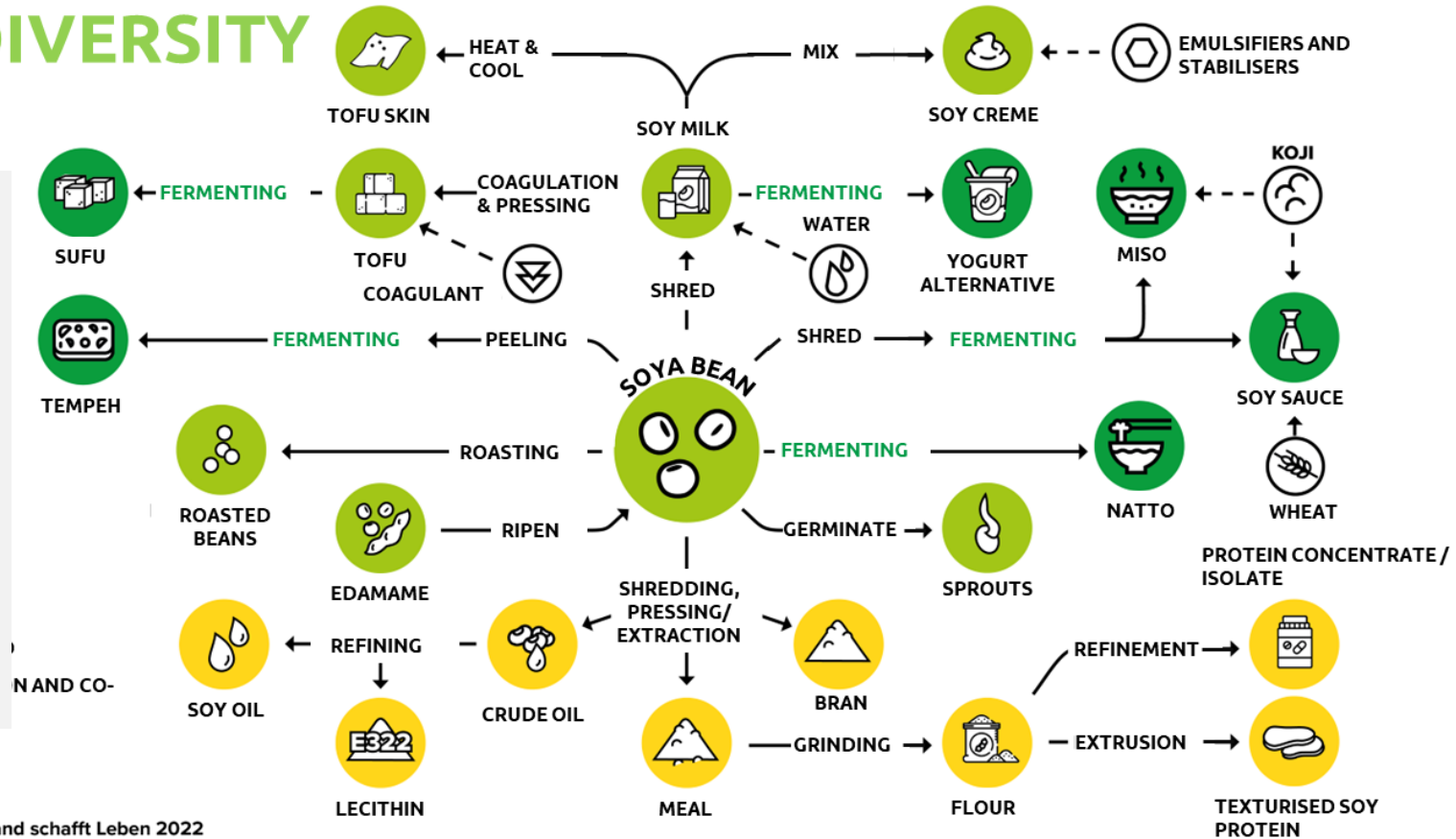


The soybean and its role for the Protein Transition in Europe

Soy in all its shapes and tastes

SOY DIVERSITY



6-7 % of global soy is used for direct human consumption, merely based on no- GM soy.

EU-Regulation (EC) No 1829/2003 obliges to label GM food and feed products. Similar system exist in other regions worldwide too.

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Quelle: Expertengespräche; eigene Darstellung
Translated by Donau Soja

Laszlo Berczeller pioneered soy processing

1920-30s: Laszlo Berczeller issued in Vienna patents for soy flour production.



Trotz der hohen Fleischpreise
billige Fleischspeisen
mit EDEL-SOJA
1 kg EDEL-SOJA hat den Nährwert von 3 1/4 kg Fleisch
1/4 „ EDEL-SOJA kostet 1 Schilling und ist überall erhältlich



Kaffee tafel
mit De-Bau-Ge-Butterbiskuits, Rührbuchen (370), Mürbteigplättchen
aus Sojamehl (200) und Biskuittorte (366)

Neuzeitliche Küche: Fleischlose Gerichte für alle Verhältnisse
Ida Klein, Verlag: Bollmer & Bentlin KG Hamburg, 1939



First choice in the plant-based industry

Cost and nutritional profile of plant-based protein

PDCAAS:
index for potentially
available amino acids
for humans



Source: Meticulous Research, FAO, Wageningen University & Research, GFI, Nutrition journals, Expert interviews, Roland Berger

First choice in the plant-based industry

Plant protein sources summary

| Protein | Protein Concentration | PDCAAS | Allergen Risk | Commercial Stage | Flavor | Functionality | Cost (/kg protein) | Global Crop Volume (MMT) |
|-----------|-----------------------|--------|---------------|------------------|--------|---------------|--------------------|--------------------------|
| Soy | ● | ● | ● | ● | ● | ● | ● | ● |
| Pea | ● | ● | ● | ● | ● | ● | ● | ● |
| Wheat | ● | ● | ● | ● | ● | ● | ● | ● |
| Canola | ● | ● | ● | ● | ● | ● | ● | ● |
| Chickpea | ● | ● | ● | ● | ● | ● | ● | ● |
| Fava Bean | ● | ● | ● | ● | ● | ● | ● | ● |
| Lentil | ● | ● | ● | ● | ● | ● | ● | ● |
| Lupin | ● | ● | ● | ● | ● | ● | ● | ● |
| Mung Bean | ● | ● | ● | ● | ● | ● | ● | ● |
| Navy Bean | ● | ● | ● | ● | ● | ● | ● | ● |
| Peanut | ● | ● | ● | ● | ● | ● | ● | ● |
| Sunflower | ● | ● | ● | ● | ● | ● | ● | ● |
| Almond | ● | ● | ● | ● | ● | ● | ● | ● |
| Corn | ● | ● | ● | ● | ● | ● | ● | ● |
| Oat | ● | ● | ● | ● | ● | ● | ● | ● |
| Potato | ● | ● | ● | ● | ● | ● | ● | ● |
| Quinoa | ● | ● | ● | ● | ● | ● | ● | ● |
| Rice | ● | ● | ● | ● | ● | ● | ● | ● |
| Sorghum | ● | ● | ● | ● | ● | ● | ● | ● |

Note: For some proteins, certain metrics are not available

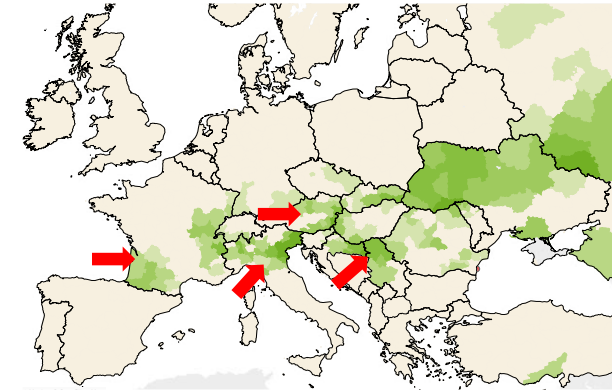
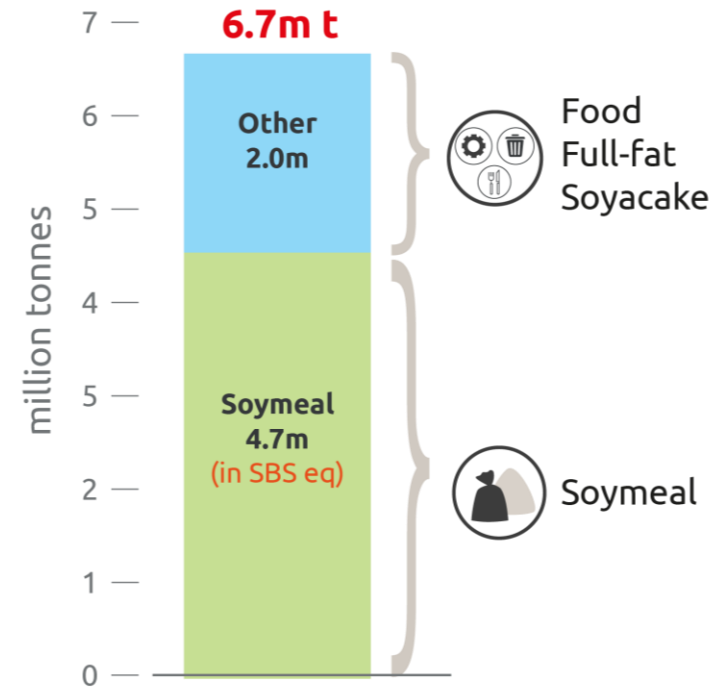
Source: GFI

Non-GM soya supply & demand in EU



- Estimated soy use in EU for food industry (fully non-GMO)
1m t (bean eq.) = ~2% of total
- Important consumer criteria: **non-GMO**, organic and European origin.
- **Europe covers 30-40%** of the needs (Austria, Italy, France, Serbia)
- Imports come from USA, China, India

Demand of non-GM soybean in EU+ in SBS eq*:



→ **DS Market Report**



Soy supply-chains for the food sector

- Imports are in form of:
 - Beans
 - Flours & meals
 - Texturized products
 - Protein concentrates
 - Protein isolates
- Small amounts of:
 - Green beans (Edamame)
 - Finished food products



soya now available

soya certified soybeans is now publicly available
branded Datasets are supplements to Agri-
agri-footprint contains averages of agricultural
de insight into the environmental impacts of
(LCI) data is available as a .csv file, which can
environmental impacts (calculated with ReCiPe

Sustainability considerations

1. Deforestation and land conversion
 - **Solution:** Certification
 - **Unknown** origin of raw materials for SPC from China?
 - **EUDR** does not cover protein isolates or concentrates
2. Critical pesticide residues in Edamame
3. Soybeans and legumes are scarce in Europe (combined <5%). An expansion brings agronomic and environmental benefits for the whole crop rotation.

Challenges and solutions for the plant-based food industry

Product development & R&D

Aims: better taste, low-processing options, clean label

- Breeding new varieties
- technological improvements
- Donau Soja initiative for a research project: improved characterisation of soybeans for raw material processing (tofu, ingredients)



Challenges and solutions for the plant-based food industry

Forecasting market demand for raw materials, ingredients and inputs:

- Estimated demand for soy in food sector in Europe: **1.5m t**
- Future demand (2035): ?
- Donau Soja initiative: assembling industry leaders to collect forecasts

Price parity: Lidl in Germany aligns prices for vegan items of its own brand Vemondo



vegconomist
- Das vegane Wirtschaftsmagazin -

DONAU SOJA...

- is an independent, member-based, multi-stakeholder organisation
- develops the European soy value chain from seed to plate
- has more than 320 members in 28 countries and >10,000 farmers
- supports value chain partners in sourcing and using certified non-GM soy from Europe: beans, flours, concentrates.



 Austrian
Development
Agency



Headquarter: Vienna, Austria

Regional Office for SEE: Novi Sad, RS

Regional Office for CEE: Kiev, UA

Regional Office for MD: Chişinău