



**REPÓRTER
BRASIL**

FROM BRAZILIAN FARMS TO EUROPEAN TABLES

MARCH 2021

**SOCIO-ENVIRONMENTAL IMPACTS
AND LABOR VIOLATIONS IN BRAZIL-EU
AGRICULTURAL SUPPLY CHAINS
(BEEF, ORANGE, COFFEE AND COCOA)**

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STAFF



“FROM BRAZILIAN FARMS TO EUROPEAN TABLES – SOCIO-ENVIRONMENTAL IMPACTS AND LABOR VIOLATIONS IN BRAZIL-EU AGRICULTURAL SUPPLY CHAINS (BEEF, ORANGE, COFFEE AND COCOA)”

MARCH 2021

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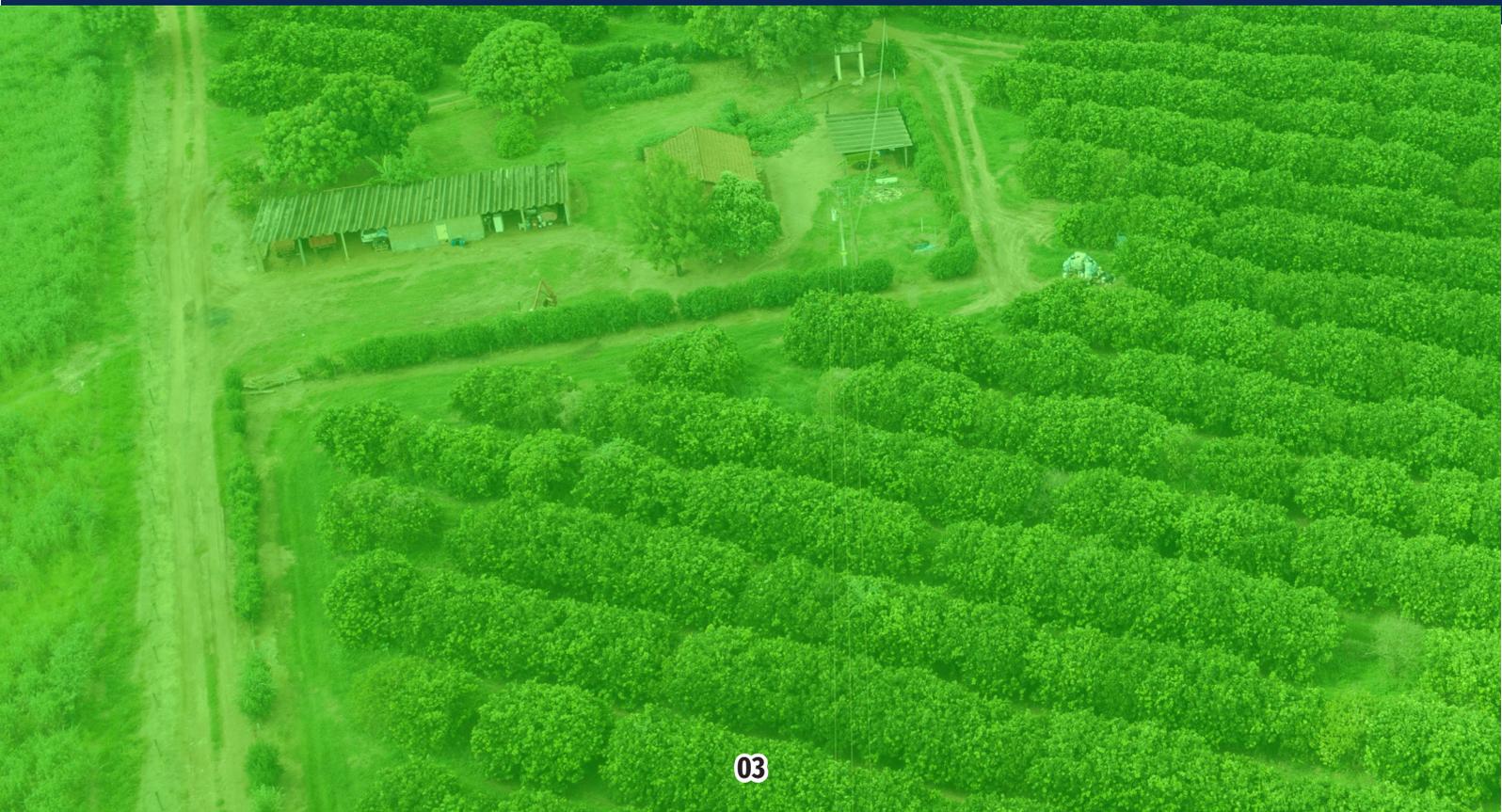
Co-funded by
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This publication was produced with financial support from the European Union. Repórter Brasil is solely responsible for the contents of this document, which cannot be regarded as reflecting the view of the European Union under any circumstances.

CONTENTS

PRESENTATION	04
EXECUTIVE SUMMARY	05
INTRODUCTION	08
BEEF	12
ORANGE	17
COFFEE	21
COCOA	25



PRESENTATION



This publication gathers data on socio-environmental and labor impacts of the supply chains of four Brazilian agricultural products exported to European Union (EU) countries: beef, oranges, coffee and cocoa. The study reveals that producers and companies in these sectors are linked to serious problems in Brazil, such as deforestation of native forests and exploitation of slave labor, in addition to contributing to chronic impoverishment and conflicts in rural areas.

Highlighting the most relevant data for the European context, this report compiles and updates research on supply chains carried out systematically over the years by Repórter Brasil and outlines an overview of these problems. Since 2001, the organization has mapped and investigated social, labor and environmental issues, exposing trade relations and demanding improvement of production processes.

The introduction to the report provides a brief analysis of the impacts caused by Brazilian exports to the EU. The next four chapters place each of the products in context and expose the most important adverse factors in their supply chains, in addition to identifying the main companies involved.

The data consolidated in this publication will contribute to a campaign for ethical eating for the next generation – Our Food, Our Future – to be launched in 2021. The action is led by an international coalition of civil society organizations, which includes Repórter Brasil and is coordinated by Germany's Christliche Initiative Romero (CIR). It seeks to mobilize young people across Europe for a socially just and sustainable food system based on human rights, agroecology and food sovereignty.

The campaign fights to hold big food companies and supermarkets accountable for human and labor ri-

ghts violations, environmental destruction, as well as land grabbing and forced displacements along their supply chains.

Therefore, it intends to sensitize European youth to pressure politicians in the region to pass laws requiring these companies to improve their trade practices and monitor all stages of their supply chains – in other words, to make them take actions that guarantee workers' rights, especially migrants and women, and contribute to reducing climate change, hunger and poverty.



EXECUTIVE SUMMARY

The global trade in agricultural commodities has substantial impact on native forest clearing. Inspections and investigations have also shown that there are still connections between export-oriented supply chains and exploitation of slave-like labor in Brazil.

This report provides an overview of the problems related to four of these supply chains: beef, orange, coffee and cocoa. It presents a synthesis of efforts towards consolidating data and information on socio-environmental impacts and serious labor violations linked to these supply chains.

There is general agreement in the circles that follow these topics – from academia to NGOs, the press, private and public research groups, as well as other governmental and multilateral entities – that some industries, such as livestock and slaughter/processing/export of beef and its deri-

vatives, as well as grains (particularly soybeans), play a more central role in this global chessboard.

To enable the supply that makes the wheel spin, transcontinental circuits interconnect the pace of consumption and demand to dynamics of booms, speculation, illegalities, conflicts and other effects that are disastrous for despoiled, exploited and exhausted territories. And projections point to Brazil as one of the main actual and potential sources of primary agricultural production for the coming decades.

At least three of the four agricultural export products addressed in this report appear prominently on the list of Brazilian exports to European Union (EU) countries in 2020 (US\$ 28.3 billion): unroasted coffee (8.9%); fruit or vegetable juices (3.5%); and beef, which is part of the group “Other products – processing industry” (2.7%). In 2020, the EU ac-

counted for 16.87% (US\$ 28.3 billion) of Brazil’s export basket – second only to China.

To understand how one of these sectors alone – livestock – relates to the loss of native forests, let us consider that 65% of deforested areas in the Amazon are covered by pastures. From 1978 to 2018, cattle multiplied by ten in the region – from 8.4 to 87 million head. From 1975 to 2017, Brazil’s meat production jumped by 642%.

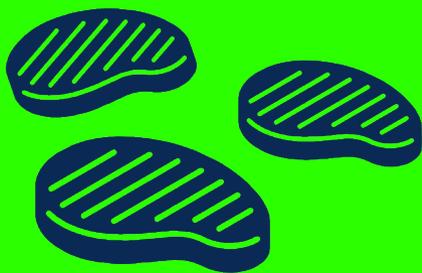
A study focused only on livestock revealed that about 17% of all beef exported by Brazil (Amazon and Cerrado) to the EU in 2017 was directly “contaminated” by potentially illegal deforestation in both biomes. Considering the possibility of indirect “contamination,” the percentage of meat with issues may rise to 48% (plus or minus 10%). It is estimated that up to 18,900 tonnes of meat exported from the states of Mato Gros-

so and Pará in 2017 alone may have been “contaminated” by illegal deforestation. Another study, prepared for the European Commission, estimated that, from 1990 to 2008, the EU imported shipments of commodities associated with deforestation of 9 million hectares, and a substantial part of that came from Brazil.

In addition to “embodied defo-

restation” and other socio-environmental impacts (such as direct and indirect stimulus to rural conflicts), Brazilian export-oriented agricultural production leaves a trail of chronic impoverishment and serious violations of social and labor rights. More than half (51%) of the cases of slave labor found in the country from early

1995 to October 2020 occurred in the livestock sector. In these 1,950 cases, 17,253 people were freed from slavery – or 31% of the total number of workers rescued.



Beef

Two-thirds of the areas deforested in the Amazon and Cerrado have been converted to pastures.

The Brazilian livestock industry alone accounted for one fifth of the total carbon dioxide (CO₂) emissions resulting from deforestation that occurred in all tropical areas of the world.

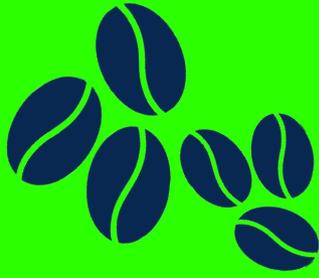
The “dirty list” of slave labor is the register of employers caught exploiting slave-like labor. It was last updated on October 5, 2020, and it includes 21 names (out of 114) linked to bovine cattle ranching.



Orange

Concentrated on three major juice exporters – Cutrale, Citrosuco and Louis Dreyfus Company (LDC) – the orange supply chain hires migrants on a seasonal basis to harvest fruit from their groves, in strenuously long working hours.

Inspections have even found cases of exploitation of slave labor in properties linked to major companies in the sector, such as the one that occurred in December 2020.



Coffee

Characterized by intense use of pesticides (as in orange), Brazil's coffee sector holds a large share of the international market (27%).

From early 2017 until the end of 2020, 466 people were freed from slave-like conditions in coffee farming areas.



Cocoa

Production decentralized as family units in the cocoa supply chain is one of the factors complicating law enforcement in the sector.

In subordination relationships disguised as "partnerships," intermediaries and processing companies put pressure on families that might have to resort to children to meet demands.



The global commodity trade accounted for

27%

of all forest loss worldwide between 2001 and 2015



INTRODUCTION

The global commodity trade accounted for 27% of all forest loss worldwide between 2001 and 2015, according to an article¹ based on satellite monitoring, modeling and calculations published on Science. Projections² indicate that global meat production alone is expected to increase – mainly due to the so-called “developing countries” – by 40 million tonnes, reaching 366 million tonnes in 2029. In Brazil, according to the same international organizations, such escalation should continue benefiting from the “abundant supply of natural resources, feed, grassland availability, productivity gains and, to some extent, the devaluation of the Real.”³

At least three of the four products whose supply chains are described in this report appear prominently in Brazil’s annual exports to EU countries in 2020 (US\$ 28.3 billion): unroasted coffee (8.9%), fruit or

vegetable juices (3.5%), and beef, which is part of “Other products – processing industry” (2.7%). Only cocoa does not appear prominently on the list, as it ranked 21st among Brazil’s agricultural exports in 2020. Note, however, that foreign sales of cocoa are on the rise both in terms of value (US\$ 2.45 million, a 31.7% increase from 2019 to 2020) and amount (632 tonnes, or 28.9%).

In May 2020, amid the restrictions related to the Covid-19 pandemic, Brazilian agricultural products sold to the European Union⁵ reached US\$ 843 million⁶ or 35.5% of all the country’s exports. In the following month – June 2020 – monthly agricultural exports to EU countries were 58.9% higher than in June 2019 – US\$ 250 million. From January to December 2020, the EU bought 16.87% of Brazilian exports, worth about US\$ 28.3 billion. It was the second largest importer if all EU countries are consid-

ered, while China was the absolute top destination for Brazilian products, with 32% or US\$ 67.7 billion.

To illustrate the connections between trade and devastation, let us consider that 65% of areas deforested in the Amazon are covered by pastures, according to a survey on land use change conducted by the Brazilian government.⁷ In the last 40 years, cattle has increased tenfold in the world’s largest tropical forest, jumping from 8.4 million head in 1978 (8% of the national total at that time) to 87 million in 2018 – that is 41% of the total livestock in the country. There are more cattle (216 million in 2016) in Brazil than people (about 210 million). Total meat production (beef, chicken and pork) totaled 25 million tonnes in 2017, compared to 3.4 million tonnes in 1975 – a 642% increase.⁸

Still on the cattle supply chain, a 2017 study⁹ on “the rotten apples

of Brazil's agribusiness" estimated that about 17% of beef and 20% of soybeans produced in the country (Amazon and Cerrado) and exported to the EU were "contaminated"¹⁰ with potentially illegal deforestation. Based on database comparison – especially on information from the Rural Environmental Register (CAR) and business ties – the same survey found that only 2% of properties account for 60% of the devastation in the two biomes.

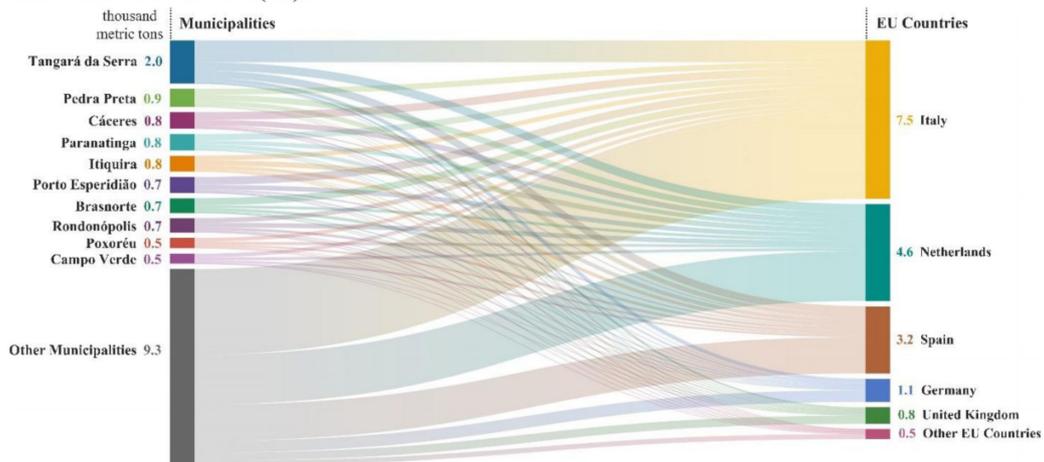
By contrasting animal transit documents issued by the states of Mato Grosso (MT) and Pará (PA) in

2017 with CAR data, it was possible to identify the source of 4.1 million head of cattle traded with meat-packing companies. About 12% (plus or minus 2%) of that total or up to 600,000 head came directly from rural properties with "potentially illegal deforestation." Italy, The Netherlands, Spain and Germany were the main importers of that product (see table below by Trase, for Rajão et al., 2020).

Regarding potential indirect "contamination" in transfers between properties (as will be seen later, one of the chief remaining

weaknesses – confirmed by several cases – in any sustainability assessment of the livestock supply chain), the percentage of cattle slaughtered with potential problems may rise to 48% (plus or minus 10%). In this regard, the state of Mato Grosso ranked 3rd in exports to the EU according to 2017 figures. It is estimated that up to 18,900 tonnes¹¹ of meat exported from MT and PA in 2017 (53%, at most) may have been directly or indirectly "contaminated" by illegal deforestation.

Fig. S26. Exports of beef potentially contaminated with illegal deforestation from municipalities of Mato Grosso and Pará state to the European Union in 2017. Total of 17.7±1.2 thousand metric tons*. Source: TRASE (48).



*Uncertainty calculated from non-traceable exports.

Chart of the Trase study "The rotten apples of Brazil's agribusiness" (Rajão et al., 2020)

Such estimates, which concern only one of the supply chains addressed here, are just tips of a much larger iceberg of damage and violations. A 2013 technical report prepared for the European Commission¹² estimated that, between 1990 and 2008, more than half of all deforestation in the world – a total of 127.6 million hectares, with an average of 7 million hectares devastated per year – took place, directly or indirectly, as a result of the agricultur-

al sector's demand for land. Around 58.2 million hectares of native vegetation cover cleared in the world (46% of the total) can be attributed to livestock, mainly to bovine cattle.

In the same 1990-2008 timeframe,¹³ 27 EU countries imported agricultural products associated with 9 million hectares of deforestation, equivalent to 36% of the global flow of goods traded among all continents in those years and containing “embodied deforestation.”¹⁴

Between the early 1990s and 2008, the EU was the largest global importer of “embodied deforestation,” with more than twice the foreign purchases attributed to East Asian countries.¹⁵ The two main products purchased by Europeans that contributed to that impact were soybeans (grain and meal) and beef (as well as other bovine cattle derivatives) from Brazil.



Attribution of deforestation in Brazil (1990-2008)

	1990-2000		2000-2008	
	1000 ha	%	1000 ha	%
Agricultural expansion, of which	20,115	68	18,143	81
• Cultivated land expansion & crop production	8,051	27	7,118	32
• Pasture expansion & ruminant livestock production	12,063	41	11,025	49
Industrial roundwood production (logging)	1,059	4	955	4
Expansion of urban areas, rural settlements, infrastructure	401	1	306	1
Natural hazards (e.g., fire)	1,961	7	1,498	7
Unexplained	5,987	20	1,482	7
TOTAL	29,523	100	22,384	100

Source: FAO, 2010a, FAO, 2011

Based on the two timeframes of the same technical study prepared for the European Commission,¹⁶ agricultural expansion was a “primary vector” of deforestation in Brazil in 68% of the areas from 1990 to 2000 and reached 81% in the following period – 2000 to 2008 (see table above). In total, more than 38,000 hectares of forests were consumed in crucial biomes such as the Amazon and the Cerrado.¹⁷

Economic stimulus and the existence of several “gaps” in the governance of agricultural products’ supply chains are major sources of concerns in terms of encouraging feedback of destructive cycles through trade deals such as the EU-Mercosur agreement.¹⁸ The risks can be summarized on three areas:

1 Increase in land prices as a result of incentive to real estate speculation tends to cause more encroachment and opening of new areas – not only “public areas,” which fall into the category of “undesignated,”¹⁹ but even in Conservation Units (CUs) and Indigenous Lands (ILs);

2 Expansion of new (indirect and use)²⁰ and “unmonitored” pastures under irregular conditions for livestock, to supply the domestic market, mainly with beef;

3 Increasing pressure for even looser land use regulation, forcing amnesties for existing socio-environmental liabilities and opening the way to increasingly less restrictive standards, as already seen in the strong lobby for economic exploitation of indigenous territories²¹ and measures accused of legalizing land grabbing such as the Titula Brasil Program.²²

In addition to “embodied deforestation” and other socio-environmental impacts (such as directly and indirectly driving rural conflicts), Brazilian agricultural production for export leaves a trail of chronic impoverishment²³ and serious violations of social and labor rights. In certain circumstances, these violations reach extreme degrees of exploitation and inhumanity, as in the case of contemporary slave labor,²⁴ which, as pointed out in research that addresses source and destination points,²⁵ involves a significant number of internal migrants (as well as foreigners, as shown by recent cases of urban slavery). In addition to the well-known circuits towards agricultural frontiers,²⁶ there are “new dynamics” underway that reflect multiple levels of exploitation in rural areas.

The database on workers rescued between 2003 and 2018²⁷ (including only official information) shows that 73% (26,755) of people freed by labor inspectors from slave-like conditions declared to be general farm workers. In addition to this broad and diffuse designation, there are 3% (965) of livestock workers, 2% (719) of farm workers, 1% (449) of coffee farming workers, as well as

grinding operators and other 65 who worked in fruit tree cultivation.

Along with these partial statistics, the Catholic Church’s Pastoral Land Commission (CPT) also collects and organizes information and has agents in the territories who carry out pioneering work against slave labor.²⁸ Looking at the number of workers involved in reports of slave labor found by the CPT (from 2008 to 2016 only, according to an article by Ipea researchers²⁹), a substantial share of 8,335 people (approximately 27% of the total of 30,992) were directly linked to livestock (3,280), planted pastures (4,182) and deforestation (873). That is about 30% of the people freed, and the proportion remains in recent assessments conducted in 2020 (see section on bovine cattle).

Regarding all four supply chains addressed in this report, not only the tendency to reduce labor inspections and worsen their general field conditions (which has happened in recent years) is important, but also the general situation of precarious and subcontracted labor. Research conducted in 2014 by the Inter-Union Department of Statistics and Socioeconomic Studies (Dieese) on Brazil’s rural waged labor market³⁰ showed that three out of five workers did not even have formal contracts. Unprotected, that contingent of informal and indirect workers earns lower wages than formal and direct employees – there are even statistics on illegal payments below the minimum wage.



BEEF

A wide range of studies³¹ point to Brazil's livestock supply chain as the one that, in quantitative and proportional terms, is more directly related to socio-environmental problems – and also to labor rights violations – in the various Brazilian biomes where it is present. A compilation of data from the Federal Government made by the Land Pastoral Commission (CPT) and reproduced in a recent report by Repórter Brasil³² points out that more than half (51%) of slave labor cases found in Brazil from early 1995 to October 2020 took place in the livestock sector. In these 1,950 cases, 17,253 people were freed in livestock, or 31% of all workers rescued.

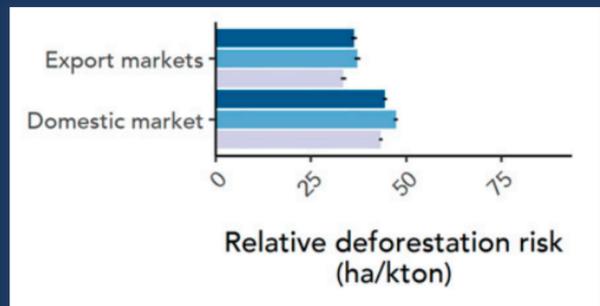
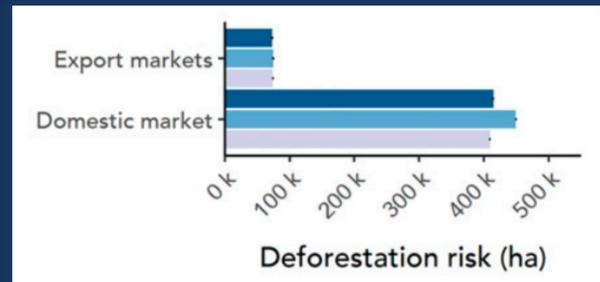
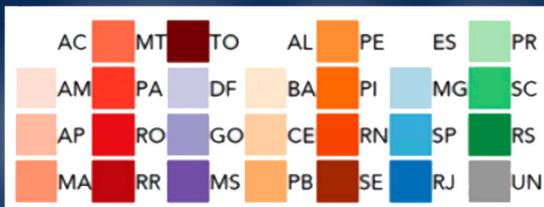
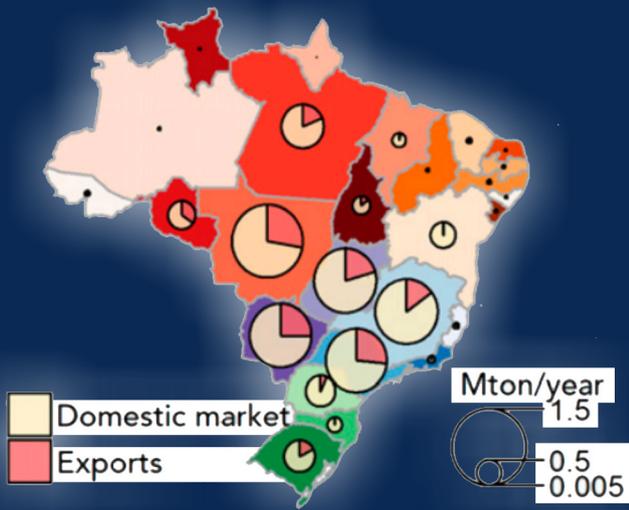
These figures, the report notes, “do not cover the whole problem, only the cases in which Federal Government inspectors rescued workers.” The significant drop in the number of cases and workers rescued in the past decade is related not to effective reduction of the problem, but rather to a “decrease in the number of inspections,

caused by both budget and ideological factors,” especially in the context of the current government of President Jair Bolsonaro, who has said many times³³ that he does not support previous administrations' internationally recognized actions and policies against slavery. According to data from IBGE's Agricultural Census (2017),³⁴ the sector employs 4.8 million workers.

On the socio-environmental aspect, taking only a MapBiomas survey as a reference,³⁵ it is estimated that two thirds of deforested areas in the Amazon and Cerrado biomes have been converted to pastures. The Brazilian livestock sector alone (2nd in the world in number of cattle head and meat production³⁶) accounted for a fifth (542 million tonnes)³⁷ of the total estimation (2.6 gigatonnes) of carbon dioxide emissions) from deforestation (associated with agricultural expansion, pastures and planted forests) that occurred in tropical areas (Latin America, Africa and Asia) between 2010 and 2014.

Therefore, Brazil's livestock farming, which is mostly (90%) extensive and covers large areas of the country, has been associated for decades not only to the advance of environmental destruction but also to reproduction of inhuman and poor labor relations. Unlike palm oil and soybeans, however, the livestock supply chain finds its highest demand in each country's domestic market, notably in Brazil.

However, according to the aforementioned technical report³⁸ for the European Commission, products from the bovine cattle chain, particularly beef and leather, find a major consumer market in the EU. The bloc's countries are the point of arrival for at least a quarter of global exports of these products.³⁹ Taking the 1990-2008 period as a reference, European imports related to this supply chain absorbed around 13% of the “embodied deforestation” circulating globally in that period.



Map and charts of the Trase study (Ermgassen et al., 2020) on Brazil's livestock supply chain (2015 and 2017), including geographic distribution, volumes and deforestation risk indexes.

A recent study carried out under the Trase⁴⁰ initiative interconnects the sources, the supply chain and the “risk of deforestation” of Brazilian beef exports. Based on data from 2015 to 2017, it reveals that the Brazilian supply chain around bovine cattle (meat, offal and live animals) was worth more than US\$ 5.4 billion/year. In addition to other assessments that emphasize the crucial process of “the rise of meat giants”⁴¹ in Brazil, multiple efforts have been made to understand this transnational scenario. In the domestic side, flows and routines used in the large bovine chain have been increasingly under scrutiny (both the ones aimed at exports and those referring to domestic supply, with some differences between them), revealing and/or confirming potential connections⁴² with socioenvironmental damages.

In this context, effects on each biome are measured, and municipalities/regions, economic and political agents are named (processing and exporting companies, on the one hand; and buyer countries/blocs, on the other), with their respective responsibilities⁴³ and relative weights in intricate operations, until these deals are concluded.

The distinguishing feature of Trase’s study published in December 2020 is in its levels of quantification and qualification, starting at farms, with georeferenced data (remote sensing via satellite images) about possible deforestation cases, going through industrialization and distribution centers and then looking into shipping and receiving

at ports linked to the bovine cattle supply chain. This combination leads us to the “deforestation risk” and “relative deforestation risk”⁴⁴ indexes, which serve as references to “distribute” participation among actors that are territorially, commercially and effectively involved.

An area of 73,000 to 74,700 ha/year has been found with “deforestation risk” linked to beef exports (2015 to 2017), assuming a one-year amortization period between damage and sales. Of this total, 40,200-41,900 ha/year (55%-56.6%) were in Amazon municipalities and 30,100-32,200 ha/year (40.7% to 43%) were in the Cerrado. The total area related to the sector, including production for the domestic market (which absorbs 75% of the total), reaches 480,000-520,000 ha/year.

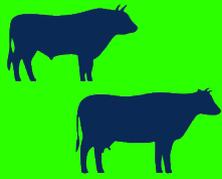
From 2015 to 2017, the “deforestation risk” embodied in exports internalized by the European Union was concentrated in the Cerrado: 2,100-2,600 ha/year, which corresponded to 72.9%-75.2% of the total allocated to the bloc – 2,900-3,600 ha/year. China, which authorized exports from 20 meatpacking companies operating in the Amazon, is highly exposed to deforestation: 15,900-23,000 ha/year (comprising 21.7%-31.1% of the entire “deforestation risk” associated with the sector’s exports).

Although they accounted for 19% of Brazil’s production of bovine cattle, according to 2017 figures, only four States – Rondônia, Mato Grosso, São Paulo and Mato Grosso do Sul – supplied 59% of all the sector’s exports between 2015 and

2017. About 48% of everything that was exported in those years came from the Cerrado while 18% came from the Amazon. The country’s three main meat companies – JBS, Minerva and Marfrig – and their subsidiaries were responsible for 71% of what was sold abroad. JBS concentrates 40% of exports originating in the Amazon, followed by Minerva (approximately 20%) and Marfrig (10%).

In that 2015-2017 period, the European Union was the fifth largest buyer (7.1% in volume and 11.9% in value) of meat and other bovine products from Brazil, behind China (including Hong Kong)⁴⁵ (30.2% in volume and 30.1% in value), Egypt (12.4% and 10.2%), Russia (10.4% and 8.2%), and Iran (7.1% and 7.2%). Each market, according to Trase’s study, has different and dynamic supply chain patterns. Although they are concentrated in the Center-South of Brazil, the EU’s export sources were expanded to the Northern Amazon⁴⁶ region in 2016, after being authorized by Pará, Acre, Rondônia, Maranhão and Tocantins.

THE INVISIBILITY OF INDIRECT SUPPLIERS



Livestock involves several stages in animal development. ‘Breeding’ covers the calf’s growth until it is weaned. ‘Rearing’, in turn, goes from weaning to the beginning of reproduction for females or fattening for males. This last stage – ‘fattening’ – aims to prepare animals for slaughter. That is when their weight gain is stimulated to increase production volume.



Some farms carry out all these stages, but many focus on one or two of them. Several factors are taken into account when deciding that. For example, capacity to invest in infrastructure and food, proximity to slaughter plants, and pasture quality in different areas.



This situation results in intense trade in pre-slaughter animals. Many farms dedicated only to fattening buy cattle for slaughter from other areas and producers. This creates a traceability gap that makes it difficult to monitor the deforestation associated with indirect suppliers.

Quadro from Repórter Brasil’s Monitor #7 (The Money that Feeds the Cattle), with three complementary stages explaining the difficulty of tracking indirect suppliers

Other studies involving the livestock supply chain underscore the recurrent and multiple problems in the sector. A Global Witness report⁴⁷ (with Brazilian NGO Imazon) exposed cases of illegal deforestation associated with the country’s three largest meat companies (JBS, Marfrig and Minerva) that were accepted by banks and audits. Amnesty International,⁴⁸ in turn (with research by Repórter Brasil itself⁴⁹), tracked livestock illegally raised in protected areas and arrived at

JBS’s supply chain. The well-known formula involving encroachment, land grabbing and deforestation of native forest areas to establish pastures is described in a work about one of the Amazon regions most impacted by human action, around the Pará portion of the BR-163 Road (Cuiabá-Santarém): it is a “deforestation type” based “on purchasing forest land, then clearing it, forming pastures and, finally, selling the areas.”⁵⁰

Contemporary slave labor was ac-

knowledged and addressed by public policies and coordinated social actions in Brazil back in the 1990s. Since then, livestock has been one of the focuses of this serious problem, according to the Introductory section of this report. The data were provided by the Observatory for the Eradication of Slave Labor and Human Trafficking, maintained by the International Labor Organization (ILO) and Brazil’s Labor Prosecution Service (MPT).

BOVINE FARMING



Workers formalized during inspections

17,492



Number of establishments inspected

1,793



Unemployment insurance authorizations issued

9,359



Severance fees paid to workers

31,757,692.96

REAS

Source: Federal Labor Inspection Secretariat (SIT)

Number of workers in slave-like conditions in all years in Brazil – Bovine farming



(Workers in slave-like conditions: 2,834/ Rescued workers: 2,833) (Source: SIT)

More than 55,000 workers were freed from modern slavery from 1995 to 2020. In bovine cattle alone, 17,500 employees were formalized, 1,800 establishments were inspected, 9,350 unemployment insurance authorizations were issued, and a total of R\$ 31.7 million were paid as severance fees (chart above retrieved from Radar SIT, Labor Inspection Statistics Information of Brazil⁵¹). The highest number of workers were freed in the livestock sector in 2003: 2,833. In the 25 years of combat against slave labor, 2003 (5,222 workers freed) was only behind the landmark year of 2007 (6,025 people freed, of whom 1,418 worked in rural properties dedicated to bovine cattle).

In the last three editions alone – 2017, 2018 and 2019 – CPT’s annual report on Rural Conflicts⁵² record-

ed at least 77 cases – an average of more than 25 per year and about one third (32%) of the total cases found. The “dirty list” released by the Federal Labor Inspection Secretariat (SIT), which is the register of employers caught exploiting workers in slave-like conditions, was last updated on October 5, 2020.⁵³ It includes 21 names (out of 114) directly linked to livestock according to the National Classification of Economic Activity (CNAE). These 110 cases with workers freed that were added to the “dirty list” took place in seven states (Pará, Mato Grosso, Roraima, Maranhão, Tocantins, Mato Grosso do Sul and Goiás).

São Félix do Xingu, in Pará, ranks first among the municipalities with the highest number of notices of violation issued by the Federal Labor Inspection Service (SIT) in op-

erations against slave labor (1995-2020), with 1,341 cases. From 2008 to 2018, bovine cattle increased by 18% there. São Paulo’s state capital São Paulo (1,234) – the Brazilian city with the largest population and the highest economic concentration and dynamism – comes second. Not by chance, São Félix do Xingu is the country’s top municipality for cattle, with 2.2 million head (1% of the country’s total). Marabá, 5th place in notices of violation (795), also has the 5th largest number of cattle head (1.1 million). Therefore, the connection between livestock and slavery is still active, even though inspections – and consequently, rescues – have dropped in structure and number.



ORANGE

Whenever they can, the leaders of Brazil’s orange juice exporting industry, represented by CitrusBR⁵⁴ – which is based on the three major companies in the sector, Cutrale,



Citrosuco and Louis Dreyfus Company (LDC) – proudly points out that three out of every five glasses of orange juice drunk in the world came from Brazilian groves. In fact,

orange juice is the most widely consumed fruit-based drink in the world (about 35% of all juices) and Europe is by far the largest market (about two thirds) for this ex-

port-directed production. According to data on the first four months (July-October) of the 2020/2021 harvest season, the USA, with 17%, Japan, with 7%, China, with 4.5% and Australia, with 2% come after the EU on the list of buyers. Furthermore, 98% of all the juice produced by the Brazilian industry are sold abroad (either as NFC, ready-to-drink liquid, or as FCOJ⁵⁵).

However, the statements of the

three orange giants usually do not include a highly relevant statistic piece of information: orange workers and small producers get less than 5% of the prices of those exports on supermarket shelves of rich consumer countries. There are cases (see illustration below with examples from the US, UK, The Netherlands and Germany, extracted from Oxfam's factsheet⁵⁶ supported by Repórter Brasil) in which

that share is only 2.5%. While the share paid for Brazilian orange juice to major supermarkets in the US and Europe rose by 50% from 1996 to 2015, according to the Bureau for the Appraisal of Social Impacts for Citizen Information (BASIC) in Oxfam's report "Ripe for Change," local farmers' share dropped from 17% to 14%.



How much value stays in each end of the Brazil's orange juice supply chain



Source: Oxfam, 2018

This logic based on high inequality and concentration of power⁵⁷ that pervades the entire orange supply chain⁵⁸ affects the workers who are at the bottom of the sector. To a large extent, migrants often coming from remote areas are hired on a per-season basis to harvest fruit during workdays of intense physical effort, in precarious conditions, in exchange for low pay, sometimes even below the minimum wage.

According to an annual inventory⁵⁹ sponsored by industry associations and released in March 2020, orange production in the citrus belt of São Paulo and in Minas Gerais's Triângulo/Southwest region – the largest production area in the country – spreads over 407,700 hectares. And to harvest the 96 billion fruits that filled 385 million boxes produced in that belt, responsible for more than 80% of the country's production in the 2019/2020 harvest season, the citrus industry formally recruited 48,200 people in São Paulo alone (not counting informal contracts), which corresponded to more than one in four (26.1%) jobs created in the state's entire economy. The strong performance even motivated a video with effusive praise from São Paulo governor João Doria.⁶⁰ According to the Ministry of Economy, these jobs in the orange industry reach 7.4% of the country's total for the period.

Two examples found by Repórter Brasil – one in 2020 involving Citrosuco supplier and another one in 2019, of a farm supplying Cutrale, the largest company in the sector – illustrate the painful and inhumane

life in the groves, in stark contrast to the praise it receives from governments and businessmen.

In an operation carried out in early December 2020, labor inspectors found 18 people in slave-like conditions at the São Bento Farm in Lucianópolis, São Paulo. The group of harvesters used to work without contracts or any payment, in precarious conditions in which there was not even a bathroom, while they were already being subjected to debts with the contractor⁶¹ (to pay for food items and the cook's work). There were also two other groups – one included hired migrants working under regular contracts while the other was a service-providing consortium in irregular situation – in the same rural property belonging to Valmir Blanco Machado, who was notified to pay R\$ 72,000 in severance fees. The precarious situation of labor in the orange harvest at the São Bento Farm (lack of contracts and payment below the legal minimum wage) had already been found during Repórter Brasil's⁶² field incursions in February 2020. At the time, in order to intimidate journalistic work, Machado's associates even called the local military (state) police, which deployed six vehicles.

Part of the Fischer/Votorantim group, Citrosuco⁶³ had been included on the “dirty list” of slave labor in 2017 and again in 2018, after a 2013 case⁶⁴ involving 26 workers from the Água Sumida and Graminha Farms, located in Botucatu and São Manoel respectively, also in state of São Paulo. Preliminary injunctions excluded the company's name in

January 2019. That was after it returned to the list in December 2018 when a court decision canceling its first inclusion on the same day was overturned in March 2017.⁶⁵

The second example of dreadful working conditions, which occurred in 2019, is related to Cutrale – the largest company in the sector. Complaints filed with federal inspection agencies by the Federation of Waged Rural Employees of the State of São Paulo (Feraesp) revealed that harvest workers at the Emília Farm in Ubajara, São Paulo, had no access to toilets, drinking water or PPE, and were paid below the minimum wage, without any transparent and reliable control over their own production.⁶⁶ One of the people found harvesting fruit at the site was under 18. One day after the visit of Feraesp representatives (driven by reports from rural workers' unions in the region) to the property supplying Cutrale, on December 19, 2019, all harvest workers of the consortium Joaquim Augusto Guesse e Outros were dismissed.

ORANGE FARMING



Workers formalized during inspections

109



Number of establishments inspected

20



Unemployment insurance authorizations issued

99



Severance fees paid to workers

436,471.99

REALS

Source: Federal Labor Inspection Secretariat (SIT)

Cutrale, managed by José Luís Cutrale (often called the Orange King/Baron⁶⁷), has also been on the “dirty list” of employers involved in cases of slave-like labor. In 2017, it entered the register⁶⁸ as a result of an inspection that took place in 2013 at the Vale Verde and Portal Farms, in the municipalities of Planura and Frutal, Minas Gerais, when 23 workers were rescued. Some of them would be already indebted when they started working, since they received food and hygiene products that would be later charged.

Surveys conducted by Repórter Brasil on government records show that, between 2011 and 2016, Sucocítrico Cutrale received a total of 482 notices of labor violations, only for cases found in its farms. In 2011-2017, Citrosuco accumulated 242 such notices, also only in its rural operations. LDC (2011-2016), in turn, was notified 154 times by

federal authorities for irregularities in this area. The three companies are dissected and scrutinized in “Squeezed,”⁶⁹ a 2018 report by Christian Initiative Romero (CIR) with Repórter Brasil. Previous field research also conducted for CIR and gathered in another document entitled “Squeeze Out,”⁷⁰ which is part of the Supply Chain⁷¹ campaign, complement this picture with a focus on the consumer market.

While there is no connection to direct stimuli and pressures for deforestation or burning in extremely strategic and crucial biomes such as the Amazon and the Cerrado, socio-environmental impacts in orange production areas are significant. As often happens in export-oriented industries, business managers run to make – still incipient and vague, as shown by the CitrusBR document⁷² – calculations about the “carbon footprint” of the supply chain as a whole.

But their real concern, especially in citriculture, is about intensive use of pesticides – including some that face many restrictions outside Brazil. The impacts resulting from pesticides are highlighted in the two CIR reports.

Put in the spotlight because of vitamin C content in this context of the Covid-19⁷³ pandemic, the orange juice supply chain – involved in a controversial cartel arrangement⁷⁴ – still has cases of degrading work,⁷⁵ even though very few establishments (20) have been inspected since 1995. Of the total number of workers rescued that are already recorded on the SIT repository, only cases from 2008, 2012 and 2013 count. The inspection in the São Bento Farm in mid-2020 confirms that new and frequent law enforcement operations are essential in the sector.



COFFEE

The introduction of the report⁷⁶ released by Catholic Relief Services (CRS) and Repórter Brasil in 2016 on working conditions in Brazil's coffee industry mentions "surprise" when 15 properties entered the "dirty list" of slave labor in 2013, all dedicated to produce that tasty and coveted grain. What may have "woken up" many people around the world who love a cup of espresso is part of a long and erratic history intertwined with the country's own formation, which has coffee as one of its main products. In addition to being the largest producer and exporter, Bra-

zil holds about 27% of the product's global market. Between November 2019 and October 2020, according to the International Coffee Organization (ICO),⁷⁷ 41.3 million 60-kg sacks⁷⁸ were traded worldwide (see table below).

In terms of production value (based on data from 2019⁷⁹), coffee ranks third (R\$ 17.6 billion) among agricultural commodities, second only to soybeans (R\$ 125.6 billion) and corn (R\$ 47.6 billion), and ahead of large-scale crops such as cotton (R\$ 16 billion). The harvested area went from 2.9 million hectares in 1990 to

1.8 million in 2019. An increase of 4% is estimated for 2020, with 1.88 million hectares, according to the fourth edition of Conab's Monitoring of Brazilian Coffee Harvest.⁸⁰ Brazil's main coffee producing state is Minas Gerais, with an estimated 34.65 million sacks (over 90% conilon). Espírito Santo comes next, with 13.96 million sacks, while São Paulo ranks third with 6.18 million sacks (a 42% increase). Bahia should produce another 4 million sacks while Rondônia will produce, according to Conab, 2.44 million sacks.

Brazilian production and exports in the 2019 world ranking

	Beef	Coffee	Orange juice	Soybeans	Poultry	Corn	Pork
PRODUCES	 9.9 million tonnes (2nd)	 3.8 million tonnes (1st)	 1.3 million tonnes (1st)	 117 million tonnes (2nd)	 13.3 million tonnes (2nd)	 101 million tonnes (3rd)	 3.7 million tonnes (4th)
EXPORTS	2.0 million tonnes (1st)	1.9 million tonnes (1st)	1.2 million tonnes (1st)	75.4 million tonnes (1st)	3.6 million tonnes (1st)	39.0 million tonnes (3rd)	0.7 million tonnes (4th)
SHARE	(22%)	(27%)	(76%)	(51%)	(38%)	(20%)	(10%)

Source: USDA; table by CNA

In the calendar year – from January to November 2020, according to the latest monthly report released by the Council of Coffee Exporters (Cecafé)⁸¹ –, the ten top consumers of Brazilian coffee were: the United States, with 7.2 million sacks imported (18.2% of the total shipped in the period); Germany, with 6.7 million sacks (16.9%); Belgium, 3.3 million (8.4%); Italy, 2.8 million (7.2%); Japan, 2.1 million (5.2%); Turkey, 1.3 million (3.3%); Russia, 1.1 million (2.9%); Mexico, 971,900 (2.4%); Spain, 856,500 (2.2%); and Canada, 809,200 (2%). Considering only the EU countries (Germany, Belgium, Italy and Spain) that are part of this group of the top 10 destinations, they account for at least 34.7%, almost twice the US.

For the 2016 CRS/Repórter Brasil report, the then manager of the Coffee Division of the Brazilian Agricultural Research Corporation (Embrapa), Gabriel Bartholo, estimated

that there were roughly 360,000 producers in Brazil, operating in 1,800 municipalities. Small producers (with less than 10 hectares planted) would be 80%, but the remaining 20% were medium and large producers that account for 75% of the volume of the coffee production. According to the 2017 IBGE Agricultural Census, for example, family farmers accounted for 35% of the value of coffee production. This sectoral picture that combines many small properties with large plantations (making inspections difficult), which tends to concentrate production and value in medium and large producers (imposing certain economic assumptions, especially low prices at the lower end of the harvest labor) makes those 15 cases included on the “dirty list” seem to be part of a routine that has been consolidating itself rather than exceptions.

The very history of inspections

provides relevant information. For example, in each of 12 years between 2002 to 2020 – 2003, 2004, 2008, 2009, 2010, 2011, 2013, 2014, 2015, 2016, 2018 and 2019 – more than a hundred people were rescued from slavery in coffee. Therefore, only in six – 2002, 2005, 2006, 2007, 2012, 2017 and 2020 – of the past 19 years, the number of workers who were found in slave-like conditions in coffee plantations was below one hundred. No matter how many complaints, certifications and debates on socio-environmental responsibility in the supply chain were conducted, the escalation seen in 2018 (306 workers found and 302 rescued – the second highest annual number, only behind 784 in 2003) also ends up signaling the need to redouble concerns regarding the sector, which has been charged almost R\$ 5 million in severance fees during inspections to combat contemporary slave labor.



COFFEE FARMING



Workers formalized during inspections

2,593



Number of establishments inspected

182



Unemployment insurance authorizations issued

1,745

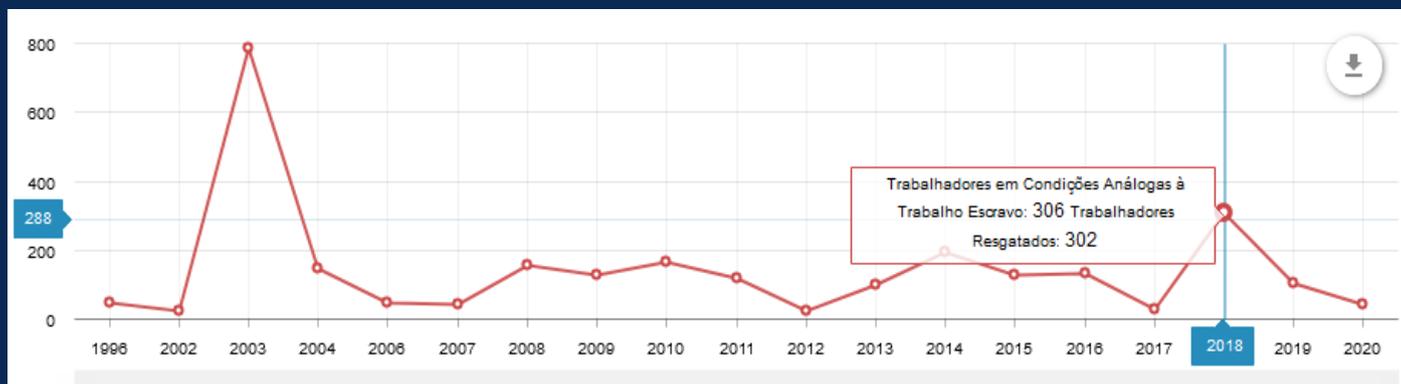


Severance fees paid to workers

4,988,815.67
REAS

Source: Federal Labor Inspection Secretariat (SIT)

Number of workers in slave-like conditions in all years in Brazil – Coffee farming



(Workers in slave-like conditions: 306/ Rescued workers: 302) (Source: SIT)

When we look at the number of properties on the current “dirty list” of slave labor (updated in October 2020) and the number of complaints and rescue cases collected by the CPT in the last three years (2017, 2018 and 2019),⁸² these concerns become even more serious. In all, ten properties linked to coffee production are on the list (seven of them in Minas Gerais, two in Espírito Santo and one on the border of the Federal District and Goiás⁸³), totaling 224 workers freed.

The high number of cases in Minas Gerais is confirmed by the 14 other recent cases listed by the CPT, referring to 199 more workers freed between 2017 and 2019 in coffee harvest that are not yet on the “dirty

list.” This increase in cases provides an idea of the wide reach and the potential for “embodied slavery” in Brazilian coffee sold to several places in the world. The countless webs already researched have connected slave labor cases to major brands like Starbucks.⁸⁴ Adding these cases to the 43 workers freed in 2020, 466 people were subjected to slave-like labor from early 2017 until the end of 2020.⁸⁵

As stressed in report #5 of Repórter Brasil’s Monitor, associations of coffee industry employers – including the National Coffee Council (CNC), which gathers producers as well as farmers cooperatives and associations – say that the criterion for defining slave labor in Brazil is

“highly subjective” and that these are isolated cases among the hundreds of thousands of farms dedicated to coffee production in the country. Workers’ representatives say that the number of cases would be much higher if the authorities inspected all complaints and correctly identified slavery situations during official inspections.

According to virtually all studies on the sector, coffee plantations also see indiscriminate use and application of pesticides. Combined with high levels of informality, it turns out to be an explosive ingredient, posing extremely high risks to workers’ health and the environment.

Types of labor law violations found

	Employing informal labor
	Undue deductions from wages
	Payment allegedly below the minimum wage
	Failure to pay mandatory benefits
	Noncompliance with regulation on pesticide use

Table with violations found in the coffee supply chain (Source: Monitor #5/Repórter Brasil)



COCOA



Brazil used to be one of the world's top cocoa producers (in the 1970s), but it is no longer among the largest producers of this typically tropical crop and it now ranks seventh among exporting countries. African countries are at the top (Côte d'Ivoire and Ghana produce 40% and 20%⁸⁶ of world cocoa, respectively). Even in the Americas, Brazil is behind Ecuador. In terms of world consumption, the European Union is the largest importer (60%); the Netherlands is the first (25%), followed by the United States (13%), Germany (11%) and Belgium (10%).⁸⁷ In addition, 40% of world cocoa processing – which simply doubled its

business scale from 2000 to 2013 (US\$ 110 billion) – takes place in Europe. Four companies in the industry – Ferrero, Mars, Mondelez and Nestlé – supply half of all chocolate consumed in the world. In Brazil, Olam International, Barry Callebaut and Cargill⁸⁸ account for 97% of grinding and roasting.

Brazilian exports of cocoa and its by-products were worth US\$ 305 million in 2019⁸⁹ – much less than the US\$ 4.6 billion from coffee sales. The largest buyers of Brazilian cocoa are in the Americas – Argentina (39%), the US (33%) and Chile (11%). Then comes the Netherlands (8%) – the only European country

on the list of top buyers – and Uruguay (3%). Plantations in Bahia and Pará, together, produce 95% of the cocoa harvested in the country. In the 2020 harvest, Pará's production (50%) surpassed Bahia's (45%),⁹⁰ even though the area occupied by cocoa in the latter state is much larger than in the Amazon. One of the main features of the sector is the substantial share of smaller properties with up to 100 hectares in the supply chain. In Bahia, they are 57% and, in Pará, 63%, according to the 2006 Agricultural Census.

LAND PROFILE – COCOA PRODUCTION (2006)

	UP TO 100 HA	100-500 HA	OVER 500 HA
BAHIA	57%	35%	8%
PARÁ	63%	32%	5%

Percentage land division of the cocoa sector

(Source: IBGE and Monitor #6/Repórter Brasil)

COCOA FARMING



Workers formalized during inspections

217



Number of establishments inspected

29



Unemployment insurance authorizations issued

191

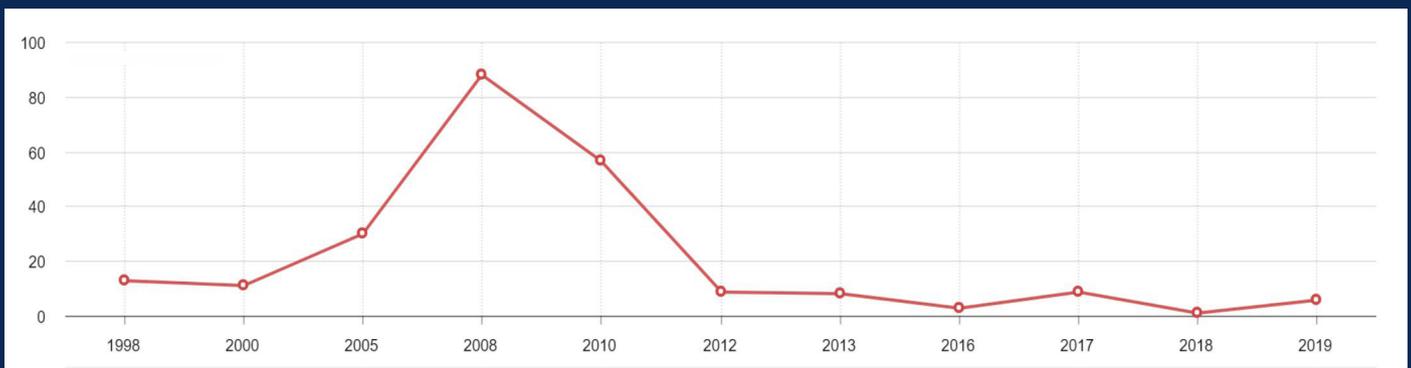


Severance fees paid to workers

503,416.19
REAS

Source: Federal Labor Inspection Secretariat (SIT)

Number of workers in slave-like conditions in all years in Brazil – Cocoa farming



(Source: SIT)



The decentralized profile based on family enterprises finds a counterpoint in concentrations and bottlenecks⁹¹ after the products leave the properties. As previously mentioned, both in Brazil and abroad, a select handful of companies strongly dominates the supply chain, exerting various types of pressure. It is in this general scenario, similar to coffee's, that numerous labor illegalities are adopted and multiply.

From 1998, when the first rescue operation took place in cocoa, until 2019, a historic peak of 88 rescues occurred in 2008 (as shown in the chart with the number of workers found in slavery each year). It was anticipated by increasing figures (30) in 2005, which remained relatively high (57) in 2010. Similar to the orange sector, few cocoa establishments were inspected in over 20 years: only 29. Even so, properties dedicated to the crop are still on the "dirty list," as is the case of the Diana Farm, in Uruçuca, Bahia.

Another cocoa producing property that remains on the list is the Dona Rita Farm, in the rural area of Brasil Novo, Pará. The analysis of the problem – through the cases listed on CPT's notebooks throughout 2017, 2018 and 2019 (which not necessarily included rescues) – makes two more farms flash on the radar. In one of them (the Felicidade Farm, in Ilhéus, on October 15, 2019), CPT even reported on five workers, but nobody was rescued after all. In another event (on December 30, 2020), also in Uruçuca, a person was freed in a case that will still be added to the "dirty list" in the future.

Among the municipalities with the most notices of violation, Medicilândia, in Pará, comes in the absolute top position with 102, far above Brasil Novo (38), Uruará (36), Placas (38), all in the state of Pará, as well as Uruçuca (32), Bahia, and Linhares (27), Espírito Santo. The high number of cases in the Amazon confirms the findings of other works – such

as the 2017 World Bank document⁹² – stressing the environmental risks of the advance of cocoa in forests, as occurs in African countries.⁹³

Two rescue cases in cocoa plantations in Pará, detailed in articles by Repórter Brasil⁹⁴ over more than a decade, reveal the mechanisms behind this type of cruel exploitation. Subordination relationships within a hierarchical chain are disguised as "partnerships." And to cope with the job agreed upon with its supposed "partners" (intermediaries or representatives of processing companies) who get large portions of the profits, small farmers end up engaging family members, including children, to speed up the pace of work. Following this logic, families bear all responsibility, exempting a whole group of individuals and companies that reap high profits from chocolate's sweet world, full of pitfalls.

NOTES



- 1** Curtis, P. G., Slay, C. M., Harris, N. L., Tyukavina, A., and Hansen, M. C. (2018). Classifying drivers of global forest loss. *Science*, v. 361 (6407), 1108-1111. Between 2000 and 2005, nearly half (48%) of tropical forests were cleared in Brazil. See: Hansen, M. C., Stehman, S. V., Potapov, P. V., Loveland, T. R., Townshend, J. R. G., DeFries, R. S., Pittman, K. W., Arunarwati, B., Stolle, F., Steining, M. K., Carroll, M., and DiMiceli, C. (2008) Humid tropical forest clearing from 2000 to 2005 quantified by using multitemporal and multiresolution remotely sensed data. *Proceedings of the National Academy of Sciences (PNAS)*, 105: 9439-9444.
- 2** Developed by the Organization for Economic Development Cooperation (OECD) with the United Nations Food and Agriculture Organization (FAO) in its annual agricultural report, with prospects for 2020 to 2029 (<https://www.oecd-ilibrary.org/sites/29248f46-en/index.html?itemId=/content/component/29248f46-en>).
- 3** In 2000-2005, nearly half (48%) of that total of devastated tropical forests were cleared in Brazil. See: Hansen, M. C., Stehman, S. V., Potapov, P. V., Loveland, T. R., Townshend, J. R. G., DeFries, R. S., Pittman, K. W., Arunarwati, B., Stolle, F., Steining, M. K., Carroll, M., and DiMiceli, C. (2008) Humid tropical forest clearing from 2000 to 2005 quantified by using multitemporal and multiresolution remotely sensed data. *Proceedings of the National Academy of Sciences (PNAS)*, 105: 9439-9444.
- 4** Web portal with Brazil's foreign trade statistics: <http://comexstat.mdic.gov.br/pt/comex-vis>
- 5** Comprising Germany, Austria, Belgium, Bulgaria, Cyprus, Croatia, Denmark, Slovakia, Slovenia, Spain, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Poland, Portugal, United Kingdom, Czech Republic, Romania and Sweden. Furthermore, for Brazil's Ministry of Development, Industry and Commerce (MDIC), of the four products addressed in this report, only unroasted coffee and cocoa appear as agriculture. Both fresh, chilled or frozen beef as well as fruit and vegetable (orange) juices are in the manufacturing industry group. Soybean meal, one of the products with the greatest share in the export basket, is also in the latter, unlike soybeans themselves, included as a primary agricultural product: <http://comexstat.mdic.gov.br/pt/comex-vis>
- 6** Second best figure in the last decade (since 2009). The highest export value from Brazil to the EU was recorded in July 2014, with US \$ 944 million (22.6%).
- 7** Terra Class Project 2014. See at: http://www.inpe.br/cra/projetos_pesquisas/terraclass2014.php
- 8** "Visão 2030 – O futuro da agricultura brasileira", document produced by the Brazilian Agricultural Research Corporation (Embrapa): <https://www.embrapa.br/visao/o-futuro-da-agricultura-brasileira>
- 9** Article published in 2020 also in the renowned journal *Science*, with contributions from the Federal University of Minas Gerais (UFMG) and other researchers from Germany and the US: Rajão, R., Soares-Filho, B., Nunes, F., Borner, J., Machado, L., Assis, D., Oliveira, A., Pinto, L., Ribeiro, V., Rausch, L., Gibbs, H., Figueira, D. (2020) Brazil's agribusiness rotten apples. *Science*, 369 (6501): 246-248. Full article at: http://www.lagesa.org/wp-content/uploads/documents/Rajao_20_Rotten%20apples_w_SM.pdf. The Center for Remote Sensing (CSR) and UFMG's Environmental Services Management Laboratory (Lagesa), involved in this study on "the rotten apples of Brazilian agribusiness" have an online platform with a "CAR Radiography" interactive map that allows viewing properties in the Amazon and the Cerrado according to their compliance – or not – with the Forest Code (https://csr.ufmg.br/radiografia_do_car).
- 10** Another study conducted by Consumer Goods and Deforestation (CGD) in 2014 found that 49% of total deforestation in the world's tropical areas occurred as a result of illegal devastation for agriculture. And at least half of that illegal deforestation was a result of foreign demand for commodities. Similar to data presented on a MapBiomass study, the CGD study confirmed that 90% of deforestation that occurred in Brazil between 2000 and 2012 was illegal. See more in: Lawson, S. et al. (2014), *Consumer Goods and Deforestation: An Analysis of the Extent and Nature of Illegality in Forest Conversion for Agriculture and Timber Plantations*. Washington, DC: Forest Trends.

- 11** The 18,900-tonne figure is based on – according to Fig. S26 below, from Rajão et al. (2020) – 17,700 tonnes potentially contaminated. The variation is due to the degree of uncertainty derived from non-traceable exports – 1,200 plus (18,900) or minus (16,600).
- 12** European Commission (2013), *The Impact of EU Consumption on Deforestation: Comprehensive analysis of the impact of EU consumption on deforestation*. Technical Report – 063. Brussels: European Commission.
- 13** Current EU member countries, with the exception of Croatia, which joined the bloc after the study.
- 14** The concept and indicators of “embodied deforestation” have been adopted by the EU. For more information, including methodological bases and criteria, see: Weatherley-Singh, J.; Gupta, A. (2018) “Embodied Deforestation” as a New EU Policy Debate to Tackle Tropical Forest Loss: Assessing Implications for REDD+ Performance. *Forests*, v. 9 (n. 12): 751
- 15** Note that China’s soybean imports increased sevenfold from 2000 to 2014.
- 16** The series *The Impact of EU Consumption on Deforestation* includes three technical reports. Besides the already mentioned *Comprehensive analysis of the impact of EU consumption on deforestation*, the other two volumes are: *Identification of critical areas where Community policies and legislation could be reviewed* and *Proposal of specific Community policy, legislative measures and other initiatives for further consideration by the Commission*. See them at: https://ec.europa.eu/environment/forests/impact_deforestation.htm
- 17** MapBiomass’ Annual Report on Deforestation in Brazil (*Relatório Anual do Desmatamento no Brasil, 2019*) attested that more than 60% of the deforested area was in the Amazon (770,000 ha), followed by the Cerrado (408,600 ha, 1,009 ha). Link: https://s3.amazonaws.com/alerta_mapbiomas.org/relatorios/MBI-deforestation-report-2019-en-final5.pdf
- 18** A study conducted by Brazilian NGO Imazon with European NGO Fern estimated that implementing the EU-Mercosur agreement could increase deforestation by up to 173,000 ha in Brazil alone. Most of that devastation would impact the livestock sector, which would be displaced by commodity monocultures. More at: https://imazon.org.br/wp-content/uploads/2020/11/mercosulue_en_imazon.pdf
- 19** Azevedo-Ramos, C.; Moutinho, P.; Arruda, V. L. da S.; Stabile, M. C. C.; Alencar, A.; Castro, I.; Ribeiro, J. P. (2020). *Lawless land in no man’s land: The undesignated public forests in the Brazilian Amazon, Land Use Policy*, v. 99.
- 20** Henders, S.; Martin Persson, U.; Kastner, T. (2015). *Trading forests: land-use change and carbon emissions embodied in production and exports of forest-risk commodities*. *Environment Research. Lett.* 10, 1–13.
- 21** See report prepared by the Articulation of Indigenous Peoples of Brazil (APIB) and Amazon Watch, “Cumplicidade na Destruição III: Como corporações globais contribuem para violações dos direitos de povos indígenas da Amazônia brasileira”: <https://amazonwatch.org/assets/files/2020-cumplicidade-na-destruicao-3.pdf>
- 22** The program was implemented by an ordinance of the Special Secretariat for Land Affairs of the Ministry of Agriculture, Livestock and Supply (Mapa) and the National Institute of Colonization and Agrarian Reform (Incra) and is now being challenged in court by the opposition (<https://noticias.uol.com.br/ultimas-noticias/agencia-estado/2020/12/08/parlamentares-vao-a-justica-contr-portaria-que-terceiriza-fiscalizacao-do-incra.htm>). It creates the Municipal Center for Land Regularization (NMRF), in which cities’ participation is voluntary and would open the possibility of land titling through local procedures and agents. Official report on the Incra website: <http://www.incra.gov.br/pt/programa-titula-brasil-quer-ampliar-regularizacao-em-areas-rurais-da-uniao.html>
- 23** Rodrigues, A. S. L.; Ewers, R. M.; Parry, L.; Souza Jr., C.; Veríssimo; Balmford, A. (2009) *Boom-and-Bust Development Patterns Across the Amazon Deforestation Frontier*, *Science*, Vol. 324, Issue 5933, 1435-1437
- 24** Phillips, N., Sakamoto, L. (2012) *Global Production Networks, Chronic Poverty and ‘Slave Labour’ in Brazil*. *Studies in Comparative International Development* n. 47, 287-315.
- 25** According to unemployment insurance data for rescued workers (1995 to 2006), the largest migration flow happens from Maranhão to Pará, the second one goes from Tocantins to Pará, and the third one is Maranhão-Tocantins. More in: Girardi, E. P.; Mello-Théry, N. A.; Théry, H.; Hato, J. (2014) *Mapeamento do trabalho escravo contemporâneo no Brasil: dinâmicas recentes, Espaço e Economia*, n. 4: 1-27.
- 26** See more in “Entre idas & vindas – Novas dinâmicas de migração para o trabalho escravo” (2016), Centro de Defesa da Vida e dos Direitos Humanos Carmen Bascarán (CDVDH/CB) and Land Pastoral Commission (CPT) Araguaína, Tocantins. (<https://rosalux.org.br/wp-content/uploads/2017/08/Entre-idas-e-vindas.pdf>)
- 27** The full profile can be seen on the website of the Observatory for the Eradication of Slave Labor and Human Trafficking: <https://smartlabbr.org/trabalhoescravo/localidade/0?dimensao=perfilCasosTrabalhoEscravo>
- 28** Since the early 1970s, when reports by recently deceased (August 2020) Dom Pedro Casaldáliga, who became bishop emeritus of the

Prelature of São Félix do Xingu (MT), became public. See “Uma Igreja da Amazônia em conflito com o latifúndio e a marginalização social”, pastoral letter from 1971 (<http://www.servicioskoinonia.org/Casaldaliga/cartas/1971CartaPastoral.pdf>)

29 Arbex, A.; Galiza, M.; Oliveira, T. (2018) A Política de Combate ao Trabalho Escravo no Período Recente. Knowledge repository of the Institute of Applied Economic Research (Ipea), Brasília: 111-137. Link: http://repositorio.ipea.gov.br/bitstream/11058/8385/1/bmt_64_pol%C3%ADtica.pdf

30 See also DIEESE (2014). O mercado de trabalho assalariado rural brasileiro. Estudos e pesquisas n. 74 (<https://www.dieese.org.br/estudosepesquisas/2014/estpesq74trabalhoRural.pdf>) and Dieese (2012). A Situação do trabalho no Brasil na primeira década dos anos 2000. São Paulo: Dieese.

31 See, for example: Margulis, S. (2001). Quem são os agentes do desmatamento na Amazônia e por que eles desmatam? Brasília: Banco Mundial; Barreto, P., Pereira, R. and Arima, E. (2008). A pecuária e o Desmatamento na Amazônia na Era das Mudanças Climáticas. Imazon: Belém, Brasil; Grau, H.R.; Aide, M. (2008). Globalization and land-use transitions in Latin America. *Ecology and Society* v. 13, n. 2: 16; Rivero, S.; Almeida, O.; Ávila, S., and Oliveira, W. (2009). Pecuária e desmatamento: uma análise das principais causas diretas do desmatamento na Amazônia. *Nova Economia*, 19 (1): 41-66; Gibbs, H. K., Ruesch, A. S.; Achard F.; Clayton, M. K.; Holmgren, P.; Ramankutty, N.; and Foley, J. A. (2010). Tropical forests were the primary sources of new agricultural land in the 1980s and 1990s. *Proceedings of the National Academy of Sciences (PNAS)* 107: 16732-16737; Meyfroidt, P., Rudel, T. K.; and Lambin, E. F. (2010) Forest transitions, trade, and the global displacement of land use. *Proceedings of the National Academy of Sciences (PNAS)* 107: 20917-20922; DeFries, R., Rudel, T. K.; Uriarte, M.; and Hansen, M. (2010). Deforestation driven by urban population growth and agricultural trade in the twenty-first century. *Nature Geoscience*, n. 3: 178-181; and Boucher, D., Elias, P., Lininger, K., May-Tobin, C., Roquemore, S., and Saxon, E. (2011). The root of the problem: what’s driving tropical deforestation today? *Union of Concerned Scientists*. Cambridge, Mass.; Walker, N. F., Patel, S. A., Kalif, K. A. B. (2013). From Amazon pasture to the high street: deforestation and the Brazilian cattle product supply chain. *Tropical Conservation Science*. Special Issue Vol. 6(3):446-467; Alix-Garcia, J.; Gibbs, H. K. (2017) Forest conservation effects of Brazil’s zero deforestation cattle agreements undermined by leakage, *Global Environmental Change*, v. 47: 201-217.

32 Monitor #8 – “Trabalho escravo na indústria da carne,” published in January 2021. Available at: https://reporterbrasil.org.br/wp-content/uploads/2020/12/Monitor-8_Trabalho-escravo-na-ind%C3%BAstria-da-carne.pdf. The report describes several cases of livestock farms located in Mato Grosso do Sul, Tocantins, Mato Grosso and Maranhão from which workers were rescued from slave-like labor between 2017 and 2019. The farms supplied their product to large exporting meat companies such as JBS and Minerva. The research content was also published by the press in Brazil and abroad (See as an example: <https://www.theguardian.com/environment/2021/jan/06/brazilian-beef-farms-used-workers-kept-in-conditions-similar-to-slavery>).

33 See: Bolsonaro quer rever trabalho escravo (<https://economia.estadao.com.br/noticias/geral/bolsonaro-diz-que-nao-esta-clara-a-diferenca-entre-trabalho-escravo-e-o-analogo-a-escravidao,70002947978>) and, as an example, Bolsonaro: trabalho análogo à escravidão não pode tirar terra de fazendeiro. (<https://noticias.uol.com.br/politica/ultimas-noticias/2020/11/12/bolsonaro-diz-que-fazendeiro-nao-pode-perder-terras-por-trabalho-escravo.htm>)

34 See: <https://www.ibge.gov.br/estatisticas/economicas/agricultura-e-pecuaria/21814-2017-censo-agropecuario.html?edicao=25757&t=resultados>

35 See note 7. Additional information on “indirect land use” on: Arima E.Y.; Richards P.; Walker R., Caldas M.M. (2011). Statistical confirmation of indirect land use change in the Brazilian Amazon. *Environmental Research Letters*, v. 6. n. 2:

36 India comes first in number of cattle head and the US has the largest production. But Brazil tops the list of exporting countries, according to the IBGE’s Municipal Livestock Survey (PPM)-2019. See summary at: https://biblioteca.ibge.gov.br/visualizacao/periodicos/84/ppm_2019_v47_br_informativo.pdf

37 Pendrill, P.; Persson, U. M.; Godar, J.; Kastner, T.; Moran, D.; Schmidt, S., Wood, R (2019). Agricultural and forestry trade drives large share of tropical deforestation emissions, *Global Environmental Change*, v. 56:1-10. See also: The State of the World’s Forests 2018 (<http://www.fao.org/documents/card/en/c/I9535EN/>). For a deeper analysis of Brazilian emissions of greenhouse gases and their conclusions for Brazil’s climate goals (“Análise das emissões brasileiras de Gases de Efeito Estufa e suas implicações para as metas do clima do Brasil, 1980-2019”), see a more recent assessment (2020) by the Greenhouse Gas Emission and Removal Estimating System (SEEG), an initiative of the Climate Observatory, which gathers more than 40 environmental organizations.

38 See notes 3 and 6. Fern also prepared material in 2018 stressing that there are about 1.5 billion head of cattle in the world, of which at least 210 million are in Brazil (more than the country’s human population), the source of 42% (334,000 tonnes) of all meat imported into the EU in 2017. (<https://www.fern.org/fileadmin/uploads/fern/Documents/Fern%20beef%20briefing%20paper.pdf>).

39 As the world’s largest exporter (supplying a fifth of the global market), Brazil provides 25%-40% of EU imports of meat products (Rajão et

al., 2020).

40 Transparency for Sustainable Economies (Trase: www.trase.earth) is an initiative towards research, tracking and transparency of global supply chains and sustainability from the Stockholm Environment Institute (SEI) and England-based Global Canopy, which also gathers researchers from other universities and social organizations. Article: Ermgassen, E.K H.J. zu; Godar, J.; Lathuillière, M. J.; Löfgren, P.; Gardner, T.; Vasconcelos, A.; Meyfroidt, P. (2020). The origin, supply chain, and deforestation risk of Brazil's beef exports. Proceedings of the National Academy of Sciences (PNAS).

41 A 2017 report prepared by the Institute for Agriculture & Trade Policy (IATP) focused on the topic: https://www.iatp.org/sites/default/files/2018-04/gigantes_da_carne_fundacao_boll_brasil_pdf.pdf. See: <https://www.boell.de/sites/default/files/factsheet-big-meat-and-dairys-supersized-climate-footprint.pdf>

42 It is important to consider that some studies – including one that began in 2008, conducted by Repórter Brasil with Papel Social, in an initiative by Rede Nossa São Paulo and Fórum Amazônia Sustentável, entitled Sustainable Connections São Paulo-Amazônia, which provided the basis for sector-based pacts in the timber, meat and soybeans industries – paved the way for countless other investigations on supply chains' socioenvironmental impacts, many of which involved livestock. Some of the problems found in the livestock chain case studies, for example, persist to this day. For additional information, see: <https://conexoes.reporterbrasil.org.br/indexbde5.html?p=80>. Along these lines, one of the milestones was Greenpeace's 2009 study A Farra do Boi na Amazônia (<http://greenpeace.org.br/gado/farradoboinaamazonia.pdf>), which drew attention to the high percentage of greenhouse gas emissions resulting from deforestation and fires, as well as the roles played by meat companies, global brands and buyers, and federal policies. Several other investigations and reports on the subject have been produced and launched by Greenpeace since then. More recently, in addition to new studies on supply chains such as that of the JBS company (<https://www.greenpeace.org/brasil/blog/greenpeace-internacional-publica-relatorio-apontando-o-impacto-da-industria-da-carne/>), the NGO has carried out campaigns on the destructive link of the current beef supply chain with supermarket chains and final consumers, as in project Carne ao Molho Madeira (<http://carneamolhomadeira.org.br>) and has also joined others to voice complaints about illegal deforestation detected by early warning systems (https://www.greenpeace.org/static/planet4-brasil-stateless/2020/06/4ba42d04-representacao-deter-sad_sirad17jun2020.pdf). Also worthy of mention is the 2018 documentary “Sob a pata do boi” (<https://sobapatadoboi.com/>), produced by the website ((o) eco and Imazon, which is part of a larger investigative journalism project on livestock in the Amazon.

43 As the Trase study itself stresses, companies in the sector have signed several commitments to veto purchases from properties associated with Amazon deforestation. The main commitments are those resulting from Conduct Adjustment Agreements (TAC) with the Federal Prosecution Service (MPF) under the Carne Legal Program, signed by a wide range of companies, and the so-called Minimum Criteria for Industrial Scale Operations with Cattle and Beef Products in the Amazon biome (signed only by JBS, Minerva and Marfrig). Imaflo, together with the Prosecution Service, has the Boi na Linha website with results of audits and additional information: <https://www.boinalinha.org/>. While about 75% of the meat companies authorized to export are signatories to these agreements, the aforementioned research seeks to measure the extent to which these flows linked to environmental destruction may (or may not) be infiltrating the “gaps,” in breach of commitments.

44 While the difference in the “deforestation risk” between production linked to the beef chain for export and for domestic consumption has been addressed in absolute terms, when the index is analyzed in relative terms (due to the greater relative impact of cattle exported live), this difference between impacts decreases.

45 After problems associated with pests in China's domestic production, the country's demand for Brazilian animal protein increased greatly in 2019, according to Brazil's Foreign Trade Secretariat (Secex); 497,700 tonnes of beef were exported (a 54.4% increase over 2018) and another 244,100 tonnes of pork (a 61.7% increase).

46 Earthsight report on the “carbon lottery” through beef imports from Brazil shows that 20.8 million tonnes of polluting gases could have been emitted to meet the consumption of only five European countries (Italy, The Netherlands, Spain, Germany and the UK, see Fig. 26 by Rajão et al., 2020) (<https://www.earthsight.org.uk/media/download/940>). See also: <https://www.boell.de/en/meat-atlas>.

47 Between 2017 and 2019, in Pará alone, the three meat companies purchased cattle from 379 farms with more than 20,000 ha of illegal deforestation, in breach of agreements and legal obligations. The full study Carne bovina, bancos e Amazônia can be seen at: <https://www.globalwitness.org/major-global-banks-complicit-widespread-destruction-amazon-rainforest-linked-brazilian-beef-companies-and-international-audits-flawed-pt/>. About working conditions at meatpacking companies, see <http://slaughteringpeople.org/> e <https://carneosso.reporterbrasil.org.br/>.

48 Full report “Da floresta à fazenda – gado bovino criado ilegalmente na Amazônia brasileira encontrado na cadeia de fornecimento da JBS”, about illegalities on the export-oriented livestock industry and adverse impacts on human rights: <https://www.amnesty.org/en/documents/amr19/2657/2020/bp/>

- 49** Repórter Brasil keeps the special web page Cattle Watch (<https://reporterbrasil.org.br/cattlwatch/>) with content produced on the beef cattle supply chain. It includes articles and reports on different stages, from farms (for example, on “pirate cattle” illegally raised in Indigenous Lands) to banks and investment funds (see 7th edition of Monitor, December 2020: <https://reporterbrasil.org.br/wp-content/uploads/2020/11/Monitor-Grana-e-Pecu%C3%A1ria-2020-PT.pdf>), with several detailed cases of links between deforestation and “triangulation” with meatpackers. The commercial link between producers in areas with high incidence of fires and devastation in the Amazon with slaughterhouses was also addressed: <https://reporterbrasil.org.br/2019/08/jbs-marfrig-e-frigor-compram-gado-de-desmatadores-em-area-campea-de-focos-de-incendio-na-amazonia/>
- 50** Torres, M.; Doblas, J.; Alarcon, D. F. (2017) *Dono é quem desmata: Conexões entre grilagem e desmatamento no sudoeste paraense*. São Paulo, Urutu-branco; Altamira, Inst. Agrônomo da Amazônia (IAA). “Highly profitable, the activity benefits from the fact that land experienced steep price increases after forest was replaced with pastures. After clearing, the hectare of forest, which could be bought for up to R\$ 350, reached values never below R\$ 2,000 and up to R\$ 5,000” (Torres et al., 2017: 77).
- 51** Radar of the Ministry of the Economy’s Labor Inspection Secretariat (SIT): <https://sit.trabalho.gov.br/radar>
- 52** In reports of slave labor (not necessarily attended to or linked to effective rescues by government inspectors), cases of exploitation linked to livestock and land clearing for pasture formation totaled 26 (out of 66) in 2017, 24 (out of 86) in 2018, and 27 (out of 89) in 2019. More at: <https://www.cptnacional.org.br/index.php/publicacoes-2/conflitos-no-campo-brasil>
- 53** Governed by Interministerial Ordinance MTPS/MMIRDH 4, of May 11, 2016. Direct access to the list at: https://sit.trabalho.gov.br/portal/images/CADASTRO_DE_EMPREGADORES/CADASTRO_DE_EMPREGADORES.pdf
- 54** Founded in 2009, the National Association of Citrus Juice Exporters (CitrusBR) is the organization that represents the interests of exporting companies. Website: <http://citrusbr.com>
- 55** Frozen Concentrate Orange Juice (FCO), 66° Brix.
- 56** Links: <https://www.oxfam.org.br/noticias/desigualdade-na-comida-quem-realmente-lucra-com-a-nossa-laranja/> and <https://www.oxfam.org.br/setor-privado-e-direitos-humanos/por-tras-do-preco/hora-de-mudar/>
- 57** Repórter Brasil’s Project to Monitor Global Supply Chains includes a space dedicated to the Orange industry: <https://reporterbrasil.org.br/laranja/>. It addresses aspects such as Oligopoly (<https://reporterbrasil.org.br/2018/06/o-oligopolio-que-manda-e-desmanda-na-industria-da-laranja/> and <https://reporterbrasil.org.br/2006/10/gigantes-da-laranja-impoem-baixos-precos-e-prejudicam-safristas/>); Labor Reform (<https://reporterbrasil.org.br/2018/06/reforma-trabalhista-reduz-em-ate-30-salario-de-trabalhadores-rurais/> and <https://reporterbrasil.org.br/2018/11/menos-greves-menos-direitos/>) and Certification (<https://reporterbrasil.org.br/2018/05/mesmo-na-lista-suja-cutrale-tem-fazendas-certificadas-com-selo-internacional/> and <https://reporterbrasil.org.br/2017/11/sindicalistas-cobram-mais-transparencia-das-certificacoes/>).
- 58** An infographic by CitrusBR (http://www.citrusbr.com.br/download/biblioteca/Infografico_portugues_baixa.pdf) emphasizes the part of harvesting that is done manually, “taking care not to damage the fruit,” illustrated by an exemplary-looking worker wearing Personal Protective Equipment (PPE), without mentioning wages, unions and much less “embodied” labor lawsuits against it.
- 59** https://www.fundecitrus.com.br/pdf/pes_relatorios/2020_06_25_Invent%C3%A1rio_e_Estimativa_do_Cinturao_Citricola_2020-2021.pdf
- 60** Governor Doria’s Twitter account on February 5, 2020 <https://twitter.com/jdoriajr/status/1225051018251120641>. For more information on the weight of agribusiness (including citrus) in São Paulo, see assessment by the Institute of Agricultural Economics (IEA): <http://www.iea.agricultura.sp.gov.br/out/TerTexto.php?codTexto=14859>. Note that the sector received significant support from state policies, especially from São Paulo state government itself. See Borges, A. C. G., & Miranda Costa, V. M. H. de. (2005). A Evolução do Agronegócio Citrícola Paulista e o Perfil da Intervenção do Estado. *Revista Brasileira Multidisciplinar*, 9(2): 101-124.
- 61** Report published on December 18, 2020: <https://reporterbrasil.org.br/2020/12/grupo-de-18-trabalhadores-e-resgatado-de-trabalho-escravo-em-fazenda-de-laranja-que-fornece-para-a-citrosuco/>
- 62** Part of the report of the field research on working conditions in orange harvest is included in “Bitter Oranges” (<http://stories.publiceye.ch/oranges-brazil/>), published in June 2020 by Swiss NGO Public Eye. Although the LDC chain was the primary focus (with several instances of precariousness connected to the company’s supply chain, in particular), the investigation extended to areas supplying other producers and had contact with people who worked for them.
- 63** The company’s stance towards this case of slave labor exploitation at its supplier São Bento Farm can be seen at: <https://reporterbrasil.org.br/2020/12/resposta-de-citrosuco-sobre-trabalhadores-resgatados-de-trabalho-escravo-em-fazenda-de-laranja/>

64 See more on the 2013 rescue operation involving Citrosuco at: <https://reporterbrasil.org.br/2013/07/citrosuco-e-autuada-por-empregar-26-em-trabalho-escravo-e-corre-o-risco-de-perder-direitos-economicos/>

65 About Citrosuco's inclusions on and exclusions from the "dirty list," see: <https://reporterbrasil.org.br/2019/01/citrosuco-obtem-nova-liminar-e-sai-da-lista-suja-do-trabalho-escravo/>. It is important to emphasize that between December 2014 and March 2017, the "dirty list" remained under "embargo," that is, not open to the general public, after a Supreme Federal Court (STF) decision on a lawsuit filed by the Brazilian Association of Real Estate Developers (Abrainc). Representing several construction companies that were on the list (led by one of the largest of them in Brazil, MRV), Abrainc challenged the constitutionality of the instrument, arguing that they were not given the right to defend themselves and that a specific law was necessary to implement it – rather than just an inter-ministerial ordinance. Rules and regulations were reviewed and new updates to the "dirty list" started to be publicized in 2017.

66 Details of the case at: <https://reporterbrasil.org.br/2019/03/convenio-que-fornecia-laranja-para-a-cutrale-e-denunciado-por-mas-condicoes-de-trabalho/>. In another visit to check the conditions at the Santana Farm in Ubirajara, São Paulo, Feraesp also found workers paid below the minimum wage in February 2019. They were dismissed on the same day that union representatives were there. Employer João Paulo Branco Peres e Outros was responsible for orange production at Ubirajara. The company was linked to Cutrale's supplier Branco Peres. The municipality of Comendador Gomes tops the list of towns in number of notices of violations precisely because of Cutrale.

67 The inclusion of José Luís Cutrale, son of patriarch José Cutrale (deceased in 2004) on the Forbes list of billionaires made headlines in Brazilian press (<https://www.bloomberg.com/news/videos/2015-01-21/brazilian-orange-baron-becomes-a-billionaire>). A year earlier, in 2014, Cutrale and Safra, a bank led by recently deceased billionaire Joseph Safra, agreed to acquire US-based Chiquita Brands (<http://g1.globo.com/economia/negocios/noticia/2014/10/grupo-cutrale-e-safra-fecham-acordo-para-compra-da-chiquita-por-us13-bi.html>), the world's largest banana producer, for US\$ 13 billion, drawing worldwide attention (<https://www.publico.pt/2014/11/01/economia/noticia/o-rei-das-laranjas-casouse-com-a-rainha-das-bananas-1674765>). In addition to oranges and bananas, Cutrale's business empire also extends to soybean plantations, and their export operations are supported by their own port and fleet of ships (<https://economia.uol.com.br/noticias/bloomberg/2015/01/27/rei-brasileiro-da-fruta-comprando-chiquita-e-revelado-como-bilionario.htm>).

68 For more details on inclusions and inspections, see: <https://reporterbrasil.org.br/2017/10/lista-da-escravidao-nao-divulgada-pelo-governo-contem-gigantes-da-agroindustria/>

69 <https://reporterbrasil.org.br/wp-content/uploads/2018/12/squeezed-behind-the-scenes-of-the-juice-industry.pdf>

70 Link to the study: http://www.supplychainge.org/fileadmin/user_upload/SC_Squeeze_out_EN.pdf. Based on "Squeeze Out", Dutch organization SOMO made some adjustments (<https://www.somo.nl/wp-content/uploads/2017/08/Juice-with-a-bitter-aftertaste.pdf>) for the market of the Netherlands, with specific research and data about supermarkets operating in that country. The 2018 sustainability report of LDC Sucos, which has been operating in Brazil for 30 years, highlighted the tracking of 100% of a single chain precisely in the Netherlands.

71 Website of the initiative: <http://www.supplychainge.org/orange-juice/>

72 Link: http://www.citrusbr.com/download/Relatorio_Final_2013_Impressao.pdf. It is worth contrasting the inaccurate survey on the real social and environmental impacts of the sector with another summary that supports CIR's aforementioned "Squeezed Out" report, which can be downloaded at http://www.supplychainge.org/fileadmin/reporters/pt_files/sumodelaranja.pdf

73 See: <https://www.cnbc.com/2020/04/01/orange-juice-was-the-surprise-outperformer-in-the-first-quarter.html> and <https://www.forbes.com/sites/simonconstable/2020/05/29/the-covid-19-pandemic-is-set-to-push-orange-juice-prices-to-record-levels/>

74 Beyond the almost two-decade-old imbroglia at the Administrative Council for Economic Defense (Cade) that ended with a R\$ 300-million agreement to be paid to the Fund for the Defense of Diffuse Rights (<https://migalhas.uol.com.br/quentes/275332/caso-mais-antigo-em-tramitacao-no-cade-e-encerrado>), which analysts see as inconsistent to the business volume involved, the topic of cartelization was even debated by the Parliamentary Inquiry Commission (CPI) at São Paulo's State Legislative Assembly (Alesp). Link to the transcript: https://www.al.sp.gov.br/spl/2017/06/Transcricao/1000048172_1000079023_Transcricao.pdf

75 Such as this one from 2019 in Perdizes, Minas Gerais – <https://g1.globo.com/mg/triangulo-mineiro/noticia/2019/12/12/quase-30-trabalhadores-em-condicao-de-trabalho-escravo-sao-resgatados-em-fazenda-de-perdizes.ghtml> – and this one involving Citrosuco, in Itapetininga, São Paulo, in 2013, after a complaint by the Federation of Agricultural Workers of the State of São Paulo (Fetaesp), which resulted in an agreement between the company and the Labor Prosecution Service (MPT): <https://revistagloborural.globo.com/Noticias/noticia/2017/08/trabalho-citrosuco-paga-r-2-mi-por-condicoes-precarias.html>

76 Full report at: <https://coffeelands.crs.org/wp-content/uploads/2016/04/CRS-Policy-Brief-Farmworker-Protections-and-Labor-Conditions-in-Brazil%E2%80%99s-Coffee-Sector.pdf>. Note that a previous report (March 2016) on "bitter coffee" produced by Danish organization Danwatch

(<https://old.danwatch.dk/wp-content/uploads/2016/03/Danwatch-Bitter-Coffee-MARCH-2016.pdf>), with a similar approach, resounded both in Brazil and abroad. For this work, the company Jacobs Douwe Egberts (JDE) admitted that it might have purchased coffee from areas where modern slavery has been found, and Nestlé (owner of the Nescafé, Nespresso and Dolce Gusto, among other brands) confirmed that it did buy from two areas where workers were released from slavery in 2015.

77 International trade figures updated on the website of the International Coffee Organization (ICO): <http://www.ico.org/prices/m1-exports.pdf>. For a table with export data since 1990, see: <http://www.ico.org/historical/1990%20onwards/PDF/2a-exports.pdf>

78 Projections made by the Brazilian supply Company (Conab) point to a 27.9% increase in production for 2020 (using the positive two-year period) over 2019, with 63 million sacks of the arabica and conilon varieties being benefited. The previous record had been set in 2018, when 61.7 million sacks were produced.

79 IBGE's Municipal Agricultural Survey (PAM): <https://www.ibge.gov.br/estatisticas/economicas/agricultura-e-pecuaria/9117-producao-agricola-municipal-culturas-temporarias-e-permanentes.html?=&t=destaques>

80 https://www.conab.gov.br/component/k2/item/download/34932_f1feea7816de1bd2f9528cac2d9a19b1

81 Link to the report on November 2020 at:

<http://www.cecafe.com.br/site/wp-content/uploads/graficos/CECAFE-Relatorio-Mensal-NOVEMBRO-2020.pdf>

82 Similar to the orange supply chain, Repórter Brasil supports and updates a specific space on its website dedicated to coffee: <https://reporterbrasil.org.br/cafe/>. It provides access to a repository of materials and content dedicated to this sector, which address since the “boom” of cases in 2018 (<https://reporterbrasil.org.br/2018/12/record-de-casos-de-trabalho-escravo-em-fazendas-de-cafe/>) until the relevant topic of limitations and “flaws” in international coffee certifications (<https://reporterbrasil.org.br/2018/08/fazenda-de-cafe-certificada-pela-starbucks-e-flagrada-com-trabalho-escravo/> and <https://reporterbrasil.org.br/2017/01/cafe-certificado-trabalhador-sem-direitos/>). Monitor #5, published in December 2016, focuses on that issue, including business ties of farms caught using slave labor (https://reporterbrasil.org.br/wp-content/uploads/2016/12/Cafe%CC%81_PT_Web.pdf). Surveys carried out with other foreign organizations are also available on the website. In addition to the study produced with CRS, there was also collaboration for a more specific report aimed at the Finnish market, organized and published in the same year 2016 by FinnWatch (https://reporterbrasil.org.br/wp-content/uploads/2016/10/FW_Coffee_report_18102016.pdf),

83 More information at: <https://g1.globo.com/go/goias/noticia/2018/08/11/acao-resgata-86-trabalhadores-em-situacao-analoga-a-escravidao-em-fazenda-de-cafe-em-sitio-dabadia-go.ghtml>

According to a report published by Repórter Brasil: <https://reporterbrasil.org.br/2018/08/fazenda-de-cafe-certificada-pela-starbucks-e-flagrada-com-trabalho-escravo/>

85 A previous report estimated that, between 2011 and 2015, federal labor inspectors rescued at least 579 people from slave labor in 26 coffee plantations areas.

86 A July 2019 El País article describes an attempt by Côte d'Ivoire and Ghana, together for the first time, to claim better prices per tonne of cocoa so that they can trade their production – essential to the world market – to the supply chains of chocolate and other products without interruption (https://brasil.elpais.com/brasil/2019/07/04/internacional/1562268144_659989.html). According to calculations made by El País, distributors and manufacturers would keep 75% of the profit based on the final price of the product while small farmers at the end of the supply chain would keep between 4% and 6%.

87 In 2018, Fern launched a fact sheet on the socio-environmental impacts of the cocoa supply chain, emphasizing plantation's relationship with deforestation (mainly in the forests of Côte d'Ivoire) and also with preserving social inequality vectors in a sector where European consumption is central: https://www.fern.org/fileadmin/uploads/fern/Documents/Cocoa_briefing_paper_WEB.pdf

88 In April this year, the inclusion of the Diana Farm, in the municipality of Uruçuca, Bahia, on the “dirty list” of slave labor, was the clue for Repórter Brasil to track the production from that property in the cocoa market. It turned out that Chaves Agrícola e Pastoral, a company pointed out as responsible for exploiting nine people found in slave-like conditions during a September 2017 inspection, supplied two of these major cocoa multinationals (Olan and Barry Callebaut), while a third one (Cargill) also took advantage of it. Article link: <https://reporterbrasil.org.br/2020/08/chocolate-com-trabalho-escravo-as-violacoes-trabalhistas-na-industria-do-cacau-no-brasil/>. Shortly after that, Chaves (including the Diana Farm itself) received the UTZ seal of “good practices.” See also the companies' stances on the problems detected in their supply chains: <https://reporterbrasil.org.br/2020/08/integra-das-respostas-de-empresas-sobre-violacoes-trabalhistas-na-industria-do-cacau/>

89 Foreign trade data released by the federal government (<http://comexstat.mdic.gov.br/>) gathered on Monitor #6, “Trabalho escravo no

cacau da Bahia”, in November de 2020: <https://reporterbrasil.org.br/wp-content/uploads/2020/10/Monitor-6-Cacau-PT.pdf>

90 According to IBGE’s systematic survey of Agricultural Production: <https://sidra.ibge.gov.br/>. See also “Pará retoma liderança na produção brasileira de cacau, com a união de agricultores”: <https://g1.globo.com/economia/agronegocios/globo-rural/noticia/2019/11/03/lideranca-na-producao--brasileira-de-cacau-volta-para-casa-no-para-com-a-uniao-de-agricultores.ghtml>

91 Research on working conditions in the cocoa sector, particularly in its interfaces with slave and child labor, has resulted in a report by Papel Social and other documents at the request of the ILO. The report ([https://www.ilo.org/wcmsp5/groups/public/---americas/---ro-lima/---ilo-brasil/documents/publication/wcms_748400.pdf](https://www.ilo.org/wcmsp5/groups/public/---americas/---ro-lima/---ilo-brasil/---brasil/documents/publication/wcms_748400.pdf)) provides information on these and other topics. About the concentration of bargaining power in the hands of a few social actors, the study says: “According to the National Association of Cocoa Processing Industries (AIPC), in 2017, four companies (three foreign ones and one from Brazil) concentrated 97% of the cocoa processing structure in Brazil, with five plants installed, four in Bahia (three in Ilhéus and one in Itabuna) and one in São Paulo.”

92 Full document: <http://documents1.worldbank.org/curated/en/876071495118818649/pdf/115144-REVISED-20170530-Cocoa-final-updated.pdf>

93 Documentary “The Dark Side of the Chocolate” (2010), directed by Miki Mistrati and Robin Romano, addressed aspects of cocoa’s supply chain, particularly in African counties, such as child labor.

94 <https://reporterbrasil.org.br/2010/06/trabalho-infantil-e-escravo-e-flagrado-na-colheita-de-cacau/> and <https://reporterbrasil.org.br/2008/10/escravidao-de-adultos-e-criancas-e-sucedida-por-espancamento/>