Minus 90%: Donau Soja / Europe Soya certified soybeans avoid greenhouse gas emissions

The environmental impact of soybean cultivation can be enormous. The current study by Blonk Consultants shows that this does not have to be the case, using the example of Donau Soja and Europe Soya certified soybeans from four different European countries: Croatia, Romania, Serbia and Ukraine with around 0.3-0.4 kg CO_2 equivalents per kg soybean. This corresponds to half of the emissions of average European soybeans in relevant cultivation areas or about a tenth of the emissions of Brazilian soybeans with a deforestation background.

Background

The European agri-food system largely depends on soya. About 35 million tonnes of soya are imported annually into the EU-27, of which roughly 90% are used by the feed industry. In the production of animal-based food, relevant amounts of greenhouse gas emissions already emerge during animal feed production.

Soybeans on the field. Foto: Donau Soja

Globally, the change in land use - for example from grassland or forest to agricultural land - accounts for large amounts of greenhouse gases.[1] *Note: In international technical language, the term land use change (LUC) is used for land conversions.* While an estimated 11% of global anthropogenic GHG emissions results from deforestation[2], soya alone accounts for 31% of imported deforestation into the EU. [3]

Data from the National Institute for Space Research (INPE) in Brazil show that between 2000 and 2016, about 5.3 million hectares of natural land in the Amazon and the Cerrado were converted into arable land for soya cultivation. [4] This area corresponds to about one third of arable land in Germany.

About 40% of the soya imported to the European Union originate from Brazil. These imports are mainly used as high-protein feed in livestock production. Soya feed from the Amazon region or the Cerrado is polluted with high CO_2 emissions due to land conversions. This results in a CO_2 footprint for Brazilian soya being about 10 times higher than for Donau Soja / Europe Soya certified soya feed.

Reduction of greenhouse gas emissions with Donau Soja / Europe Soya soybeans

The origin of the soybeans has a significant impact on the carbon footprint. Often, the origin of the soybeans and the related carbon emissions are unknown. Donau Soja aims to increase transparency by publishing the research results by Blonk Consultants. The study is based on an extensive collection of primary data collected directly from soybean farmers who produce according to the Donau Soja / Europe Soya standard and are representative of the four countries examined.

The results show a carbon footprint of 0.3-0.4 kg CO_2-equivalents (eq) per kg DS / ES certified soybeans. This corresponds to about half the emissions of an average European soybean according to Agri-footprint database (0.6 kg CO_2-eq excl. LUC resp. 0.8 kg CO_2-eq incl. LUC) or about a tenth the emissions of Brazilian soybeans with deforestation background (0.3 kg CO_2-eq excl. LUC resp. 5.6 kg CO_2-eq incl. LUC). [5]

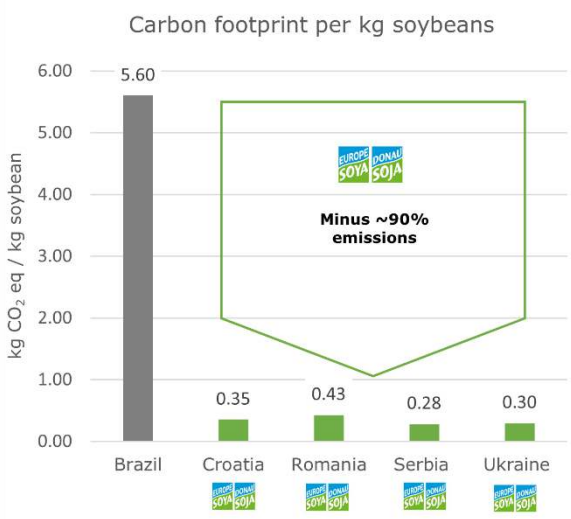

Figure 1: Comparison of global warming potential of 1 kg of soya beans from Brazilian non-certified production incl. LUC (Agri-footprint 5.0) with 1 kg Donau Soja / Europe Soya certified soybeans in 4 European countries (Blonk Consultants, 2022).

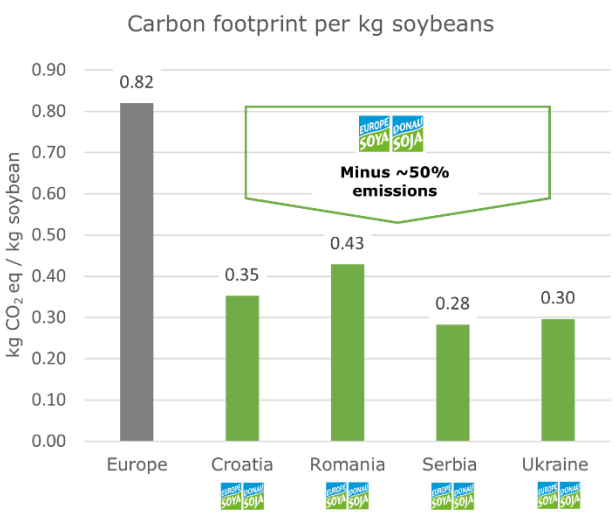

Figure 2: Comparison of global warming potential of 1 kg of soya beans from European non-certified production incl. LUC (Agri-footprint 5.0) with 1 kg Donau Soja / Europe Soya certified soybeans in 4 European countries (Blonk Consultants, 2022).

Donau Soja Branded Datasets available in Agri-footprint

The environmental impact data of Donau Soja / Europe Soya certified soybeans are publicly available as a so-called "branded dataset" via Blonk Consultant's Agri-footprint database and can be used for further Life Cycle Assessments (LCA) and Carbon Footprint calculations. Branded datasets are supplements to Agri-footprint, the life cycle assessment database for the agri-food industry. The new data sets now available provide insights into the environmental performance of Donau Soja / Europe Soya soybeans at country level.

Donau Soja discloses data on the environmental impact of Donau Soja / Europe Soya certified soybeans in order to facilitate the transition to a sustainable, European value chain. The data includes values on the carbon footprint as well as data on other environmental categories.

Why Donau Soja / Europe Soya soybeans are special

In 2020 the EU imported about 35 million tons of soya, mainly from overseas. About 11 million hectares are needed to meet this demand. According to the Sustainable Trade Initiative (IDH), only 25% of the EU's soya demand comes from certified deforestation-free production, as guaranteed by Donau Soja. [Note: Based on certified deforestation-free volumes (incl. credits by six recognised soya standards]. [6]

The Europe Soya / Donau Soja quality labels stand for and quality- and origin-controlled soybeans and products

The quality labels Donau Soja / Europe Soya guarantee non-GM, sustainably produced soya of European origin. Donau Soja / Europe Soya certified supply chains protect valuable ecosystems: Soya is only cultivated on land that was dedicated for agricultural use not later than 1st of January 2008. By relying on Donau Soja / Europe Soya, companies actively contribute to the preservation of forests and other valuable ecosystems and thus to climate protection.

About Donau Soja

Donau Soja is a non-profit, independent and member-based organisation based in Vienna. The vision of Donau Soja is a sustainable, safe and European protein supply. To achieve this, Donau Soja supports, among other things, the sustainable production of soya in Europe and the development of regional value chains. The two labels Donau Soja / Europe Soya stand for non-GM soya products of controlled origin and quality from the Danube region and from Europe. Donau Soja unites over 300 members in 27 countries.

Website: www.donausoja.org

About Blonk Consultants

Blonk is a leading international expert in food system sustainability, inspiring and enabling the agri-food sector to give shape to sustainability. Blonk supports organizations understand their environmental impact in the agri-food value chain by offering advice and developing tailored software tools based on the latest scientific developments and data.

Website: www.blonksustainability.nl

References

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[4] Trase. Yearbook Soy 2018. Available at: http://yearbook2018.trase.earth/

[5] European average corresponds to the average of the most relevant European soybean growing countries, where available: AT, DE, FR, IT, RO, RU, UA; (Donau Soja, based on Agrifootprint 5.0.) Available at: https://blonksustainability.nl/tools/agri-footprint

[6] The sustainable trade initiative (IDH), 2021. European Soy Monitor. Available at: https://www.idhsustainabletrade.com/uploaded/2021/06/2019-IDH-European-Soy-Monitor-report.pdf