

Reduction of greenhouse gas emissions caused by Swiss imports of feed soy by 85% since 2004

by Moritz Teriete*, Sustainable Supply Chain Expert and Research Associate Soy Network Switzerland; Basel, April 6, 2023

Global production of soy has increased by a factor of 8 since the 1960s and has doubled since 2000 alone. The cultivation of soy in the producing countries in South America is associated with high greenhouse gas emissions, mainly caused by deforestation and other land use changes (LUC).¹

Certified soy from Europe

In 2004, WWF and Coop launched the so-called "Basel Criteria" for sustainable soy cultivation. The Basel Criteria were the basis for standards such as ProTerra and RTRS. The Soy Network was founded in 2010 to promote the cultivation, sourcing, marketing and use of responsibly produced soy. The stated goal was to achieve at least 90 percent market coverage for Switzerland with soy certified according to recognized standards. This goal was achieved in 2015. In 2022, the share was 95.9% (Table No. 1).

Table No. 1: Shares of the lead standards in feed soybean imports 2022

	Imports in tonnes	Share of total imports
Bio Suisse	17'089	4.3%
Europe Soya	25'799	9.6%
ISCC PLUS	96'159	35.7%
ProTerra	117'119	43.5%
CSA/GTP	1'950	0.7%
Donau Soja	244	0.1%
RTRS Non GM	-	0.0%
Without certificate/not known	11'041	4.1%
Total Imports certified	258'359	95.9%
Total Imports Switzerland	269'400	100.0%

Source: Soy Network Switzerland

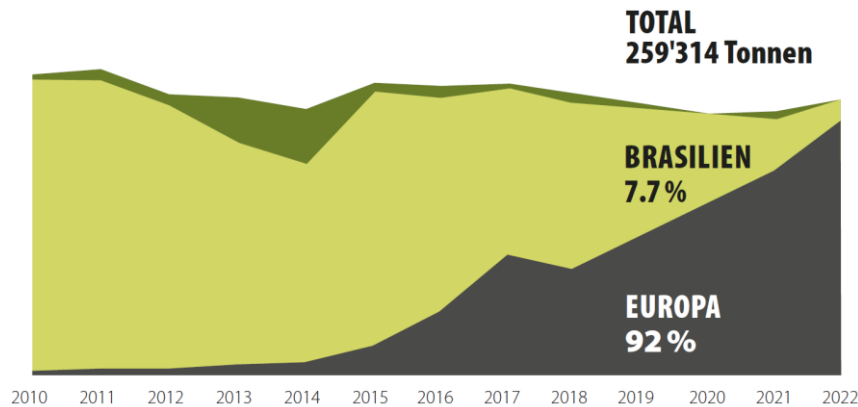
In addition to the focus on certified goods, another change took place away from overseas to European origin. Until 2015, all certified products came from Brazil. With the establishment of standards such as Danube Soy, the share of soy from European cultivation gradually increased to over 90% in 2022 (see Chart No. 1). This in part was due to the decreasing availability of GMO-free

¹ https://www.wwf.ch/sites/default/files/doc-2021-03/WWF_Risky_business_GR%20revised.pdf

(*) Moritz Teriete holds a degree in International Business and Cultural Studies from the University of Passau and has several years of experience in advising companies and organizations in the food and agricultural sector on sustainability (sustainability analysis and assessment, supply chain design, etc.) through his work for the FiBL subsidiary SFS GmbH. Moritz Teriete works part-time for the Soy Network and the Palm Oil Network.

soy from Brazil, as well as the commitment of the members of the soy network and the more and more regionally oriented sourcing strategies of some importers.

Chart No. 1: Development of soy imports 2010 – 2022 (soybean meal only)

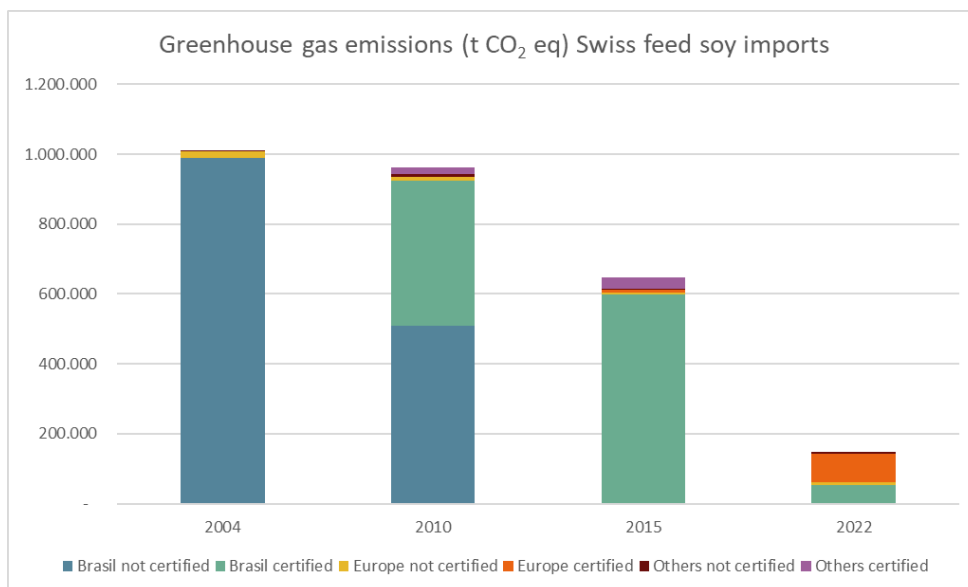


Source: Soy Network Switzerland

Greenhouse gas emissions from soy imports

Our current calculations show: Developments toward certified feed soy and European origin have gradually reduced annual greenhouse gas emissions associated with Swiss soy imports by 85%, from 1,010,000 metric tons of CO₂ equivalents in 2004 to 147,000 metric tons of CO₂ equivalents in 2022 (see Chart No. 2). This is mainly because the share of greenhouse gas emissions caused by deforestation and other land use changes is much lower for European soy as well as for certified Brazilian soy than for non-certified soy. (See appendix for basis of calculation)

Chart No. 2: Development Greenhouse Gas Emissions 2004 – 2022



Source: Soy Network Switzerland

According to the WWF report "Imported Deforestation" from 2020, soy imports accounted for the largest share of annual GHG emissions associated with land conversion of all Swiss imports of agricultural products, at an average of 47 percent, ahead of cocoa, coffee and palm oil.² However, based on current calculations and the developments presented, soy imports are now likely to be behind cocoa and coffee in terms of emissions.

This reduction is a welcome development for the soy network and a good example of how responsible sourcing can help mitigate the environmental impact of an industry and how even small changes can have a significant positive impact on reducing greenhouse gas emissions. Because Switzerland is a small country and an insignificant player in the global soy market, the Swiss Soy Network's efforts to shift to certified sustainable soy of European origin have limited impact on the overall sustainability of soy production worldwide. Nevertheless, the Soy Network recognizes that Switzerland can play an important role in promoting sustainable soy production and sourcing practices by leading by example.

The Soy Network will therefore continue to work with standards organizations and other partners to further reduce environmental impacts through improvements in agricultural practices in Europe and overseas.

² See chart on page 7 https://www.wwf.ch/sites/default/files/doc-2021-03/WWF_Risky_business_GR%20revised.pdf

Appendix: Explanation of calculation bases

It should be noted that all calculation results are to be understood as approximate values. For the calculations, no own surveys were carried out, but only existing data and surveys of Blonk Consultants (Agrifootprint 5.0), ProTerra and Donau Soja were used as a basis. Also, the results have not been externally verified so far.

For the total import volumes by origin, the customs import statistics of SwissImpex (for the years 2004, 2010, 2015)³ and Reserve Suisse (2022)⁴ were used. The origin in the statistics could not always be clearly assigned due to trade routes, import structures, silo locations, etc. and was therefore partially estimated in cooperation with importers. The data on the segregated and certified import quantities according to standards (see Table No. 1) are based on the data reported by importers, which are collected annually in accordance with the control concept⁵ of the Soy Network and in some cases additionally compared with data from the standard organizations and checked for plausibility. For the calculations, only direct imports of feed soy (whole soybeans, as well as soybean meal with customs tariff numbers 2304.0010, 1201.9010 and 1201.9021) and no indirect soy imports, e.g. via dairy or meat products, have been included so far. The latter account for about 20% of the total imports of soy into Switzerland, but are difficult to record and evaluate.

The values for greenhouse gas emissions⁶ of non-certified soy from Brazil (5.6 kg CO₂-eq per kg soybeans) and Europe (0.82 kg CO₂-eq per kg soybeans), as well as certified soy from Europe (0.43 kg CO₂-eq per kg soybeans) were kindly provided by Blonk Consultants (Agrifootprint 5.0)⁷. The values on emissions from certified soy from Brazil (2.53 kg CO₂-eq per kg soybean meal, including transport to Europe (0.03 kg CO₂-eq per kg soybean meal)) are based on calculations by the standard organization ProTerra.⁸ For the countries of origin summarized under "Other" in Chart No. 2, the value for non-certified Brazilian soy according to Agrifootprint 5.0 was used for the sake of simplicity. All values used for the present calculations always include GHG emissions resulting from land use changes (LUC). GHG emissions caused by transport only account for a very small proportion of total emissions compared to cultivation and were therefore not taken into account except for the value for certified soy from Brazil.

³ <https://www.gate.ezv.admin.ch/swissimpex/>

⁴ <https://www.reservesuisse.ch/datengrundlage/>

⁵ https://www.sojanetzwerk.ch/fileadmin/user_upload/Kontrollmechanismus_Soja_Netzwerk_Schweiz.pdf

⁶ In the case that individual emission values were only available for soybean meal or whole soybeans, an allocation factor of 0.8 was used for simplicity, i.e. 80% of the GHG emissions from whole beans are attributed to soybean meal, 20% to soybean oil produced during the processing of soybeans.

⁷ See also Danube Soy study ([https://www.donausoja.org/wp-content/uploads/2023/02/DS-LCA-](https://www.donausoja.org/wp-content/uploads/2023/02/DS-LCA-Sojabohnen.pdf)

[Sojabohnen.pdf](https://www.donausoja.org/wp-content/uploads/2023/02/DS-LCA-Sojabohnen.pdf)), as well as the Agrifootprint Branded Dataset for Danube Soy (<https://blonksustainability.nl/news/donau-soja-disclosed-environmental-data-of-soybeans>). The highest value of the four countries in the study (0.43 kg CO₂-eq per kg soybeans in Romania) was taken as the value for all certified soy from Europe.

⁸ <https://www.proterrafoundation.org/news/environmental-footprint-of-proterra-certified-brazilian-soybean-products/>