



Position paper

Soy imports: from pain point to perspective

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The Netherlands is heavily dependent on soy imports as a source of protein. The high level of soy imports exacerbates global mineral imbalances (including nitrogen), contributes to ongoing deforestation, and creates dependency on intercontinental supply chains. Increased cultivation of proteins in The Netherlands requires a multi-stakeholder approach with policymakers, farmers, the food industry, and consumers aligning. With this position paper, Wageningen University & Research provides the facts and figures on soy import and a perspective toward realistic solutions.

Basis Figures

- *Europe is heavily dependent on soy imports, with annual import around 34 million tons soy beans and products (EU27 + UK). [based on data from Eurostat]*
- *The Netherlands is Europe's largest soy importer, around 4 million tons of soybeans (of which 1 million is re-exported).*

- **Land use:** Based on a mean actual yield of 3.25 tons per hectare in South America, Dutch soy bean imports require 1.23 million hectares, which translates to 1.7 million football pitches or 29% of the total land mass of The Netherlands. [CBS, yieldgap.org]
- **Deforestation:** Three-quarters of the imports are from South America, of which two-thirds is from Brazil, where deforestation is a major issue. [based on data from Eurostat through Report Profundo] A recent publication indicates that up to 20% of Brazilian soy used in Europe for feed may be connected to deforestation. [Science: The rotten apples of Brazil's agribusiness] Deforestation is a major source of greenhouse gas emissions and a major contributor to global biodiversity collapse.
- **Nitrogen:** Nitrogen is the main molecular building block of proteins. Every 15 kilograms of imported soybeans represents 1kg of imported nitrogen. It is possible to put a direct price on the environmental damage this represents, as nitrogen emission credits are currently trading at 75 euros per kg. This means that the net soy bean imports of 3 million tons represent 15 billion euros of economic cost.

Perspective

With limited amounts of available arable land, The Netherlands will not achieve protein self-sufficiency through agricultural cultivation alone. A multi-pillar approach is required. Local protein must include increased cultivation of protein crops, but also total use of agricultural streams and land-independent novel technologies. These initiatives must be paralleled with demand-side interventions that create a dietary shift toward more balanced plant and animal protein consumption.

Local production

- The best land crop for cultivation as a protein source are legumes, which have the added benefit of binding nitrogen into the soil. To achieve a stable business case for legume cultivation, the resulting plant material needs to be valorised to both food and feed, with high quality components sold to food.
- With mature supply chains and an innovative primary processing sector, The Netherlands can also benefit from valorisation of currently underutilized streams. For example, tomato and cucumber leaves and stems may be upcycled either through protein extraction or as a substrate for cultivation of protein-rich fungi.
- Finally, innovative technologies for land-independent protein production such as microorganism cultivation directly from gas are essential to long-term self-sufficiency.

Diet shift

- On average the protein consumption ratios in The Netherlands are approximately 60% animal-derived and 40% plant-derived.
- A shift in the dietary pattern toward less animal and more plant protein indirectly leads to reduced soya import dependence, since less protein is then required for use as animal feed. Shifting the diet to 50:50 animal:plant leads to a potential annual reduction of 435.000 tons soya import. Shifting to a 60-40 diet would double that figure.





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Wageningen University & Research has prepared [a plan for reduction of soya imports by 1 million tons by 2030](#) on the basis of a dietary shift to 50:50, increased cultivation of legumes to 100 hectares, upcycling of under-utilised agricultural residues, and land-independent production of microbial protein, summarized in the figure below.

Eiwitstromen Nederland

