries, although it is not clear which ones are seating manufacturers. In Italy Magna has 39 manufacturing facilities, followed by Austria with 17, Czech Republic with 11 and UK with 10. All the top five car manufacturers in Europe are listed as Magna customers: **PSA Group, Volkswagen Group, Groupe Renault, BMW Group**, and **Daimler** in addition to, among others, **Volvo, Toyota** and Tata Motors (owner of **Jaguar** and **Land Rover**).

In its 2021 Annual Information Form (AIF), Magna lists “stampings, electronics, chips, molded parts, die casting, forging, coverstock, and wire harnessesas” as its key components and raw materials. There is no mention of leather or strategies to monitor deforestation within its supply chain in any publicly available Magna’s documents. The actions address environmental issues described by Magna’s 2020 Sustainability report are mostly linked to minerals.

There is no mention of leather or strategies to monitor deforestation within its supply chain in any publicly available documents

Figure 29

Customers of car seats manufacturers*

Elaborated by Aidenvironment

*note that customers might not be sourcing exclusively car seats in Europe as the car seats manufacturers also operate outside Europe and produce other car interiors and system components (see the description of the car seats manufacturers in the text for detail).



2.4

Czech Republic and Germany: The European hubs of car seat manufacture

The entire car seat manufacturing sector, including an unknown proportion of leather car seats, is concentrated in the largest automotive industry regions: North America, Europe, and Asia.

With 22 per cent, the Czech Republic is the world's biggest car seat exporter by trade value and total weight and Germany is second with 13 per cent of the global car seats exports. The position of these two European countries in global car seat exports confirms that they are leading the car seat manufacturing process that supplies the European automotive sector. The top five importers of car seats from the Czech Republic are all in Europe: Germany, Netherlands, Austria, Belgium, and Slovakia. Germany alone imports 71 per cent of the car seats manufactured in Czech Republic. The top five importers of car seats produced in Germany are also all in Europe and together import 68 per cent of the car seats produced in Germany.

Four of the top five car seat manufacturers have a significant number of car seat manufacturing facilities in the Czech Republic and Germany: Adient (seven in Germany and seven in the Czech Republic); Lear (six in Germany and three in the Czech Republic); Faurecia (two in Germany and two in the Czech Republic); and Magna (eleven in the Czech Republic). Besides Germany and the Czech Republic, in general the car manufacturing sector concentrates its industrial facilities in various other Eastern European nations such as Croatia, Hungary, Poland, Romania, Serbia, Slovakia, and Slovenia.

The shipping data used for the analysis of this study does however not point to the Czech Republic and Germany as the main export destinations of Brazilian leather within Europe. Italy is the second biggest global importer of leather from Brazil, being 94 per cent wet blue, as well as being the largest exporter of finished-leather, accounting for 25 per cent of the global share. European Union countries are the destination for 41 per cent (by weight) and 46 per cent (trade value) of Italian finished-leather exports.

2.5

Italy as the main leather supplier in Europe and the hub of automotive leather manufacture

In Europe, Italy is the focal point for understanding the links between Brazilian leather and the automotive industry.

Image by Victor Moriyama



Within the leather supply chain, there is a lack of transparency on the links and connections between car seat manufacturers and tanneries

According to the Confederation of National Associations of Tanners and Dressers of the European Community (Euro Leather), there are 1,480 tanneries in the European Union countries, of which 82 per cent are in Italy followed by Spain with seven per cent. The Italian Tanners' Association (Unione Nazionale Industria Conciaria) states that 21 per cent of the raw hides and wet blue leather processed by Italian tannery industries comes from South America. The Comtrade data (United Nations) shows that almost 45 per cent of the wet blue leather that can be stored and transported for longer distances comes from South America, with Brazil alone being the origin of 29 per cent of wet blue imported by Italy.

In 2019, 42 per cent of the finished leather (by weight) imported by Germany came from Italy and 17 per cent directly from Brazil. In the Czech Republic, 45 per cent of the imported finished leather (by weight) came from Italy in 2019. Although the leather imported from Italy by Germany and the Czech Republic can be used by different leather manufacturing sectors, the leather used by car seat manufacturers in these countries most likely also originates in Italy, where most of the companies in Europe which specialise in automotive leather are operating.

As Italy is the main focus of the manufacturing industry which processes wet blue into finished leather in Europe, and Brazil is the origin of 29 per cent of the wet blue leather imported by Italy, it is very likely that a substantial part of the finished leather imported by European countries from Italy has its origin in Brazil.

Within the leather supply chain, there is a lack of transparency on the links and connections between car seat manufacturers and tanneries, especially when the supply chain is horizontally organized. Most of the tanneries specialising in automotive leather list car brands as their customers and not the car seat manufacturers. In the case of Lear and Eagle Ottawa, the car seat manufacturer and its leather specialist affiliate, the link between leather producing countries and the company's car seat manufacturing facilities seems to be more direct, without an unaffiliated intermediate actor. In other cases, a range of different companies play intermediary roles between leather producing countries and the car industry. Some of the intermediate companies specialise in automotive leather.

The most important Italian leather manufacturers participating in automotive leather are: Gruppo Mastrotto, Rino Mastrotto Group, Pasubio, Gruppo Dani, and Mario Levi.

Gruppo Mastrotto

Gruppo Mastrotto, with seven facilities in Italy, and also one in Brazil and one in Indonesia, is the largest Italian tannery and states that its growing automotive sector supplies leather to Audi, Volkswagen, and Toyota.

Rino Mastrotto

Rino Mastrotto, with five facilities in Italy, also owns Bermas leather in Brazil and Elmo leather with five facilities focused on automotive leather in Sweden, where Volvo is headquartered. The automotive sector of Rino Mastrotto represents 40 per cent of its operations.

Pasubio

Pasubio, with five facilities in Italy, has 90 per cent of its operations linked to automotive leather and states that specialises in luxury automotive upholstery. Pasubio's customers are Tata Motors (luxury brands: Jaguar and Land Rover), Volkswagen Group (Volkswagen and Skoda, and luxury brands: Porsche, Lamborghini, and Bentley), BMW Group (luxury brand: BMW) and PSA Group (Citroen).

Gruppo Dani

Gruppo Dani, has facilities in Italy, Slovenia, and Italy, but also operates in the US and China. Fifty per cent of Gruppo Dani's operations are linked to automotive leather and they state links to the 'German automotive industry'.

Mario Levi

Mario Levi automotive leather has five facilities in Italy and one in Romania and operates in China. Mario Levi's customers appearing in pictures on the company's website are Fiat-Chrysler (Alfa Romeo and Maserati) and Volkswagen Group (Seat).



Image by Victor Moriyama

2.6

The possible routes of Brazilian leather into the European automotive industry

This study found 12 known companies specialising in automotive leather that were directly importing leather from Brazil into various countries around the world between 2018 and 2020.

Table 8 shows the leather imported by weight, main destinations, and main Brazilian suppliers. It is important to note that the suppliers considered for this analysis are the known Brazilian tanneries directly exporting leather from Brazil. Almost 50 per cent of Brazilian leather is exported through logistics companies, which obscures the exporter's identity and highlights the importance of transparency regarding traceability in all stages of the leather supply chain.

From the sample of trading data analysed in this report, it is possible to identify three main leather routes from Brazil to the 12 identified manufacturers specialising in automotive leather. The first route is Brazil - Asia (China, Indonesia, and Thailand), second Brazil - North America (Mexico and US), and third Brazil - Europe (Italy, Germany, and Slovenia).

The Brazil - Asia leather route is mainly supplying leather to the Asian automotive industry, the biggest in the world. China imported 46 per cent of the wet blue leather exported from Brazil between 2018 and 2020, period considered in this report. In 2017, 90 per cent of the finished leather exported by China had Asian countries as the destination with only one per cent going to European countries. Even for the vertically integrated companies, such as Lear, China seems to be supplying finished leather mainly to the Asian market. Data from 2017 shows, for instance, that Eagle Ottawa, the leather specialising affiliated company of Lear, exported 88 per cent of its leather linked products from China to Japan, and only 5 per cent to European countries (Hungary, UK, Germany, and France).

Mexico is the fifth biggest car seat exporter globally, but 99 per cent of these seats are imported by the US and Canada

The Brazil - North America leather route, including Mexico and US as the main importers, is central to the North American automotive industry, the third biggest in the world. Mexico is the fifth biggest car seat exporter globally, but 99 per cent of these seats are imported by the US and Canada. Mexico has also connections to the European leather market, including the automotive sector. There are data showing, for instance, that Gruppo Mastrotto, the main Italian importer of leather from Brazil, exports finished leather to BOS Automotive in Mexico. BOS is a German manufacturer of automotive interiors, including leather products, and exports "car parts" from Mexico to Germany and Sweden, although it is not clear if these exports include leather products.

Mexico can be an intermediate country for leather processing of vertically integrated companies, such as Lear/Eagle Ottawa – 53 percent of the leather imported from Brazil by Lear/Eagle Ottawa is imported to Mexico or the US, mainly by Mexican subsidiaries, such as Eagle Ottawa Mexico. Lear states that they are increasingly spreading their manufacturing capacity of seat components in low-cost regions, which means that the leather used in Lear's car seats around the world might be processed in Mexico up to the sewing stage. Lear/Eagle Ottawa exports car components with leather from its Mexican facilities to their own facilities in Germany and Hungary.

The leather trading route Brazil - Europe is an important route in terms of traceability for the leather used in the European automotive sector. Five out of 12 automotive leather companies were identified directly as importing leather from Brazil to Europe: Lear Corporation/Eagle Ottawa (Germany); Gruppo Mastrotto (Italy), Ambra Automotive Leather (Italy), Mario Levi (Italy), Pasubio (Italy).[1] Among these companies, it was not possible to trace potential links between Ambra Automotive Leather and the European automotive industry.

Ambra Automotive Leather is part of Gruppo Dal Maso. Their operational links are not clear, and there is also a joint operation between Ambra and Mario Levi in South Africa. Ambra Automotive Leather requested an agreement with creditors to avoid bankruptcy in 2019. Although Ambra Automotive Leather is one of the largest Italian automotive leather manufacturers importing leather from Brazil, it is not clear if it is still operating tanneries in Italy under this name, or if this leather is processed by other Italian tanneries or exported to be processed in other countries. Mario Levi, also directly importing leather from Brazil, is mainly focused on automotive leather and has potential links to Fiat-Chrysler luxury brands (Alfa Romeo and Maserati).

1 In the original version of this report identified that Wollsdorf was importing leather directly from Brazil (source: Panjiva data). According to a subsequent dialogue with Wollsdorf, the company informed that the leather imported from JBS Brazil was raw leather originating from the USA, finalized at JBS Couros plant in Brazil.

Table 9

Automotive leather companies directly importing leather from Brazil between 2018 and 2020

Elaborated by Aidenvironment with sources from Panjiva

The sample included in this analysis is representative and helps to indicate the main destinations and importers within the automotive leather sector.

AUTOMOTIVE LEATHER COMPANIES	WEIGHT IMPORTED (TONS)	IMPORTED FROM BRAZIL TO	BRAZILIAN SUPPLIERS
Lear Corporation / Eagle Ottawa	26,420	US/Mexico (53%) Germany/Hungary (19%) China (18%) Thailand (10%)	JBS (60%) Vancouros (34%) Others (6%)
Gruppo Mastrotto	13,605	Italy (73%) Indonesia (27%)	Mastrotto Brasil (63%) Minerva (13%) Marfrig (7%) Coming Couros (7%) Others (11%)
Midori Auto Leather	13,477	China (48%) Mexico (19%) Japan (1%)	Midori Brasil (69%) Minerva (22%) Others (9%)
GST Auto Leather	5,954	China (48%) Mexico (39%) US (12%)	JBS (100%)
Ambra Automotive Leather	1,566	Italy (100%)	JBS (61%) Others (39%)
Mario Levi	1,428	Italy (100%)	Minerva (54%) Vancouros (27%) Durlicouros (19%)
Pasubio	1,300	Italy (100%)	Coming Couros (28%) Fuga Couros (25%) Minerva (24%) Others (23%)
Mingxin	1,054	Cinha (100%)	JBS (100%)
Zhejiang Fubang	636	China (100%)	Minerva (98%) JBS (2%)
Autoliv	155	US (100%)	Bermas (100%)



Image by Victor Moriyama

2.7

Case studies - The European automotive industry's exposure to deforestation through leather

The case studies presented in this section identify potential links between leather used by the European automotive sector and Brazilian leather exporters exposed to deforestation, focusing on automotive leather manufacturers directly importing leather from Brazil.

Even if some automotive leather manufacturers in Europe list the car brands they supply leather to, the supply chain links between them and car seat and other interior components manufacturers are not always clear. The exposure to deforestation of four automotive companies included in the case studies are summarised in Table 10, whilst other car manufacturers are also part of the case studies.

Table 10

European automotive industry exposure to deforestation in the Brazilian Legal Amazon (Amazon and part of the Cerrado biome) in 2019 and 2020

Elaborated by Aidenvironment

AUTOMOTIVE COMPANIES	CAR SEAT MANUFACTURER	AUTOMOTIVE LEATHER MANUFACTURER	BRAZILIAN SUPPLIERS	DEFORESTATION EXPOSURE (HA)	
Volkswagen Group	?	Gruppo Mastrotto (Italy)	Vancouros, Minerva Couros, Mastrotto Brasil, JBS Couros	JBS Couros Vancouros Fuga Couros Minerva Couros Mastrotto Brasil	1.15 million 0.80 million 0.47 million 0.48 million Unknown
	?	Pasubio (Italy)	Minerva Couros, Fuga Couros		
	Lear	Eagle Ottawa (Germany/Hungary)	JBS Couros, Vancouros		
BMW Group	?	Pasubio (Italy)	Minerva Couros, Fuga Couros	JBS Couros Vancouros Fuga Couros Minerva Couros	1.15 million 0.80 million 0.47 million 0.48 million
	Lear	Eagle Ottawa (Germany/Hungary)	JBS Couros, Vancouros		
Daimler	Lear	Eagle Ottawa (Germany/Hungary)	JBS Couros, Vancouros	JBS Couros Vancouros	1.15 million 0.80 million
PSA Group*	?	Pasubio (Italy)	Minerva Couros, Fuga Couros	JBS Couros Fuga Couros Minerva Couros	1.15 million 0.47 million 0.48 million
Groupe Renault**	Adient, Magna	?	?	?	?

(*) PSA Group recently merged with Fiat-Chrysler. The joint venture is named Stellantis, and the new company is exposed to deforestation both through PSA Group's operations and through Fiat-Chrysler's operations. This report considers the deforestation risk of PSA Groupe only, as the merging of the two companies happened posterior to the period studied in this report.

(**) The methods and data used in the study did not identify a proven link between Groupe Renault and the Brazilian leather exporters although it is known that Groupe Renault has links to Adient and Magna, two of the top five car seat manufactures supplying the European Automotive market and with a high risk of using Brazilian leather'

Case One: Gruppo Mastrotto

Gruppo Mastrotto is the largest importer of leather from Brazil among the automotive leather manufacturers identified in this study.

Gruppo Mastrotto sources leather from different Brazilian tanneries: JBS Couros and Vancouros are the tanneries which had the highest involvement in deforestation in the Amazon and Cerrado biomes in 2019 and 2020.

JBS Couros JBS Couros was exposed to 896,033 hectares of deforestation in the Amazon and 257,266 hectares in Cerrado biome, whilst **Vancouros**, was involved in deforestation of 640,266 hectares in the Amazon biome and 161,403 hectares in the Cerrado biome.

Minerva Couros is highly likely to be exposed to deforestation as they state that they supply leather from their own slaughterhouses, with involvement in 263,591 hectares of deforestation in the Amazon biome and 219,440 hectares in the Cerrado biome.

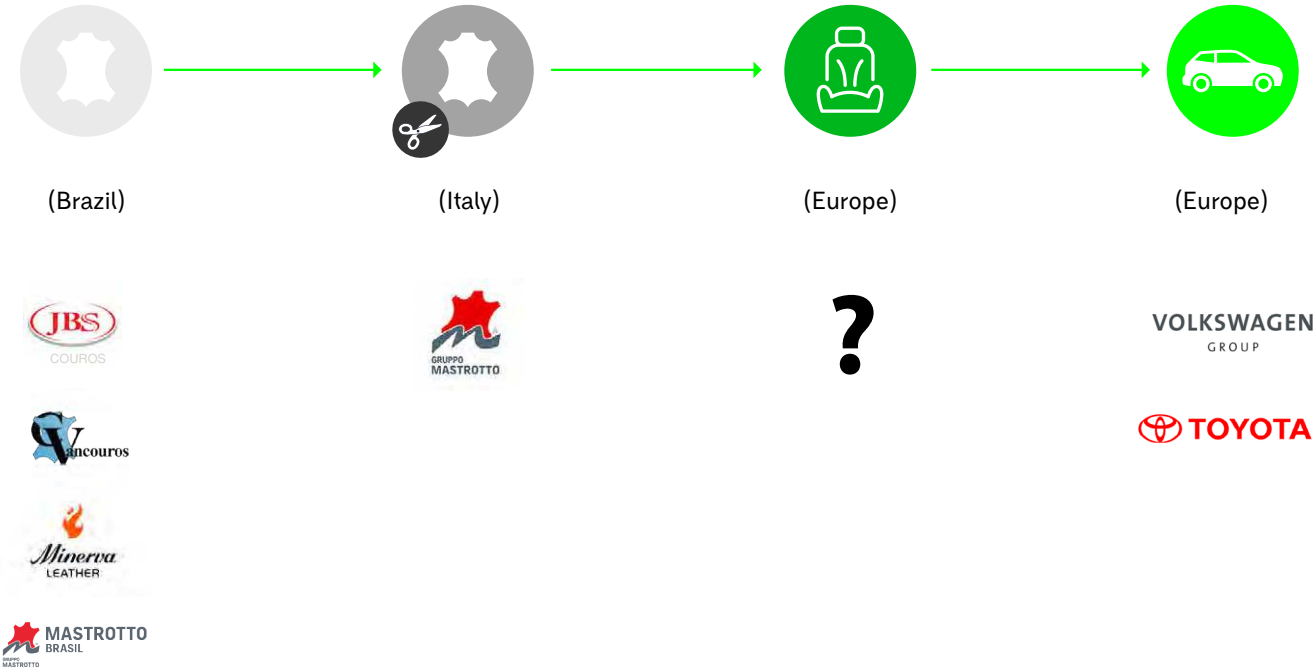
The only tannery of **Mastrotto Brasil** (owned by Gruppo Mastrotto) is in Bahia state and it was not possible to calculate its exposure to deforestation through the data and methods used in the study.

JBS Couros is potentially linked to all eight cases of recent deforestation presented in the first part of this report (page 52); Minerva Couros to three cases; and Vancouros to five cases. Although it is not clear who Gruppo Mastrotto's customers are within the largest car seat manufacturers operating in Europe, the group states that they supply leather to **Audi and Volkswagen** (Volkswagen Group), and to **Toyota** (Toyota Motors).

Figure 30

Elaborated by Aidenvironment

JBS Couros, Vancouros, Minerva Couros, and Mastrotto Brasil (Brazil) → Gruppo Mastrotto (Italy)



Case Two: Pasubio

Pasubio has 90 per cent of its operations focused on automotive leather and states that it specialises in supplying luxury car brands.

Pasubio sources only wet blue leather from Minerva Couros and Fuga Couros.

Minerva Couros is highly likely to be involved in deforestation as they supply leather from their own slaughterhouses, with exposure to 263,591 hectares of deforestation in the Amazon biome and 219,440 hectares in the Cerrado biome.

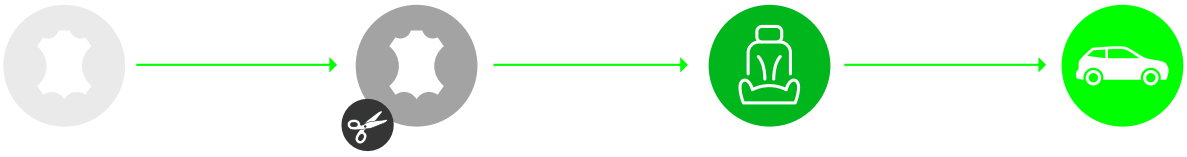
Fuga Couros is also owner of Frigosul, with slaughterhouses in Mato Grosso, Mato Grosso do Sul and São Paulo and states that it sources leather from its own slaughterhouses, with exposure to 237,266 hectares of deforestation in the Amazon biome and 233,584 hectares in the Cerrado biome between 2019 and 2020.

Minerva Couros is potentially linked to three out of the eight cases of recent deforestation presented in the first part of this report (page 52) and Fuga Couros to five cases. Although it is not clear who is the car seat manufacturer sourcing leather from Pasubio to supply the automotive industry, Pasubio states that its customers are Tata Motors ('luxury' brands: **Jaguar and Land Rover**), Volkswagen Group (Volkswagen and Skoda, and 'luxury' brands: **Porsche, Lamborghini**, and **Bentley**), BMW Group ('luxury' brand: **BMW**) and PSA Group ('luxury' brand: **DS Automobile**).

Figure 31

Elaborated by Aidenvironment

Minerva Couros and Fuga Couros (Brazil) → **Pasubio (Italy)**



(Brazil) (Italy) (Europe) (Europe)

Minerva Foods

PASUBIO LEATHER

?

VOLKSWAGEN GROUP

Fuga COUROS S/A

BMW GROUP

PSA GROUPE

TATA

JAGUAR

LAND ROVER

Case Three: Eagle Ottawa

The Brazilian leather suppliers to Eagle Ottawa in Hungary (through Germany) are JBS and Vancouros.

Although the leather imported by Eagle Ottawa is finished leather, it has a high deforestation connection.

JBS and Vancouros have tanning facilities specialising in wet blue with potential links to slaughterhouses operating in the Legal Amazon, and their exported finished leather, even if processed in tanneries not directly linked to slaughterhouses in the Legal Amazon, may originate from wet blue produced in these facilities.

The analysis in this report shows that between 2019 and 2020 **JBS Couros** had the highest exposure to deforestation, totalling 896,033 hectares in the Amazon biome and 257,266 hectares in Cerrado biome.

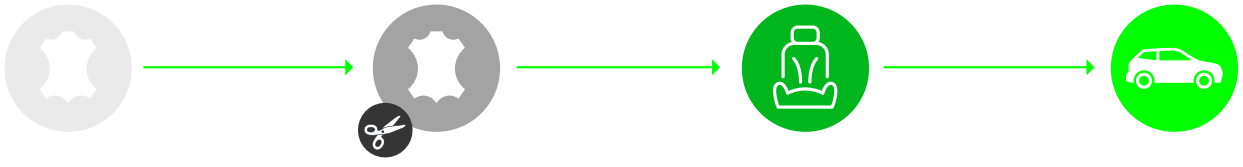
Vancouros, the second largest leather exporter considered in this study, was involved in 640,266 hectares of deforestation in Amazon biome and 161,403 hectares in Cerrado biome.

JBS Couros is potentially linked to all eight cases of recent deforestation presented in the first part of this report and Vancouros to five cases (page 52). Lear states that it supplies car seats to luxury brands from **Fiat-Chrysler** (Alfa Romeo and Maserati), **Volkswagen Group** (Audi, Lamborghini, and Porsche), **BMW Group**, Tata Motors (**Jaguar and Land Rover**), **General Motors** (Cadillac), **Ford Motors** (Lincoln), and **Daimler** (Mercedes-Benz).

Figure 32

Elaborated by Aidenvironment

JBS Couros and Vancouros (Brazil) → **Eagle Ottawa (Germany/Hungary)**



JBS COUROS

Vancouros

EAGLE OTTAWA AUTOMOTIVE LEATHER

LEAR

LEAR CORPORATION

VOLKSWAGEN GROUP

DAIMLER

BMW GROUP

FCA FIAT CHRYSLER AUTOMOBILES

TATA

JAGUAR

LAND ROVER

General Motors

Ford



Image by Victor Moriyama

Appendix One

Deforestation exposure of slaughterhouses in Legal Amazon

Beef processors	Number of facilities	Prodes 2019 & 2020 (hectares)		Total (hectares)	Deforestation exposure per facility (hectares)	Sample of direct and indirect Suppliers (hectares)*	
		Amazon	Cerrado			Amazon	Cerrado
JBS	21	1,082,277	259,220	1,341,497	63,881	4,561	6,010
Minerva	4	263,591	219,441	483,032	120,758	418	542
Marfrig	5	243,067	94,977	338,044	67,608	600	991
Total		**1,588,935**	**573,638**	**2,162,573**	-	**5,579**	**7,543**
Total (excluding overlapping)		**1,085,898**	**259,220**	**1,345,118**	-	-	-

* The sample of direct and indirect suppliers to the meatpackers represents only a small part of the suppliers to JBS, Minerva and Marfrig and only includes suppliers from the states of Goiás, Minas Gerais, Mato Grosso, Mato Grosso do Sul, Pará and Tocantins, where we were able to geographically locate the suppliers' properties to check recent deforestation. For JBS, this sample includes 983 direct and 1,874 indirect suppliers; for Marfrig, 348 direct and 678 indirect suppliers; and for Minerva, 214 direct and 612 indirect suppliers.

Some highlights:

- Note that the deforestation included in this analysis is not exclusively linked to the cattle supply chain and might be also linked to other sectors such as logging or agriculture. However, in Amazon biome deforestation is more likely linked to the cattle sector due to the land use change pattern there (timber-cattle-crops). Between 2018 and 2019, 83 per cent of the conversion from native vegetation (mainly forest) was directly to pasture and only five per cent to agriculture, while in Cerrado the conversion from native vegetation (forest and savannah) directly to pasture was 57 per cent and to agriculture 27 per cent. Bear in mind that most of the forest recently converted into pasture in Cerrado is also being converted into crop plantations faster than in Amazon.

- In Amazon biome, for the period between August 2018 and July 2020, based on confirmed deforestation data by Prodes (INPE), we found that the slaughterhouses of the three main meat packers operating in Brazil (JBS, Minerva, and Marfrig) were exposed to a total of 1,588,935 hectares of deforestation.

- In Cerrado biome, for the period between August 2018 and July 2020, based on confirmed deforestation data by Prodes (INPE), we found that the slaughterhouses of the three main meat packers operating in Brazil (JBS, Minerva, and Marfrig) were exposed to a total of 573,638 hectares of deforestation.

- While JBS is exposed to more deforestation because it has more than four times the number of slaughterhouses of Minerva and Marfrig (JBS - 21, Minerva - 4, Marfrig - 5) operating in the Legal Amazon, Minerva has the higher exposure to deforestation per slaughterhouse: Minerva – 120,758 ha/slaughterhouse; Marfrig – 67,608 ha/slaughterhouse; and JBS – 63,881 ha/slaughterhouse.

- Considering the limited sample of confirmed direct and indirect suppliers to the slaughterhouses of the three main meat packers operating in Brazil (JBS, Marfrig, and Minerva), we found a total deforestation of 5,579 hectares in Amazon, and 7,543 hectares in Cerrado, taking place on suppliers' properties between August 2018 and July 2020.

- Direct and indirect suppliers' properties within the analysed sample with deforestation between August 2018 and July 2020 were the starting point for the identification of case studies linking deforestation to the final user of the leather product.

Amazon Biome
Detailed data on deforestation exposure of JBS's slaughterhouses in the Legal Amazon (Amazon biome)

JBS Slaughterhouses			Buying Zones in Amazon biome		Total	Sample of direct and indirect Suppliers		Total
			Prodes (2019)	Prodes (2020)		Prodes (2019)	Prodes (2020)	
1	Colíder	MT	124,361	127,197	251,558	101	82	183
2	Alta Floresta	MT	121,464	119,773	241,237	192	93	285
3	Pimenta Bueno	RO	115,876	107,984	223,860	-	-	-
4	Tucumã	PA	88,838	86,349	175,187	16	22	38
5	Juara	MT	90,053	59,183	149,236	141	1,387	1,528
6	Marabá	PA	72,031	77,035	149,066	12	7	19
7	Porto Velho	RO	77,838	70,334	148,172	-	-	-
8	São Miguel do Guaporé	RO	78,169	68,132	146,301	37	-	37
9	Juína	MT	63,312	54,223	117,535	141	91	232
10	Rio Branco	AC	58,999	52,697	111,696	-	-	-
11	Araguaína	TO	48,255	47,795	96,050	7	10	17
12	Água Boa	MT	15,267	29,901	45,168	33	125	158
13	Confresa	MT	11,894	20,065	31,959	133	19	152
14	Redenção	PA	14,464	16,842	31,306	6	62	68
15	Vilhena	RO	17,352	12,536	29,888	-	-	-
16	Santana do Araguaia	PA	10,659	18,379	29,038	76	198	274
17	Diamantino	MT	12,337	15,914	28,251	37	39	76
18	Araputanga	MT	13,689	8,319	22,008	-	-	-
19	Pedra Preta	MT	4,315	12,353	16,668	-	-	-
20	Pontes e Lacerda	MT	4,602	2,776	7,378	771	618	1,389
21	Barra do Garças	MT	1,252	411	1,663	48	59	107
Total			**1,045,027**	**1,008,197**	**2,053,224**	**1,749**	**2,812**	**4,561**
Total (excluding overlapping)			**526,749**	**555,529**	**1,082,277**	-	-	-

Some highlights:

- JBS's slaughterhouse in Colíder (Mato Grosso) has the biggest exposure to deforestation within Amazon biome, with a total of 251,558 hectares of deforestation found in its buying zone, followed by JBS's slaughterhouses in Alta Floresta (Mato Grosso), in Pimenta Bueno (Rondônia) and in Tucumã (Pará).

- The sample of direct and indirect suppliers to JBS's slaughterhouses showed the highest deforestation happening in suppliers' properties in Juara (Mato Grosso) and in Pontes e Lacerda (Mato Grosso).

Detailed data on deforestation exposure of Minerva's slaughterhouses in the Legal Amazon (Amazon biome)

	Minerva Slaughterhouses		Buying Zones in Amazon biome		Total	Sample of direct and indirect Suppliers		Total
			Prodes (2019)	Prodes (2020)		Prodes (2019)	Prodes (2020)	
1	Rolim de Moura	RO	71,241	57,397	128,638	-	-	-
2	Araguaína	TO	44,631	44,111	88,742	44	-	44
3	Paranatinga	MT	8,595	18,751	27,346	48	59	107
4	Mirassol D'Oeste	MT	15,115	9,878	24,993	-	267	267
		Total	**139,582**	**130,137**	**269,719**	**92**	**326**	**418**
	Total (excluding overlapping)		**135,078**	**128,513**	**263,591**	-	-	-

Some highlights:

- Minerva's slaughterhouse in Rolim de Moura (Rondônia) has the biggest exposure to deforestation within Amazon biome, with a total of 128,638 hectares of deforestation found in its buying zone, followed by Minerva's slaughterhouses in Araguaína (Tocantins), and in Paranatinga (Mato Grosso).

- The sample of direct and indirect suppliers to Minerva's slaughterhouses showed the highest deforestation in suppliers' properties in Mirassol D'Oeste (Mato Grosso) and in Paranatinga (Mato Grosso).

Detailed data on deforestation exposure of Marfrig's slaughterhouses in the Legal Amazon (Amazon biome)

	Marfrig Slaughterhouses[1]		Buying Zones in Amazon biome		Total	Sample of direct and indirect Suppliers		Total
			Prodes (2019)	Prodes (2020)		Prodes (2019)	Prodes (2020)	
1	Tucumã	PA	88,504	86,193	174,697	2	-	2
2	Chupinguaia	RO	24,588	19,578	44,166	-	-	-
3	Nova Xavantina	MT	5,740	15,061	20,801	1	-	1
4	Tangará da Serra	MT	11,802	8,577	20,379	99	482	581
5	Várzea Grande	MT	1,930	2,159	4,089	14	3	17
		Total	**132,564**	**131,568**	**264,132**	**115**	**485**	**600**
	Total (excluding overlapping)		**126,097**	**116,970**	**243,067**	-	-	-

Some highlights:

- Marfrig's slaughterhouse in Tucumã (Pará) has the biggest exposure to deforestation within Amazon biome, with a total of 174,697 hectares of deforestation found in its buying zone, followed by Marfrig's slaughterhouses in Chupinguaia (Rondônia), and Nova Xavantina (Mato Grosso).

- The sample of direct and indirect suppliers to Marfrig's slaughterhouses showed the highest deforestation happening in suppliers' properties in Tangará da Serra (Mato Grosso) and in Várzea Grande (Mato Grosso).

1 The Marfrig slaughterhouse in Ji-Paraná (RO) was not included in the analysis for not being operating in the time of the Imazon study on slaughterhouses' buying zones, part of the methods of the present study.

Cerrado Biome

Detailed data on deforestation exposure of JBS's slaughterhouses in the Legal Amazon (Cerrado biome)

	JBS Slaughterhouses		Buying Zones in Cerrado biome		Total	Sample of direct and indirect Suppliers		Total
			Prodes (2019)	Prodes (2020)		Prodes (2019)	Prodes (2020)	
1	Araguaína	TO	73,221	80,540	153,761	94	544	638
2	Pedra Preta	MT	37,070	33,640	70,710	112	91	203
3	Água Boa	MT	36,779	31,634	68,413	1,190	812	2,002
4	Araputanga	MT	21,421	21,551	42,972	2	-	2
5	Barra do Garças	MT	22,007	19,997	42,004	1,287	1,201	2,488
6	Diamantino	MT	21,356	19,858	41,214	110	120	230
7	Pontes e Lacerda	MT	16,951	17,566	34,517	7	12	19
8	Confresa	MT	9,606	9,124	18,730	182	196	378
9	Vilhena	RO	1,517	3,484	5,001	-	-	-
10	Juara	MT	1,673	1,095	2,768	3	-	3
11	Juína	MT	1,328	800	2,128	13	32	45
12	Colíder	MT	1,210	683	1,893	3	-	3
13	Alta Floresta	MT	74	256	330	-	-	-
14	Redenção	PA	76	21	97	-	-	-
15	Santana do Araguaia	PA	76	21	97	-	-	-
16	Pimenta Bueno	RO	15	6	21	-	-	-
		Total	**244,379**	**240,276**	**484,655**	**3,002**	**3,008**	**6,010**
	Total (excluding overlapping)		**128,105**	**131,115**	**259,220**	-	-	-

Some highlights:

- JBS's slaughterhouse in Araguaína (Tocantins) has the biggest exposure to deforestation within Cerrado biome, with a total of 153,761 hectares of deforestation found in its buying zone, followed by Pedra Preta (Mato Grosso) and Água Boa (Mato Grosso).

- The sample of direct and indirect suppliers to JBS's slaughterhouses showed the highest deforestation happening in suppliers' properties in Barra do Garças (Mato Grosso) and in Água Boa (Mato Grosso).

Detailed data on deforestation exposure of Minerva's slaughterhouses in the Legal Amazon (Cerrado biome)

	Minerva's Slaughterhouses		Buying Zones in Cerrado biome		Total	Sample of direct and indirect Suppliers		Total
			Prodes (2019)	Prodes (2020)		Prodes (2019)	Prodes (2020)	
1	Araguaína	TO	71,654	79,370	151,024	315	3	318
2	Paranatinga	MT	24,147	20,903	45,050	212	12	224
3	Mirassol D'Oeste	MT	21,702	21,946	43,648	-	-	-
4	Rolim de Moura	RO	41	95	136	-	-	-
	Total		**117,544**	**122,314**	**239,858**	**527**	**15**	**542**
	Total (excluding overlapping)		**106,691**	**112,749**	**219,441**	-	-	-

Some highlights:

- Minerva's slaughterhouse in Araguaína (Tocantins) has the biggest exposure to deforestation within Cerrado biome, with a total of 151,024 hectares of deforestation found in its buying zone, followed by Paranatinga (Mato Grosso), and Mirassol D'Oeste (Mato Grosso).

- The sample of direct and indirect suppliers to Minerva's slaughterhouses showed the highest deforestation happening in suppliers' properties in Araguaína (Tocantins) and in Paranatinga (Mato Grosso).

Detailed data on deforestation exposure of Marfrig's slaughterhouses in the Legal Amazon (Cerrado biome)

	Marfrig's Slaughterhouses[1]		Method	Buying Zones in Cerrado biome		Total	Sample of direct and indirect Suppliers		Total
				Prodes (2019)	Prodes (2020)		Prodes (2019)	Prodes (2020)	
1	Nova Xavantina	MT	BZ	30,242	25,615	55,857	369	341	710
2	Várzea Grande	MT	BZ	24,051	22,622	46,673	108	-	108
3	Tangará da Serra	MT	BZ	21,049	20,982	42,031	97	76	173
4	Chupinguaia	RO	BZ	682	2,554	3,236	-	-	-
5	Tucumã	PA	BZ	375	283	658	-	-	-
			Total	**76,400**	**72,056**	**148,456**	**574**	**417**	**991**
			Total (excluding overlapping)	**49,662**	**45,316**	**94,977**	-	-	-

Some highlights:

- The Marfrig slaughterhouse in Nova Xavantina (Mato Grosso) has the biggest exposure to deforestation within Cerrado biome, with a total of 55,857 hectares of deforestation found in its buying zone, followed by Várzea Grande (Mato Grosso), and Tangará da Serra (Mato Grosso).

- The sample of direct and indirect suppliers to Marfrig's slaughterhouses showed the highest deforestation happening in suppliers' properties in Nova Xavantina (Mato Grosso) and in Tangará da Serra (Mato Grosso).

1 The Marfrig slaughterhouse in Ji-Paraná (RO) was not included in the analysis for not being operating in the time of the Imazon study on slaughterhouses' buying zones, part of the methods of the present study.

Appendix Two

Profile and Export data of the largest leather exporters in Brazil

JBS Couros – Export data and Tanneries

JBS Couros - Exports								
Linked Companies	JBS Brazil (beef and leather production)		35 meatpacking plants in Brazil					
			24 leather production facilities worldwide (15 in Brazil)					
			18 distribution centers					
			5 beef cattle feedlots					
Leather export	Name exporter		Position	Weight	Total	Type of leather		
	JBS / JBS SA		**#2**	**187,278,641**	**14.88%**	Wet Blue	78 %	
						Finished	22%	
Three Main Destinations & Importers	Country		Importer					
	China & Hong Kong	46.87%	Tongxiang Gaoqiao Leather Co., Ltd.					4.45%
			Chief Movement Ltd.					4.33%
			Luen Fung Leather Fty Trading Co.					3.61%
	Vietnam	17.69%	Dona Que Bang Industrial Co., Ltd.					10.60%
			Lamipel Vietnam Llc					3.06%
			Chief Movement Ltd.					1.81%
	Italy	10.29%	Conceria Priante Srl					4.09%
			Lamipel Sp A					2.64%
			Conceria Montebello Sp A					0.69%

JBS Couros – Tanneries						
Owner		Municipality	State	Main Product	Capacity	LGW
1	JBS SA	São Luís De Montes Belos	GO	Wet Blue	Unknown	Yes
2	JBS SA	Porangatu	GO	Wet Blue	Unknown	Yes
3	JBS SA	Naviraí	MS	Wet Blue	Unknown	Yes
4	JBS SA	Nova Andradina	MS	Wet Blue	Unknown	Yes
5	JBS SA	Barra Do Garças	MT	Wet Blue	Unknown	Yes
6	JBS SA	Colíder	MT	Wet Blue	Unknown	Yes
7	JBS SA	Marabá	PA	Wet Blue	Unknown	Yes
8	JBS SA	Colorado Do Oeste	RO	Wet Blue	Unknown	Yes
9	JBS SA	Cacoal	RO	Wet Blue	Unknown	Yes
10	JBS SA	Pedra Preta	MT	Wet Blue	Unknown	Yes
11	JBS SA	Itumbiara	GO	Finished (Automotive, Upholstery)	Unknown	Yes
12	JBS SA	Uberlandia	MG	Finished (Automotive, Footwear, Upholstery)	Unknown	Yes
13	JBS SA	Cascavel	CE	Finished (Automotive, Footwear, Upholstery)	Unknown	Yes
14	JBS SA	Lins	SP	Finished (Automotive)	Unknown	Yes
15	JBS SA	Montenegro	RS	Finished (Automotive, Upholstery)	Unknown	Yes

Vancouros – Export data and Tanneries

Vancouros - Exports							
Linked Companies	Curtume Blubras (Vancouros/Viposa)			Sinop (MT), Rolândia (PR)			
	Indústria e Comércio de Couros Internacional			Rolândia (PR)			
	Curtidora Tocantins (Vancouros/Viposa)			Colinas do Tocantins (TO), Redenção (PA)			
	Vanleather Indústria e Comércio de Couros			Assis (SP), Rolândia (PR)			
	Bluamerica Indústria de Couros (Vancouros/ Viposa/Durlicouros)			Presidente Médici (RO)			
	Blubrasil Indústria e Comércio de Couros (Vancouros/Viposa/Durlicouros)			Bataguassu (MS)			
	Curtume Vanzella			Rolândia (PR)			
Leather export	Name exporter		Position	Kg	Total	Type of leather	
	Vancouros/Vanleather/Curtidora Tocantins		**#6**	**59,424,736**	**4.72%**	Wet Blue	81.7%
						Finished	18.3%
Three Main Destinations & Importers	Country		Importer				
	China & Hong Kong	44.58%	Trends Leather Yangzhou Co., Ltd.				14.10%
			Jinjiang Guoyuan Leather Industry Co., Ltd.				6.46%
			Haining Huayi Trading Co., Ltd.				3.36%
	Italy	29.77%	Faeda Sp A				6.50%
			Lamipel Sp A				6.08%
			Crest leather Ltd.				4.86%
	United States	8.85%	Lear Mexican Seating Corp				8.17%
			Kamali Group Inc.				0.17%
			Cargill Inc.				0.13%

Vancouros - Tanneries						
Owner		Municipality	State	Main Product	Capacity	LGW
1	Vancouros	Rolândia	PR	Wet Blue, finished (Automotive, Upholstery)	Unknown	Yes
2	Curtume Araçatuba (Vancouros)	Araçatuba	SP	Unknown	Unknown	No
3	Bluamerica Indústria de Couros (Vancouros/Viposa Durlicouros)	Presidente Médici	RO	Wet Blue	1,500/day	No
4	Curtume Blubras (Vancouros/Viposa)	Sinop	MT	Unknown	Unknown	No
5	Curtidora Tocantins (Vancouros/Viposa)	Colinas do Tocantins	TO	Unknown	Unknown	No
6	Blubrasil Indústria e Comércio de Couros (Vancouros/Viposa/Durlicouros)	Bataguassu	MS	Unknown	Unknown	No

Minerva Couros - Export data & Tanneries

Minerva Couros - Exports							
Linked companies	Minerva Foods	11 slaughterhouses in Brazil 9 distribution centers					
Leather export	Name exporter	Position	Kg	Total	Type of leather		
	Minerva SA	**#4**	**59,925,994**	**4.76%**	Wet Blue	99.9%	
					Finished	0.1%	
Three Main Destinations & Importers	Country		Importer				
	China & Hong Kong	46.99%	Haining Huayi Trading Co., Ltd.			9.75%	
			Zhejiang Tongtianxing Group Co., Ltd.			7.79%	
			Midori Auto Leather China Co., Ltd.			4.93%	
	Italy	35.88%	Natuzzi Sp A			8.11%	
			Crest Leathers Ltd.			6.19%	
			Gruppo Mastrotto Sp A			2.92%	
	Vietnam	9.32%	Prime Asia Vietnam Co., Ltd.			7.33%	
			Saigon Tan Tec Leather Ltd.			1.44%	
			Mega International Ltd.			0.27%	

Minerva Couros – Tanneries						
Owner		Municipality	State	Main Product	Capacity	LGW
1	Minerva Couros	Barretos	SP	Wet Blue, semi-finished	14,000/day	No

Fuga Couros - Export data & Tanneries

Fuga Couros - Exports								
Linked Companies	NH Comércio de Couros e Derivados		Novo Hamburgo (RS)					
	Luiz Fuga Indústria de Couro		São Leopoldo (RS), Governador Edison Lobão (MA)					
	Maranhão Indústria de Couros		Governador Edison Lobão (MA)					
	Tocantins Comercial de Couros		São Leopoldo (RS)					
	Fuga e Panorama Indústria de Couros		Cáceres (MT)					
Leather export	Name exporter		Position	Kg	Total	Type of leather		
	Fuga Couros / Fuga Couros Jales / Luiz Fuga / Tocantins Comercial		**#7**	**50,517,006**	**4.01%**	Wet Blue	97.5%	
						Finished	2.5%	
Three Main Destinations & Importers	Country		Importer					
	China & Hong Kong	60.19%	Zibo Dahuanjiu Polygrace Tannery				6.56%	
			Chengdu Lanpai Synplus Leather Industry				3.80%	
			Zhejiang Tongtianxing Group				3.75%	
	Italy	18.27%	Fimap				1.84%	
			Lapelle				1.82%	
			Conceria Italia				1.80%	
	Portugal	4.26%	Lamifil Indústria e Comércio				2.17%	
			Curtivil Indústria Curtumes				0.66%	
			Derma Leather Comércio e Indústria de Peles				0.38%	

Fuga Couros - Tanneries						
Owner		Municipality	State	Main Product	Capacity	LGW
1	Fuga Couros S.A.	Marau	RS	Semi-Finished, Finished	3,500/day	Yes
2	Fuga Couros S.A.	Jales	SP	Wet blue	4,000/day	Yes
3	Fuga Couros S.A.	Hidrolândia	GO	Wet blue	3,000/day	Yes
4	Fuga Couros S.A.	Parnaíba	MS	Wet blue	3,000/day	No
5	Fuga Couros S.A.	Várzea Grande	MT	Wet blue	1,000/day	No
6	Fuga e Panorama Indústria de Couros	Cáceres	MT	Unknown	Unknown	No
7	Maranhão Indústria de Couros	Governador Edison Lobão	MA	Unknown	Unknown	No

Durlicouros - Export data & Tanneries

Durlicouros - Exports								
Linked companies	Durli Agropecuária Ltda (farm)				Canarana (MT)			
	Frigo Verona Ltda (Frigozan) (slaughterhouse)				Matupá (MT)			
	Frigorífico Juruena Eireli (slaughterhouse)				Juruena (MT)			
	Friouro Frigorifico Ltda (slaughterhouse)				Matupá (MT)			
Leather export	Name exporter		Position	Kg	Total	Type of leather		
	Durlicouros Indústria e Comércio de Couros Exportação e Importação Ltda		**#8**	**39,189,302**	**3,11%**	Wet Blue	93.8%	
						Finished	6.2%	
Three Main Destinations & Importers	Country		Importer					
	China	64,58%	Htl Mfg. Pte., Ltd.			20,00%		
			Trends Leather Yangzhou Co., Ltd.			14,95%		
			Tongxiang Gaoqiao Leather Co., Ltd			14,68%		
	Italy	29,18%	Lapelle Srl			8,33%		
			Conceria Cristina Sp A			3,07%		
			Dalloro Pelli Srl			2,13%		
	India	2,56%	Reliance Chemicals			0,93%		
			New Horizons Pvt., Ltd.			0,40%		
			Model Exims Pvt., Ltd.			0,34%		

Durlicouros - Tanneries						
Owner		Municipality	State	Main Product	Capacity	LGW
1	Durlicouros	Cuiabá	MT	Wet Blue	4,000/day	Yes
2	Durlicouros	Xinguara	PA	Wet Blue	4,500/day	Yes
3	Durlicouros	Wanderlândia	TO	Wet Blue	3,000/day	Yes
4	Durlicouros	Santa Terezinha	BA	Tannery under construction	Unknown	No
5	Durlicouros	São José Dos Pinhais	PR	Unknown	Unknown	No
6	Brascouros (Durlicouros)	Erechim	RS	Semi-Finished, Finished	3,000/day	No

Mastrotto Brasil - Export data & Tanneries

Mastrotto Brasil - Exports							
Linked companies	Satto Agropecuaria Ltda		Cachoeira (BA)				
Leather export	Name exporter		Position	Kg	Total	Type of leather	
	Mastrotto Brasil / Mastrotto Reichert Sa		**#9**	**26,620,938**	**2.11%**	Wet Blue	73.9%
						Finished	26.1%
Three Main Destinations & Importers	Country		Importer				
	China	38,44%	Tong Hong Beihai Trading Co., Ltd.				16.92%
			Tong Hong Tannery Bei Hai Co., Ltd.				10.09%
			Les Champs International Agricultural Product Trade				4.57%
	Vietnam	27.53%	Tong Hong Tannery Vietnam Jsc / Tong Hong Tannery Vietnam Co., Ltd.				27.10%
			Chief Movement Ltd.				0.43%
	Italy	23,29%	Gruppo Mastrotto Sp A				21.44%
			Sapa Sp A				1.76%
			Italia Living Srl				0.07%

Mastrotto Brasil - Tanneries						
	Owner	Municipality	State	Main Product	Capacity	LGW
1	Mastrotto Brasil SA	Cachoeira	BA	Automotive, Upholstery	Unknown	Yes

Viposa - Export data & Tanneries

Viposa - exports							
Linked Companies	Curtume Blubras (Vancouros/Viposa)			Sinop (MT), Rolândia (PR)			
	Curtidora Tocantins (Vancouros/Viposa)			Colinas do Tocantins (TO), Redenção (PA)			
	Blubrasil Indústria e Comércio de Couros (Vancouros/Viposa)			Bataguassu (MS)			
Leather export	Name exporter	Position	Kg	Total	Type of leather		
	Viposa Sa	**#10**	**23,926,048**	**1.90%**	Wet Blue	95.4%	
					Finished	4.6%	
Three Main Destinations & Importers	Country		Importer				
	China	44.75%	Tongxiang Gaoqiao Leather Co., Ltd.			21.67%	
			Fengan Leather Enterprise Co., Ltd.			7.81%	
			Htl Mfg. Pte., Ltd.			2.36%	
	Italy	24.52%	Conceria Volpiana Sp A			4.53%	
			Unicredit Sp A			2.99%	
			Pangea Srl			2.95%	
	Vietnam	7.72%	Lamipel Vietnam Llc			5.00%	
			Prime Asia Vietnam Co., Ltd.			2.06%	
			C & U Co., Ltd.			0.28%	

Viposa – Tanneries						
Owner		Municipality	State	Main Product	Capacity	LGW
1	Viposa SA	Várzea Grande	MT	Wet Blue	Unknown	Yes
2	Viposa SA	Nova Andradina	MS	Unknown	Unknown	No
3	Viposa SA	Caçador	SC	Unknown	Unknown	No



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