

Donau Soja / Europe Soya: A real and climate-saving alternative

Agriculture, Forestry, and Other Land Use (such as deforestation) accounts for 23% of global greenhouse gas (GHG) emissions, making it the second biggest emitter after electricity and heat production.^[1] While only 18% of global arable land is used for direct food production, over 70% are used for feed production.^[2] Soya production has a big share in this system – it accounts for 10% of arable land globally and is mainly used as animal feed in livestock production. The European Union is heavily dependent on the imports of soya. On average over the last years (2015-2019), almost 40 million tons of soybeans had been imported annually, mostly from overseas. Approximately 12 million hectares of land primarily in Brazil, Argentina and the USA are needed to supply that demand. A great share of that land is located in areas which previously had been high conservation value biomes, such as the Amazon forest or Cerrado. According to the Sustainable Trade Initiative (IDH), only 25% of the EU's soya consumption come from certified deforestation-free production, as guaranteed by Donau Soja.^[3]

Deforestation - main driver for CO₂ emissions

A comparison of soya production in different countries reveals clear climate saving potentials: On average, 4.2 kg of CO₂ emissions^[4] result from the production of 1 kg of soybeans in Brazil, while soybean production in Ukraine or Italy causes 0.6 kg and 0.5 kg of CO₂ respectively. This translates into a reduction of more than 3 kg of CO₂ per kg of soybean, or in other words up to 90% of emissions (Figure 1). The main driver is by far the conversion from forest or natural grassland into arable land (termed as land use change, LUC). Donau Soja / Europe certified supply chains guarantee that there is no deforestation and no conversion of natural ecosystems.

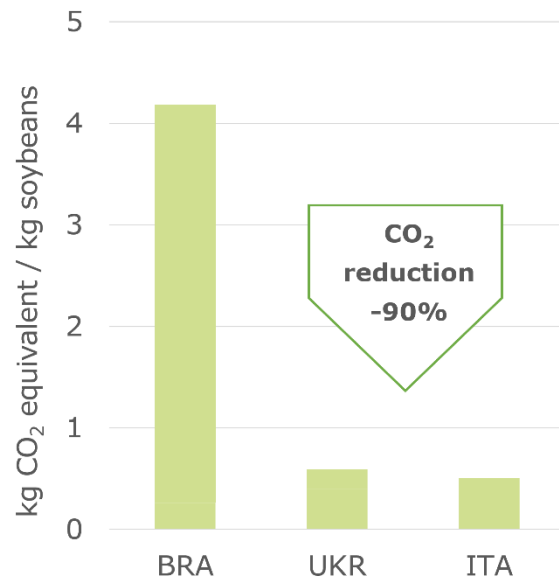


Figure 1: Carbon footprint of 1 kg of soybeans, at farm in Brazil, Ukraine and Italy according to Agri-Footprint 5.0.

Reductions in the egg sector

In a study presented on World Egg Day 2019, Dr. Stefan Hörtenhuber, a scientist at the University of Natural Resources and Life Sciences, Vienna (BOKU) analysed the climate effects of the shift to Donau Soja certified feed in the Austrian egg sector. The study indicates that the Austrian egg production causes 36% less CO₂ emissions compared to the Western European standard model. Austrian egg producers are pioneers in climate-friendly egg production: Austrian egg producers who rely on Donau Soja certified feed avoid 1 kg of CO₂ per kg of egg. Almost two billion eggs are produced in Austria per year. Of those, 1.7 billion are Donau Soja certified. This adds up to 110,000 tons of Donau Soja eggs which are produced in Austria each year, avoiding almost 110,000 tons of CO₂ emissions per year.



Celebrating World Egg Day. The Austrian egg sector switched to Donau Soja certified soya feed in 2013. Photo: Donau Soja

The shift of the egg production to regional soya (Donau Soja) is now seen by Austrian farmers, industry and retailers as a great success for the whole sector. This case is an outstanding example for a climate-friendly agriculture.



Laying hens producing Bavarian "Thanninger Freiheit" eggs are fed with Donau Soja. Photo: Geflügelhof Aigner

A recent study by FiBL Austria confirmed these results and showed a similar reduction for German eggs of the brand *Thanninger Freiheit* (Geflügelhof Aigner, Bavaria). Compared to the average German egg, the use of Donau Soja in *Thanninger Freiheit* eggs reduces 1.2 kg of CO₂ per kg of egg. At total emissions of 2.9 kg of CO₂ per kg of egg, this corresponds to a reduction of an astonishing 41% (Figure 2). Geflügelhof Aigner reduces its CO₂ emissions by a further 8.4% through additional measures (use of photovoltaic electricity, in-house biogas plant) and thus avoids around 50% CO₂ emissions compared to the German average.

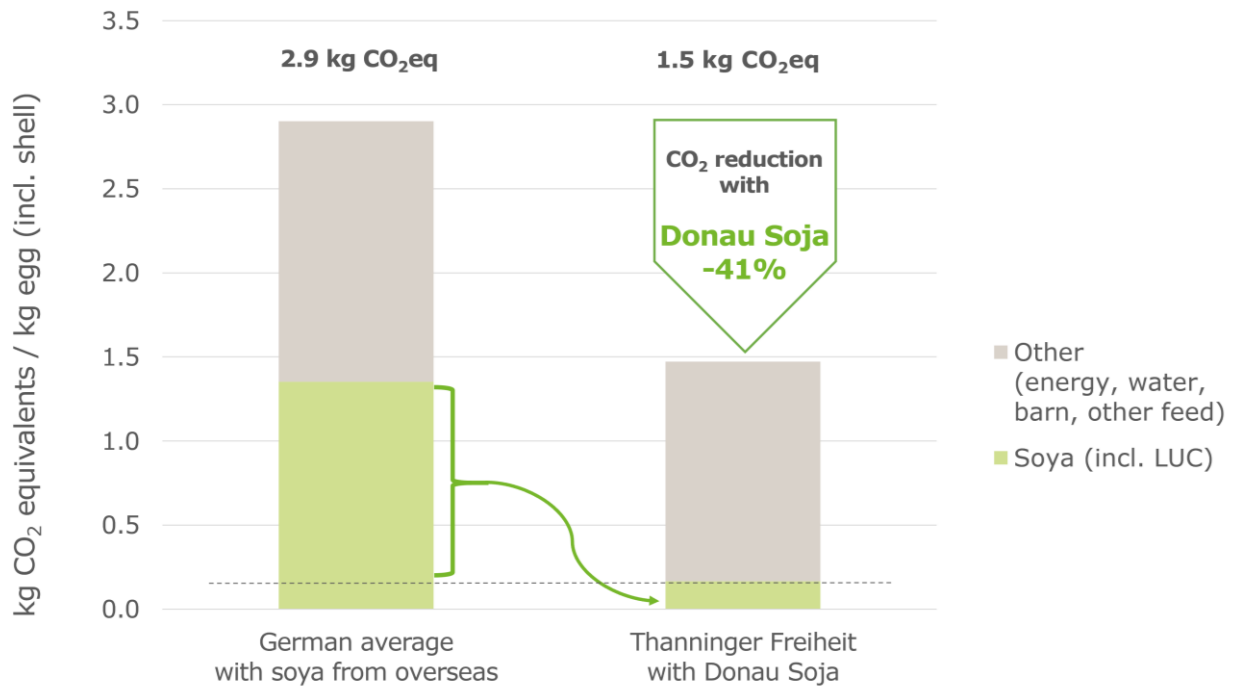


Figure 2: Carbon footprint of 1 kg egg (incl. shell) at farm - comparison of feed with Donau Soja versus soya from overseas (25:75 from USA and Brazil).

Reduction in the pig sector

In 2011, the Sustainable Europe Research Institute (SERI) found that soya from sources with deforestation deteriorates the carbon footprint of the Austrian pig production significantly. Replacing soya from overseas with regionally produced soya would result in a reduction of CO₂ emissions for 1 kg of pork by about 50% to 1.8 kg of CO₂.^[5]

A recent study by FiBL Austria confirmed the SERI results by analysing the CO₂ emissions for pigs of the brand *Hofglück* (EDEKA, south Germany). *Hofglück* pork produced with Donau Soja / Europe Soya certified feed causes 2.2 kg of CO₂ per kg of pork, while a comparable production with soya from overseas causes 3.4 kg of CO₂ per kg of pork. That translates to a reduction of more than 1.2 kg of CO₂ per kg of pork, an emission reduction of about 40% (Figure 3). The smaller reduction in this study is explained by the smaller share of soyameal in the feed ration.



EDEKA *Hofglück* pigs are fed with Donau Soja / Europe Soya. Photo: Helmut Fischer

In total, the *Hofglück* programme avoids around 10,000 tons of CO₂ emissions per year. Based on the findings of the study, extrapolated to the amount of soya feed used for pigs, around 7 million tons of CO₂ emissions per year could be avoided throughout Germany by switching to Donau Soja / Europe Soya certified products. This amount corresponds approximately to the CO₂ footprint of all inhabitants of the regional capital Stuttgart.

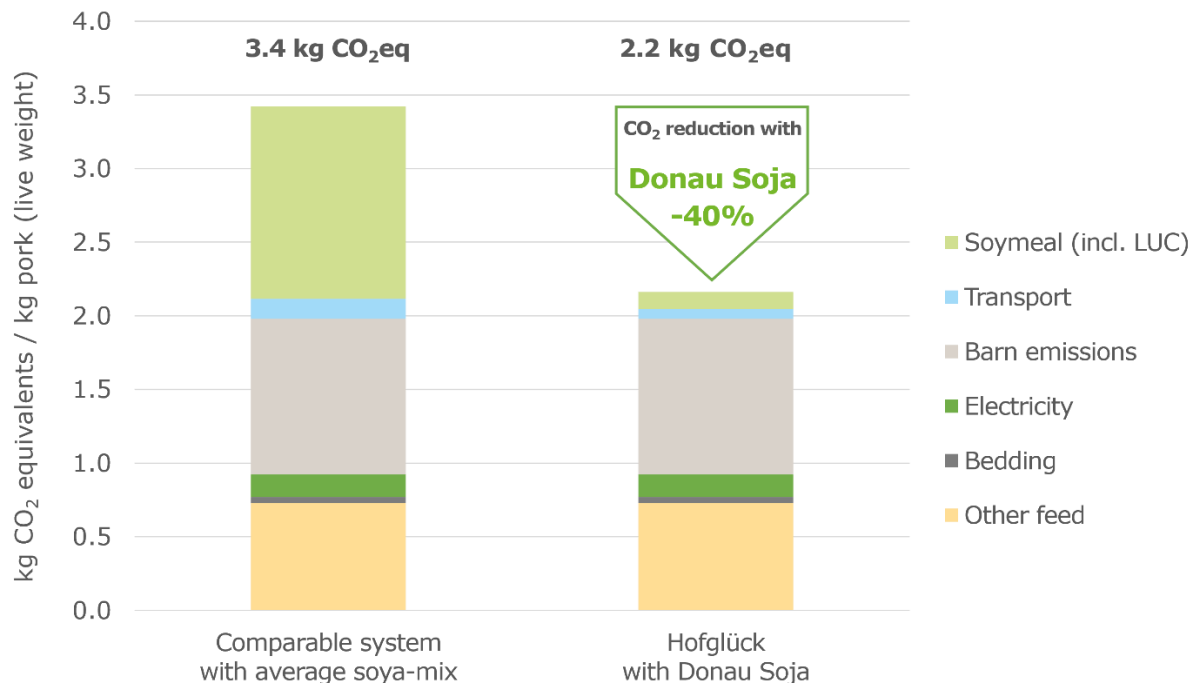


Figure 3: Carbon footprint of 1 kg of pork (live weight, at farm gate) – comparison of feed with Donau Soja / Europe Soya versus soya from overseas (50:50 from USA and Brazil). Further processing steps after the pig farm are not considered.

References

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- [2] Raschka, A. und Carus, M., 2012. Available at: https://www.iwbio.de/fileadmin/Publikationen/IWBio-Publikationen/Stoffliche_Nutzung_von_Biomasse_nova.pdf
- [3] 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>
- [4] Carbon footprint and CO₂ emissions respectively refer to CO₂ equivalents (CO₂eq), thereby including other greenhouse gases such as methane or nitrous oxide. IPCC, 2013. Climate Change 2013: The Physical Science Basis: Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, New York.
- [5] Sustainable Europe Research Institute (SERI), 2011. Available at: <https://www.spar.at/content/dam/sparatwebsite/nachhaltigkeit/produkte/regionale-produkte/schweinefleisch-untersuchung-SPAR.pdf>