

Brazilian Soy Imports to the Netherlands

Frequency, Patterns, Uses

Barbara Kuepper – May 2022

Commissioned by Greenpeace Netherlands

Introduction

This briefing summarises key data on the soy trade from Brazil to the Netherlands and links to other EU countries. Particular attention is paid to soy originating from Brazilian states that make up the Cerrado biome. The analysis builds on statistical data for the years 2018 to 2021, and considers soybeans, soybean meal and soybean oil as key products.^a Soybean meal is used as a key source of high-quality protein in animal feed. Based on EU-level estimates, more than 85% of the soy products available for use go into animal feed to produce meat, dairy, eggs, and farmed fish.¹ Soybean oil is used as an edible oil as well as industrial applications such as biodiesel.

1 Dutch soy imports

The Netherlands is a key entry point for soy imports to the European Union. In 2021, 6.7 million metric tonnes (Mt) of soybeans, soybean meal and soybean oil arrived in the ports of Rotterdam and Amsterdam.^b Based on average global yields, this volume required a production area of approximately 2.4 million hectares (Mha).^c This volume made the Netherlands the largest importer in the EU with a share of 16.6%. Spain followed on the second place with 16.4% (6.6 Mt), Germany was third with 14.2% (5.7 Mt), and Italy fourth with 10.0% (4.1 Mt).^d

Brazil was by far the most important origin of Dutch soy imports, with 2.4 Mt of beans and 1.6 Mt of meal or 60% of total Dutch imports.² Based on average crush results and yields, this volume required the production of an estimated soybean equivalent of 4.4 Mt, and an estimated production area of 1.2 Mha.³ This surface equals eight times the area covered by Greater London.

North America supplies almost exclusively soybeans, while Argentinian supplies mostly consist of soybean meal. European origins, especially from Ukraine and Russia, have shown a steady increase in recent years but still only account for a small share of overall Dutch soy imports.

^a The crushing of soybeans results in two main products: soybean meal with an average weight share of 78.5% and soybean oil with around 18.5%. The protein content of the soybean meal varies, among others depending on the inclusion of soybean hulls. Soybean meal may also be referred to as soybean oil-cake or pellets.

^b Requiring an estimated soybean equivalent of 7.3 Mt, based on average crushing results.

^c Average Brazilian soybean yields are higher than the global weighted average, with 3.55 t/ha in Brazil compared to a weighted average of 2.99 t/ha globally.

^d These volumes include some double-counting due to intra-EU trade.

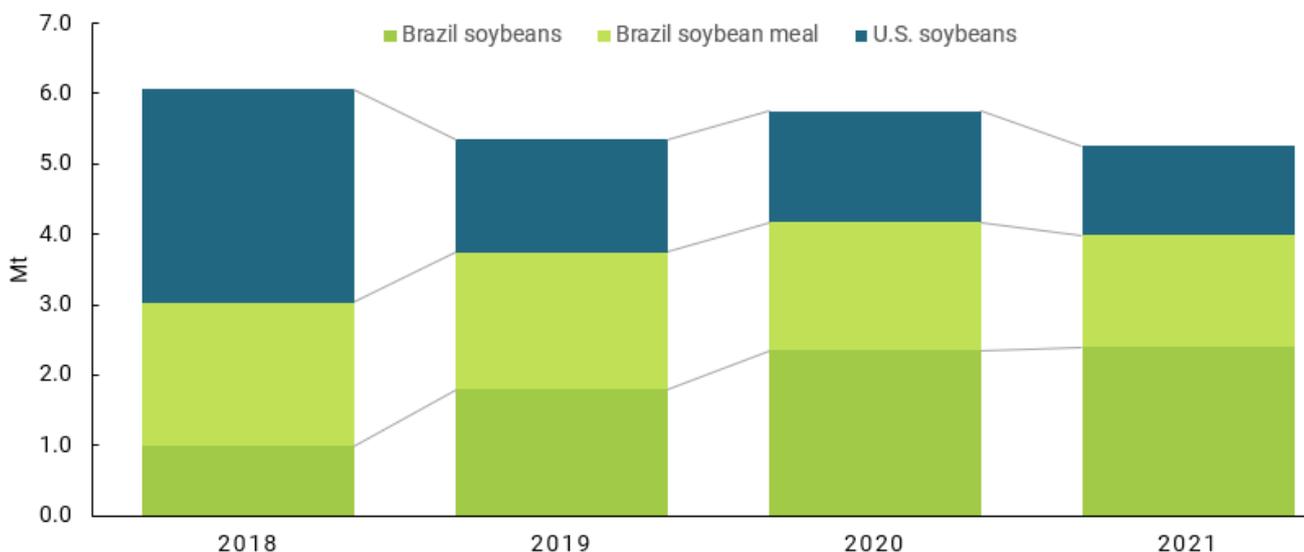
Figure 1 Soybean and soybean meal imports to the Netherlands by origin, 2021



Note: Soybean oil imports are much smaller at less than 100,000 t and therefore not separately included.
Source: Eurostat (2022).

The volume and share of Brazilian soy in Dutch imports has increased in recent years, due to increasing volumes of soybeans being shipped to the Netherlands (Figure 2). Meanwhile, the role of the U.S. as a supplier of soybeans decreased.

Figure 2 Development of Brazilian and U.S. soy imports to the Netherlands, 2018 to 2021



Source: Eurostat (2022).

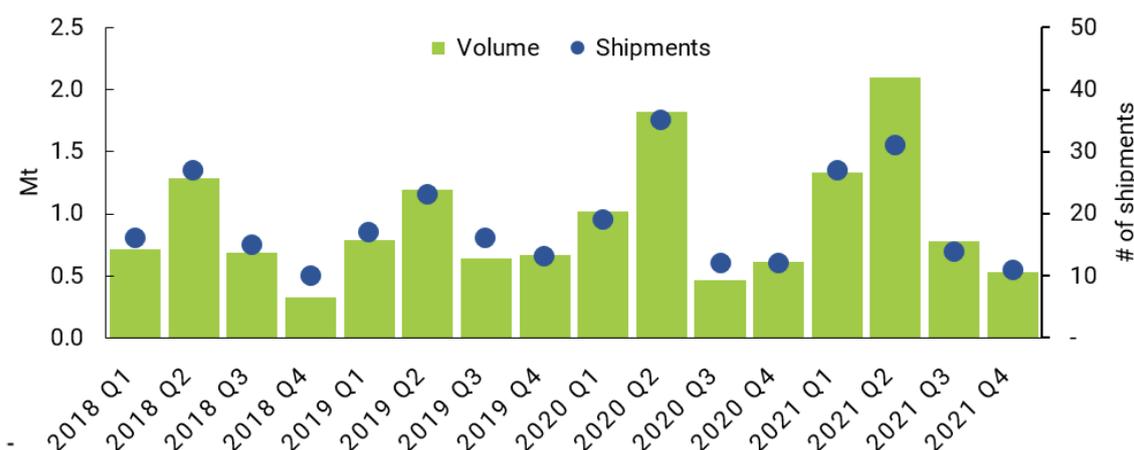
2 Dutch soy imports from Brazil

1.1 Volume and frequency

An analysis of shipment data shows that the second quarter of the year (Q2) generally sees the highest volumes of soy shipped from Brazil to the Netherlands (Figure 3). During the last four years, the months April-June accounted for shares between 36% (2019) and 47% (2020). In 2021, the Q2 share stood at 44%. This seasonal peak is in line with the Brazilian soybean crop cycle, where harvesting (with some regional variations) starts in February and runs through early May.⁴

Bulk shipments are the key delivery mode for soy products. A small share of less than 0.2% of the traded soy volume arriving in the Netherlands is containerised. This is for example the case for bags of organic soybeans and for soy protein concentrate (SPC).

Figure 3 Volume, frequency of Brazilian bulk soy shipments to the Netherlands, 2018 to 2021



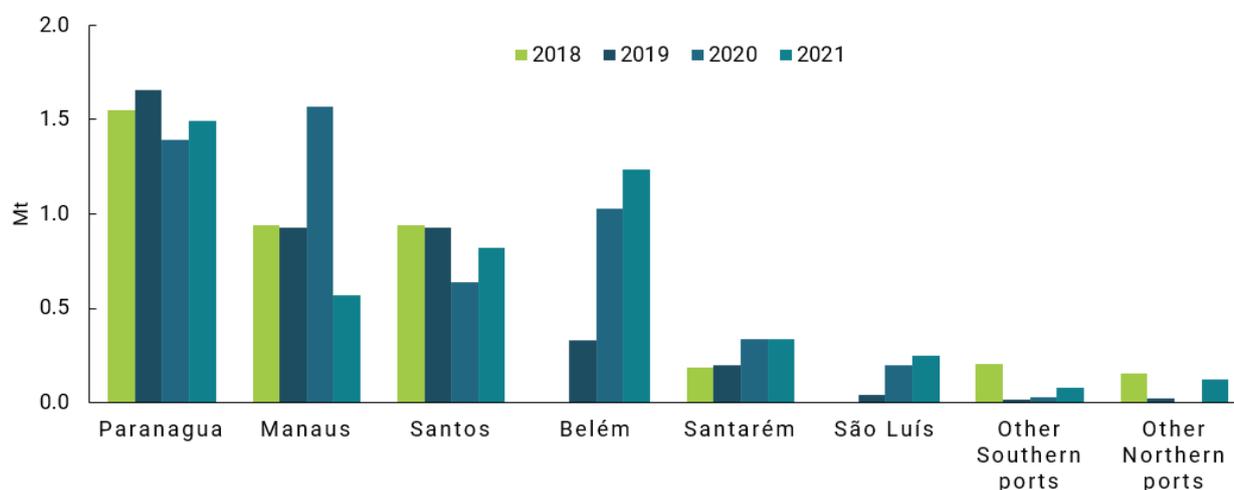
	2018				2019				2020				2021			
	Q1	Q2	Q3	Q4												
Shipments	16	27	15	10	17	23	16	13	19	35	12	12	27	31	14	11
Volume (Mt)	0.71	1.29	0.69	0.33	0.78	1.20	0.64	0.66	1.02	1.82	0.47	0.61	1.34	2.09	0.78	0.53

Note: Summarising shipments of soybeans and soybean meal. Focussing on bulk loads of at least 2,000 t.
Source: Eurostat (2022).

1.2 Key Brazilian ports

The main departure points for Brazilian soy shipments to the Netherlands in recent years are Paranagua and Santos in the South of the country, and Manaus, Belém, Santarém and São Luís in the Amazonas region (Figure 4). Across the four years from 2018 to 2021, the two southern ports accounted for around 52% of the total volume shipped to the Netherlands. This share decreased to around 47% in 2021. The ports along the Amazon River were responsible for 45% across the four-year period, but 2021 saw with 51% a higher-than-average share in exports to the Netherlands.⁵ Statistics suggest that Manaus saw a peak in 2020 but decreased after that. Belém saw a strong increase in departures to the Netherlands in 2020 and 2021.

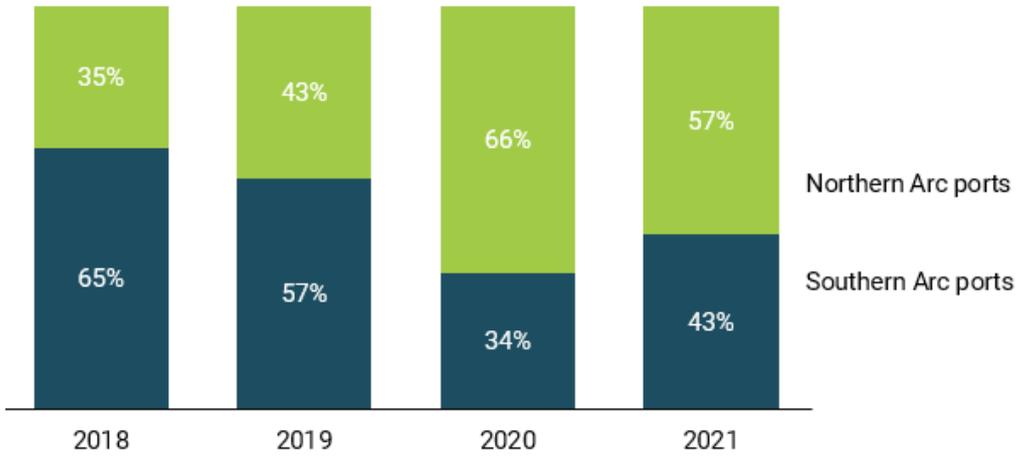
Figure 4 Brazilian departure ports of soy shipments to the Netherlands, 2018 to 2021



Source: Comexstat (2022).

While the Cerrado states are located in the northeast and centre of the country, a sizeable share of the soy exported from these states to the Netherlands is taking a route via ports in the Southern Arc, particularly Paranagua and Santos (Figure 5).⁶ This includes also exports from states like Bahia and Tocantins that are located at a considerable distance from these ports (Figure 6).

Figure 5 Key export routes of soy from Cerrado states to the Netherlands



Source: Comexstat (2022).

Figure 6 Location of Brazilian soy ports

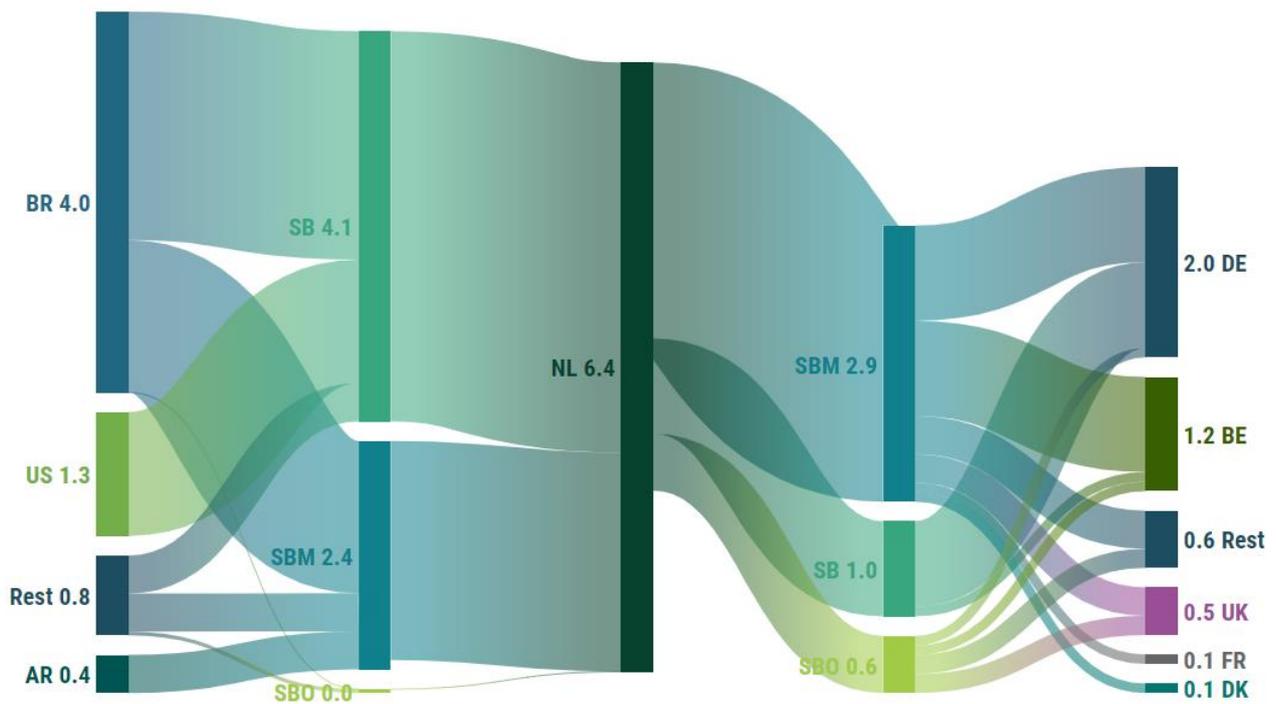
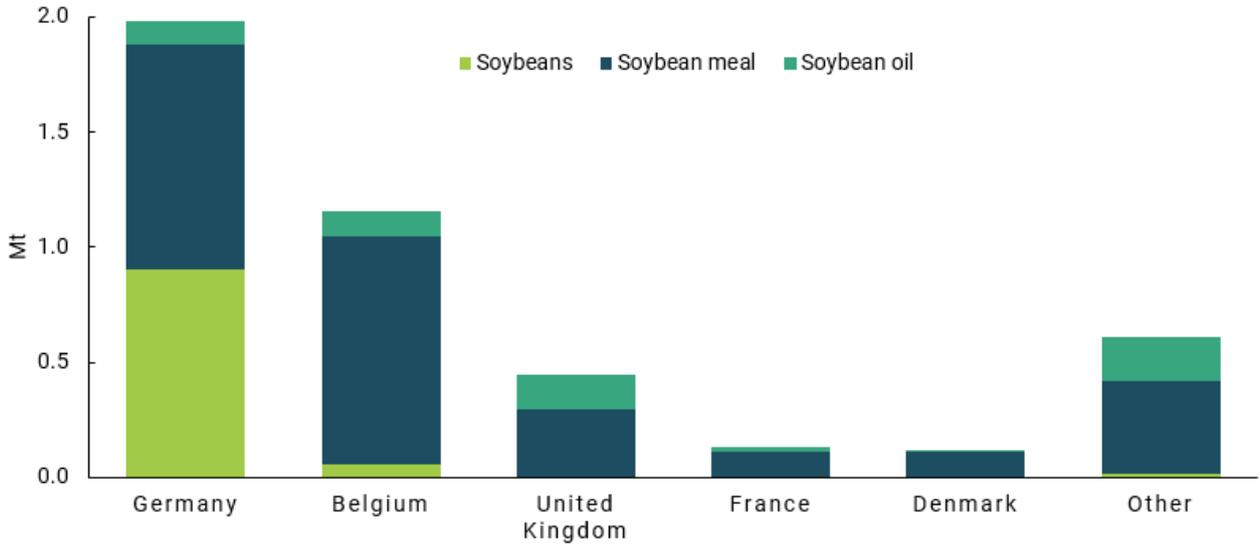


Source: Proinde (2020), *Loading Soybeans in Brazil*.

3 Destinations of Dutch soy imports from Brazil

After part of the soybeans imported into the Netherlands is crushed into the key products soybean meal and soybean oil, statistics show that on average in recent years around two-thirds of soy products are re-exported from to predominantly EU destinations. In 2021, Germany accounted for 45% of combined Dutch exports of soybeans, soybean meal and soybean oil. Belgium received 26% and the United Kingdom 10% (Figure 7).⁷

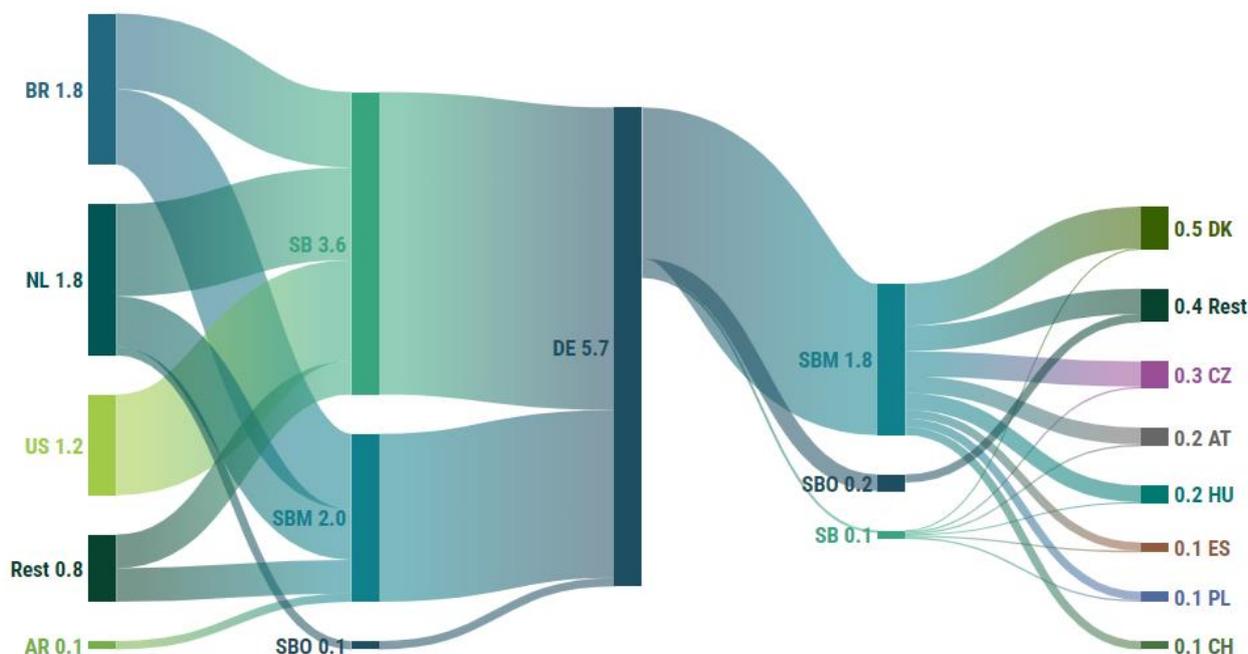
Figure 7 Key destinations of soy exports from the Netherlands, 2021 (Mt)



Note: SB=soybeans, SBM=soybean meal, SBO=Soybean oil.
Source: Eurostat (2022).

In turn, Germany as the key destination of Dutch re-exports also plays itself an important role as a soy trading hub, particularly for exports of soybean meal. Destinations include Denmark as well as Central and Eastern European countries (Figure 8).

Figure 8 Key destinations of soy exports from Germany, 2021 (Mt)



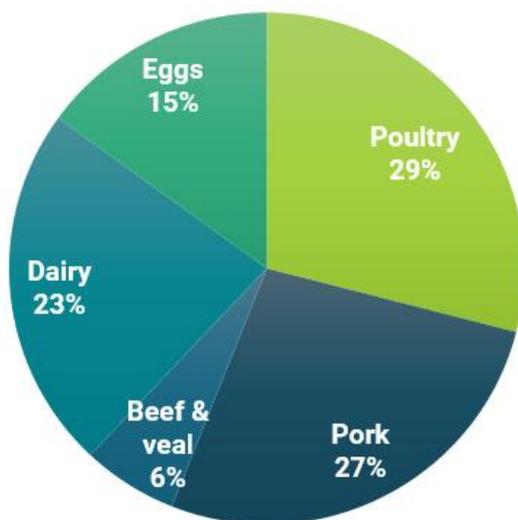
Note: SB=soybeans, SBM=soybean meal, SBO=Soybean oil; Dutch export and German import statistics show small deviations.
Source: Eurostat (2022).

After deducting re-exports, around one-third or 2.2 Mt of the imported soy is used in the Netherlands, with around 2 Mt of soybean meal accounting for most of this volume. Based on the share of Brazilian soy in the imported volumes, an estimated 1.2 Mt or 61% of the total soybean meal used in animal feed in the Netherlands in 2021 originated from Brazil. Considering the volume of soybeans necessary to produce this amount of soybean meal (1.6 Mt), the Dutch use of Brazilian soy required an estimated production area of 450,000 ha.⁸ This surface equals almost three times the land surface of Greater London.

As calculated in a 2020 report on the Dutch soy sector, the poultry and pork sector are the largest users of Brazilian soybean meal, with estimated shares of 29% and 27%, respectively. In total, meat production takes up around 62%, dairy accounts for around 23%, and egg production for 15% (Figure 9).⁹ The resulting meat, dairy, and eggs are consumed domestically in the Netherlands but partially also exported. Therefore, part of the 'embedded soy' is also exported.^e

^e Soy that was used to obtain the product, i.e. in animal feed for poultry and livestock, but that is not physically present in the end product.

Figure 9 Estimated use of Brazilian soymeal across Dutch livestock segments, 2018



Source: Kuepper, B. and G. Rijk (2020, October), *Who's Profiting from Brazilian Soy? An Analysis of the Dutch Soy Supply Chain*, Report commissioned by Greenpeace Netherlands, Amsterdam, Netherlands: Profundo.

4 Potential deforestation link

The deforestation footprint of the expanding soybean cultivation area in Brazil during the last decades has been most pronounced in the Amazon and Cerrado Biomes. The Amazon Soy Moratorium, which was first agreed in 2006 and later indefinitely extended, helped to reduce soy-driven deforestation in the Amazon biome. Cattle ranching is the most important driver of deforestation in the Amazon biome, and often also linked to fires.¹⁰

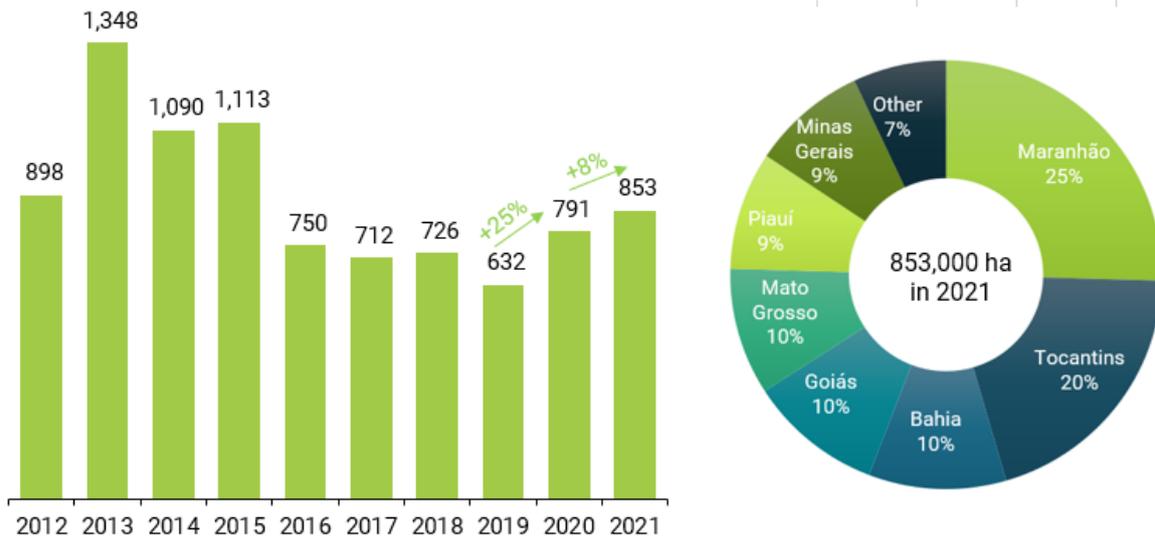
Meanwhile, the Brazilian Cerrado biome has seen large-scale deforestation for soy cultivation. While the Forest Code obliges farmers in the Amazon to conserve up to 80 percent, farmers are only required to set aside 20 to 35 percent of native vegetation in the Cerrado.¹¹ Only 8% of the biome are protected.¹² Consequently, much of the Cerrado deforestation is legal under Brazilian environmental regulations. Only about 55 percent of native Cerrado vegetation remains at this point.¹³

The deforestation rate in the Cerrado had shown a declining trend from 2016, however, legal and illegal deforestation still destroyed more than 3.7 Mha during the last five years, with 2020 and 2021 showing increasing rates again to a level above 2016 (Figure 10).¹⁴

It remains difficult to establish a direct connection between Cerrado deforestation and soy exports, but its role as an important driver of conversion is clear.

- A Chain Reaction Research analysis of 2020 data gives a conservative indication of the importance of soy as a driver of Cerrado deforestation by only considering farms that showed soybean cultivation before 2018. It found that in 2020 alone, an estimated 28.3% or more than 200,000 ha of Cerrado deforestation took place on farms that had already soy-planted areas. Over half of this deforestation was linked to prominent soy producers that in turn supply leading soy traders like Cargill, Bunge, ADM, LDC, and COFCO.¹⁵

Figure 10 Cerrado deforestation rates 2012 to 2021 (1,000 ha) and share of states in 2021



Source: INPE (2022), "TerraBrasilis - PRODES (Desmatamento)", online: <http://terrabrasilis.dpi.inpe.br/app/dashboard/deforestation/biomes/cerrado/increments>, viewed in April 2022.

- A 2022 analysis by Rainforest Foundation Norway and Harvest analysed developments in 21 high-risk municipalities in the frontier region of the Cerrado that are included in specific monitoring programmes of top agri-commodity traders.¹⁶ It found that between 2018 and 2020, deforestation and conversion of Cerrado vegetation in this area increased overall by 34%, and by 61% on soy-producing farms. Expanding the analysis to 61 key municipalities, deforestation was observed on around 236,000 ha between August 2020 and July 2021. Sourcing soy from these lands would be in breach of the 2020 cut-off date set by leading consumer goods companies. While deforestation rates in the Cerrado increase again, the research found that leading traders Bunge, ALZ Grãos, COFCO, and Cargill significantly increased their soy silo capacity in high-risk municipalities by adding around 300,000 t capacity between 2019 and 2021.¹⁷
- A 2020 study linked illegal deforestation since 2008 on individual rural properties in the Amazon and Cerrado biomes to their agricultural production and exports to EU countries. It found that 2% of properties in the Amazon and Cerrado were responsible for 62% of all potentially illegal deforestation. The authors estimated that roughly 20% of soy exports from both biomes to the EU may be contaminated with illegal deforestation.¹⁸

When zooming in on the Cerrado biome, an estimated 46% of Brazilian soy imports to the Netherlands in 2021 originated from states overlapping with the Cerrado biomes.¹⁹ If roughly 20% of soy exports from the Cerrado may be contaminated with illegal deforestation, the potentially contaminated volume imported via the Netherlands in 2021 equalled at least 411,000 t soybean equivalent. Focussing on the net volume used domestically in the Netherlands, an estimated 61% or 1.6 Mt of soybean equivalent originated from Brazil in 2021. Using the same assumptions, this volume may have been linked to about 149,000 t of soybeans potentially contaminated with illegal deforestation in the Cerrado biome.

These estimates only consider illegal deforestation. As the important soy producing states in the Cerrado region are more likely to see legal deforestation for the expansion of agricultural activities, it is likely that these estimates of contaminated soy would be considerably higher if all Cerrado conversion for soy production could be considered.

References

- 1 Kuepper, B. and M. Stravens (2022, January), *Mapping the European Soy Supply Chain*, Amsterdam, The Netherlands: Profundo, commissioned by WWF European Policy Office.
- 2 Eurostat (2022), "EU trade since 1988 by HS2,4,6 and CN8[DS-645593]", online: <https://ec.europa.eu/eurostat/web/main/data/database>, viewed in March 2022.
- 3 PSD Online (2022), "Custom query – Oilseed, soybean", online: <https://apps.fas.usda.gov/psdonline/app/index.html#/app/advQuery>, viewed in March 2022.
- 4 S&P Global (2020, March 24), "Brazil soybeans export accelerates in March: trade department", online: <https://www.spglobal.com/platts/en/market-insights/latest-news/agriculture/032420-brazil-soybeans-export-accelerates-in-march-trade-department>, viewed in March 2022.
- 5 Comexstat (2022), "General imports and exports", online: <http://comexstat.mdic.gov.br/en/geral>, viewed in April 2022.
- 6 Comexstat (2022), "General imports and exports", online: <http://comexstat.mdic.gov.br/en/geral>, viewed in April 2022.
- 7 Eurostat (2022), "EU trade since 1988 by HS2,4,6 and CN8[DS-645593]", online: <https://ec.europa.eu/eurostat/web/main/data/database>, viewed in March 2022.
- 8 PSD Online (2022), "Custom query – Oilseed, soybean", online: <https://apps.fas.usda.gov/psdonline/app/index.html#/app/advQuery>, viewed in March 2022.
- 9 Kuepper, B. and G. Rijk (2020, October), *Who's Profiting from Brazilian Soy? An Analysis of the Dutch Soy Supply Chain*, Report commissioned by Greenpeace Netherlands, Amsterdam, Netherlands: Profundo.
- 10 Garcia, M.T., Rijk, G. and M. Piotrowski (2020, May), *Deforestation for Agricultural Commodities a Driver of Fires in Brazil, Indonesia in 2019*, Washington DC, U.S.: Chain Reaction Research.
- 11 Azevedo, A.A., Rajão, R., Costa, M.A., Stabile, M.C.C., Macedo, M.N., dos Reis, T.N.P., Alencar, A., Soares-Filho, B.S. and R. Pacheco (2017, July 3), "Limits of Brazil's Forest Code as a means to end illegal deforestation", PNAS, online: <https://www.pnas.org/content/early/2017/06/27/1604768114>, viewed in March 2022.
- 12 IPAM (2022, January 5), "Matopiba bate recorde histórico de desmatamento no Cerrado", online: <https://ipam.org.br/matopiba-bate-recorde-historico-de-desmatamento-no-cerrado/>, viewed in April 2022.
- 13 MapBiomas, in: Trase.earth (2018), "MATOPIBA: Brazil's soy frontier", online: <https://medium.com/trase/matopiba-brazils-soy-frontier-9ad4cc6fe2d9>, viewed in March 2022.
- 14 INPE (2022), "TerraBrasilis - PRODES (Desmatamento)", online: <http://terrabrasilis.dpi.inpe.br/app/dashboard/deforestation/biomes/cerrado/increments>, viewed in April 2022.
- 15 Garcia, M., Rijk, G. and M. Piotrowski (2021, March), *Key Cerrado Deforesters in 2020 Linked to the Clearing of More Than 110,000 Hectares*, Washington DC, U.S.: Chain Reaction Research.
- 16 WBCSD (2021, December), "Soft Commodities Forum progress report", online: <https://www.wbcds.org/Programs/Food-and-Nature/Food-Land-Use/Soft-Commodities-Forum/Resources/Soft-Commodities-Forum-Progress-Report-December-2021>, viewed in April 2022.
- 17 Rainforest Foundation Norway and Harvest (2022, March), *The State of the Soy Industry*.
- 18 Rajão, R., Soares-Filho, B., Nunes, F. et al., "The rotten apples of Brazil's agribusiness", *Science*, Vol. 369(6501): 246-248.
- 19 Comexstat (2022), "General imports and exports", online: <http://comexstat.mdic.gov.br/en/geral>, viewed in April 2022.