European Soy Monitor

Insights on European uptake of responsible, deforestation and conversion-free soy in 2020

the sustainable trade initiative

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Prepared by Schuttelaar & Partners for IDH, The Sustainable Trade Initiative.

Important Notice on Contents – Estimations and Reporting.

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The following authors and IDH staff contributed to the report: Doutzen Wagenaar and Ruth de Jong from Schuttelaar & Partners, and Guilherme do Couto Justo and Margaux Duchâtel from IDH.

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IDH, The Sustainable Trade Initiative is an international organization that convenes, finances, and manages large programs to accelerate transitions toward sustainability in partnership with multinational and smaller companies, governments, and civil society. Headquartered in the Netherlands, IDH delivers scalable, economically viable impact on the Sustainable Development Goals. IDH operates globally in different industry sectors ranging from cocoa and tea to cotton and soy, and encourages joint investment in innovative models to realize long-term solutions for environmentally and socially sustainable production and trade. IDH is supported by multiple European governments including the following donors: The Ministry of the Foreign Affairs of the Netherlands (BUZA), Switzerland's State Secretariat for Economic Affairs (SECO), the Danish International Development Agency (DANIDA), and the Norwegian Department for Development Cooperation (NORAD).

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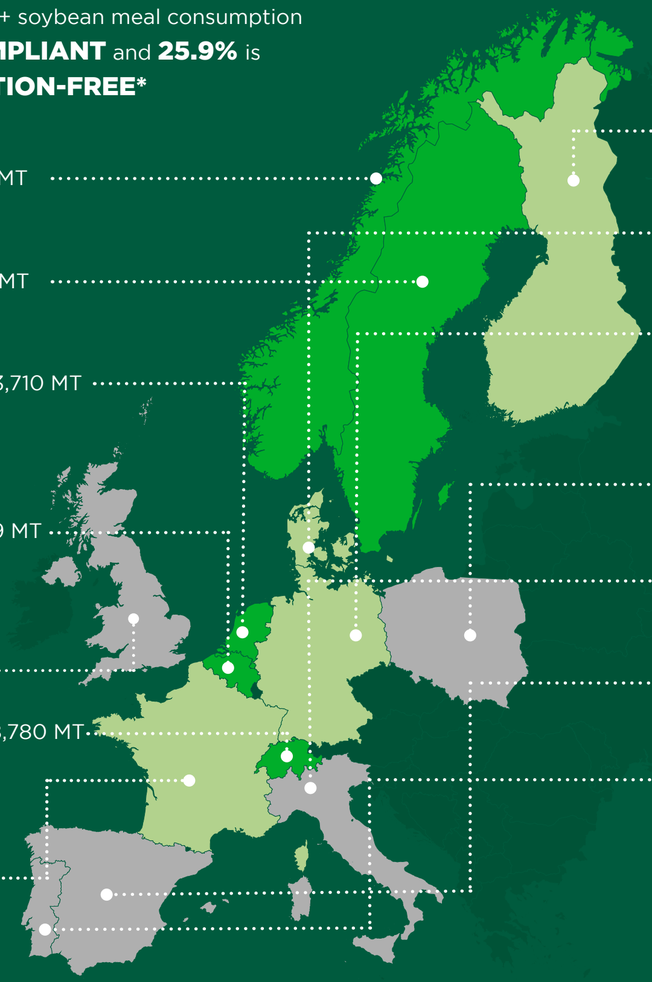
European consumption of responsible and deforestation-free soy in 2020

43.8% of EU27+ soybean meal consumption is **FEFAC COMPLIANT** and **25.9%** is **DEFORESTATION-FREE***



Norway 171,264 MT
>100% >100%

Sweden 317,051 MT
83% 83%

Netherlands 943,710 MT
>100% >100%

Belgium 587,899 MT
>100% 96%

UK 2.8 MMT
31% 22%

Switzerland 308,780 MT
>100% >100%

France 3.5 MMT
59% 12%

Finland 145,227 MT
65% 48%

Denmark 1.1 MMT
68% 29%

Germany 3.1 MMT
57% 38%

Poland 1.2 MMT
0% 0%

Italy 4.4 MMT
27% 18%

Spain 3.5 MMT
27% 2%

Portugal 1.2 MMT
31% 0%

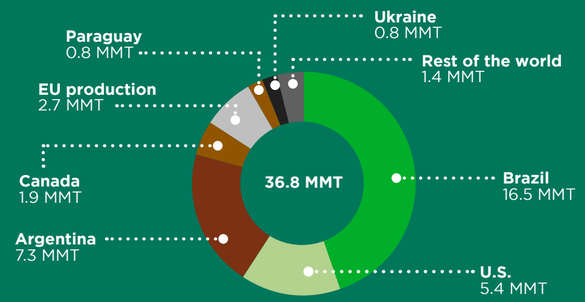
% FEFAC compliant % Certified Deforestation-free

Due to methodological differences a one-on-one comparison with last year's report is not entirely possible.

*For the calculation of deforestation-free we only took into account the volumes under the schemes which have been benchmarked by IUCN/ Profundo as deforestation-free (RTRS, Proterra, ISCC+, Danube / Europe Soy, CRS and SFAP- Non Conversion). **Net import of soybeans in soybean meal equivalents 12.7 MMT + net import of soybean meal 16 MMT + 2.15 MMT own soy production in soybean meal equivalents.

EUROPE OVERVIEW

Origins of EU27+ soy products



34.1 MMT in imports + 2.7 MMT EU production

Source: Eurostat & Comtrade

30.90 MMT
Soybean meal available**

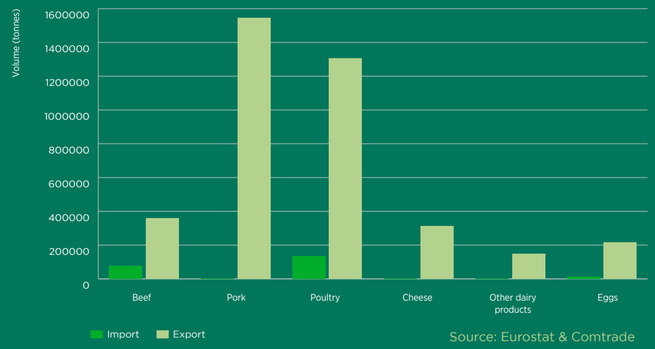
2.75 MMT
EU27+ net export embedded soy

28.15 MMT
EU27+ soybean meal consumption

30.9-2.75 = 28.15

Import and export of embedded soy in EU27+

Total Import of embedded soy: 0.26 MMT | Total Export of embedded soy: 3.1 MMT



Source: Eurostat & Comtrade

FEFAC estimated that **76.3%** of EU27+ soy imports are from **low deforestation risk areas**

GLOBAL OVERVIEW

354 MMT [1]
global soy production

32.5 MMT
is FEFAC SSG compliant soy

127 million [2]
hectares total production

the sustainable trade initiative

Executive Summary

Building on past annual reports, the 2020 European Soy monitor examines EU27+ (European, UK, Norwegian, and Swiss) imports of sustainable soy, the impacts of these imports on producing countries, and strategies to drive investment in sustainable soy globally. The uptake of FEFAC Soy Sourcing Guidelines (FEFAC SSG) compliant soy increased from 42.2% in 2019 to 43.8% in 2020. The percentage certified conversion-free soy increased slightly from 25.3% to 25.9% during the same time period. These changes are modest, and point to a lack of mainstream adoption of certified soy in the EU27+. Increasingly, certification is seen as one of the instruments in a smart mix of solutions such as biome wide moratoria, clean supplier approaches, and legislation. Supply chain multistakeholder action at the landscape level is also increasingly seen as a promising option to halt deforestation and protect valuable ecosystems. Monitoring the impact of all these different solutions is key to assess whether real progress is being made.

The COVID-19 pandemic that spread over the world in 2020 had devastating effects on the world's economies and societies, but soy trade was not significantly affected. Demand for soy continued to rise and global production increased from 334 million tonnes in 2019 to 354 million tonnes in 2020. Stocks at the end of 2020 were very small, and soybean prices, especially in the non-GMO market, rose significantly. Concerns about the sustainability of soybean production, mainly related to land conversion, remained present in the public debate. For the carbon sequestering capacity of non-forest ecosystems such as the Cerrado, Great Plains, and Chaco rose and further emphasized the need to protect these biomes.

In 2020, EU27+ countries imported over 16 million tonnes of soybeans and over 17.5 million tonnes of soybean meal. Soy production in the EU27+ declined from 2.74 million in 2019 to 2.7 million tonnes in 2020. Due to Europe's strong livestock sector, the export of animal-based products linked to soy far outweighed imports. The import of embedded soy linked to animal-based products was 826,847 tonnes and the export almost 3 million tonnes. Overall, the import and export patterns of beef, eggs, poultry, dairy, and cheese remained rather stable. In 2020 however, the EU27+ pig sector benefited from the African swine fever crisis in China, resulting in increased exports of pork meat relative to previous years.

Soybean meal available for consumption in EU27+ was calculated using net soy imports, EU27+ soy production, and imports and exports of embedded soy. Based on the data obtained from the FEFAC SSG compliant soy standards, the certified volume of compliant soybean meal destined for the EU27+ was 12.3 million tonnes in 2020. The percentage of FEFAC SSG compliant soy increased from 42.2% to 43.8% and the percentage of certified Deforestation and Conversion Free (DCF) soy increased from 25.3% to 25.9%.[3] Large-scale uptake of certified soy is still absent in 2020.

The uptake of FEFAC SSG compliant soy by individual European countries shows large similarities with the previous years, although uptake decreases slightly for most countries. In general, countries maintained their position relative to other countries in terms of sustainable uptake. The apparent stagnation in uptake of certified soy takes place in a broader debate over the effectiveness of farmer certification. The role of certification in halting deforestation and conversion is increasingly under scrutiny. Civil society organizations also increasingly support obligatory legislation demanding due-diligence as a means to halting deforestation – draft legislation on these themes was announced in 2021 and 2022. Negative publicity on certification may also have influenced companies that previously invested in certification.

The future of responsible soy can be found in a smart mix of solutions. Farmer certification plays a role, rewarding farmers for sustainable practices on their farm. Direct investments in landscapes with a high risk of deforestation, land conversion, water depletion, or soil degradation are also needed. IDH is investing in credible, multistakeholder projects at the landscape level via its Produce, Conserve, and Include approach. Other actors are also focusing on the actual risk landscapes. With improved satellite monitoring, the real risks of deforestation and conversion in a supply chain can be much better assessed. Other instruments, such as biome-wide moratoria, clean supplier approaches, and payment for ecosystem services are also being investigated and could play an important role in protecting landscapes in the future. It is clear that complex and multifaceted problems need a smart mix of solutions, and monitoring the effectiveness of this broader mix of solutions will be the main purpose of the European Soy Monitor in the years to come.

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Preface

I proudly present the fourth edition of the European Soy Monitor that reports on the uptake of FEFAC Soy Sourcing Guidelines compliant soy and deforestation and conversion-free soy in 2020. The report shows that the uptake of certified soy in EU27+ increased only slightly compared to last year. Despite this, I remain optimistic in light of hopeful developments on the ground. At IDH, our focus is increasingly shifting towards working with various stakeholders in the risk-landscapes themselves, achieving real impact in terms of sustainable intensification and rising agricultural production, conservation of valuable biomes, and inclusion of smallholders and communities. I continue to advocate a broader view on progress in which certification plays a clear role, but other indicators need to be included.

The stagnation evident in certified uptake throughout the EU27+ and at the country-level is integral to this report. Exploring the many definitions of progress has always been central to the underlying goal of reducing deforestation/ conversion and supporting farmers. I observe that companies, associations, and coalitions of soy stakeholders are intensifying focus on the topic of deforestation and conversion-free soy, but not always through certification. As companies examine the real link of their imports to specific risk-landscapes, it's important that impact in specific regions via direct investment in landscapes grows. I want to warn against European supply chains being 'cleaned' by redirecting sourcing, producing regions – especially those at highest risk of deforestation – need EU27+ support and investment to change practices. At IDH we have recently decided to focus our work on investment in specific landscapes in order to have real, direct, impact on the ground. In all our landscape work, we use a structured, balanced, and inclusive stakeholder approach based on the need to work on Production, Conservation, and Inclusion in a specific landscape. In Brazil, this approach is formalized through the PPI pillars (Produce, Preserve, and Include) and various landscape plans (called 'PPI compacts') have been developed and rolled out in different states in Brazil. Often farmer certification plays a role in such landscape plans, present in concrete goals such as achieving a percentage of certified farmers in a region. Monitoring and reporting is an important part of the work in a landscape. I hope and expect that future reports will also measure information about the number of protected hectares, the increase in agricultural productivity, and improvements in livelihoods of local communities.

In this report, certification is positioned as one of the tools in a broader toolbox for improving soy sustainability. It is my expectation that the European Soy Monitor will become a report showing a broader variety of progress indicators and I strongly believe that our landscape work will play a key role in that.

Daan Wensing
CEO IDH
March 2022

Definitions

Cutoff date
(Related to no-deforestation and no-conversion commitments): The date after which deforestation or conversion renders a given area or production unit non-compliant with no-deforestation or no-conversion commitments, respectively.

Deforestation and conversion-free (DCF) soy
Soy that is produced without converting natural ecosystems such as forests, wetlands, savanna, highly biodiverse wetlands, peatland, and high carbon stock land into agricultural acres. In this report we refer to the Profundo benchmark and the FEFAC Transparency Tool to calculate DCF soy.

EU27+
EU27+ refers to the European Union (27 member states) plus Norway, Switzerland, and the United Kingdom. The United Kingdom leaving the European Union in 2020 resulted in the switch in this report from EU28+ to EU27+.

Embedded soy
Embedded soy is the 'hidden soy' that is linked to animal-based protein such as meat, eggs, and dairy. When European countries import such products, they also 'implicitly' import the soy that was used to produce these products.

FEFAC Soy Sourcing Guidelines
The FEFAC Soy Sourcing Guidelines (FEFAC SSG) were developed in 2016 to provide guidance to feed companies that want to source responsible soy. Updated in 2021, the FEFAC SSG now also include a module to identify conversion-free soy standards.

FEFAC compliant soy
The FEFAC Soy Sourcing Guidelines (FEFAC SSG) were developed in 2016 to provide guidance to feed companies that want to source responsible soy. Updated in 2021, the FEFAC SSG now also include a module to identify conversion-free soy standards.

Low conversion risk soy
Soy that originates from countries or regions with a small risk of deforestation or land conversion. The risk categories are developed by FEFAC in cooperation with international experts.

Profundo benchmark
Profundo has assessed all FEFAC SSG compliant standards and concluded that 6 offer deforestation and conversion-free soy. This benchmark is used in the European Soy Monitors to calculate the percentage certified deforestation free soy. In addition, also a reference to the new FEFAC Transparency Tool is made.

Soybean meal available for domestic consumption
The reference volume for the calculation of FEFAC compliant and DCF soy. The available soybean meal for domestic consumption is calculated by summing all soy imports and domestic soy production, subtracting soy exports and adding the net import or export of embedded soy.

Transparency Tool
Created in 2021 along with the new version of the Soy Sourcing Guidelines, FEFAC's Transparency Tool allows companies to identify credible soy standards that offer certified conversion-free soy. In the Transparency Tool, most FEFAC SSG-compliant standards are also considered to offer deforestation and conversion-free soy.

Beef
All frozen, fresh, or chilled meat of bovine animals (HS 0201 and HS 0202)

Pork
All frozen, fresh, or chilled meat of swine (HS 0203)

Poultry
All frozen, fresh, or chilled meat and edible offal of poultry (HS 0207)

Eggs
Birds' eggs and dried eggs (HS 0407 and HS 0408)

Cheese
All cheeses and curds (HS 0406)

Other dairy products
All kinds of milk, cream, buttermilk, and whey products (HS 0401-HS 0405)

1 Trends and developments in the soy supply chain

The demand for soy continues to rise in a world with an ever-growing appetite for cheap protein. Soy is a very efficient, cheap, and widely available source of protein, making it a preferred choice in feed, food, fuel, and industrial applications worldwide. This first chapter presents the key facts and figures of global soy production, trade, and consumption in 2020.

1.1 The soy market in 2020

The outbreak of the COVID-19 pandemic has had a dramatic effect on the world in 2020. Besides very serious health and societal effects, it resulted in large trade disruptions and severe economic damage. Although the agriculture and food industry were affected as well, experts conclude that COVID-19 did not exert significant impacts on international value chains of non-perishable commodities such as cereals and oilseeds like soy.[4] However, soy trade continues to be a dynamic and volatile business with ever-increasing demand for soybeans and many outlets for soy products.

1.1.1 Global soy production

In 2020, the world's total soy production grew to 353.5 million metric tonnes. An estimated 126.95 million hectares were dedicated to soy planting, resulting in an overall productivity of 2.78 tonnes per hectare.[5] Compared to 2019, the total production of soy increased by 5%, the area used for soy production increased by 4.46%, and productivity per hectare increased by 0.36%. As Figure 1 shows, Brazil remains the largest soy producer, followed by the United States, then Argentina. In Brazil 37 million hectares and in the United States 33 million hectares were planted with soy.[6] The strong dollar favored Brazilian soy production in 2020 and it is expected that soy production in Brazil will further increase as a result of investments in logistical improvements, use of former pastures, and land conversion in frontier areas such as the Cerrado.[7]

1.1.2 Global soybean imports

Brazil, the Unites States, Argentina, and other major soy producers are both consumers and exporters. Soybeans can be exported directly or after crushing as soybean meal and soybean oil. Figure 2 shows the countries with the highest imports of soybeans. China is the biggest importer of soybeans, followed by the EU27+.

Figure 3 shows that the EU27+ is the biggest importer of soybean meal, followed by Indonesia, and Vietnam. China does not import large volumes of soybean meal but has a large crushing capacity available. Market analysts predict that China will remain the dominant market force in international commodity trade, including the trade in soy products. With a growing appetite for protein and a limited ability to produce more protein in China, more vessels will find their way to China in the coming years. FAO experts expect a tightening supply-demand situation for soy and other oilseeds in the near future.[10]

Figure 1 World soybean production in tonnes in 2020 (FAO[8])

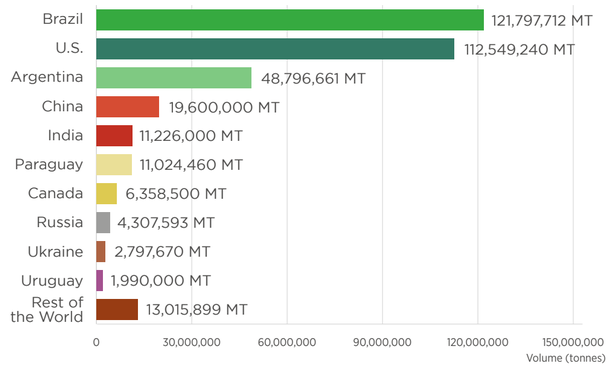


Figure 2 Main soybean importing countries in 2020 (FAO[9])

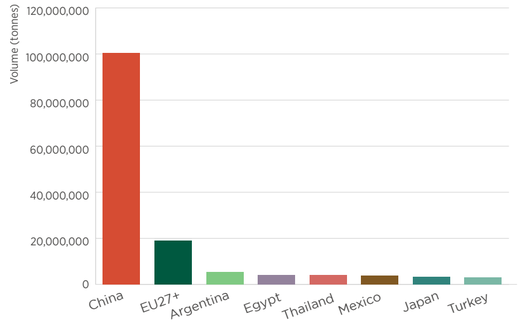
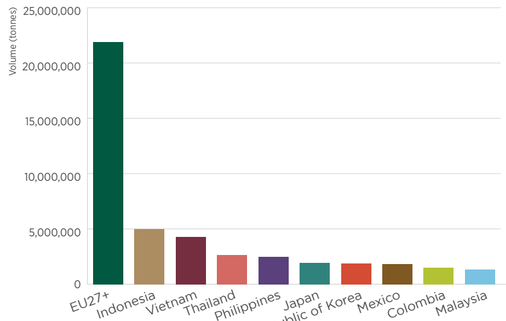


Figure 3 Main soybean meal importing countries in 2020 (FAO[11])



1.1.3 Soybean consumption

Soybeans are used in animal feed, food, as biofuel, and for technical industrial applications. Figure 4, originally retrieved from the website 'Our World in Data,' shows an indication of the allocation of global soy production to its various end uses.[12] According to this overview, soy is predominantly used as animal feed (77%), followed by direct human consumption (19.2%) and industrial applications (3.8%). Around 6% of the world's total soy production is used for vegetarian and vegan products such as meat replacers and dairy alternatives. Although this is rather modest, an increase is expected in the coming years.[13]

1.2 Trends and developments in soy production regions

Concerns about land conversion remain high on the agenda of companies, governments, and civil society. These concerns can be placed in a broader context of increasing attention to climate change, biodiversity loss, and water scarcity, in addition to human rights topics. Recent research by Trase indicates that more than half of tropical deforestation linked to exports of key commodities is happening in less than 5% of the producing regions. In addition, the European Union's soy imports are linked to more deforestation per ton of soy than Chinese imports of soybeans.[16] This is because it sources greater volumes from deforestation hotspots.

1.2.1 Developments in the Amazon

In Brazil, land conversion in the legal Amazon has been monitored via the PRODES-project since 1988, resulting in annual deforestation rates that are recognized by the international scientific community as highly accurate. PRODES figures indicate that annual deforestation in the Amazon fluctuated greatly since 1988 but declined sharply after a peak in 2004 (Figure 5). In recent years deforestation is increasing again. Deforestation in the Amazon is caused by natural and human induced forest fires and illegal logging for economic activities such as mining, farming, and cattle.[17] The role of soy in deforestation is discussed below.

Figure 4 Allocation of global soy production to its end uses by weight, based on 2017-2019 data (Our World in Data[14])

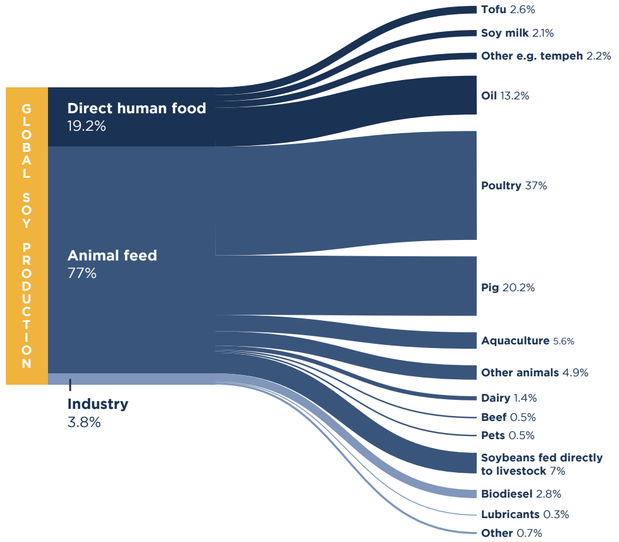
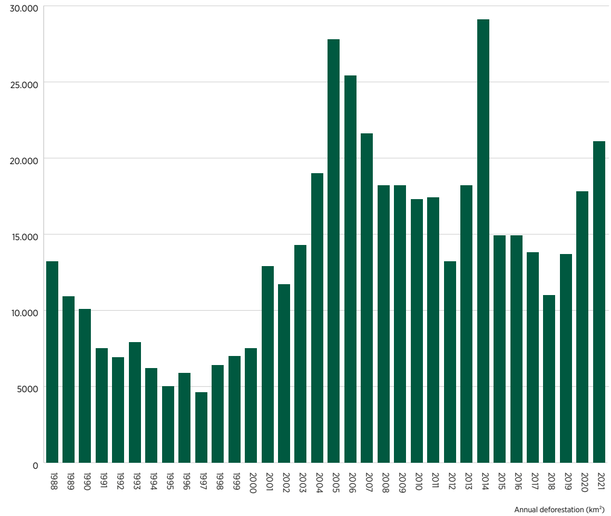


Figure 5 Deforestation rates in the legal Amazon since 1988 (TerraBrasilis[18])



Uptake of responsible soy in vegan & vegetarian food

A recent study into the uptake of plant-based products in Europe shows that Europe's plant-based food industry grew by 49% between 2018 and 2020[15]. Soybean protein concentrate is an important ingredient in plant-based products replacing meat and dairy products, and the producers of such products use non-GMO soy. The non-GMO requirements automatically result in the need for fully segregated, physical soy supply chains. Therefore, the soy is commonly sourced from Europe, the United States or Canada. Companies involved in the production of vegan and vegetarian food products therefore face a different situation than their colleagues in the feed sector. An attempt to also assess the trade flows of such plant-based alternatives was halted by the absence of clear HS classifications, which determines the products place in the universal index of international trade. However, it is clear that this sector will gain importance and can be challenged to play a role in responsible soy production especially with regards to soil health and integrated crop management.

In 2006, the Amazon Soy Moratorium was signed as an agreement between soy traders not to buy soy from farmers in the Amazon that deforested their land after 22 July 2008, the reference date of the Forest Code. Rural properties that are not in compliance with the Moratorium are excluded from the soy trading and financing processes by the signatories of the Moratorium. Figure 6 shows the same overall deforestation figures as Figure 5 and highlights the effects of the Soy Moratorium. It indicates that the Soy Moratorium had a large effect on total deforestation in the biome, but also shows that deforestation is increasing again despite the Moratorium. In 2021, ABIOVE and its partners published an overview of the 13th year of the Amazon Soy Moratorium, concluding that soy production in the Amazon increased steeply since the implementation of the Moratorium but rarely on lands that were deforested after 2008.[19] There is concern that deforestation will continue for other crops such as maize and cotton, even on farms that are in compliance with the Amazon Moratorium.[20]

The report concludes that between 2007/2008 and 2019/2020, the area planted with soy in the Amazon increased from 1.64 million to 5.41 million hectares. Of the land under soy cultivation around 108,000 hectares were deforested after 2008 and hence not in compliance with the Amazon Moratorium. This non-compliant area corresponds to 2.0% of the total soy grown in the Amazon Biome in the 2019/20 crop year. Due to a sophisticated monitoring system, the non-compliant acres can be traced back to specific municipalities. It shows that only 23 municipalities grow 83% of the soy that is noncompliant with the Moratorium. Figure 7 shows the states where the non-compliant soy area is concentrated. The authors of the report conclude that the Soy Moratorium does not prevent new deforestation, but it does block soy production on cleared land.[23] There is increasing concern that farmers continue to deforest the Amazon forest to produce other crops such as maize or cotton, and simply produce soy on land that was deforested before July 2008 to maintain compliance with the Moratorium[24]. Combating illegal deforestation remains key, and all stakeholders in the landscape need to be involved in strategies to reduce deforestation.

Figure 6 Deforestation rates per state in the Amazon biome (retrieved from ABIOVE & Agrosatélite[22])

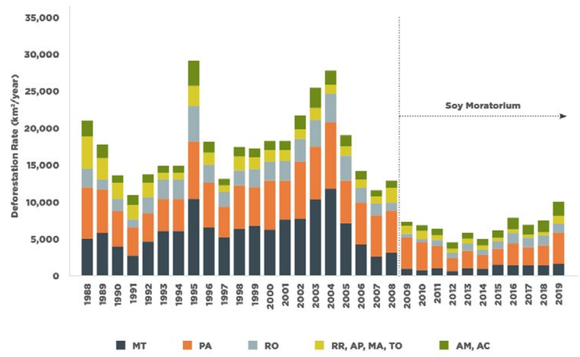
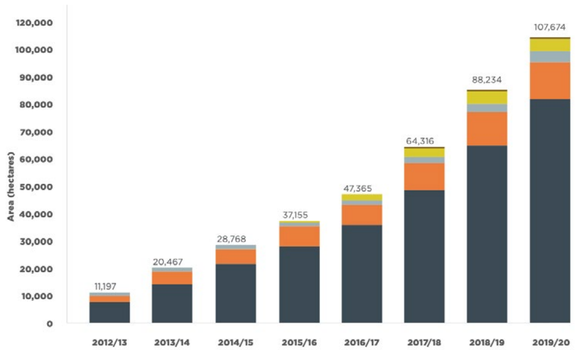


Figure 7 Evolution of the soy area not in compliance with the Amazon Soy Moratorium per state (retrieved from ABIOVE & Agrosatélite[25])



	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
RR	n.a.	n.a.	n.a.	0	0	23	9	8
TO	n.a.	n.a.	n.a.	n.a.	0	0	0	0
AP	n.a.	n.a.	n.a.	38	0	58	59	56
MA	n.a.	n.a.	n.a.	n.a.	2,212	3,160	4,505	4,672
RO	899	1,097	1,159	1,358	1,602	1,928	2,911	4,172
PA	2,065	4,676	5,722	7,479	7,418	10,133	12,811	14,144
MT	8,233	14,694	21,887	28,280	36,134	49,013	67,940	84,623

Produce, Conserve, and Include in Mato Grosso

During the Paris climate conference in 2015, the state of Mato Grosso introduced an ambitious plan to achieve social and economic development through sustainable land use. The plan included a broad set of concrete and measurable targets divided into three key areas: Produce, Conserve, and Include (PCI). Examples of measures included in the plan are sustainable crop and cattle intensification, crop production on (former) pastures, the protection of native vegetation and the inclusion of smallholders and local communities, amongst others. The PCI strategy was developed via a participatory process that included all relevant public, private, and civil society organizations to realize their shared ambitions.

Each year an assessment of progress is published. The 2021 evaluation and update of the strategy shows that total grain production increased from 49.2 to 68.7 million tonnes between 2015 and 2020.[21] Livestock productivity also increased. The percentage of the state that is covered with native vegetation declined from 63.7% to 62.3%, still above the threshold level of maintaining 60% native vegetation. Between 2015 and 2017 there was an observable decline in deforestation. After 2017 annual deforestation in Mato Grosso increased again from 1,273 km^2 to 1,779 km^2 in 2020. Land conversion in the Cerrado (in Mato Grosso) decreased between 2015 and 2020 from 1,695 km^2 to 727 km^2. Combating illegal deforestation and forest fires remains a challenge and top priority.

1.2.2 Developments in the Cerrado

The TerraBrasil dashboard system, which includes all PRODES data, reveals conversion data for the Cerrado biome.[26] Unfortunately, it was recently released that the monitoring of conversion in the Cerrado will stop.[27] Land conversion in the Cerrado peaked in 2003 and 2004 with 28.8 thousand square kilometres converted. Although there has been a downward trend since 2004, conversion numbers varied significantly between 2010 and 2021 with a peak in 2013, as shown in Figure 8. In 2020, around 8 thousand square kilometres of natural lands were converted. The role of soy production in the conversion of Cerrado land is assessed below.

Since 2015, ABIOVE and Agrosatélite release an annual in-depth report about land use change and soy production in the Cerrado[29]. In 2022, a detailed assessment of soy production and land conversion happening between 2000 and 2020 was published. The assessment shows that soy production grew from 7.5 million hectares in 2000/01 to 20 million hectares in 2020/21. Total deforestation of the Cerrado for soy production in the entire period was 3.25 million hectares. Figure 9 shows the expansion of soy area in the Cerrado over three periods. A distinction is made between soy expansion with and without land conversion in the Cerrado as a whole, Matopiba, and the others states in the Cerrado. The figure shows that soy expansion with land conversion is still taking place, but that it is slowing down compared to earlier periods. In order to limit land conversion in the Cerrado, it is important to investigate sustainable intensification, and to understand the relation between soy, cotton, maize, and cattle and to identify compensation mechanisms for farmers that protect part of the natural vegetation on their lands.

Figure 8 Annual deforestation rates in the Cerrado in square kilometers (TerraBrasilis[28])

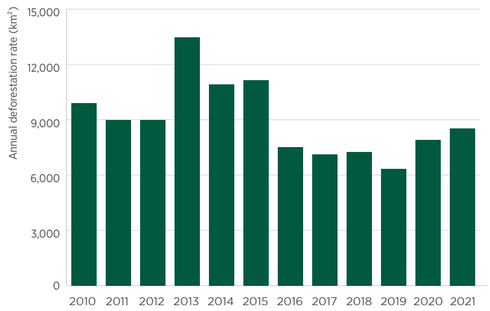


Figure 9 Soy expansion with and without deforestation in the Cerrado Biome, Other States and Matopiba in three periods: 2000/01 to 2006/07; 2006/07 to 2013/14; 2013/14 to 2020/21. (retrieved from ABIOVE & Agrosatélite[30])

1.2.3 Developments in the Gran Chaco

With growing attention for protecting other biodiversity regions, rich carbon capturing ecosystems such as the Cerrado and Gran Chaco come more in the spotlight. A recent study indicates that dry forests stores up to 19 times more carbon than previously assumed.[31] The Chaco spans a large part of Argentina, and parts of Paraguay, Bolivia, and Brazil. Monitoring capacity in this biome is less developed, however Argentina launched a new satellite (SAOCOM 1B) and 24/7 deforestation monitoring system in July 2020.[32] Publicly available information about the current state of play in Gran Chaco is available via Global Forest Watch, MapBiomas, and information from civil society organizations.

MapBiomas reveals land-use changes in biomes in South America and Indonesia using Google Earth Engine.[33] For the Chaco biome, information until 2019 is available.[34] Figure 10 shows that a significant fraction of the woody vegetation in Gran Chaco was transformed into agricultural land between 2000 and 2019. Research from 2017 indicates that soy plays a role in driving the conversion of the Chaco.[35]

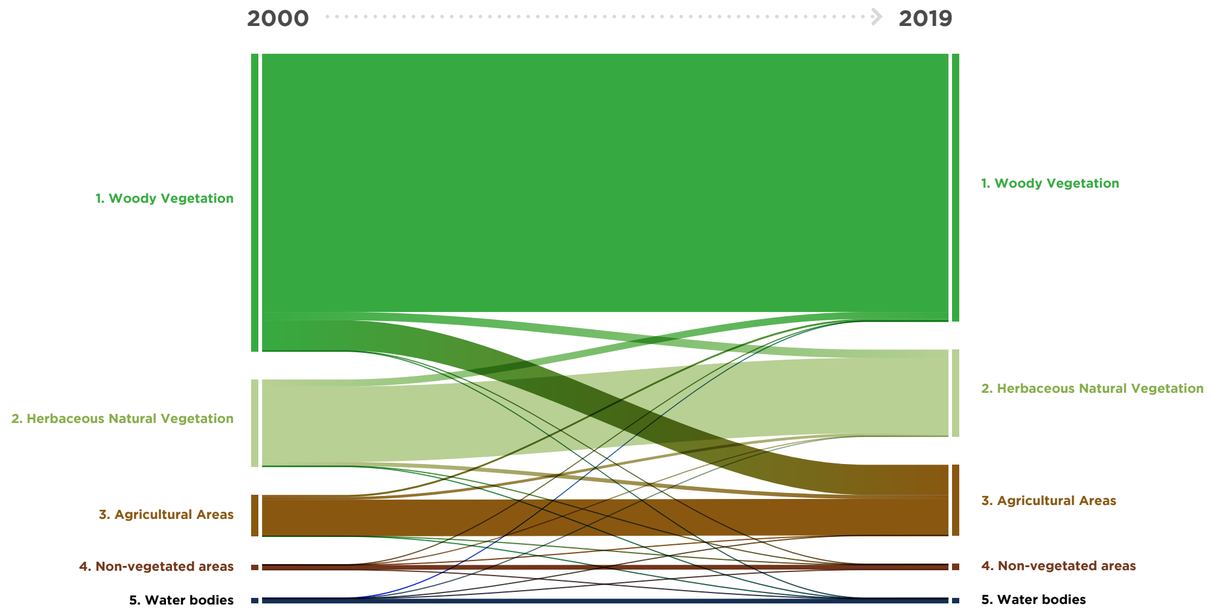
Civil society organizations report on illegal logging as well. Argentina has a 'Native Forest Law (26.331),' which clearly assigns areas that cannot be deforested (including 60,000 square kilometres of the Gran Chaco), but illegal logging is taking place. In 2019, a group of civil society organizations proposed a strategy called the 'Compromiso Gran Chaco' to stop deforestation of the Gran Chaco.[37] In this strategy, governments, companies, civil society organisations, and society are called upon to stimulate implementation and enforcement of the Native Forest Law to protect this biome.

Another concern is the conversion of the Dry Chaco in Paraguay. Between 2010 and 2019, the Paraguayan part of the Chaco biome lost 2.4 million hectares of native vegetation, largely for the expansion of pastures. While Trase data shows only 14,600 hectares were planted with soya in Dry Chaco in 2019, production has doubled since 2014 and experts are worried that the Dry Chaco is becoming a new soy expansion area.

VISec: a sectoral vision for the Gran Chaco

Realizing that valuable landscapes can only be protected when all actors in that landscape are involved, also in the Gran Chaco initiatives are being set up to protect this important area. A broad group of stakeholders came together to discuss a joint vision for the Gran Chaco. This so called Visión Sectorial del Gran Chaco Argentino (ViSeC) aims to protect native vegetation in this important biome whilst also looking into smallholder inclusion, economic development and agricultural production. The vision includes the commitments Xand actions that producers, processors and traders, civil society, and government will each play to obtain the shared goals in the region. The initiative is still very new, but working groups are currently being created to start putting the plans into action.

Figure 10 The transitions in land cover in Gran Chaco between 2000 and 2019 (Retrieved from Map Biomas[36])



1.2.4 Developments in the Atlantic Forest

The Atlantic Forest, the main soy-producing region in Paraguay, is also at risk of deforestation. Recent research by Trase indicates a link between soy production and land conversion especially in the Atlantic Forest but also in the Dry Chaco.[38] In 2019, an estimated 75,000 hectares of forest were cleared in the Atlantic Forest. Trase assessed that five of the main importers of Paraguayan soy are exposed to 5,700 hectares of illegal deforestation risk from this specific biome.

1.2.5 Developments in Great Plains

Like the Cerrado and the Gran Chaco, the Great Plains in the mid-west of the United States, and parts of Canada and Mexico are increasingly seen as an important carbon stock that need protection.[39] A recent study in Science shows that the protection of grasslands can contribute to a significant reduction in greenhouse gas emissions.[40] The 2021 Plowprint Report by WWF indicates that land conversion in the Great Plains (US, Canada, and Mexico) has increased – 2.56 million acres (1 million hectare) were converted to row crops in 2018-2019.[41] The report states that in the Great Plains conversion is linked to corn (25%), soy (22%), and wheat (21%). In the Northern Great Plains (US & Canada), wheat accounted for most of the new conversion (42%) followed by corn (10%) and soy (10%).

Concluding remarks

This chapter has shown the main trends and developments in soy trade and soy production areas, with special attention for soy producing landscapes. In 2020, soy production increased, and soy trade continued despite the COVID-19 pandemic. China and Europe remain the main soy buyers, and Brazil and the United States remain the main producers. Land conversion is increasing in many of the soy production regions, but research into the role of soy also indicates that the link with soy is often becoming smaller. Focusing too much on soy alone for stopping land conversion is therefore not an effective solution. Investment in vulnerable landscapes, taking into account all stakeholders and all crops, is a promising way forward. In addition, the incentives for farmers, who often have a legal right to convert part of their land, need to be aligned to effectively reduce land conversion.

SoyChaco: investing in the Gran Chaco

Aware of the importance of the Gran Chaco, a coalition of Dutch organizations has joined forces to promote responsible and conversion-free soy from the Chaco. Within the project called ‘SoyChaco,’ IUCN NL, Solidaridad, Fundacion Vida Silvestre, Zuivel NL (the Dutch dairy sector), and a Dutch trader work together to achieve positive impact in the risk-area. SoyChaco matches RTRS-certified producers from Gran Chaco with traders and buyers interested in their sustainability efforts, helps research solutions for farmers on their way to responsible production, and promotes additional nature conservation and restoration.

Further reading:

> SoyChaco, A Dutch pilot project to add conservation value to soy sourcing in the Argentine Chaco.

2 Uptake of responsible soy in EU27+

The European Union is a large soy importer and has a relatively high exposure to deforestation-risk. The percentage of certified imported soybeans is not the only indicator for progress in the area of responsible soy production, but it is an important one. This chapter reports on the uptake of FEFAC Soy Sourcing Guidelines compliant soy, certified DCF soy, and soy from low conversion risk areas. Note that in 2020, the FEFAC Soy Sourcing Guidelines 2015 were still the reference.

2.1 The EU27+ soy footprint

As indicated in Chapter 1, the European Union imports high volumes of soybeans and soybean meal, and produces and exports large quantities of animal-based products such as meat, dairy, and cheese. This section unravels the EU27+ (EU27 + UK, Norway, and Switzerland) soybean footprint, looking at imports and exports of soybeans and soybean meal, domestic soybean production, and import and export of embedded soy. These three categories are first discussed separately below.

2.1.1 Direct soy imports

Table 1 gives an overview of the total imports of the largest soy products (soybeans and soybean meal) to the EU27+ in 2020. The table shows that the EU27+ imported over 16 million tonnes of soybeans and over 17.5 million tonnes of soybean meal. It exported 277,044 tonnes of soybeans and 1,500,672 tonnes of soybean meal.

Figure 11 shows the aggregated volume of soybeans, soybean meal, and soybean oil imported to the EU27+ by country of origin in 2020.[42] Brazil and Argentina are the main countries of origin for soy used in the EU27+, followed by the United States, Canada, Paraguay, and Ukraine. 'Rest of the World' includes producing countries such as Russia, India, Serbia, China, and Uruguay.

2.1.2. Soybean production

Countries in the European Union produced 2,693,500 tonnes of soybeans in 2020.[43] Soy production in Norway, Switzerland and the United Kingdom is negligible. Figure 12 shows that significant soy production in the European Union currently is limited to a handful of countries such as Italy, France, Romania, Croatia, and Austria. Given the desire to diversify the crop plan in European countries as well as political support through the emergence of "National Protein Strategies" soy volumes in the European Union are likely to increase. In geographical Europe, soy production is growing steeply and countries such as Ukraine are becoming a true market force in soy supply.[44] Current prices of soy and the market forecasts are likely to additionally stimulate European soy production.

Figure 11 Total volume of soy products (meal, beans, and oil) imported to the EU27+ by country of origin (tonnes) (Eurostat & Comtrade)

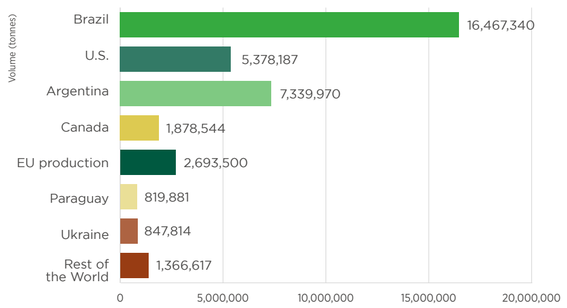
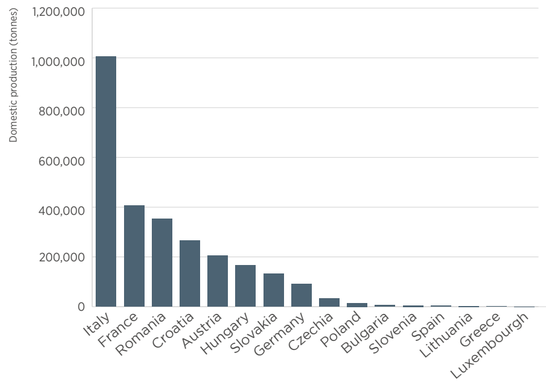


Figure 12 Soybean production in the European Union in 2020, (Eurostat[45])



European soy in the Austrian egg sector

Although European soy production is modest compared to production in other parts of the world, in some countries the cultivation and uptake of European soy is successfully taking off. One of the drivers being increased market demand for responsibly produced soy:

Already in 2013, the Austrian egg sector switched to Donau Soja certified feed. This means, that practically all eggs sold through the Austrian food retail chains (with the exception of organic eggs) have been produced using certified soy feed from the Danube region. In total, sales add up to 1.7 billion certified and labelled eggs per year in Austria.

Austria is the fifth largest soya producer in the European Union with 210,000 tons of soya cultivated on 70,000 hectares in 2020. In 2020, around two-third of soy for the Austrian egg sector was cultivated and processed in Austria. The switch to certified non-GMO, sustainable and traceable soya is seen as a success for the whole sector by many farmers, industry and retailers. It created added value for soy farmers in Austria and the Danube Region. It is also an example how short and transparent soy supply-chains within Europe can close the loop between production, processing and consumption, thereby strengthening rural development, reducing food miles and contributing to a sustainable agri-food system in Europe.

Table 1 Import of soybean products to EU27+ in tonnes

Soy products	Dominant use	Total import to EU27+ (in tonnes)	Total export from EU27+ towards the rest of the world (in tonnes)
Soybeans (HS 1201)	Animal feed (after toasting or crushing)	16,201,495	277,044
Soybean meal (HS 2304)	Animal feed	17,508,706	1,500,672

Source: Based on Eurostat & Comtrade data

2.1.3 Import and export of embedded soy

In addition to importing soy, the EU27 also imports animal-based products as seen in Table 2. Table 2 reports on the import and export of animal-based products to and from the EU27 (not corrected for trade with Norway, Switzerland and the UK). Import from countries outside the EU27 is relatively modest (2 million tonnes of animal-based products). Intra-European trade of animal-based products is significantly larger (almost 30 million tonnes).

The imported animal-based products come with a 'hidden soy footprint', referred to as embedded soy. Table 3 shows the volumes of embedded soy that are linked to EU27 imports and exports of animal-based products (not corrected for trade with Norway, Switzerland and the UK). RTRS conversion-factors are used to calculate the embedded soy imported to the EU27 and the average of the conversion factors calculated by Hoste et al are used for export.[46] Table 3 shows that the EU27 is a net exporter of embedded soy (3.8 million tonnes).

In this report the focus is on EU27+, so in addition to the EU27, the UK, Norway, and Switzerland are included. This means that both import and export are corrected for trade with these three countries. After this correction, the import of embedded soy to the EU27+ is 826,847 tonnes (the UK, Switzerland and Norway also import animal-based products from outside EU27+) and the export of embedded soy is 3,577,775 tonnes. The difference between the two, the net export of embedded soy is around 2.8 million tonnes of soy.

2.1.4 Soybean meal available for consumption in EU27+

Total soybean meal available for consumption in the EU27+ is needed to calculate the rate of FEFAC SSG compliant and DCF certified soy. To arrive at that volume requires the net soybean and soybean meal imports, domestic soybean production, and the net exports of embedded soybean meal.[47] Table 4 brings all previously discussed elements together to arrive at the soybean meal available for consumption in EU27+, which is slightly more than 28 million tonnes of soybean meal.

Table 2 Import and export of animal-based products to and from EU27 in tonnes

Product	Import animal products in tonnes FROM countries outside EU27	Export animal products in tonnes TO countries outside EU27
Beef	236,117	465,422
Pork	109,384	3,793,521
Poultry	391,746	2,028,851
Cheese	222,785	1,401,616
Other dairy products	1,035,609	4,655,739
Eggs	45,270	266,094
Total	**2,040,911**	**12,611,243**

Source: Eurostat

Table 3 Import & Export of embedded soy to and from EU27 in tonnes

Product	Import embedded soy in tonnes FROM countries outside EU27	Export embedded soy in tonnes TO countries outside EU27
Beef	106,489	209,905
Pork	55,457	1,669,149
Poultry	296,160	1,667,107
Cheese	40,547	500,938
Other dairy products	38,318	166,396
Eggs	24,129	104,708
Total net-import	**561,100**	**4,318,203**

Source: Eurostat

Table 4 Soybean meal available to EU27+ in tonnes, all values expressed as soybean meal (conversion factor 0.8 for soybeans)

Import		Export		Net available soybean meal
Import soybeans	12,961,196	Export soybeans	221,635	**12,739,561**
Import soybean meal	17,508,706	Export soybean meal	1,500,672	**16,008,035**
EU27+ Soybean production				**2,154,800**
Direct soybean meal available				**30.902.396**
Import embedded soy	826,847	Export embedded soy	3,577,775	**-2,750,928**
Total soybean meal available for consumption in EU27+				**28,151,467**

Source: Based on Eurostat & Comtrade data

2.2 Uptake of FEFAC SSG compliant soy

To determine the total volume of FEFAC SSG compliant soy sold to EU27+ (whether via certificate trade or as physical certified soy), all compliant soy schemes were asked to share their information. Like in the previous reports, all data is brought together in one table (Table 5). It is important to mention that the FEFAC Soy Sourcing Guidelines 2015 are still the reference in 2020 and that an additional scheme was approved in 2020: CSQA. This standard is now also included in the overview in Table 4. The new version of the FEFAC Soy Sourcing Guidelines was published in 2021.

The total volume of FEFAC SSG compliant soybeans with EU27+ as the final destination is 15.4 million tonnes of beans. Converted to soybean meal, a volume of 12.3 million tonnes

Table 5 Overview of soy delivered under the FEFAC compliant soy standards to EU27+ (in tonnes of soybeans)

Name	Producing countries	Total volume certified soy-beans globally	Destined for EU27+
Agricultura Sustent-bale Certificada	Argentina	350,000	100,000
Amaggi	Brazil	43,400	0
Cargill Triple-S	Paraguay, Brazil	560,000	73,378
Cefetra CRS	Brazil, Argentina, Paraguay	442,000	442,607
CSQA	Italy	508,000	508,000
Donau Soja + Eu-rope Soya	Russia, Serbia, Italy, Croatia, Romania, Austria, Ukraine, Hun-gary, Germany, France, Moldova, Switzerland	610,000	610,000
Proterra	Brazil	3,032,171	3,032,171
RTRS	Brazil, Paraguay, India, Argenti-na, China	4,509,343	3,856,780
Sustainable Farming Assurance Program (SFAP)	Brazil	550,000	550,000
US Soy Sustainability Assurance Protocol (SSAP)	United States of America	21,299,232	5,656,909
ISCC+	Argentina, Austria, Bulgaria, Bra-zil, Czech Republic, Greece, Cro-atia, Hungary, Romania, Serbia, Russian Federation, Slovenia, Slovakia, Ukraine	612,316	600,000
ADM responsible soybean standard	No info.	No info.	No info.
Bunge Pro-S	No info.	No info.	No info.
FEMAS	No info.	No info.	No info.
Louis Dreyfus Com-pany	No info.	No info.	No info.
Programma Coamo	No info.	No info.	No info.
Total in beans		**32,516,462**	**15,429,845**
Total in meal (x0.8)		**26,013,170**	**12,343,876**

Source: Data provided by the standard owners

Initiatives by the European feed industry

Around 77% of all soybeans are used in the feed industry.[53] Sustainable soy has been on the feed sector's radar for quite some time. In 2020, the European Feed Manufacturers' Federation (FEFAC) launched its new Sustainability Charter for the period until 2030. The Charter includes five ambitions, one of which is the promotion of responsible sourcing practices. Revised in 2020, the Soy Sourcing Guidelines are an important instrument for promoting responsible soy. Tied to this is the Transparency Tool, a newly developed tool to compare the FEFAC compliant standards in terms of no-deforestation and no-conversion impact. Standards appear in the Transparency Tool when:

- They have a clear non-conversion offer in which non-conversion is defined in line with the Accountability framework
- There is a clear cutoff date for conversion and deforestation, no later than December 2020
- Accurate and verified satellite images are used to monitor the non-conversion claim
- There is transparency about the supply chain / chain of custody model used

In 2021, the new Guidelines were published along with the Transparency Tool.

Further reading:

> FEFAC Sustainability Charter 2030
> FEFAC Soy Sourcing Guidelines 2021
> Non-Conversion Transparency Tool

of soybean meal is available. The total volume of soybean meal available for consumption in EU27+ was calculated to be 28,151,467, and hence the percentage that is FEFAC compliant is 43.8%. This is a small increase compared to 2019 figures (42.2%). In the section below this percentage is further assessed looking at the individual standards.

2.2.1 Multistakeholder standards

The multistakeholder standards RTRS, Proterra, Donau Soja, Europe Soy, and ISCC+ have reported on total certified volume produced and estimated European uptake for the past three years. Table 6 gives an overview of this data. The volume of RTRS certified soy destined for the EU27+ increased from 2.4 million to 3.9 million tonnes between 2018 and 2020. Proterra is responsible for a rather stable 3 million tonnes of certified soy sent to the EU27+. Donau Soja and Europe Soy together account for around 600,000 tonnes of certified soy. ISCC+ shows more volatile pattern with a peak of 1 million tonnes in 2019. In 2020, an estimated 600,000 tonnes of ISCC+ certified soy found their way to the EU27+.

2.2.2 Trader / privately owned schemes

Table 7 gives an overview of the trader programs and the privately owned standards that are FEFAC compliant. Of the six traders, Amaggi, Cefetra, and Cargill have reported over all three years. ADM, Bunge, and Louis Dreyfus have not provided data. All six companies emphasize that their own FEFAC SSG compliant soy standard is not the only responsible soy offer in their portfolio. Most of them also sell RTRS, Proterra, and SSAP soy, among more specific traceability and conversion-free soy solutions.

In addition, it is important to mention that the six traders grouped together under the Soft Commodities Forum report transparently about traceability and the volume sourced in specific risk commodities. More about these initiatives can be found in the section on ‘trader initiatives’. Looking at the data provided by the three traders, a very mixed picture is presented. It could be that other soy options (conversion-free/

Table 6 Overview of volumes under multistakeholder standards (in tonnes)

	2018		2019		2020	
	Total certified volume	Volume destined for EU28+	Total certified volume	Volume destined for EU28+	Total certified volume	Volume destined for EU27+
RTRS	4,500,000	2,400,000	4,085,655	3,652,006	4,500,00	3,900,000
Proterra	3.400,000	2,800,000	2,988,373	2,988,373	3,000,000	3,000,000
Donau Soja / Europe Soy	600,000	600,000	675,000	675,000	610,000	610,000
ISCC+	748,000	324,000	1,160,156	1,000,000	612,316	600,000

Table 7 Overview of volume under trader and privately owned programs (in tonnes)

	2018		2019		2020	
	Total certified volume	Volume destined for EU28+	Total certified volume	Volume destined for EU28+	Total certified volume	Volume destined for EU27+
ADM	No information		No information		No information	
Amaggi	415,000	415,000	59,000	0	43,300	0
Bunge	No information		No information		No information	
Cargill	540,000	3,000	317,000	200,000	560,000	73,378
Cefetra	680,200	680,200	621,000	633,226	442,000	442,607
FEMAS	No information		No information		No information	
Louis Dreyfus	No information		No information		No information	
SFAP Non-conversion	495,000	495,000	470,000	470,000	550,000	550,000
CSQA	N/a – not benchmarked yet		N/a – not benchmarked yet		508,000	508,000

traceable) are gaining ground over FEFAC SSG compliant standards, but this remains uncertain since data is lacking about other soy solutions.

FEMAS, CSQA, and SFAP are different types of standards. FEMAS is a United Kingdoms' based industry standard, CSQA is an Italian based industry standard, and SFAP is a privately owned standard. SFAP non-conversion grew to 550,000 tonnes in 2020, and for the other two little data is available to make meaningful statements.

2.2.3 Farmer owned standards

Last but not least, there are three standards that can best be grouped under the name 'farmer owned standards'. The FEFAC SSG compliant Brazilian program by COAMO has not reported for any of the years. The Argentinean program Agricultura Sustentable Certificada shows a mixed picture with a low volume destined for the EU28+ in 2019 and a higher volume in 2020. EU27+ imports from SSAP (the United States soy standard) declined from 6.2 million in 2018 to 5.7 million in 2020 (See Table 8).

With upcoming European Union legislation in the area of deforestation-free commodities and due diligence, the feasibility of traceability to the plot is under discussion. The book & claim and area mass balance model are models that are not (administratively) linked to the physical soy flow. In mass balance and segregation there is an (administrative) link to the physical soy flow. Table 9 shows the available supply chain models under each FEFAC SSG compliant standard. Proterra, RTRS, CSQA and Donau Soja/Europe Soy are the only ones that make use of segregation as a chain of custody model, especially because of the non-GMO nature of their soy. The dominant model for the traders is mass balance. There where RTRS, Cefetra, and SFAP were the only ones that offered a book & claim or area mass balance model, increasingly others are also starting to offer this option.

Table 8 Overview of volume under farmer owned standards (in tonnes)

	2018		2019		2020	
	Total certified volume	Volume destined for EU28+	Total certified volume	Volume destined for EU28+	Total certified volume	Volume destined for EU27+
Agricultura Sustentable Certificada	400,000	240,000	350,000	80,000	350,000	100,000
Programma COAMO	No information		No information		No information	
SSAP	10.700,000	6,200,000	22,888,032	5,930,000	21,300,000	5,656,909

Table 9 Supply chain models per FEFAC compliant standard

Name	Cutoff date	Book & Claim	Area Mass Balance	Mass Balance	Segregation
Agricultura Sustentable Certificada	1 Jan. 2020	X			
Amaggi Responsible soy standard	Aug. 2020		X	X	
Cargill Triple-S	1 Jan. 2008			X	
Cefetra CRS	May 2009	X	X	X	
CSQA	1 Jan. 2008			X	X
Donau Soja + Europe Soya	1 Jan. 2008		X	X	X
Proterra	31 dec. 2008 ('after 2008')	X	X	X	X
RTRS	1 Jan. 2009	X	X	X	X
SFAP	1 Jan. 2009	X	X		
SSAP	1 Jan. 2008			X	X
ISCC+	1 Jan. 2008			X	
ADM responsible soybean standard	1 March 2015	X		X	X
Bunge Pro-S	June 2016		X	X	
FEMAS	n.a. Legal compliance			X	
Louis Dreyfus Company	1 Jan 2016	X	X		
Programma Coamo	No information				

Trader Initiatives

Commodity traders are increasingly challenged to intensify their relations with primary producers, improve traceability in the supply chain, and guarantee 'clean' supply chains. The soy supply chain, currently organized to perfection to secure food security and cheap and timely deliveries of soybeans all over the world, faces challenges in transitioning to more traceability and sustainability. Since 2019, six commodity traders – ADM, Bunge, Cargill, Louis Dreyfus Company (LDC), COFCO International, and Viterra – are united in the Soft Commodities Forum under the flag of the World Business Council for Sustainable Development (WBCSD).

These traders have collectively committed to the Amazon Moratorium, and also broadened the scope of deforestation-free imports to the Cerrado biome. The Soft Commodities Forum is mapping conversion in the Cerrado with trusted partners. In 2020, the 25 municipalities with the largest conversion-risk were identified. These 25 municipalities represent 8.7% of the Cerrado biome but contain 44% of the native vegetation area converted to soy in the Cerrado in the last five years. All six traders committed to achieving full traceability to farm for direct sourcing from the 25 priority municipalities, reaching a minimum of 95% by the end of 2020. The December 2020 report shows that all six reached 100% traceability. In 2021, the number of focus municipalities increased to 61, corresponding to 64% of the native vegetation area converted to soy in the Cerrado in the last five years.[54] The December 2021 report shows that in addition to direct sourcing, the majority of the six traders were also able to map 100% of their indirect suppliers to the first point of aggregation in all 61 focus municipalities.

In addition to monitoring, SCF also works with farmers in these areas. SCF launched a project with Solidaridad Brazil in Bahia and a project with the PCI initiative in Mato Grosso to understand current land use dynamics from soy producers, and identify gaps and opportunities to promote and scale best practices.

Further reading:

> Soft Commodities Forum progress report December 2020

> Soft commodities Forum progress report December 2021

2.3 Uptake of certified DCF soy

In the previous European Soy Monitors (on 2018 and 2019) the certified deforestation-free soy percentage was calculated using the Profundo benchmark that identified six soy standards to be deforestation-free: CRS, Donau Soja/Europe Soya, ISCC+, Proterra, RTRS, and SFAP non-conversion.[48] Based on these six standards, the percentage of certified DCF soy in 2020 is 25.9% (Table 10).

Since the last publication of the European Soy Monitor in 2019, two important developments are worth mentioning; the creation of the Accountability Framework (in 2019) and the creation of FEFAC's Transparency Tool (in 2021). Both have resulted in the possibility to align definitions of DCF soy and compare different standards that offer DCF soy.

The Accountability Framework has harmonized the definitions and concepts for companies who make commitments in their supply chains. The framework includes definitions in the area of no-deforestation and no-conversion and provides clear guidance on implementing and monitoring commitments in this area. The Transparency Tool developed by FEFAC and ITC in 2021 allows companies to identify standards that deliver DCF soy. Note that in the Transparency Tool also standards are displayed that work with a cutoff date of (latest) 2020, where in the Profundo benchmark the latest cut-off date was 2016. The Transparency Tool indicates that 14 different standards are in line with DCF standards.[49] Five from the six standards benchmarked by Profundo are included and seven new standards are added. Note that ISCC+, which was listed in the Profundo benchmark, is missing in the Transparency Tool. This is because the scheme was revised and is currently undergoing benchmarking against the 2021 FEFAC Soy Sourcing Guidelines. In the proposed method below, ISCC+ is still included.

Table 11 provides an overview of the seven additional standards that are considered to deliver DCF soy according to the Transparency Tool.

Table 10 Certified deforestation and conversion-free standards in line with 2018 and 2019 report

Name	Total volume certified soybeans globally (tonnes in beans)	Destined for EU27+ (tonnes in beans)
Cefetra CRS	442,000	442,607
Donau Soja + Europe Soya	610,000	610,000
Proterra	3,032,171	3,032,171
RTRS	4,509,343	3,856,780
Sustainable Farming Assurance Program (SFAP)	550,000	550,000
ISCC+	612,316	600,000
Total in beans	**9,755,830**	**9,091,558**
Total in meal (x0.8)	**7,804,664**	**7,273,247**

Table 11 Additional standards assigned to be DCF in FEFAC's Transparency Tool

Name	Total volume certified soybeans globally (tonnes in beans)	Destined for EU27+ (tonnes in beans)
ADM Responsible Soybean Standard	No info	No info
Agricultura Sustentable Certificada + Module on Non-conversion	Not applicable in 2020	
Amaggi Responsible Standard + Deforestation and Conversion Free Module	Not applicable in 2020	
Bunge Pro-S Assuring Sustainable Sourcing	No info	No info
Cargill Triple S Soya Products	560,000	73,378
CSQA Sustainable Cereal and Oilseed Standard (DTP 112)	508,000	508,000
PROFARM Production Standard	Not applicable in 2020	
U.S. Soy Sustainability Assurance Protocol (SSAP)	21,299,232	5,656,909
Total in beans	**22,367,232**	**6,238,287**
Total in meal (x0.8)	**17,893,786**	**4,990,630**

If the Transparency Tool is used as the reference, rather than the Profundo benchmark, the percentage of certified DCF soy increases to 43.6%. This is because basically all standards are assessed to deliver DCF soy in the Transparency Tool. The only standard with a reported volume to Europe that is not included in the calculation is Agricultura Sustentable Certificada (100,000 tonnes to EU27+) because this standard has an add-on module for no-conversion and no-deforestation. Since this add-on module was not in place in 2020, the 100,000 tonnes are not taken into account.

2.4 Soy from areas with a low risk of land conversion

As in the 2018 and 2019 European Soy Monitor reports, this report includes an estimation of the soy imported from low-risk areas. Research by Trase makes it clear that more than 50% of the deforestation-risk exposure takes place in around 5% of the production regions.[50] Europe has a higher exposure to deforestation (per tonne imports) than China because it is importing from higher-risk regions.[51] At the moment of writing, data from Trase was available until 2018, and a rough assessment of deforestation-risk percentages per country is added below.

FEFAC used the following risk factors for the main production regions. These percentages are based on judgments by experts from Brazil (ABIOVE), Argentina (Aapresid), and Paraguay (CAPPRO). Compared to last year, the percentage in Argentina changed from 3 to 5%, and the percentage for Paraguay decreased from 16% to 15% (Table 12). Note that these estimates and those included in the section on deforestation in the Amazon and Cerrado in Chapter 1 are very conservative. Using it's own experts' knowledge of low and high risk factors applied to sourced volumes, FEDIOL reached similar values.

Applying these percentages to the imports of soybeans and soybean meal to the EU27+ results in a percentage of 76% coming from areas that are assumed to have a low-risk of deforestation (Table 13). In 2019 this figure was slightly higher – 80.4%.

Table 12 Estimation of risk-exposure per country

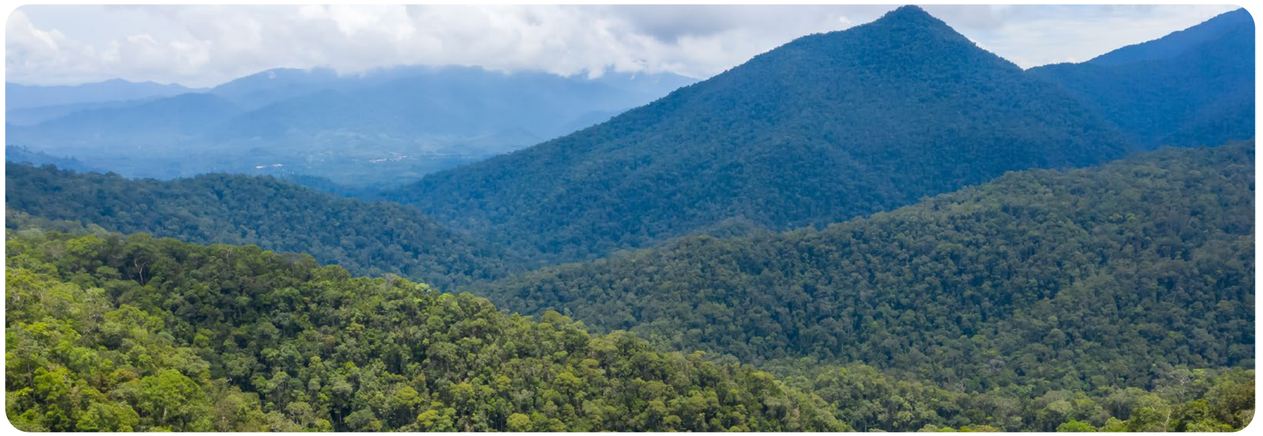
Brazil	50%
Argentina	5%
Paraguay	15%

Source: FEFAC

Table 13 Estimation of the risk of the exposure to deforestation for imports to the EU27+

	% of volume assumed to be low risk	Soybean products (Soybeans + soybean meal + soybean oil – non-converted)	Total from low-risk areas:
Brazil	50%	16,467,340	8,233,670
Argentina	95%	7,339,970	6,972,972
Paraguay	85%	819,881	696,899
Unites States	100%	5,378,187	5,378,187
Canada	100%	1,878,544	1,878,544
Ukraine	100%	847,814	847,814
EU production	100%	2,622,000	2,622,000
Rest of the world	100%	1,366,617	1,366,617
Total		**36,720,353**	**27,996,702**

Source: Eurostat



Note that the 76% is only a rough estimation of the percentage of soy that is likely not exposed to deforestation and land conversion risks. It offers no guarantee that the soy is produced without deforestation and conversion.

Concluding remarks

From 2019 to 2020 the uptake of FEFAC SSG compliant soy increased only slightly from 42.2% to 43.8%. The percentage of certified conversion-free soy increased slightly from 25.3 to 25.9% when using the same method as previous years.[52] It can be concluded that both the uptake of FEFAC SSG compliant and certified DCF soy is growing slowly. A reason for this can be that there is an increasing focus on conversion-free and traceable soy solutions that focus on this specific item, rather than on sustainable soy (including all sustainability pillars). Another reason can be that many organizations and countries are looking into a risk-based approach to commodities linked to deforestation and conversion, working with initiatives such as Trase to identify their exposure and address it directly. If this is the case, attention to all-round sustainability might decrease. And finally, various civil society organizations have lobbied policy makers in Brussels and member states that standards alone are not effective measures tackle deforestation and that obligatory legislation is needed.

With new legislation now being announced, the soy supply chain will need to adopt a smart mix of measures to move to responsibly produced and deforestation and conversion-free soy. These different measures are introduced in the next chapter.

Initiatives by the food industry and the retail sector

Although the dominant outlet for soybeans is feed, soybean oil and soybean proteins are used in various food products as well. Food processing companies and retailers are increasingly taking responsibility for the embedded soy on their shelves. The first challenge to do so is to calculate their actual soy footprint. Over the years, different tools such as the Soy ladder by KPMG (2014) and the RTRS Soy Footprint calculator (updated in 2020) have been developed.

Commitments to DCF have soy become more concrete and measurable over time. The Consumer Goods Forum published its Soy Sourcing Guidelines in 2014 to achieve zero net deforestation by 2020. No information could be found on the sourcing in line with these Guidelines and whether ‘zero net deforestation’ was actually achieved. In the meantime, the ambition was raised with the creation of the Forest Positive Coalition. Under the flag of the Forest Positive Coalition food companies work on implementing a clear approach towards DCF supply chains linked to commodities including soy, palm oil, paper, and beef. The topic of DCF soy has also dominated the agenda of specific Sustainable Agriculture Initiative (SAI) working groups in 2020.

Efforts and commitments from the retail sector to halt deforestation and conversion have become more apparent in 2020 and 2021. In 2021, the Retail Soy Group published a guide for public disclosure on the use of soy within a retail supply chain. Even though the reporting guidelines are not mandatory, it advocates for coherent and consistent use of reporting metrics. The proposed matrices are based on the Accountability Framework, including the definition of no-conversion. A last example of the involvement of retailers in soy sustainability is the ‘Soy Transparency Coalition.’ In 2020, this coalition assessed the practices of the main soy traders with regards to transparency, sustainability, and supplier engagement and provided concrete suggestions for improvements in these areas.

Further reading:

- Soy ladder for retailers by KPMG
- RTRS Soy footprint calculator
- Responsible soy roadmap by the Forest Positive Coalition
- Guidance for forest positive soy suppliers and traders
- Public reporting guidelines on soy
- Soy Transparency Coalition

Multistakeholder initiatives

Civil society organizations have played a leading role in recent years in stimulating companies to make clear commitments, ensuring these commitments are monitored, and keeping the pressure on industry to continue deepening impact. The three examples below are a small selection of the work civil society organizations have been doing, but they are game changing initiatives that have had significant impacts on sustainable supply chains.

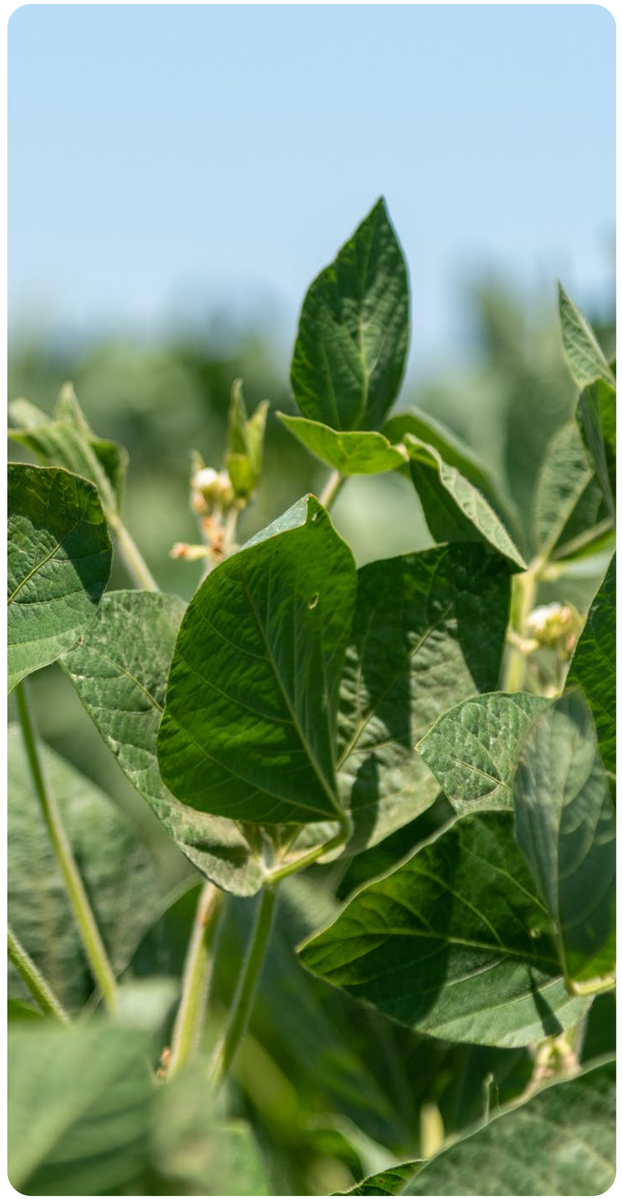
The Accountability Framework Initiative
The Accountability Framework Initiative (AFi) is an initiative set up by a group of civil society organizations to develop a comprehensive and consensus-based framework to guide effective goal-setting, implementation, and monitoring for ethical supply chains. Launched in June 2019, a clear framework with definitions and guidance is now available for all companies and organizations that want to make credible, measurable claims and monitor progress over time. The Accountability Framework has quickly become the leading reference for terms such as 'deforestation', 'conversion,' 'no deforestation,' and 'no conversion,' making commitments in this area much 'smarter' and better comparable. The revision of the FEFAC Soy Sourcing Guidelines, a process that started in 2020, is also in alignment with the Accountability Framework.

Trase
Trase is a data-driven and fact-based initiative that helps market players, financial institutions, and civil society organizations understand the trade and financing of commodities linked to deforestation. Trase's supply chain mapping approach brings together disparate, publicly available data to connect consumer markets to deforestation and other impacts on the ground. Increasingly, companies, coalitions, and countries are working with Trase to understand their links to deforestation, and map how to reduce them.

Landscape initiatives on the SourceUp platform
The focus on farm level or a specific supply chain is often not enough to make an impact on complex and overarching themes such as deforestation, conversion, or water depletion. These challenges involve many stakeholders with different interests, and are increasingly addressed by projects at the landscape level. The Sustainable Trade Initiative (IDH) is a leading player in this development. IDH has invested in a thorough methodology to stimulate action on the ground in landscapes at risk for conversion or depletion.

In soy producing regions in Brazil, IDH has been working on an innovative approach to promote long-term sustainable rural development by connecting rural producers, companies, governments, local communities, financiers, and investors to establish collective governance models. These alliances create an environment for positive and reliable dialogue to solve complex issues based on a common objective: economic and social development with protection of forests. As a result, agricultural products are produced sustainably, small producers and local communities are included in socio-productive chains, and natural resources are conserved and protected. On a broader scale, the SourceUp platform collects all credible landscape projects on one clear platform and allows stakeholders to contribute to concrete projects in their sourcing areas.

Further reading:
> Accountability Framework
> Trase
> SourceUp



3 Solutions for responsible and deforestation free soy

The European Soy Monitor focuses on the uptake of FEFAC SSG compliant and certified DCF soy in EU27+. But certification alone is not the full story and certification alone cannot solve all problems. Increasingly certification is placed in a broader context in which other solutions also play a role. This chapter discusses different instruments in the toolbox to work on sustainable soy production and to protect the world's most valuable ecosystems. These instruments are also relevant to Chapter 4, which investigates the state of play in specific European countries.

3.1 Legislation

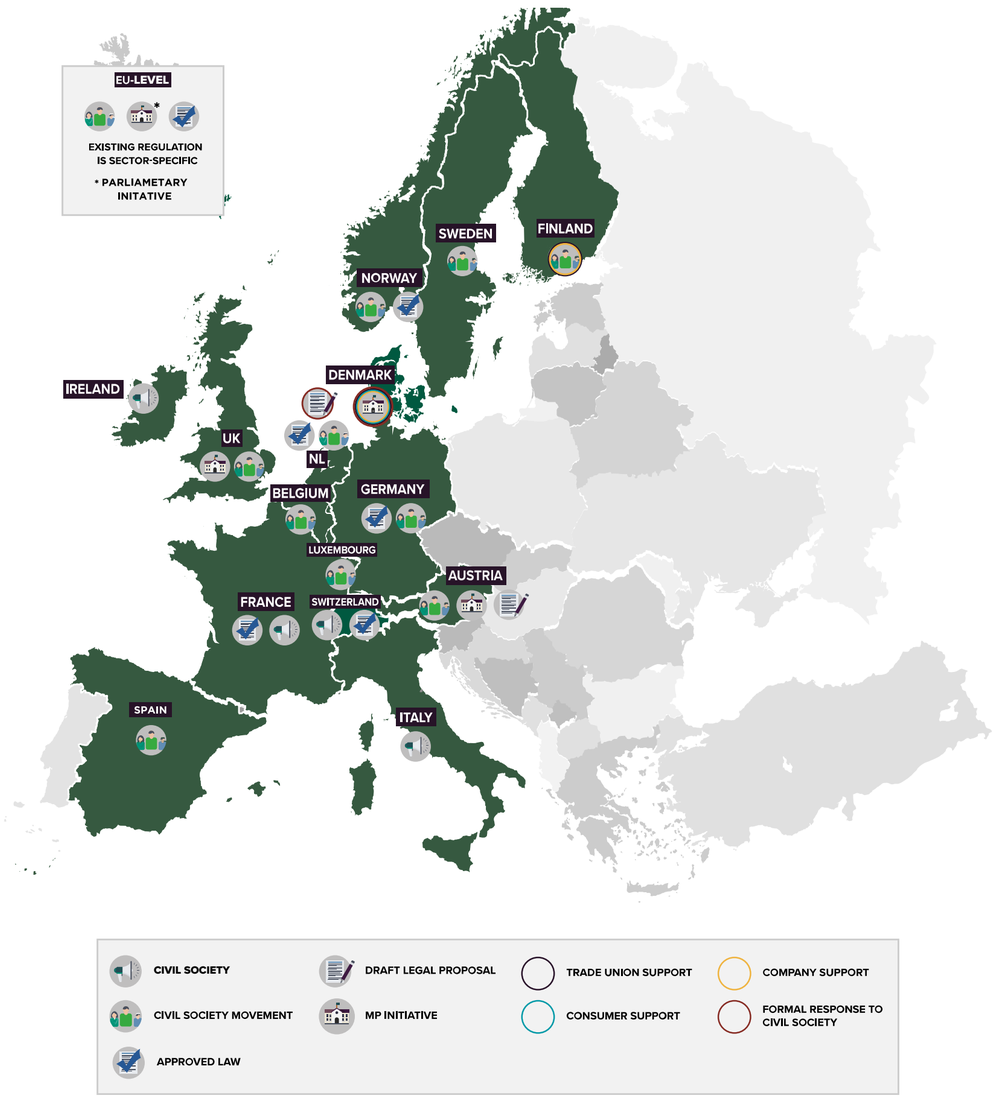
While certification is a voluntary measure for the industry to show commitment to sustainably produced crops, various organizations have worked to bring about obligatory measures in the form of binding legislation. These requests have found a broad support and a comprehensive set of Regulations and Directives on clean supply chains and transparent action and reporting around sustainable business conduct is forthcoming. The European Union has issued legislative proposals for deforestation-free products (released November 2021), Sustainable Corporate Governance (released February 2022), and Corporate Reporting (released April 2021).

Additionally, various EU Member States have or are planning to adopt legislative proposals requiring companies to implement thorough due diligence processes. Figure 13 shows the different countries that have already adopted a form of due diligence legislation. In practice this means that companies need to assess and take adequate and ongoing action to tackle the risks in their supply chains. Certification continues to be an important tool to mitigate these risks.

3.2 Clean supplier approach

An approach that is increasingly advocated, especially by civil society organizations, is the so-called 'clean supplier approach.' In this approach the supplier of the commodity is highlighted as the lever of change. Suppliers are stimulated to work on long-term relations with their direct and indirect suppliers and make sure to deliver only sustainable and DCF commodities. Downstream companies then select those traders or suppliers that have a proven track record of delivering DCF and sustainable ingredients, rather than requiring specific sustainable crops from them. The idea of clean suppliers comes forward subtly in the recommendations in the 2021 WWF Trader Soy Score Card.[56] A similar idea is also suggested by the Soy Transparency Coalition.[57]

Figure 13 European countries with due diligence legislation (retrieved from Shift Project[55])



3.3 Direct investment in critical landscapes

One of the main concerns of many solutions in the area of sustainable soy is that companies will move to low-risk regions. By moving to low-risk regions companies clean their own supply chain, but discard the possibility of positively impacting high-risk areas. Another major challenge in sustainable soy is the overarching complexity of land-use problems – land conversion and deforestation cannot be solved in a single supply chain or at the farm level, they include many sectors and stakeholders. As a result, recent innovations focus on landscape level impact. The Sustainable Trade Initiative (IDH) is taking a leading role in developing methodologies to bring together diverse stakeholders in a specific landscape to create a joint vision and action plan for that region (compacts). These regional action plans include targets for conservation, production, protection, and inclusion (of smallholders and local communities) and clear governance and monitoring mechanisms to effectively reach the goals set in the compact.[58]

One of the ways to link downstream buyers to these compacts is via the recently launched SourceUp platform. The platform connects buyers of agricultural commodities to coalitions of stakeholders in production areas, enabling direct collaboration on sustainability and impact. The SourceUp platform displays these different producing landscapes and allows companies to invest in specific projects in a compact.[59] In this way a downstream company can invest in concrete improvement in a high-risk region, having direct impact on the ground.

3.4 Payment for environmental services

In biomes such as the Cerrado, farmers often have the legal right to convert part of their land. Doing so results in economic benefits. There is an increasing awareness that farmers need clear incentives to refrain from (sometimes legally permitted) land conversion. These include paying them for environmental services such as carbon sequestration or water management, or compensating them for the losses they suffer when not producing on parts of their lands. Beginning in 2019 several companies committed to the Funding for Soy Farmers in the Cerrado Initiative. In Brazil, ABIOVE and Agrosatelite worked on a Cerrado Conservation Mechanism that facilitated matching farmers that met the no conversion requirements with available funding.[60] The latest update on the 31st of December 2020 indicates that not enough companies joined the initiative.[61]

New initiatives are being launched as well. During the 2021 COP26 conference in Glasgow, the Innovative Finance for the Amazon, Cerrado, and Chaco ("IFACC") was launched by TNC, World Economic Forum, and UNEP with pledges totaling $3 billion to accelerate DCF soy and cattle production in South America.[62] One of these pledges is from the first program of the Responsible Commodities Facility, which provides low-interest credit lines to Brazilian soy and corn farmers who commit to using degraded pasture and avoid clearing forests and native grassland for agriculture. It is worthwhile to explore how farmer-directed initiatives will lead to more sustainable practices in the near future.

3.5 Partnerships

Increasingly, diverse actors in the supply chain collaborate to jointly work on responsible and DCF soy. The Collaborative Soy Initiative, National Soya Initiatives (NSIs), and the platform for European National Soya Initiatives (ENSI) are all examples of this. Chapter 4 presents these multistakeholder initiatives in specific European countries.

Concluding remarks

Certification is increasingly seen as one of many measures in a smart mix of solutions. Other solutions include legislation, clean supplier approaches, landscape initiatives, financial services for farmers, and partnerships. Thinking about these different solutions as tools in a toolbox that all have their own focus and role in the bigger picture helps to ensure that solutions are not abandoned for the wrong reasons. Certification's inability to stop deforestation does not negate it's value as tool, but rather points to the fact that it was unreasonable to expect this tool alone to solve the problem in the first place. The coming years will be about finding the right mix of solutions to power growth in sustainable and DCF soy supply chains.

Carbon footprinting

In 2020, companies in the food and feed sector were working on reducing their climate impact. In the feed sector, the Global Feed LCA Institute (GFLI) continued to work on aligned rules for carbon footprinting based on credible methods in line with Product Environmental Footprint Category Rules (PEFCR) and the use of approved databases. Several soy standards such as ProTerra, Donau Soja/Europe Soya, SFAP non-conversion, and SSAP have calculated the carbon footprint of the soy from their own certified farmers. These calculations show a significant reduction in the climate impact of sustainable soy production relative to country-specific baselines for conventional soy production. These results demonstrate that good agricultural practices such as no-till, integrated pest management, targeted application of pesticides and fertilizers, and monitoring and management of fossil fuel use can result in a lower carbon footprint. Until now, farmer group, or region-specific data could not be used in formal GFLI-approved carbon footprint calculations. In 2022, GFLI launched a pilot to experiment with the use of such farmer group specific information, called 'branded data' in official climate impact calculations.[63]

4 Uptake of responsible soy per country

This chapter reports on the uptake of FEFAC Soy Sourcing Guidelines compliant and DCF soy in individual European countries. In addition to the basic statistics, insights from National Soy Initiatives are provided. The first paragraph briefly introduces the method used to arrive at the country specific figures.

4.1 Method for individual countries

Like in Chapter 2, the soybean meal available for consumption is used as the reference to calculate the percentages of FEFAC SSG compliant and certified DCF soy. Eurostat and Comtrade data are used to calculate the balance between import and export of soybeans and soybean meal, and the balance between import and export of embedded soy. Soy production in the country is added to arrive at the soybean meal available for domestic consumption.

4.1.1 Calculating the % of FEFAC compliant soy

Most of the FEFAC SSG compliant soy standards are not able to report on the exact destination country of certified soy. As a result, feed associations are the main source of information for country-level data on uptake of FEFAC SSG compliant soy. In addition, downstream companies can also invest in sustainable soy certificates (only data from RTRS is available) to cover their (embedded) soy footprint. In order to calculate the percentage of FEFAC SSG compliant soy the information from the feed association and (non-feed) downstream companies are added and divided by the soybean meal available for domestic consumption.

4.1.2 Calculating the % of certified DCF soy

For the calculation of the percentage certified DCF soy, the Profundo benchmark was used in order to allow for comparability with the previous years studies.[64] Most feed associations only collect the aggregated volume of FEFAC compliant soy used in their national feed industry, making calculating the percentage of certified DCF soy a challenge. RTRS and SFAP are able to provide information on credits sold to consumer markets, Proterra and Donau Soja are to a certain extent able to provide information on physical flows of certified volumes into specific markets.

Countries

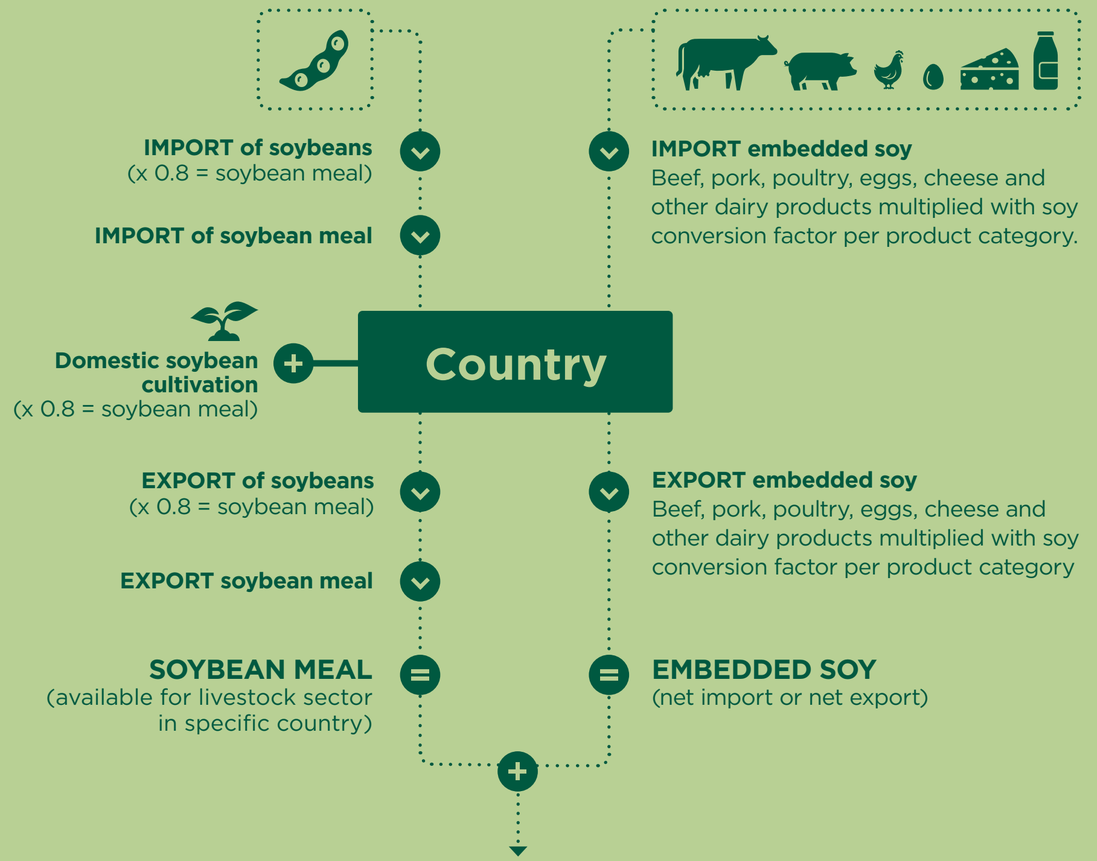
In addition to the overall analysis of responsible soy in the EU27+, the European Soy Monitor looks at specific countries in the EU27+. For each of these countries, the domestic soybean meal consumption is calculated, by looking at the import and export of direct and embedded soy. Based on the domestic soybean meal consumption, the % FEFAC-compliant and % DCF soy is calculated.

To directly navigate to the countries, please select the country below.

BELGIUM >>
DENMARK >>
FINLAND >>
FRANCE >>
GERMANY >>
ITALY >>
THE NETHERLANDS >>
NORWAY >>
POLAND >>
PORTUGAL >>
SPAIN >>
SWEDEN >>
SWITZERLAND >>
UNITED KINGDOM >>

Calculation soybean meal consumption in a specific country

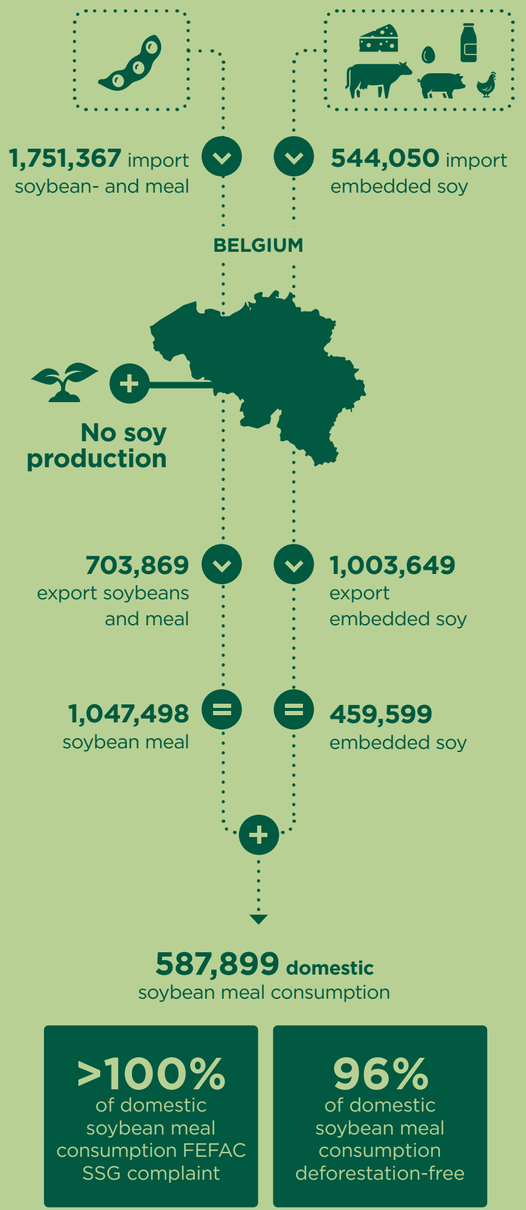
all volumes are in tonnes



Domestic soybean meal consumption

% of domestic soybean meal consumption FEFAC SSG compliant

% of domestic soybean meal consumption deforestation-free



4.2 Belgium

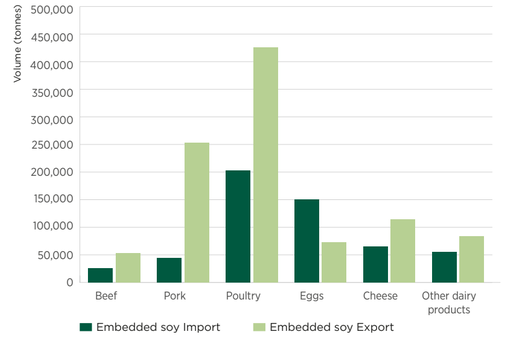
Belgium is a strong trading nation with ports that play a crucial role in the distribution of goods further into Europe. The feed industry (represented by the Belgian Feed Association or BFA) is committed to using certified DCF soy and has a tradition of collectively buying sustainable soy certificates under RTRS, CRS, and SFAP non-conversion. In 2021 the Belgium government joined the Amsterdam Declaration Partnership, demonstrating its commitment to facilitating responsible, deforestation, and conversion-free supply chains

4.2.1 Domestic soybean meal consumption

In 2020, Belgium was a net importer of soybeans and soybean meal. Table 14 shows that in 2020, a volume of 1,047,498 tonnes of soybean meal was available in the country. Belgium has very little to no domestic soy production.

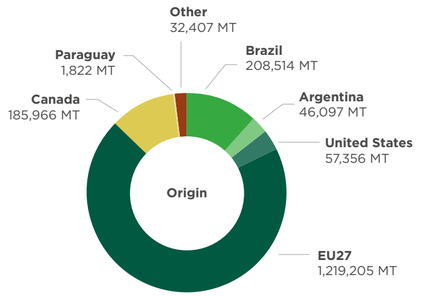
In addition to importing soybeans and soybean meal, Belgium imports animal-based products such as poultry and eggs. Most of these imports come from other European Union countries. Figure 14 shows the ratio between import and export of embedded soy linked to specific categories of products. With these animal-based products, Belgium imported 544,050 tonnes of embedded soy. Belgium also has a strong livestock sector and exports a substantial volume of animal-based products. These exports are linked to a footprint of a bit more than one million tonnes of embedded soy. Hence, Belgium had a net export of 459,599 tonnes of embedded soy in 2020.

Figure 14 Import and export of embedded soy to and from Belgium



Source: Eurostat

Figure 15 Originations of Belgium soybean meal and soybeans (converted in soybean meal)



Source: Eurostat

Table 14 Import and export of soybean products to Belgium

in tonnes	Import	Export	Net available
Soybean meal	1,229,929	548,111	681,818
Soybeans x0.8	521,438	155,758	365,680
Net availability	1,751,367	703,869	**1,047,498**

Source: Eurostat

The estimated soybean meal available for consumption in Belgium is the sum of the net availability of direct and embedded soy. Hence, this results in a domestic soybean meal consumption of 1,047,498 - 459,599 = 587,899 tonnes.

4.2.2 Share of FEFAC-compliant soy

The BFA reported that sustainable soy certificates were acquired under three schemes in 2020: CRS (175,000 tonnes), RTRS (124,000 tonnes), and SFAP non-conversion (125,000 tonnes). This totals to 424,000 tonnes of FEFAC compliant soy. In addition, via imports of compound feed from the Netherlands another 155,400 tonnes of FEFAC compliant soy was used in Belgium. This makes a total of 579,400 tonnes of FEFAC compliant soy used in the feed industry

In addition to the feed industry, four downstream food/retail companies acquired RTRS certificates totaling to 139,648 tonnes of soy. This means that in total 579,400 + 139.648 = 719,048 tonnes of FEFAC SSG compliant soy were bought for the Belgium market.

Analyzing domestic soybean consumption reveals that 719,048 / 587,899 > 100% of the soy in 2020 was FEFAC SSG compliant.

4.2.3 Share of DCF soy

The three sustainable soy standards mentioned in Section 4.2.2 (CRS, RTRS, and SFAP) are also assumed to deliver certified DCF soy. The percentage of DCF soy of the imported soybean meal volume in compound feed coming from the Netherlands is unknown and for that reason cannot be taken into account. There is no additional information available about uptake under other FEFAC SSG compliant standards, meaning the share of FEFAC-compliant soy is the same as certified DCF soy. In total this means that 563,648 / 587,899 = 96% of soy was certified DCF.

4.2.4 Conclusion and recommendations

Belgium feed companies, food companies, and retailers are actively buying sustainable soy certificates, which shows Belgium's commitment to sustainable soy. The collective approach of the feed sector makes sure all feed companies including the smaller players are connected to responsible soy production. However, this collective approach also takes away some of the responsibility for these companies. With forthcoming due diligence legislation and deforestation-legislation from the European Union, it is also important for companies to remain actively involved in their supply chain through for example dialogues with suppliers on responsible procurement and sustainable development in the soy producing landscapes.

4.3 Denmark

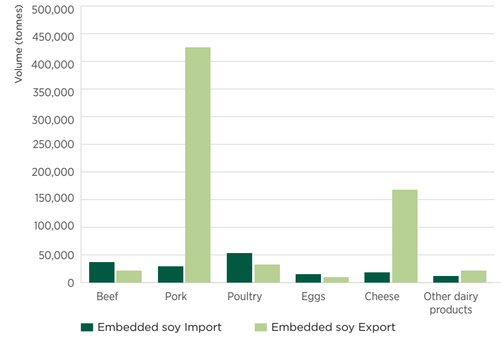
The Danish food and feed sector are committed to responsible and DCF soy, which shows in the large uptake of sustainable soy certificates by feed companies, food companies, and retailers. The Danish Alliance on Responsible Soy works actively towards 100% DCF soy and stimulates clear monitoring of the progress towards that goal. The Danish government has been a member of the Amsterdam Declaration Partnership from the start.

4.3.1 Domestic soybean meal consumption

In 2020, Denmark was a net importer of soybeans and soybean meal. Table 15 shows that in 2020, a volume of 1,660,562 tonnes of soybean meal was available in the country. Denmark has no domestic soy production.

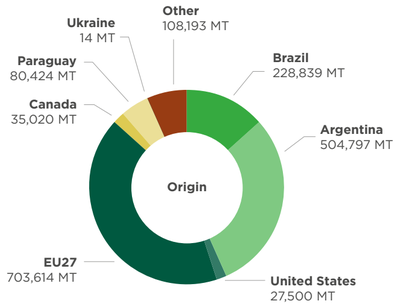
In addition to importing soybeans and soybean meal, Denmark imports animal-based products such as poultry and beef. Most of these imports come from other European Union countries. Figure 16 shows the ratio between input and export of embedded soy linked to specific categories of products, with pork and cheese as dominant sources of exported embedded soy. Denmark imported 163,420 tonnes of embedded soy and exported 675,484 tonnes of embedded soy. Hence, Denmark had a net export of 512,064 tonnes of embedded soy in 2020.

Figure 16 Import and export of embedded soy to and from Denmark



Source: Eurostat

Figure 17 Originations of Danish soybean meal and soybeans (converted in soybean meal)



Source: Eurostat

Table 15 Import and export of soybean products to Denmark

in tonnes	Import	Export	Net available
Soybean meal	1,667,959	26,843	1,641,116
Soybeans x0.8	20,442	996	19,446
Net availability	1,688,401	27,839	**1,660,562**

Source: Eurostat

The estimated soybean meal available for consumption in Denmark is the sum of the net availability of direct and embedded soy. Hence, this results in a domestic soybean meal consumption of 1,660,562 - 512,064 = 1,148,498 tonnes.

4.3.2 Share of FEFAC-compliant soy

The Danish feed association (DAKOFO) reported that 100,000 tonnes of soybean meal were reported as FEFAC SSG compliant in 2020. An additional 350,000 tonnes of soy were estimated to also be FEFAC SSG compliant, but there is no information available about the schemes under which the soy was purchased.

In addition to the feed industry, three downstream companies acquired RTRS certificates equal to 330,280 tonnes of soy. This means that in total (100,000 + 350,000) + 330,280 = 780,280 tonnes of FEFAC SSG compliant soy were bought for the Danish market.

It can be concluded that 780,280 /1,148,498 = 68% of domestic soybean meal consumption was FEFAC SSG compliant in 2020.

4.3.3 Share of DCF soy

The feed industry did not (due to confidentiality) link the FEFAC SSG compliant soy to specific standards. The RTRS certificates bought by downstream partners in paragraph 4.3.2 are assumed to deliver certified DCF soy. In total this means that 330,280 / 1,148,498 = 29% of the domestic soybean meal consumption was certified DCF in 2020.

4.3.4 Conclusion and recommendations

Uptake of FEFAC SSG compliant and DCF soy did stagnate in 2020. Danish downstream food companies are large buyers of RTRS credits and project commitment to responsible and DCF soy. The data from the feed industry shows a relatively low uptake of FEFAC SSG compliant and DCF soy, although this can partly be explained by the fact that there are only a couple of feed companies and information sharing can be sensitive.

Continuous and transparent monitoring of uptake of certified soy remains a priority. Most of the soybean meal imported to Denmark comes from other European Union countries. Direct imports from Argentina (500,000 tonnes) are also relatively high. This direct link brings in opportunities to invest in high-risk landscapes in Argentina.

4.4 Finland

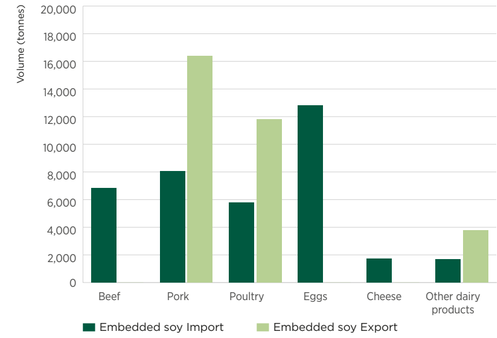
Finland is a relatively small buyer of soybean products. Most trade is with neighboring countries and there is only a very modest direct connection to sourcing regions with a potential risk of land conversion. Finnish actors in the food chain invest in Proterra and RTRS certified soy. Compared to 2019, uptake of FEFAC-SSG and DCF soy decreased significantly.

4.4.1 Domestic soybean meal consumption

In 2020, Finland was a net importer of soybeans and soybean meal. Table 16 shows that in 2020, a volume of 140,298 tonnes of soybean meal was available in the country. Finland has no domestic soy production.

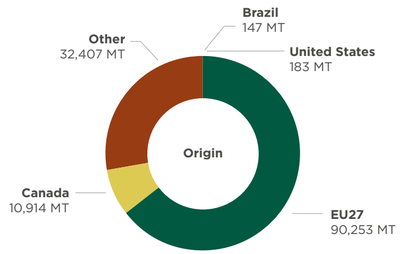
In addition to importing soybeans and soybean meal, Finland imports animal-based products such as cheese, poultry, other dairy products, pork, and beef. Most of these imports come from other European Union countries. Figure 18 shows the ratio between import and export of embedded soy linked to the specific categories of products. Finland imported 39,903 tonnes of embedded soy and exported 31,974 tonnes of embedded soy. Hence, Finland had a net import of 4,929 tonnes of embedded soy in 2020.

Figure 18 Import and export of embedded soy to and from Finland



Source: Eurostat

Figure 19 Originations of Finnish soybean meal and soybeans (converted in soybean meal)



Source: Eurostat

Table 16 Import and export of soybean products to Finland

in tonnes	Import	Export	Net available
Soybean meal	117,497	12	117,485
Soybeans x0.8	22,812	0	22,812
Net availability	140,310	12	**140,298**

Source: Eurostat

The estimated soybean meal available for consumption in Finland is the sum of the net availability of direct and embedded soy. This results in a domestic soybean meal consumption of 140,298 + 4,929 = 145,227 tonnes.

4.4.2 Share of FEFAC SSG compliant soy

The Finnish feed association (FFDIF) reported that the usage of FEFAC SSG compliant soy was 70,000 tonnes in 2020 compared to 110,000 in 2019. Of this, 70,000 tonnes were FEFAC SSG compliant soy, 19,000 tonnes were Proterra certified, and 26,000 tonnes were RTRS certified.

In addition to the feed industry, four downstream food/retail companies acquired RTRS certificates totaling to 24,264 tonnes of soy. This is also significantly less than the 76,033 tonnes of RTRS certificates that were purchased last year. This means that in total 70,000 + 24,264 = 94,264 tonnes of FEFAC SSG compliant soy were bought for the Finnish market.

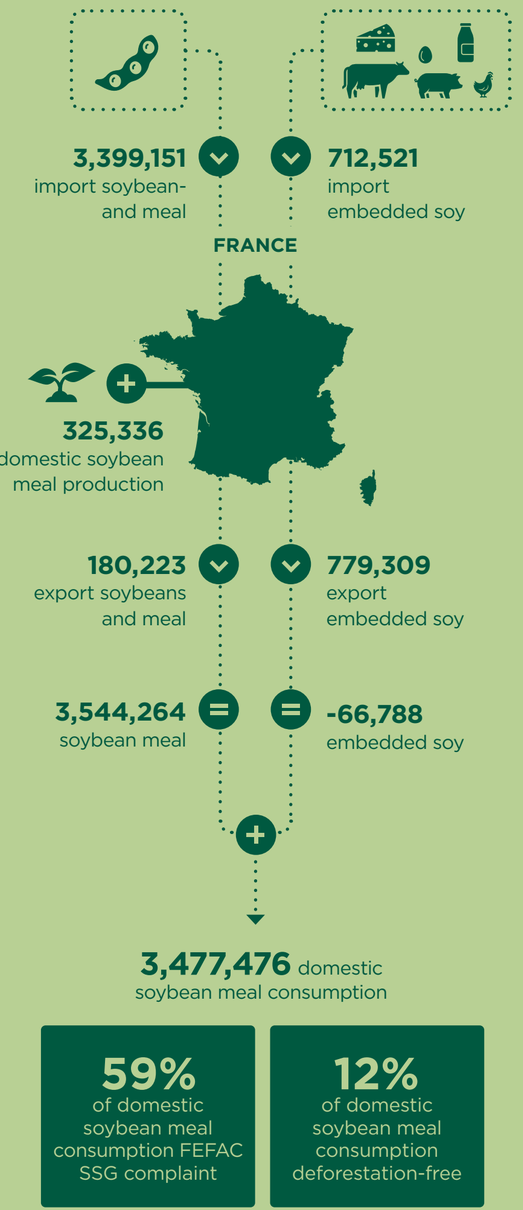
It can be concluded that 94,264 / 145,227= 64.9% of domestic soybean meal consumption in Finland was FEFAC SSG compliant in 2020, a significant reduction compared to the more than 100% certified last year.

4.4.3 Share of DCF soy

The two standards mentioned under 4.4.2 (RTRS and Proterra) are also assumed to deliver certified DCF soy. In total this means that (19,000+26,000+24,264) / 145,277 = 48% was certified DCF.

4.4.4 Conclusion and recommendations

Compared to last year, there has been a decline in the uptake of FEFAC SSG compliant and DCF soy in Finland. With relatively low volumes of direct and embedded soy being traded in Finland, a change in buying behavior by one or two bigger players can already impact the state of play in the country to a large extent. In this case, one downstream company bought over 40,000 tonnes of RTRS certificates in 2019 and around 9,000 in 2020. Since most soybean meal coming to Finland is imported from other European Union countries, especially Germany and the Netherlands, there is an opportunity to discuss the transition to responsible and DCF soy with European counterparts. Another recommendation would be for Finland to create a sector-wide commitment to responsible and DCF soy (much like Denmark, Sweden, and Norway) and jointly work to achieve it.



4.5 France

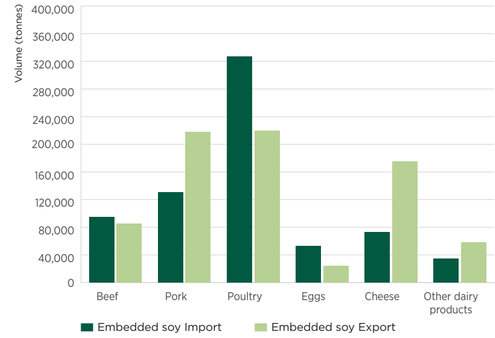
Duralim unites French stakeholders on the topic of conversion-free soy and sustainable feed solutions. Monitoring of certified soy in France is a challenge, as it is everywhere, and as a result Eurofac issued a study into the origin of soy imported to France in the 2019/2020 crop year. The study concluded that 38% of France's soy imports are connected to low-risk regions and that for 62% more information is needed. In November 2020, retailers in France announced measures to end the use of soy produced on deforested land. Similar to 2019, French retailers cover significant volumes of soy with RTRS certificates.[65]

4.5.1 Domestic soybean meal consumption

France is a net importer of soybeans and soybean meal. France produces 406,670 tonnes of soybeans (corresponding to 325,336 tonnes of soybean meal) domestically. Table 17 shows that in 2020, a volume of 3,544,264 tonnes of soybean meal was available for consumption in the country.

In addition to importing soybeans and soybean meal, France imports animal-based products such as beef, poultry, and pork. Most of these imports come from other European Union countries such as Belgium, Poland, and the Netherlands. Figure 20 shows the ratio between input and export of embedded soy linked to the specific categories of products. With these

Figure 20 Import and export of embedded soy to and from France



Source: Eurostat

Figure 22 Originations of French soybean meal and soybeans (converted in soybean meal)Source: Eurostat

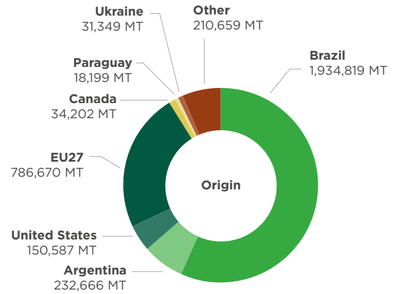


Table 17 Import and export of soybean products to France

in tonnes	Import	Export	Domestic production	Net available
Soybean meal	2,902,879	30,274		2,872,605
Soybeans x0.8	496,272	149,949	325,336	671,659
Net availability	3,399,151	180,223	325,336	**3,544,264**

Source: Eurostat

animal-based products, France imported 712,521 tonnes of embedded soy. France has a strong livestock sector that exports a substantial volume of animal-based products linked to a footprint of 779,309 tonnes of embedded soy. As a result, France had a net export of 66,788 tonnes of embedded soy in 2020.

The estimated soybean meal available for consumption in France is the sum of the net availability of direct and embedded soy. This results in a domestic soybean meal consumption of 3,544,264 - 66,788 = 3,477,476 tonnes.

4.5.2 Share of FEFAC-compliant soy

The French feed association Eurofac reported that the usage of FEFAC SSG compliant soy was 1,927,224 tonnes in 2020. This is an increase compared to the 1,602,000 tonnes reported in 2019. From this total of 1,927,224 tonnes, 260,000 tonnes were bought under Proterra certification and RTRS data show that the French 'Feed Alliance' bought 24,000 tonnes of RTRS certificates. For the remaining 1.64 million tonnes no reference to a specific standard is provided.

Three French downstream food/retail companies acquired RTRS certificates totaling to 136,790 tonnes of soy. This is a slightly more than the certificates totaling 132,451 tonnes purchased in 2019. This means that in total 1,927,224 + 136,790 = 2,064,014 tonnes of FEFAC SSG compliant soy were bought for the French market.

Analyzing the domestic soybean meal consumption in France reveals that 2,064,014/3,477,476 = 59% of the soy in 2020 was FEFAC SSG compliant.

4.5.3 Share of DCF soy

The two standards mentioned under 4.5.2 (Proterra and RTRS) are also assumed to deliver certified DCF soy. In total this means that (260,000 + 24,000 + 136,790)/ 3,477,476 = 12% is certified DCF.

4.5.4 Imports of soy from low conversion-risk areas

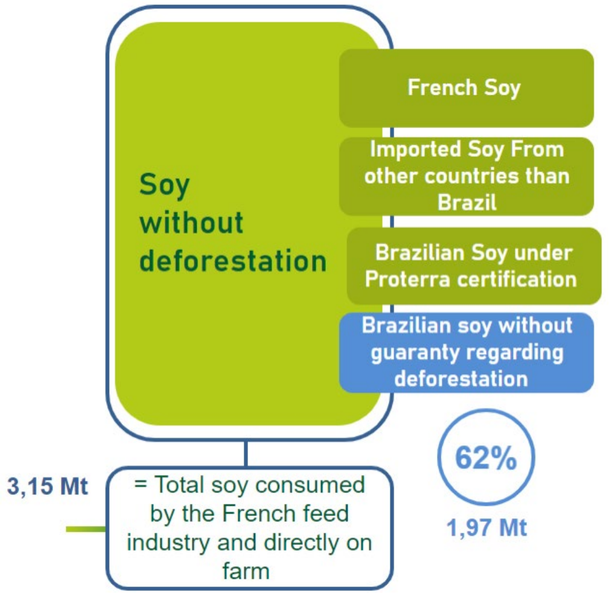
Eurofac investigated the link to potential land conversion for the 2019/2020 crop season via its Soy Observatory. All soy produced in France, soy imported from countries other than Brazil, and all Proterra certified soy are considered to be deforestation-free. For all other soy (1.97 million tonnes of soybeans) the exact origination is not known and more information is needed. This corresponds to around 62% of all soy consumed domestically in France. In 2022, a new study will be conducted, also assessing soy from higher risk regions in Argentina.

4.5.4 Conclusion and recommendations

It is clear that the topic of responsible and DCF soy is on the radar in France and that cooperation in both the feed and retail sectors is vibrant. Uptake of certified FEFAC SSG soy increased from 46% in 2019 to 59% in 2020.

Due to a lack of data on the exact standards behind the FEFAC SSG compliant volume, the percentage of DCF soy remains rather low. The initiative to monitor the origins of soy in a structured way is very promising and shows that around 62% of the soy consumed can be considered deforestation-free. The only concern is that this strategy can take away the holistic approach to sustainable soy. French actors should critically reflect whether this is desirable.

Figure 22 Calculation of soy with a low risk of deforestation in 2019/2020



4.6 Germany

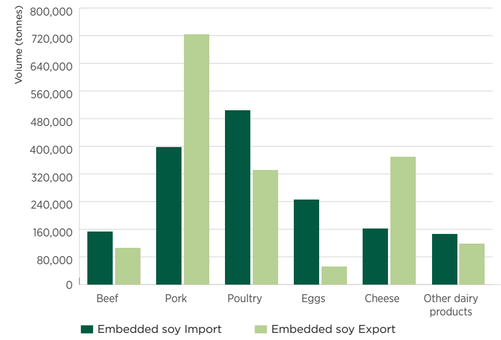
Germany is a large importer and trader of soy. The German government is part of the Amsterdam Declaration, the German Society for International Co-operation (GIZ) is actively working on projects on the ground in soy producing countries, and the Forum on more sustainable protein in feed (FONEI) increasingly pays attention to the international dimension of responsible soy. Compared to last year the uptake of FEFAC SSG compliant and certified DCF soy has increased, but the data quality and transparency remain problematic.

4.6.1 Domestic soybean meal consumption

In 2020, Germany was a net importer of soybeans and soybean meal and had a domestic soy production of 90,500 tonnes, corresponding to 72,400 tonnes of soybean meal. Table 18 shows that in 2020, a volume of 3,185,649 tonnes of soybean meal was available in the country.

In addition to importing soybeans and soybean meal, Germany imports animal-based products such as poultry and pork. Most of these imports come from other European Union countries. Figure 23 shows the ratio between import and export of embedded soy linked to specific categories of products. With these animal-based products, Germany imported 1,608,519 tonnes of embedded soy. Germany has a strong livestock sector and exports a substantial volume of animal-based

Figure 23 Import and export of embedded soy to and from Germany



Source: Eurostat

Figure 24 Originations of German soybean meal and soybeans (converted in soybean meal)Source: Eurostat

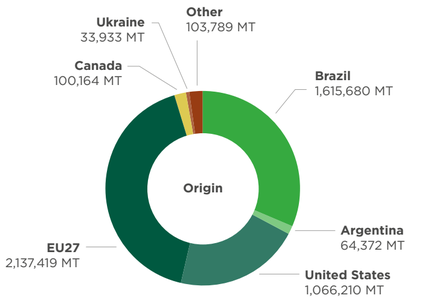


Table 18 Import and export of soybean products to Germany

in tonnes	Import	Export	Domestic production	Net available
Soybean meal	2,029,562	1,973,876		55,686
Soybeans x0.8	3,092,006	34,443	72,400	3,129,964
Net availability	5,121,568	2,008,319	72,400	**3,185,649**

Source: Eurostat

products. These exports are linked to a footprint of 1,700,160 tonnes of embedded soy. Hence, Germany had a net export of 91,640 tonnes of embedded soy in 2020.

The estimated soybean meal available for consumption in Germany is the sum of the net availability of direct and embedded soy. Hence, this results in a domestic soybean meal consumption of 3,185,649 - 91,641 = 3,094,008 tonnes.

4.6.2 Share of FEFAC-compliant soy

The German feed association (DVT) reported that 1,463,400 tonnes of soy were FEFAC-SSG compliant in 2020. There is no detailed information about the schemes under which the soy was purchased. RTRS data shows that feed companies bought 59,141 tonnes of RTRS soybean meal. In addition, German companies bought 75,000 tonnes of SFAP non-conversion certificates.

Downstream companies and retailers acquired 298,714 tonnes of RTRS certified soy. This means that in total 1,463,400 + 298,714 = 1,762,114 tonnes of FEFAC SSG compliant soy were bought for the German market.

This results in a percentage of 1,762,114 / 3,094,008 = 57% FEFAC SSG compliant soy in 2020.

4.6.3 Share of DCF soy

The RTRS certificates and the SFAP non-conversion certificates mentioned under 4.6.2 are assumed to deliver certified DCF soy. In addition, it is estimated that 750,000 tonnes of Proterra certified soy were used in Germany. This means that (59,141 + 298,714 + 75,000 + 750,000)/ 3,094,008 = 38% was certified DCF.

4.6.4 Conclusion and recommendations

German actors are less vocal on the topic of soy sustainability in an international context, but are making progress. FONEI is carefully placing more attention on international imports of DCF soy, which could result in a higher uptake of certified DCF soy. Cooperation with other National Soy Initiatives such as the ENSI platform may be a way to encourage further uptake of responsible soy in the context of upcoming legislative requirements. Germany imports most soy from other European Countries such as the Netherlands and Austria, but also has a strong direct link to Brazil. It would be valuable to intensify the dialogue with both European and Brazilian counterparts on the transition to responsible and DCF soy.

4.7 Italy

Italy has a relatively large soy production and also imports around 3.5 million tonnes of soy products. The Italian government signed the Amsterdam Declaration and is committed to improving uptake of DCF soy in the country.

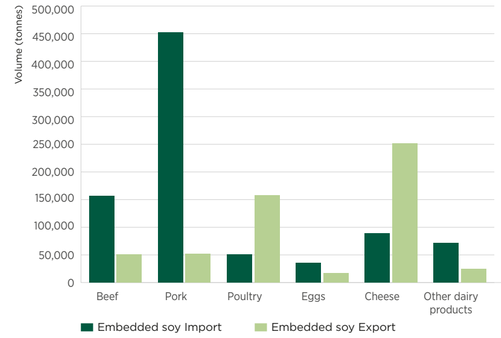
4.7.1 Domestic soybean meal consumption

In 2020, Italy was a net importer of soybeans and soybean meal but also one of the main soy producing countries in Europe. In 2020, Italian farmers produced 1,005,630 tonnes of soybeans, corresponding to 804,504 tonnes of soybean meal. Table 19 shows that in 2020, a volume of 4,127,492 tonnes of soybean meal was available in the country.

In addition to importing soybeans and soybean meal, Italy imports animal-based products such as beef and pork. Most of these imports come from other European Union countries. Figure 25 shows the ratio between input and export of specific categories of products. With these animal-based products, Italy imported 855,020 tonnes of embedded soy and exported 552,852 tonnes of embedded soy. Hence, Italy had a net import of 302,168 tonnes of embedded soy in 2020.

The estimated soybean meal available for consumption in Italy is the sum of the net availability of direct and embedded soy. Hence, this results in a domestic soybean meal consumption of 4,127,492 + 302,168 = 4,429,660 tonnes.

Figure 25 Import and export of embedded soy to and from Italy



Source: Eurostat

Figure 26 Originations of Italian soybean meal and soybeans (converted in soybean meal)

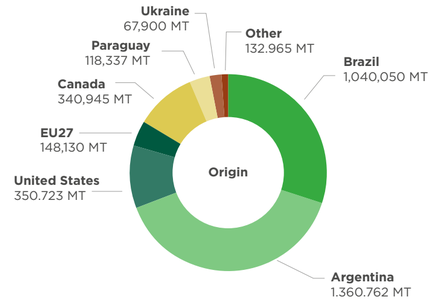


Table 19 Import and export of soybean products to Italy

in tonnes	Import	Export	Domestic production	Net available
Soybean meal	1,690,310	123,302		1,567,008
Soybeans x0.8	1,769,503	13,523	804,504	2,527,980
Net availability	3,459,813	136,825	804,504	**4,127,492**

Source: Eurostat

4.7.2 Share of FEFAC-compliant soy

The Italian feed association (ASSALZOO) reported that in 2020, 1,183,798 tonnes of soy were considered FEFAC SSG compliant. The association was able to specify the volumes under five FEFAC SSG compliant standards: Bunge Responsible Soy (2,234 tonnes), CRS by Cefetra (3,416 tonnes), CSQA (396,600 tonnes), Donau Soja (855 tonnes), and Proterra (242 tonnes), a total of 403,347 tonnes. For the remaining 780,451 tonnes no further specification could be provided by ASSALZOO.

RTRS data shows that one Italian food company purchased 33,000 tonnes of RTRS certified soy.

Analyzing Italy's calculated domestic soybean consumption reveals that (1,183,798 + 33,000) / 4,429,660 = 27% of the soy in 2020 was FEFAC SSG compliant.

4.7.3 Share of DCF soy

According to the Profundo benchmark, CRS, Donau Soja, RTRS, and Proterra deliver DCF soy. As in last year's study, domestic soy is also considered DCF. This means that (3,416 + 855 + 242 + 33,000 + 772,000) / 4,429,660 = 18% of the soy in 2020 was certified DCF.

4.7.4 Conclusion and recommendations

Like previous years, the use of FEFAC SSG compliant and DCF soy is relatively modest. The fact that the government joined the Amsterdam Declaration Partnership is a positive signal. Italian stakeholders could consider working together in a National Soy Initiative to further stimulate the uptake of responsibly produced soy. Unlike other countries mentioned in this report, Italy does not import significant volumes of soy from other European countries. Its import is mainly linked to Brazil, Argentina, the United States, and Canada. It would be interesting to investigate the link to high-risk regions in Brazil and investigate options to directly invest in those regions via a landscape approach.

4.8 Netherlands

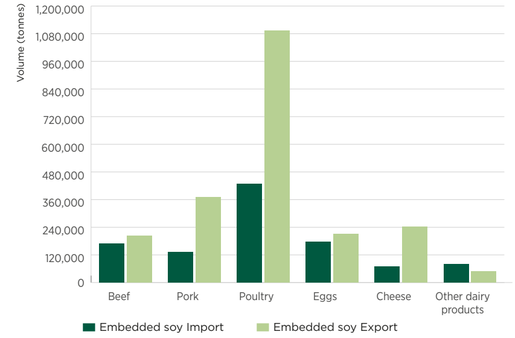
The Netherlands is one of the main EU27+ importers of soybeans and soybean meal and distributes the soy further into Europe. Dutch stakeholders have a long tradition of working together towards responsible soy. Historically, Dutch stakeholders collectively bought soy certificates (like in Belgium), and presently individual feed and food companies take robust action. Dutch companies are responsible for buying by far the largest share of RTRS certificates and the entire feed sector has signed FEFAC's Responsible Sourcing Declaration. In the National Soy Initiative, called the Dutch Soy Dialogue, all stakeholders work together to increase impact in soy producing regions.

4.8.1 Domestic soybean meal consumption

In 2020, the Netherlands was a net importer of soybeans and soybean meal. Table 20 shows that in 2020, 2,057,884 tonnes of soybean meal was available in the country.

In addition to importing soybeans and soybean meal, the Netherlands imports animal-based products such as poultry and eggs. Figure 27 shows the ratio between input and export of specific categories of products. With these animal-based products, the Netherlands imported 1,056,221 tonnes of embedded soy. The Netherlands has a strong livestock sector and exports a substantial volume of animal-based products. These exports are linked to a footprint of 2,170,396 tonnes of

Figure 27 Import and export of embedded soy to and from the Netherlands



Source: Eurostat

Figure 28 Originations of Dutch soybean meal and soybeans (converted in soybean meal)

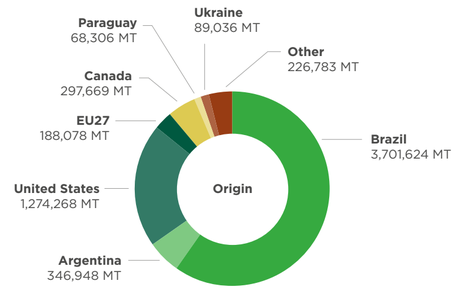


Table 20 Import and export of soybean products to the Netherland

in tonnes	Import	Export	Net available
Soybean meal	2,563,299	3,290,907	-727,608
Soybeans x0.8	3,629,413	843,921	2,785,492
Net availability	6,192,712	4,134,828	**2,057,884**

Source: Eurostat

embedded soy. Hence, the Netherlands had a net export of 1,114,174 tonnes of embedded soy in 2020.

The estimated soybean meal available for consumption in the Netherlands is the sum of the net availability of direct and embedded soy. Hence, this results in a domestic soybean meal consumption of 2,057,884 - 1,114,174 = 943,710 tonnes.

4.8.2 Share of FEFAC-compliant soy

The Dutch feed association Nevedi reported that in 2020, 1,700,090 tonnes of soy were FEFAC SSG compliant of which 1,060,923 tonnes were covered by RTRS certificates. An additional 350,000 tonnes were covered by SFAP non-conversion certificates.

In addition to the feed industry, 11 downstream food/retail companies acquired RTRS certificates totaling 66,306 tonnes of soy. This means that in total 1,700,090 + 66,306 = 1,766,396 tonnes of FEFAC compliant soy were bought for the Dutch market.

Analyzing domestic soybean meal consumption in the Netherlands reveals that 1,766,396 / 943,710 = >100% of the soy was FEFAC SSG compliant in 2020.

4.8.3 Share of DCF soy

The RTRS and SFAP non-conversion certificates mentioned under 4.8.2 are also assumed to deliver DCF soy. In total this means that (1,060,923 + 350,000 + 66,306) / 943,710 >100% was certified DCF.

4.8.4 Conclusion and recommendations

The Netherlands is one of the main countries importing soy for further distribution into Europe. These imports link directly Brazil (59% of all imports), the United States (20%), Argentina (5%), and Canada (4.8%). The significance of these imports means that the Netherlands is often pushed by NGO's to work on responsible imports (from for instance Brazil) as the impacts affect not only the Dutch footprint but secondary importers across Europe as well.

Of all countries assessed, Dutch stakeholders are the most committed to buying responsible and DCF soy. The strong commitment to RTRS and the acquisition of over one million tonnes of RTRS certificates are a clear demonstration of that. However, the Netherlands' dependency on buying book & claim certificates is also a disadvantage, especially in themes of traceability and due diligence. The Dutch Soy Platform (DSP) is a crucial platform that facilitates in-depth and high-level discussions on transitioning to sustainable and DCF soy. The platform also stimulates experiments with impactful innovations such as direct investments in high-risk landscapes.

4.9 Norway

Norway is a small player in soy and a modest player in embedded soy. Since 2015, Norway has been seriously committed to responsible and deforestation-free soy. Norway has a relatively large aquaculture sector and imports soybean meal for fish feed. The aquaculture sector has a strong connection with Proterra, guaranteeing responsible and DCF soy. The Norwegian Round Table on Responsible Soy brings stakeholders together to further improve in the soy supply chain.

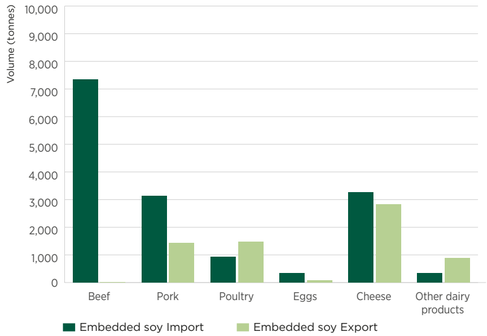
4.9.1 Domestic soybean meal consumption

In 2020, Norway was a net importer of soybeans and soybean meal. Table 21 shows that in 2020, a volume of 162,632 tonnes of soybean meal was available in the country.

Norway also imported embedded soy via animal-based products. Figure 29 shows the ratio between input and export of embedded soy linked to specific categories of products. Norway imported 15,331 tonnes of embedded soy and exported 6,699 tonnes of embedded soy. Hence, Norway had a net import of 8,631 tonnes of embedded soy in 2020.

The estimated soybean meal available for consumption in Norway is the sum of the net availability of direct and embedded soy. This results in a domestic soybean meal consumption of 162,632 + 8,631 = 171,264 tonnes.

Figure 29 Import and export of embedded soy to and from Norway



Source: Eurostat

Figure 30 Originations of Norwegian soybean meal and soybeans (converted in soybean meal)

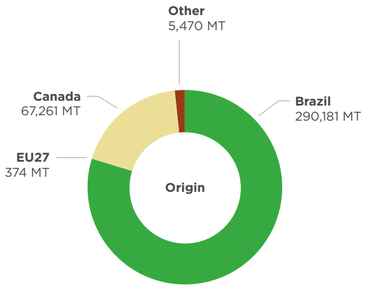


Table 21 Import and export of soybean products to Norway

in tonnes	Import	Export	Net available
Soybean meal	33,579	200,408	-166,829
Soybeans x0.8	329,708	247	329,462
Net availability	363,287	200,655	**162,632**

Source: Eurostat

4.9.2 Share of FEFAC-compliant soy

The Norwegian feed association (Denofa) reported to FEFAC that 573,555 tonnes of soy were FEFAC SSG compliant of which 409,555 tonnes were Proterra certified. Note that this volume is more than the total import of soybeans and soybean meal. RTRS data indicate that Denofa bought 18,000 tonnes of RTRS soy certificates as well – this is assumed to be included in the figure reported to FEFAC.

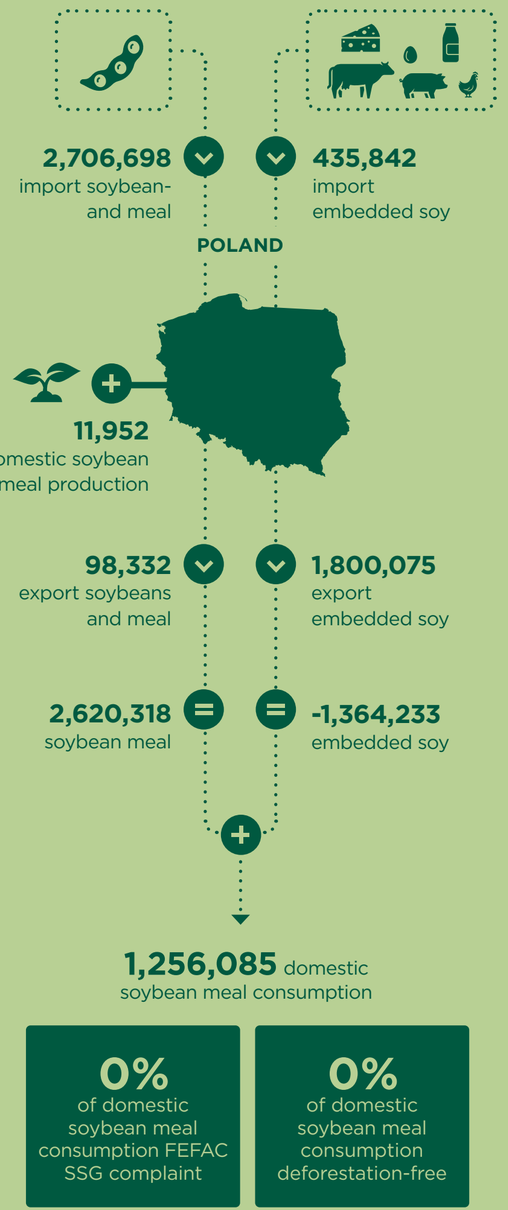
Analysis of the domestic soybean meal consumption in Norway reveals that 573,555/171,264 = >100% of the soy in 2020 was FEFAC SSG compliant.

4.9.3 Share of DCF soy

Both Proterra and RTRS are DCF soy standards meaning that in Norway more than 100% of the soybean meal available for domestic consumption was certified DCF (409,555 + 18,000 /171,264 = >100%).

4.9.4 Conclusion and recommendations

Norway imports most of its soy directly from Brazil and Canada. Norwegian stakeholders in the feed sector have a strong commitment to Proterra certified soy. This has the advantage that Norwegian stakeholders are already buying physically segregated certified responsible, DCF soy. With this, they are ahead of most actors in European Union countries. The challenge for Norwegian stakeholders is to connect to their colleagues in the European Union, share their experiences, and upscale best practices.



4.10 Poland

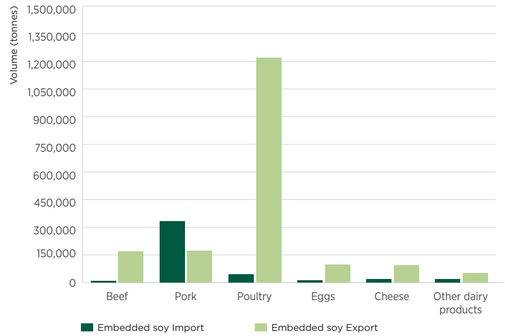
Poland is a relatively large importer of soybean meal, but at the same time the cultivation of non-GMO soy varieties in the country is being promoted. The availability of such varieties has been increasing every year. Since the German consumer market is very important for the Polish agricultural sector, topics such as non-GMO and sustainability are likely to become more important the coming years.

4.10.1 Domestic soybean meal consumption

In 2020, Poland was a net importer of soybeans and soybean meal. Poland has a domestic soy production of 14,940 tonnes of soybeans (equivalent to 11,952 tonnes of soybean meal). Table 22 shows that in 2020, a volume of 2,620,318 tonnes of soybean meal was available in the country.

In addition to importing soybeans and soybean meal, Poland imports and exports animal-based products. Figure 31 shows the ratio between input and export of embedded soy linked to specific categories of products. With these animal-based products, Poland imported 435,842 tonnes of embedded soy and exported 1,800,075 tonnes of embedded soy. Hence, Poland had a net export of 1,364,233 tonnes of embedded soy in 2020.

Figure 31 Import and export of embedded soy to and from Poland



Source: Eurostat

Figure 32 Originations of Polish soybean meal and soybeans (converted in soybean meal)Source: Eurostat

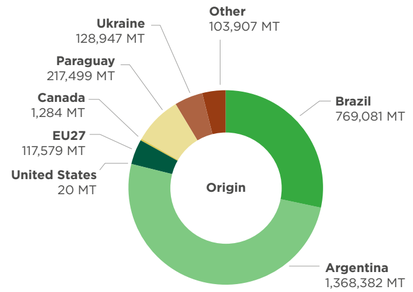


Table 22 Import and export of soybean products to Poland

in tonnes	Import	Export	Domestic production	Net available
Soybean meal	2,666,496	93,319		2,573,177
Soybeans x0.8	40,202	5,013	11,952	47,141
Net availability	2,706,698	98,332	11,952	**2,620,318**

Source: Eurostat

The estimated soybean meal available for consumption in Poland is the sum of the net availability of direct and embedded soy. This results in a domestic soybean meal consumption of 2,620,318 – 1,364,233 = 1,256,085 tonnes.

4.10.2 Share of FEFAC SSG compliant soy

The Polish feed association (IZBA) did not report any volumes of FEFAC SSG compliant soy. One downstream company bought RTRS certificates covering 1,540 tonnes of soy. The percentage of FEFAC SSG compliant domestic soybean consumption in Poland was therefore 1,540 / 1,256,085 = 0%.

4.10.3 Share of DCF soy

The percentage of certified DCF soy was also 1,540 / 1,256,085 = 0%.

4.10.4 Conclusion and recommendations

Poland imports directly from Argentina, Brazil, Paraguay and Ukraine. Soy imports from European Union countries are relatively modest (mostly from Germany and the Netherlands). IZBA estimates that 323,600 tonnes of soybean meal are linked to regions with a low-risk of deforestation such as Ukraine and the European Union. With the strong direct link to production countries, there is both the risk of importing soybeans with a link to high-risk regions and the possibility to invest with high impact in specific regions and work on responsible, DCF soy directly. Polish stakeholders could work with their European counterparts on making the topic of certified DCF soy a higher priority.

4.11 Portugal

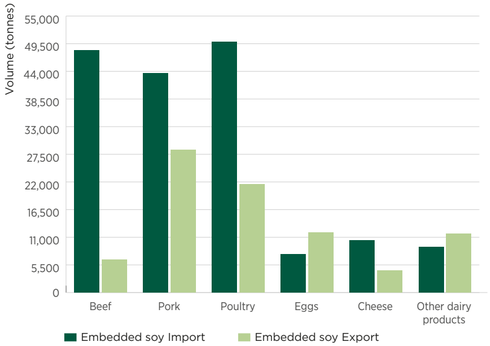
Although Portugal is not amongst the biggest players in soy, it has a strong connection to production regions, especially Brazil. Portugal's uptake of FEFAC SSG compliant and DCF soy continues to be relatively modest and downstream food companies and retailers seem little involved in the discussion on deforestation-free soy. All actors in Portugal are challenged to step up their game and work on this topic, and European Union legislation will play a role in encouraging this.

4.11.1 Domestic soybean meal consumption

In 2020, Portugal was a net importer of soybeans and soybean meal and did not produce soybeans. Table 23 shows that in 2020, a volume of 1,077,051 tonnes of soybean meal was available in the country.

In addition to importing soybeans and soybean meal, Portugal imports animal-based products such as beef, pork, and poultry. Figure 33 shows the ratio between input and export of embedded soybean meal linked to specific categories of products. With these animal-based products, Portugal imported 168,736 tonnes of embedded soy and exported 84,495 tonnes of embedded soy. Hence, Portugal had a net import of 84,240 tonnes of embedded soy in 2020.

Figure 33 Import and export of embedded soy to and from Poland



Source: Eurostat

Figure 34 Originations of Portuguese soybean meal and soybeans (converted in soybean meal)

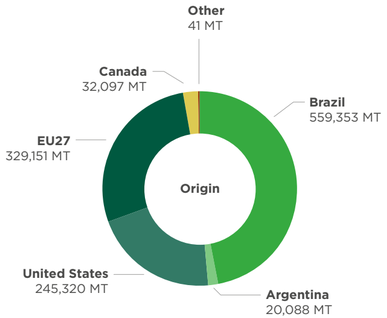


Table 23 Import and export of soybean products to Portugal

in tonnes	Import	Export	Net available
Soybean meal	70,376	104,164	-33,788
Soybeans x0.8	1,115,675	4,836	1,110,839
Net availability	1,186,051	109,000	**1,077,051**

Source: Eurostat

The estimated soybean meal available for consumption in Portugal is the sum of the net availability of direct and embedded soy. Hence, this results in a domestic soybean meal consumption of 1,077,051 + 84,240 = 1,161,291 tonnes.

4.11.2 Share of FEFAC-compliant soy

The Portuguese feed association (IACA) reported that the 2020 usage of FEFAC-SSG compliant soy was 355,715 tonnes of which 239,826 was bought under the SSAP standard. For the remaining 115,889 tonnes no further specification was provided and there is no additional information available from downstream food companies or retailers.

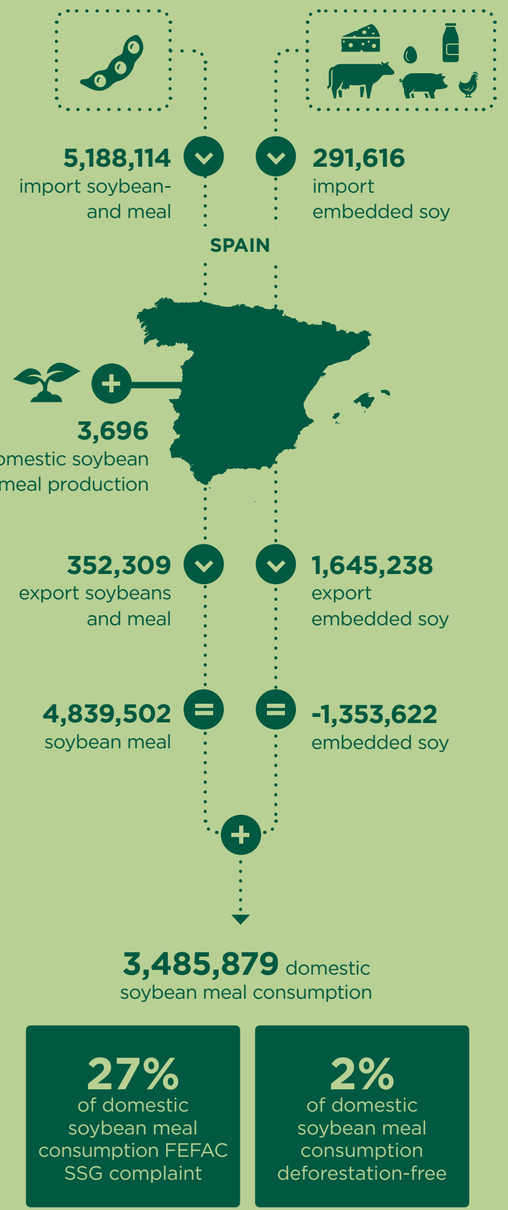
Analyzing domestic soybean consumption reveals that 355,715 / 1,161,291 = 31% of the soy in 2020 was FEFAC SSG compliant.

4.11.3 Share of DCF soy

Since there is no information regarding the soy bought under specific DCF schemes, this study does not report on the Portuguese share of DCF soy.

4.11.4 Conclusion and recommendations

Portugal imports more than 500,000 tonnes of soy products from Brazil, followed by 300,000 tonnes from European Union countries. There is a big opportunity to invest in Brazilian regions and work with actors in the supply chain on improved monitoring and increased uptake of certified soy. The forthcoming European Union legislation will likely provide an extra motivation for companies in Portugal to work on responsible soy supply chains.



4.12 Spain

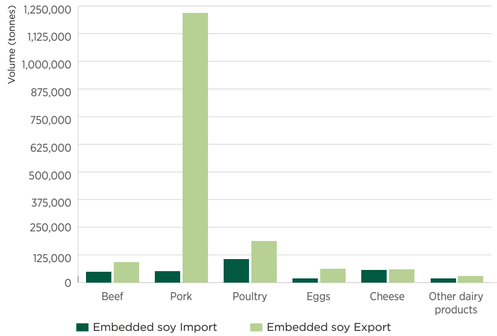
Spain is the most important net-importer of soybeans and soybean meal in EU27+. The Spanish government has recently joined the Amsterdam Declaration Partnership and is committed to putting the topic of deforestation-free soy higher on the agenda. The Spanish feed association (CESFAC) has worked with IDH and Trase to gain a better understanding of the risk-exposure of their imported soybeans. Although these developments are positive, they do not yet translate into a higher uptake of certified soy.

4.12.1 Domestic soybean meal consumption

With an import of over 5 million tonnes of soybean meal equivalents, Spain is a key player in European soy imports. Table 24 shows that in 2020, 4,839,502 tonnes of soybean meal were available in the country. Spain has a modest domestic soy production of 4,620 tonnes of soybeans (equivalent to 3,696 tonnes of soybean meal).

Spain imports a relatively low volume of animal-based products. Figure 35 shows the ratio between input and export of embedded soy linked to the specific categories of products. With these animal-based products, Spain imported 291,616 tonnes of embedded soy and exported 1,645,238 tonnes of embedded soy. Hence, Spain had a net export of 1,353,622 tonnes of embedded soy in 2020.

Figure 35 Import and export of embedded soy to and from Spain



Source: Eurostat

Figure 36 Originations of Spanish soybean meal and soybeans (converted in soybean meal)

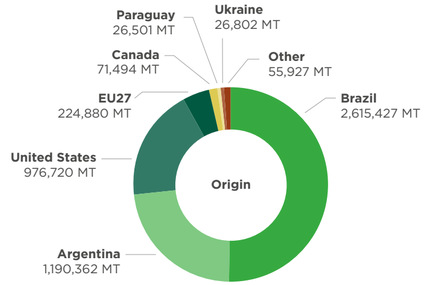


Table 24 Import and export of soybean products to Spain

in tonnes	Import	Export	Domestic production	Net available
Soybean meal	2,519,902	348,306		2,171,596
Soybeans x0.8	2,668,213	4,003	3,696	2,667,906
Net availability	5,188,114	352,309	3,696	**4,839,502**

Source: Eurostat

The estimated soybean meal available for consumption in Spain is the sum of the net availability of direct and embedded soy. Hence, this results in a domestic soybean meal consumption of 4,839,502 - 1,353,622 = 3,485,879 tonnes.

4.12.2 Share of FEFAC-compliant soy

CESFAC reported that 879,286 tonnes of soy were bought under USSEC SSAP. RTRS data show that Spanish feed companies bought 76,851 tonnes of RTRS certificates.

Unlike in 2019, when downstream companies bought for 30,000 tonnes of RTRS soybean certificates, there is no 2020 information available about the uptake of responsible soy by downstream food producing companies or retailers.

Analyzing domestic soybean consumption in Spain reveals that (879,286 + 76,851)/3,485,879 = 27% of the soy in 2020 was FEFAC SSG compliant.

4.12.3 Share of DCF soy

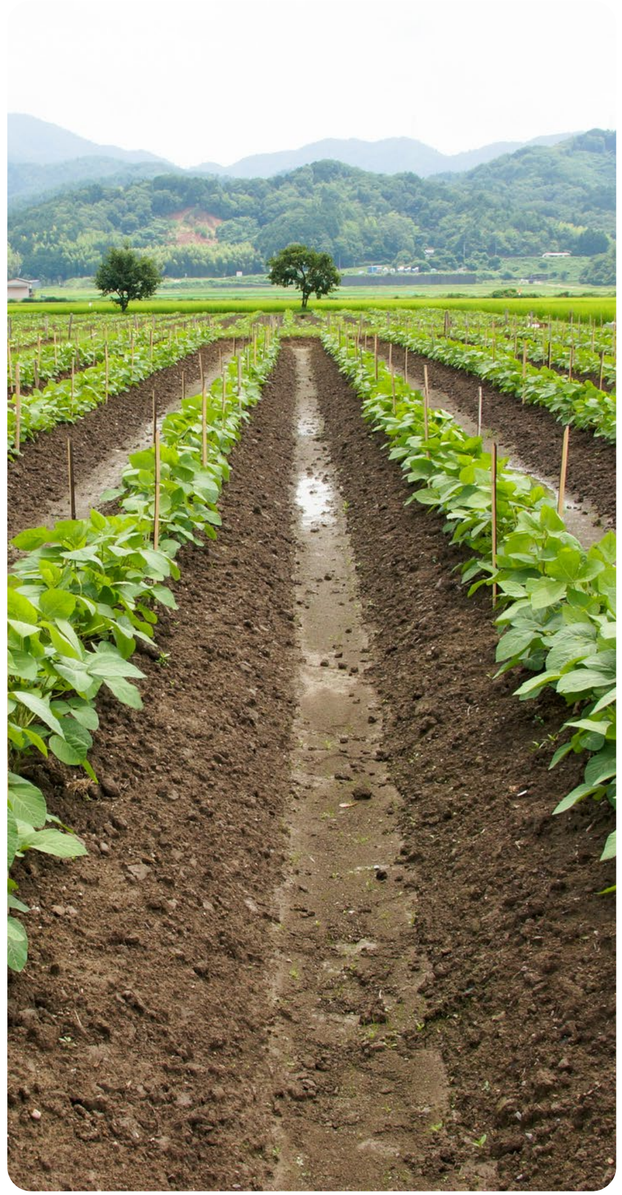
The RTRS soy is included in the Profundo benchmark, and as a result 76,851/3,485,879 = 2% of domestic consumption is certified DCF. The next section elaborates on a study CESFAC, IDH, and Trase conducted into the topic of soy with a possible link to deforestation.

4.12.4 Low-risk soy

CESFAC has further investigated the link to deforestation of its imported soy in 2016, 2017, and 2018. In this study, all soy produced in the United States, Canada, European Union and Ukraine is considered to come from regions with a low risk of deforestation.[66] Brazilian soy sourced in compliance with the Amazon Moratorium, certified Brazilian soy and soy originating from Argentina (excluding the Gran Chaco) is also seen as low-deforestation soy.[67] The CESFAC study specifies the exact origins of Brazilian and Argentina soy using Trase data. Based on Trase data, CESFAC reported that in 2018, 71% of the total soy imported from Brazil to Spain may be considered to be low (deforestation) risk. In addition, 91% of the total soy imported from Argentina in 2018 may be considered to be low (deforestation) risk.

4.12.5 Conclusion and recommendations

Spanish actors have a direct connection to production regions in Brazil, the United States, Argentina, and Paraguay. Exports to other European Union countries are relatively small. The study with Trase on 2016, 2017, and 2018 soy imports shows where Spanish actors have a link to land conversion and can be a starting point for investments in those regions. With the Spanish government becoming part of the Amsterdam Declaration Partnership group, it is interesting to investigate how Spanish stakeholders can improve cooperation (e.g. via a National Soy Initiative), and make next steps in the transition to responsible and DCF soy.



4.13 Sweden

Sweden is a relatively small player in the European soy sector but has a strong commitment to responsible soy, specifically Proterra certified soy. Given the fact that Proterra certified soy is sourced via segregated streams, the country is well equipped to deal with upcoming legislative changes.

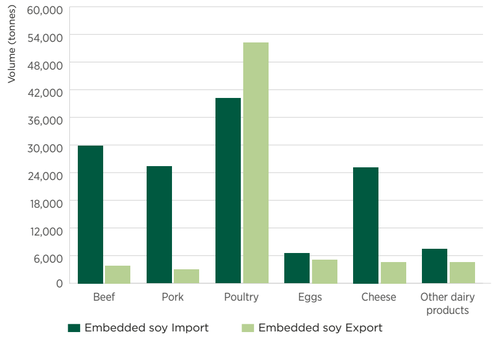
4.13.1 Domestic soybean meal consumption

Sweden is a net importer of soybeans and soybean meal. Table 25 shows that in 2020, a volume of 255,736 tonnes of soybean meal was available in the country. Sweden has no domestic soy production.

In addition to importing soybeans and soybean meal, Sweden imports animal-based products such as poultry, beef, and cheese. Figure 37 shows the ratio between input and export of embedded soy linked to the specific categories of animal-based products. With these animal-based products, Sweden imported 134,432 tonnes of embedded soy and exported 73,117 tonnes of embedded soy. Hence, Sweden had a net import of 61,315 tonnes of embedded soy in 2020.

The estimated soybean meal available for consumption in Sweden is the sum of the net availability of direct and embedded soy. This results in a domestic soybean meal consumption of 255,736 + 61,315 = 317,051 tonnes.

Figure 39 Import and export of embedded soy to and from Sweden



Source: Eurostat

Figure 40 Originations of Swiss soybean meal and soybeans (converted in soybean meal)

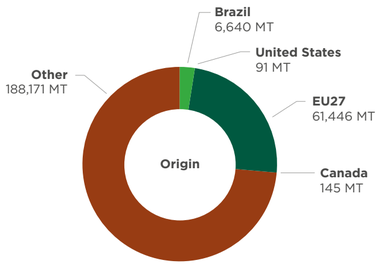


Table 25 Import and export of soybean products to Sweden

in tonnes	Import	Export	Net available
Soybean meal	255,920	2,488	253,433
Soybeans x0.8	8,504	100	8,403
Net availability	264,424	2,588	**261,836**

Source: Eurostat

4.13.2 Share of FEFAC-compliant soy

The Swedish feed association Swedish Grain & Feed Association (Föreningen Foder & Spannmål, F&S), reported that in 2020 166,000 tonnes of soy were Proterra certified and an additional 41,000 tonnes were sourced from Canada under requirements that are equal to Proterra certification. In total 207,000 tonnes of soy are therefore considered to be FEFAC SSG compliant.

In addition to the feed industry, ten downstream companies acquired RTRS certificates totaling 55,318 tonnes of soy. This means that in total 207,000 + 55,318 = 262,318 tonnes of FEFAC SSG compliant soy were bought for the Swedish market.

Analyzing domestic soybean consumption in Sweden reveals that 262,318 / 317,051= 83% of the soy in 2020 was FEFAC SSG compliant.

4.13.3 Share of DCF soy

The two sustainable soy standards mentioned in 4.13.2 (Proterra and RTRS) are also assumed to deliver certified DCF soy. This means that percent certified DCF is the same as the percent certified FEFAC SSG. In total this means that 262,318 / 317,051= 83% of the soy in 2020 was DCF certified.

4.13.4 Conclusion and recommendations

Swedish actors in the feed supply chain show a large commitment to buying segregated Proterra soy which is non-GMO, responsible, and DCF. In addition, Swedish players in the food sector are committed to buying RTRS certified soy (certificates). Compared to last year, the percentage of FEFAC SSG compliant soy went down, but the percentage of DCF soy increased. Swedish actors work together in the Swedish Soy Dialogue and are committed to 100% legal and DCF. With the current segregated soy flows, Swedish actors is an example for other European players that are moving towards sustainable soy in physical supply chains.

4.14 Switzerland

Switzerland has a very strong commitment to local, non-GMO, and responsibly sourced soy. The Soy Network Switzerland plays a leading role in guaranteeing this commitment. According to the Soy Network Switzerland, at least 95% of all soy imports to the Swiss market were responsibly produced and 58% of imports come from European cultivation.

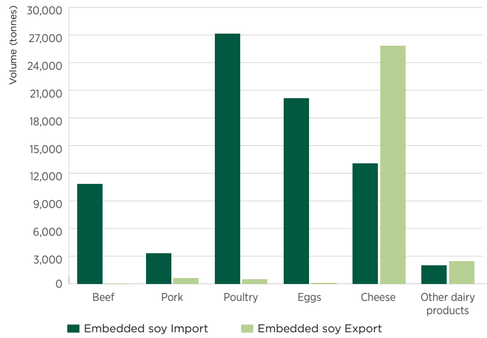
4.14.1 Domestic soybean meal consumption

Switzerland is a net importer of soybeans and soybean meal. Table 26 shows that in 2020, a volume of 261,836 tonnes of soybean meal was available in the country. Switzerland has no domestic soy production.

Switzerland imports animal-based products such as poultry and eggs. Figure 39 shows the ratio between import and export of embedded soy linked to specific categories of products. Via these animal-based products, Switzerland imported 76,488 tonnes of embedded soy and exported 29,544 tonnes of embedded soy. Hence, Switzerland had a net import of 46,944 tonnes of embedded soy in 2020.

The estimated soybean meal available for consumption in Switzerland is the sum of the net availability of direct and embedded soy. This results in a domestic soybean meal consumption of 261,836 + 46,944 = 308,780 tonnes.

Figure 39 Import and export of embedded soy to and from Switzerland



Source: Eurostat

Figure 40 Originations of Swiss soybean meal and soybeans (converted in soybean meal)

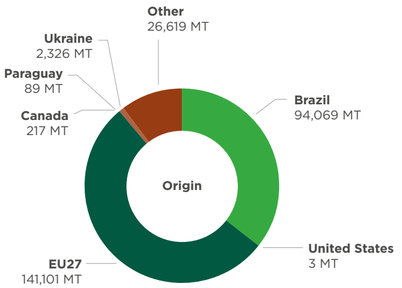


Table 26 Import and export of soybean products to Switzerland

in tonnes	Import	Export	Net available
Soybean meal	255,920	2,488	253,433
Soybeans x0.8	8,504	100	8,403
Net availability	264,424	2,588	**261,836**

Source: Eurostat

4.14.2 Share of FEFAC SSG compliant soy

The Swiss feed association VSF reported that in 2020, 26,000 tonnes soy were bought under Donau Soja, 38,000 under Europe Soy, 54,000 under ISCC+, 116,000 under Proterra, and 111 tonnes under RTRS certification. This totals to 234,111 tonnes of FEFAC SSG compliant soy.

In addition to the feed industry, three downstream companies from Switzerland acquired RTRS certificates totaling to 171,242 tonnes of soy. This means that in total 234,111 + 171,242 = 405,353 tonnes of FEFAC SSG compliant soy were bought for the Swiss market.

Analyzing domestic soybean consumption in Switzerland reveals that 405,353 / 308,780 = >100% of the soy in 2020 was FEFAC SSG compliant.

4.14.3 Share of DCF soy

All sustainable soy standards mentioned in 4.14.2 are also assumed to deliver certified DCF soy. This means that the same percentage of the domestic soybean meal consumption in Switzerland was certified DCF. In total this means that 405,353 / 308,780 = >100% was certified DCF.

4.14.4 Conclusion and recommendations

Although the soy volumes imported by Switzerland are relatively modest compared to some other countries, Switzerland is definitely a leading example in terms of committing to responsible and DCF soy at a national scale, careful monitoring of responsible soy uptake, and transitioning to physical responsible soy supply chains. Although it is unlikely that its practices can be immediately replicated in other countries, facilitating learning and exchange between Swiss actors and other European actors via ENSI umbrella could be a way to inspire others to make practical steps towards DCF soy.

4.15 United Kingdom

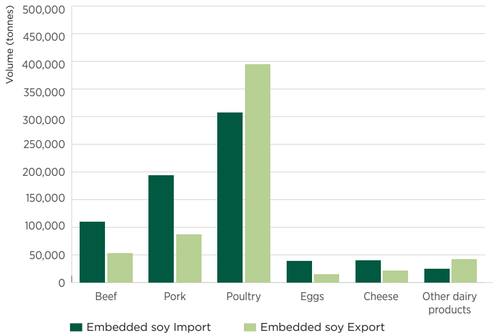
The United Kingdom is a relatively large player in the soy supply chain, importing over 2.7 million tonnes of soybean meal equivalents in 2020. It is also has a strong commitment to legal and deforestation-free soy. The UK Round Table on Responsible Soya plays a leading role in the transition to legal and deforestation-free soy.

4.15.1 Domestic soybean meal consumption

The United Kingdom is a net importer of soybeans and soybean meal. Table 27 shows that in 2020, 2,704,139 tonnes of soybean meal were available for domestic consumption. The United Kingdom has no domestic soy production.

The United Kingdom imports animal-based products such as poultry and pork. Most of these imports come from European Union countries. Figure 41 shows the ratio between input and export of embedded soy linked to specific categories of animal-based products. With these animal-based products, the United Kingdom imported 713,244 tonnes of embedded soy. The United Kingdom exports a substantial volume of animal-based products. These exports are linked to a footprint of 610,186 tonnes of embedded soy. Hence, the United Kingdom had a net import of 103,058 tonnes of embedded soy in 2020.

Figure 41 Import and export of embedded soy to and from United Kingdom



Source: Eurostat

Figure 42 Originations of the United Kingdom's soybean meal and soybeans (converted in soybean meal)Source: Eurostat

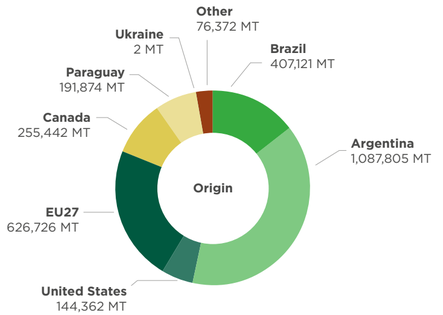


Table 27 Import and export of soybean products to United Kingdom

in tonnes	Import	Export	Net available
Soybean meal	2,137,719	69,881	2,067,838
Soybeans x0.8	651,985	15,684	636,301
Net availability	2,789,704	85,565	**2,704,139**

Source: Eurostat

The estimated soybean meal available for consumption in the United Kingdom is the sum of the net availability of direct and embedded soy. This results in a domestic soybean meal consumption of 2,704,139 + 103,058 = 2,807,197 tonnes.

4.15.2 Share of FEFAC-compliant soy

The United Kingdom's feed association AIC reported that in 2020, 876,746 tonnes of soy were FEFAC SSG compliant. There is no available information on which schemes the soy was certified under.

The annual report by the UK Round Table on Responsible Soya concluded that in 2020, 625,158 tonnes of soy were sourced under the Book & Claim standard and 251,588 tonnes of soy were sourced under physical supply chain models, totaling also to 876,747 tonnes of certified soy (feed and food).

Analyzing domestic soybean consumption in the United Kingdom reveals that 876,746 / 2,807,197 = 31% of the soy in 2020 was FEFAC SSG compliant.

4.15.3 Share of DCF soy

Although there is no information available about the specific standards under which the soy is sourced, all standards offering Book & Claim soya (RTRS, CRS, and SFAP non-conversion) are also considered to deliver DCF soy by the Profundo benchmark. Therefore 625,158 / 2,807,197 = 22.3% is certified DCF.

4.15.4 Low-risk soy

In its annual progress report, the UK Round Table for Responsible Soya follows a different approach for calculating responsible soy uptake.[68] Note that 'responsible' is defined as legal and (assumed) DCF, in contrast to the definition of responsible in this report (FEFAC SSG compliant) that includes all dimensions of sustainability.

In the comprehensive report by the Round Table, there are four categories of soy and an unknown category:

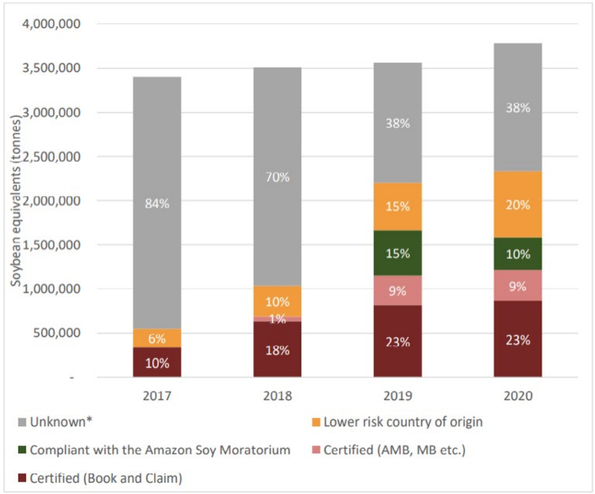
- Lower risk soy (USA & Canada, for Brazil, Argentina, and Brazil FEFAC's risk percentages are applied)
- Soy from the Amazon that is in compliance with the Amazon Moratorium
- Certified soy (physical supply chain models)
- Soy covered by Book & Claim certificates

Figure 43 shows UK's imports divided over these four categories and the unknown category. It is assumed that in 2020, approximately 30% of the soy was not coming from a region with a risk of deforestation. An additional 32% was sourced under sustainable soy standard. The report also shows that the uptake of physical certified material increased from 1% in 2018 to 9% in 2020. In total, 62% of all soy imported to the UK in 2020 was considered to be DCF.

4.15.5 Conclusions and recommendations

Deforestation-free soy is high on the agenda of companies in the United Kingdom. In 2021, UK retailers signed a Manifesto committing to deforestation-free soy, similar to the manifesto in France. The UK Round Table on Responsible Soya is one of the most active National Soy Initiatives with interesting sector-based plans to transition to physical DCF. The theory of change in the UK is slightly different than in other European countries. The UK starts with legal and DCF soy, and focuses less on sustainability in all its facets. Most other countries have a committed to sustainably certified soy. Despite this difference, the UK Round Table is a leader under the ENSI umbrella, encouraging others to make ambitious steps in the area of DCF soy.

Figure 43 Overview of composition of (assumed) DCF soy in the United Kingdom (Retrieved from UK Roundtable on Sustainable Soya[69])



5 Conclusions and recommendations

The uptake of FEFAC SSG compliant and certified DCF soy increased slightly in 2020. Differences between countries in the EU27+ continue to exist and little convergence can be observed. This final chapter provides the main conclusions and gives concrete recommendations to actors in the soy supply chain.

5.1 Concluding remarks

In 2020, Brazil and the United States continued to be the main suppliers of soybeans and China and the European Union were the biggest importers of soy. Soy sustainability remained high on the agenda. Throughout the year various initiatives strengthened their commitment towards buying deforestation-free soy. The Accountability Framework Initiative enables companies and stakeholders to use the same language and hence formulate more robust commitments. Despite continuous attention on the topic, conversion of native vegetation in soy producing regions is ongoing. Thanks to in-depth monitoring by public and private organizations in these regions, the link to soybean expansion is better known and actions can be targeted to specific municipalities.[70] There is also increased consensus that deforestation cannot be tackled in one supply chain.

This report shows a small increase in the uptake of FEFAC SSG compliant and certified DCF soy in EU27+. At the level of individual countries, uptake of certified soy has remained stable. Like last year, countries with an active National Soy Initiative continue to be frontrunners in the uptake of responsible soy. The rather flat uptake of certified soy can be caused by different factors; among those is the increasing attention on DCF soy in the physical supply chain. This has resulted in the development of soy solutions that focus on guaranteeing DCF soy, without focusing on all sustainability dimensions. In addition, actors in the soy supply chain are increasingly assessing the deforestation-exposure of their supply chains and taking measures to lower that exposure, which could lead to moving away from high-risk areas.

It is foreseen that certification will remain an important instrument for guaranteeing responsibly produced soy, but is not enough to tackle complex, overarching problems such as deforestation and land conversion. Therefore, it can be concluded that a smart mix of solutions is necessary to guarantee both responsible soy production and the protection of landscapes. This mix of solutions includes investment in and cooperation at the landscape level, biome wide moratoria, clean supplier approaches, and mandatory legislation. Monitoring deforestation and land conversion and enforcing legal compliance are also import themes for government to government interaction.

5.2 Recommendations

The findings in this report, translate into the following recommendations about certification, deforestation-free supply chains, and cooperation between actors at the national level.

1. Commit to applying the definitions, principles, and practices from the Accountability Framework Initiative

Companies in the feed and food sector are encouraged to implement commitments and policies for ‘clean supply chains’ using the definitions, principles, and best practices as presented in the Accountability Framework. Anticipating upcoming legislation on deforestation and due diligence, companies are strongly encouraged to establish robust monitoring and transparent reporting in this area.

2. Translate commitments into concrete purchase conditions for suppliers

Companies are encouraged to translate their commitments into concrete purchase conditions – only then will suppliers receive a clear incentive to adjust their sourcing practices.

3. Refer to the standards in the FEFAC benchmark and the Transparency Tool

The FEFAC Soy Sourcing Guidelines and accompanying benchmark provide clear insight into credible soy sustainability standards. The Transparency Tool allows for further investigation of standards that offer DCF soy. Companies are invited to use the filtering system in the tool such as cut-off date and supply chain model to identify the standard that matches their ambitions and commitments.

4. Invest in a gradual transition to physical supply chain models

Anticipating upcoming due diligence and deforestation legislation in the European Union, traceability becomes more important. Purchasers are advised to collaborate with suppliers to explore the possibilities to move to responsible soy in the physical supply chain via supply chain models such as area mass balance, mass balance, and segregation.

5. Stay connected to risk-landscapes in a way that matches your company’s size and supply chain role

While moving away from high-risk soy producing areas might seem attractive, the impact of staying connected to farmers in those regions is likely to be bigger. Therefore, companies are encouraged to stay connected to risk-landscapes in a way that matches their specific situation. For smaller companies, buying Book & Claim certificates from such regions can be a solution to reward farmers for sustainable practices. For bigger companies, investments in landscape projects and sourcing from certified farmers in a high-risk region may maximize impact.

6. Connect to or establish a National Soy Initiative in your country

The transition to responsible and DCF soy can seem complicated at first glance, but many best practices are developed and various organizations have paved the way. Companies are therefore encouraged to join a National Soy Initiative in their country to learn from others and to make the transition together.

Note that there are highly relevant publications available with concrete additional recommendations for specific actors in the supply chain. Suggestions for further reading are:

- **Deforestation-free Principles**
- **The Urgency of Action to Tackle Tropical Deforestation**
- **Concrete actions for transparent and deforestation-free supply chains**

Endnotes

1 FAOSTAT, FAO.
2 FAOSTAT, FAO.
3 When using the new FEFAC Transparency Tool for deforestation and conversion-free soy standards, almost the entire FEFAC SSG compliant volume is also considered to be DCF.
4 Food Outlook - Biannual Report on Global Food Markets: June 2020. (2020). FAO.
5 All production, yield and area data from FAOSTAT, FAO.
6 Acreage. (2021). National Agricultural Statistics Service (NASS), Agricultural Statistics Board, United States Department of Agriculture (USDA); Anand, Asim (29 April 2021). Global soybean 2021-22 production, trade reaches record high: IGC. S&P Global.
7 Colussi, J. and G. Schnitkey (12 July 2021). Brazil Likely to Remain World Leader in Soybean Production. farmdoc daily (11):105, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign.
8 FAOSTAT, FAO.
9 FAOSTAT, FAO.
10 Agricultural Outlook 2021-2030. (2021). OECD/FAO.
11 FAOSTAT, FAO.
12 Ritchie, Hannah and Max Roser (2021). Soy. OurWorldInData.org
13 Meat Substitutes Market Size, Share | Global Report, 2021-2028. Fortune Business Insights
14 Soy. Ourworldindata.org
15 Europe's plant-based food industry shows record-level growth. (30 March 2021). CORDIS, European Commission.
16 More than half of tropical deforestation linked to exports of key commodities is happening in less than 5% of producing regions (2 July 2020). SEI.
17 Escobar, Herton (7 Aug. 2020). Science, Deforestation in the Brazilian Amazon is still rising sharply. Science. Vol 369, Issue 6504.
18 TerraBrasilis, PRODES.
19 Soy moratorium – Crop year 2019/20: Monitoring soy through satellite images in the amazon biome. ABIOVE.
20 Lucy Jordan, Alice Ross, Elisângela Mendonça, Andrew Wasley and Liam Slattery (10 Feb. 2022). 'Loophole' allowing for deforestation on soya farms in Brazil's Amazon. The Guardian.
21 Mato Grosso PCI Strategy goals Update, 2030 vision. PCI.
22 Soy Moratorium. ABIOVE.
23 Soy Moratorium. ABIOVE.
24 Lucy Jordan, Alice Ross, Elisângela Mendonça, Andrew Wasley and Liam Slattery (10 Feb. 2022). 'Loophole' allowing for deforestation on soya farms in Brazil's Amazon. The Guardian.
25 Soy Moratorium. ABIOVE.
26 Terrabrasilis, homepage
27 Wenzel, Fernanda (12 Jan. 2022). As its end looms, Cerrado tracker records 6-year deforestation high. Mongabay.
28 Terrabrasilis, PRODES.
29 Geospatial Analysis of Soy Crop in the Cerrado Biome: Expansion Dynamic | Agricultural Suitability | Evaluation System for Financial Compensation - 2001 to 2019. Agrosatélite Applied Geotechnology Ltda. Florianópolis-SC, Brazil, 2020
30 Geospatial Analysis of Soy Crop in the Cerrado Biome 2000 to 2020. Agrosatélite Applied Geotechnology Ltda. Florianópolis-SC, Brazil, 2022
31 Pötzschner, Flo & Baumann, Matthias & Gasparri, Nestor & Conti, Georgina & Loto, Dante & Piquer-Rodríguez, María & Kuemmerle, Tobias. Ecoregion-wide, multi-sensor biomass mapping highlights a major underestimation of dry forests carbon stocks. Remote Sensing of Environment. 269. 112849.
32 Valente, Marcela (27 July 2020). Argentina counts on new satellite technology to guard forests day and night. Thomson Reuters Foundation.
33 MapBiomas Brazil (15 Dec 2020). Lanzamiento de la Colección 2 de MapBiomas Chaco. YouTube.
34 MapBiomas Chaco
35 Verena Fehlenberg, Matthias Baumann, Nestor Ignacio Gasparri, Maria Piquer-Rodriguez, Gregorio Gavier-Pizarro, Tobias Kuemmerle. The role of soybean production as an underlying driver of deforestation in the South American Chaco. Global Environmental Change. Volume 45, 2017, Pages 24-34.
36 MapBiomas Chaco
37 Situation. Compromiso Gran Chaco
38 Tyldesley, M. (2021). Soy deforestation risk in Paraguay continues despite decline. Trase.
39 Popkin, Gabriel (17 Sept. 2021). How Can the Most Endangered Ecosystem in the World Be Saved? National Geographic.
40 Fargione, Joseph E., et al. (2018). Natural climate solutions for the United States. Science Advances, Volume 4, Number 11.
41 Plowprint. WWF, 2021
42 These volumes are aggregated without converting them to soybean meal.
43 EuroStat, Data browser,https://ec.europa.eu/eurostat/databrowser/view/APRO_CPSH1__custom_2041733/default/table?lang=en
44 World-grain, Ukraine soybean production on the rise, https://www.world-grain.com/articles/15133-ukraine-soybean-production-on-the-rise
45 EuroStat Data browser
46 Hoste, R. (2016). Soy footprint of animal products in Europe: an estimation. (Wageningen Economic Research report; No. 2016-083). Wageningen Economic Research.
47 All converted into soybean meal using a conversion factor of 0.8 from soybeans to soybean meal.
48 Retno Kusumaningtyas and Jan Willem van Gelder (7 June 2019). Setting the bar for deforestation-free soy in Europe. Profundo.
49 FEFAC Transparency Tool. Consulted January 2022.

50 More than half of tropical deforestation linked to exports of key commodities is happening in less than 5% of producing regions. (2 July 2020). SEI.
51 More than half of tropical deforestation linked to exports of key commodities is happening in less than 5% of producing regions. (2 July 2020). SEI.
52 The new FEFAC Transparency Tool concludes that (almost) all FEFAC SSG compliant standards also guarantee DCF, resulting in a percentage of 43.7%.
53 Soy. Ourworldindata.org.
54 Risso, Joel. Cerrado soy dynamics with focus on the 61 priority municipalities updated for crop year 2019/20 vs. Prodes 2014-2019. Agrosatélite.
55 Human Rights Due Diligence: the State of Play in Europe. (March 2021). Shift.
56 Trader Soy Score Card, Recommendations. WWF.
57 Soy Transparency Coalition
58 Mato Grosso and Maranhão, Brazil. IDH
59 SourceUp
60 Geospacial analysis of soy crop. ABIOVE.
61 Davies, May (31 December, 2000). Tesco urges more companies to fund sustainable soy farming in Brazil's Cerrado. QUOTA.
62 Innovative Finance for the Amazon, Cerrado, and Chaco. (30 March 2021). UNEP.
63 Branded data. GLFI.
64 For those readers interested in the certified volume using the Transparency Tool as a reference, the FEFAC SSG compliant volume can be used. In the Transparency Tool all FEFAC SSG compliant standards are also considered DCF soy.
65 Byrne, Jane (20 Nov. 2020). French supermarkets fighting soy-driven deforestation. Feednavigator.
66 Sustainable soy for a responsible supply of compound feed. CESFAC.
67 Note that soy 'in compliance with the Amazon Soy Moratorium' is slightly confusing. Traders do not buy soy from farmers in the Amazon that have deforested their land after July 2008. But there is no specific program that provides 'Amazon Moratorium' soy.
68 UK Roundtable on Sustainable Soya: Annual progress report 2021. EFECA.
69 UK Roundtable on Sustainable Soya: Annual progress report 2021. EFECA.
70 For example ABIOVE & Agrosatélite, Soft Commodities Forum, and Trase
71 European Soy Monitor 2018. IDH.
72 Hoste, R. (2016). Soy footprint of animal products in Europe: an estimation. (Wageningen Economic Research report; No. 2016-083). Wageningen Economic Research.

Annex 1: Methodology

This section elaborates on the methodology used to calculate the FEFAC SSG compliant and certified DCF percentages for EU27+ and individual countries. The method was originally introduced in the 2018 European Soy Monitor.[71] The biggest changes compared to 2018 are discussed in more detail. The final section explains the limitations of the study.

Annex 1.1: Data sources

The following data sources are used in the report:

Trade statistics

The Eurostat database EU Trade Since 1988 by HS 2, 4, 6, and CN8 was used to retrieve imports and exports of direct soy and embedded soy to and from the EU27 and individual European Union countries. In addition, Comtrade was consulted for data on Norway, Switzerland, and the United Kingdom. To calculate the overall soy consumption of the EU27+, all EU27 figures were corrected for trade between the EU27 and Norway, Switzerland, and the United Kingdom, and trade between those three countries and the rest of the world (outside of EU27).

Uptake of certified soy

Both the owners of the FEFAC SSG compliant standards and the European feed associations provided input about the uptake of certified soy. In general, the feed associations reported one overall figure of FEFAC SSG compliant soy. A few were able to also report on the uptake of soy under specific FEFAC SSG compliant standards. Few standards were able to report on the final destination of the certified soy with RTRS as the biggest exception, a result of the Book & Claim chain of custody model.

Annex 1.2: Calculations

The following sections elaborate on the calculations made to determine the percentage of FEFAC SSG-compliant and certified DCF soy.

Soybean meal available for consumption

The reference volume for all calculations is the 'soybean meal available for consumption'. This reference value is calculated by aggregating the domestic soy production, the net import/export of soybeans and soybean meal, and the net import/export of embedded soy.

The trade codes for soybeans, soybean meal, and soybean oil are listed in Table 28. Soybean oil volumes are not included in the calculations. The soybeans are converted into soybean meal using a crushing ratio of 0.8. Domestically produced soybeans are converted into soybean meal using the same ratio.

The trade codes for animal-based products included in this study are listed in Table 29. Compared to the previous two reports, one additional HS-code was included (HS0408). Although there are more trade flows of animal-based products, for instance all kinds of residual flows, these represent significantly smaller flows and were not included in the report.

Table 28 HS codes used for direct soy

Product	HS-code	Description
Soybeans	1201	Soya beans, whether or not broken
Soybean meal	2304	Oilcake and other solid residues, whether or not ground or in the form of pellets, resulting from the extraction of soya-bean oil
Soybean oil	1507	Soya-bean oil and its fractions, whether or not refined (excl. chemically modified)

Table 29 HS codes included in embedded soy analysis

Product	HS-code	Description
Beef	0201	Meat of bovine animals, fresh or chilled
	0202	Meat of bovine animals, frozen
Pork	0203	Meat of swine, fresh, chilled or frozen
Poultry	0207	Meat and edible offal of fowls of the species Gallus domesticus, ducks, geese, turkeys and guinea fowls, fresh, chilled or frozen
Cheese	0406	Cheese and curd
Other dairy products	0401	Milk and cream, not concentrated nor containing added sugar or other sweetening matter
	0402	Milk and cream, concentrated or containing added sugar or other sweetening matter
	0403	Buttermilk, curdled milk and cream, yogurt, kephir and other fermented or acidified milk and cream, whether or not concentrated or flavoured or containing added sugar or other sweetening matter, fruits, nuts or cocoa
	0404	Whey, whether or not concentrated or containing added sugar or other sweetening matter; products consisting of natural milk constituents, whether or not containing added sugar or other sweetening matter, n.e.s.
	0405	Butter, incl. dehydrated butter and ghee, and other fats and oils derived from milk; dairy spreads
Eggs	0407	Birds' eggs, in shell, fresh, preserved or cooked
	0408*	Birds' eggs, not in shell, and egg yolks, fresh, dried, cooked by steaming or by boiling in water, molded, frozen or otherwise preserved, whether or not containing added sugar or other sweetening matter

For the calculation of the embedded soy linked to the animal-based products, RTRS conversion factors and those presented by Robert Hoste et al. in 2016 were applied.[72] For the import of animal-based products, the new RTRS conversion factors were used. These conversion factors are broadly used in the soy supply chain and recognized as credible reference values. Since these conversion factors are not country specific, the report continues to use the Hoste conversion factors for exports from specific European countries. Not all countries were included in the Hoste study and for those countries that were not in the study the average value of the conversion factors for each category were applied.

Uptake of FEFAC SSG compliant soy at EU27+ level
The uptake of FEFAC SSG compliant soy is calculated using the information from the FEFAC SSG compliant soy standards. These standard owners provided information on the total certified responsible soy volumes and the volume exported to EU27+. The aggregated volume of certified soybean (meal) exported to Europe was used to calculate the overall percentage of FEFAC SSG compliant soy at the EU27+ level.

Uptake of certified DCF soy at EU27+ level
In line with the previous Soy Monitoring Reports, RTRS, ISCC Plus, ProTerra, SFAP-non conversion, Danube & Europe Soy, and CSR are classified as guaranteeing DCF soy. The aggregated volume of soy exported to EU27+ under these six standards is considered to result in the uptake of certified DCF soy. Taking the Transparency Tool by FEFAC as the reference, the difference between FEFAC SSG compliant and certified DCF soy practically disappears as almost all standards are also considered to deliver DCF soy.

Uptake of FEFAC SSG & certified DCF compliant soy at country level
The feed associations are the main source of information for calculating the uptake of FEFAC SSG compliant soy at the country level. These feed associations collected data on certified soy from their member feed companies. Where the data was available, the uptake of certified soy (book & claim) by downstream companies was also included.

Since a specification of soy sourced under each specific FEFAC SSG compliant standard was often not available, the percentage of DCF soy is mainly determined by looking at the available country-specific data from the soy standards.

Annex 1.3: Data limitations and challenges

This section reports on the limitations of the study and the challenges related to data availability.

Data availability and data quality
Data availability and data quality remain the biggest challenges in preparing this report. Public data about soy trade is available, and the methodology is transparent and replicable (there can be small differences between Eurostat and Comtrade data). Calculating the uptake of certified material is more challenging. The complexity of the soy supply chain does not yet allow for full traceability from soy production region to final destination market. Only soy sourced under the segregated supply chain model (often non-GMO soy) and the acquisition of book & claim certificates can be better connected to a final destination market. Feed associations that collect data from their members are often challenged by confidentiality concerns and hence report at an aggregated level. The solution sought to deal with these challenges is transparency. By making clear what is included and what could not be included, the reader is aware of the assumptions made.

Allocation of book & claim certificates
Another limitation of the report is the assumption that the company that buys book & claim certificates will ‘claim’ these certificates only in one country, the country in which its headquarters is located. In reality a company that is registered as a Danish company, will also sell food products to other countries and hence the responsible soy will also be used in other end markets. Allocating all certificates bought by companies in one country to that specific country, can lead to over or underestimations of the certified volume. A further specification of the exact allocation of soy to specific end markets appeared to be impossible due to confidentiality concerns. However, since this is a problem for all companies and all countries, the real effects are expected to level out to some extent.

Little insight into risk-exposure per country
Last but not least, the study especially focused on certified FEFAC SSG compliant and certified DCF soy, and less on soy coming from low-risk regions. It was complicated to calculate the risk-exposure for individual countries since the original production country from the soy often gets lost along the supply chain. Hopefully this will become easier when new Trase data (beyond 2019) becomes available. The findings from the three countries that have further investigated this topic are included in the report.

Discussion
The main discussion about the method in this report is linked to the fact that it accounts for all soy streams together (domestic production, direct soy imports/exports, and embedded soy imports/exports), and calculates the percentage that is FEFAC SSG compliant for a country. This assumes that all ‘sustainability efforts’ are connected to the domestic soy footprint while it could be that the soy used in the Netherlands to feed pigs that are sold to German retailers is certified because of sector demands by that German retailer. In other words, the report is not specific enough to answer the question whether a specific national sector is using responsible soy or not. The answer to this criticism is that the effect is the same for all countries and sectors and therefore the real effects could level out.

Closely related to this is the fact that the focus on the soybean meal available for domestic consumption takes away some of the burden from large soy importing countries and transfers it to countries (and companies) downstream. A method in which the focus was solely on imports would place greater responsibility on importing countries. The reason the focus lies on the domestic consumption is that in the end, downstream companies need to also take responsibility and demand responsible soy. At the end of the day, consumer-facing companies need to find a market (and hence payment) for the sustainability efforts upstream.

Last but not least, the decision to report both the certified DCF soy under the old method (Profundo benchmark) and the new method (FEFAC Transparency Tool) can be questioned. For comparability between the 2018, 2019, and 2020 reports, it was decided to follow the same method. In the transition phase from the Profundo benchmark to the Transparency Tool, it was decided to report both options for certified DCF soy.

Sensitivity analysis

In preparing an annual report, comparability is key. However, it is also clear that the method needs to be critically reviewed and improved wherever possible. In this 2020 version of the report, some changes were implemented that have consequences on the final results. This section elaborates on these changes and impacts.

The biggest change compared to last year is the use of the new RTRS conversion factors for soy imports to the EU27+ and to specific countries in the EU27+. In the previous report the average conversion factors from Hoste et al were used. Since the RTRS conversion factors are broadly perceived as a credible reference, these figures were used for imported soy. However, the Hoste conversion factors are still used for specific countries, as country specific information is more accurate than generic conversion factors. For exports the Hoste conversion factors are still used for all countries included in the study, and an average value for those countries that were not included in the study. These figures were used to map the European soy footprint most accurately.

If the same conversion factors as in the 2018 and 2019 reports were used, the net export of embedded soy would increase from 2,750,928 to 3,366,058. This results in less soybean meal available for consumption (27,536,337 instead of 28,151,467), and a higher percentage of FEFAC SSG compliant soy (from 43.8% to 44.8%). This difference is mainly caused by the new conversion factor for beef that changed from 0.29 (‘old’ RTRS) to 0.451 (2020 RTRS). This change indicates that significantly more soy is linked to beef and more embedded soy is exported. Note that beef is not included in the Hoste report and as a result 2018 and 2019 reports used the (‘old’) RTRS conversion factor. The effect of the change in the conversion factor for beef is somewhat compensated by the change in the conversion factor for poultry, which changed from 0.817 (Hoste) to 0.756 (2020 RTRS). This change means less soy is linked to poultry and less embedded soy is exported. Overall, the effect of the new conversion factors results in a lower overall percentage FEFAC SSG compliant soy (43.8% with new conversion factors, compared to 44.8% with old conversion factors).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