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How to delink the UK's soybean imports and livestock supply chains from deforestation in the Amazon

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About 57 per cent of the soybeans imported by the UK for animal feed comes from Brazil. However, Brazilian soybean production is one of the drivers of the Amazon's deforestation, which has increased significantly since 2019. Cesar Revoredo-Giha and Montse Costa-Font discuss the options for the UK to make its livestock production sustainable.

Food, as stated in the 1996 World Food Summit definition, should be safe, nutritious, and meet people's dietary needs and preferences.

However, as it is (or should be) clear for everybody now, things are not that straightforward: food production has several environmental implications, which must also be considered. In other words, how you produce food matters.

An enquiry carried out by [The Guardian](#) in October 2020 showed that UK retailers were not sure about the provenance of the soybeans used in their meat supply chains. In addition, the sustainability credentials of the imported soybeans were not clear, and they could be related to deforestation in the Amazon rainforest.

In the context of the ongoing discussion on trade and production standards (e.g., [Why do we need a Trade, Food and Farming Standards Commission?](#)), this article aims to provide information about the role of soybeans for UK trade.

What are soybeans for and what is the problem with them?

Soybeans are an important industrial agrifood crop, primarily used for animal feed, human food, and production of biofuels. However, only about six per cent of soybeans grown worldwide go directly into food products for human consumption, such as tofu ([UCS, 2015](#)). Soybean products contribute high-quality protein to livestock diets because they are rich in the limiting amino acids lysine, threonine, and tryptophan, optimising the growth of animals such as pigs and chickens ([Stein, Roth, Sotak and Rojas, 2011](#)).

Despite their role as a high-quality protein in animal production, soybeans cannot be fed raw because there are several anti-nutritive factors that have a negative impact on the nutritional quality of the protein. These anti-nutritive factors can be destroyed by various processing methods that can have different impacts on the nutritional quality of the products derived, such as full-fat soybeans, soybean meal and soybean protein concentrates. Of these, soybean meal has been the

major ingredient in both poultry and livestock diets (Dei, 2011) and approximately 75 per cent of what is produced in the world is fed to pigs and poultry.

The increasing demand for meat, biofuels, and other soy products has been accompanied by a sustained increase in soybean production—accomplished by a combination of higher yield (i.e., production per hectare) and expanding soybean cultivation into new areas such as the forests in the Amazon region. Advances in farming methods and crop varieties have made it possible to grow soybeans profitably in tropical forests, transforming Brazil in the second leading soybean-producing country in the world (UCS, 2015).

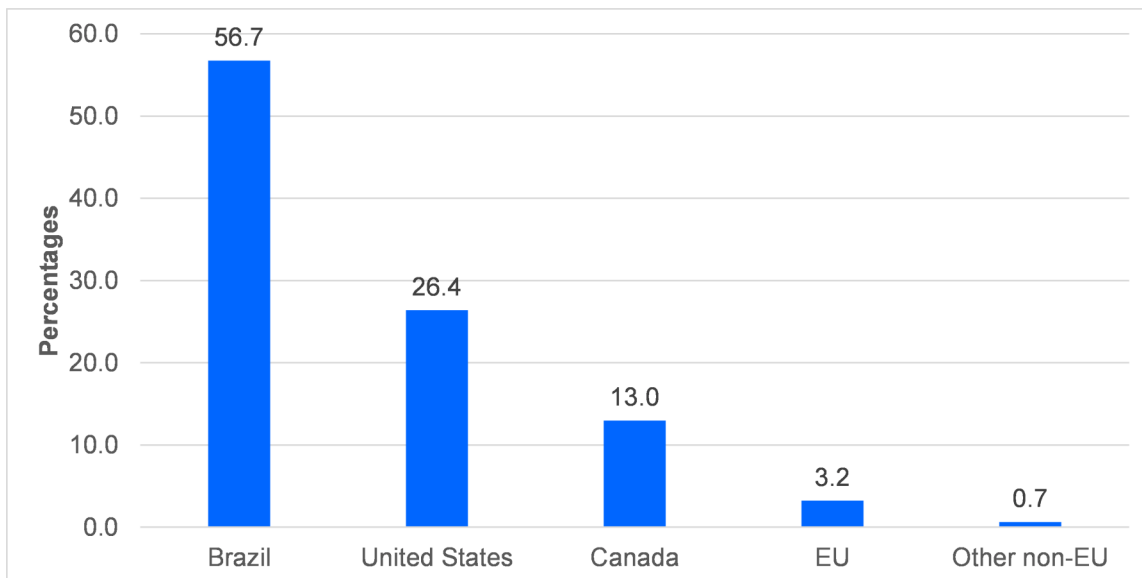
Because soybean production has led to deforestation, a zero-deforestation commitment (i.e., the soy moratorium) was agreed by Brazil's government, the soy industry, and civil society organisations, banning traders from purchasing soybeans from the Amazon's deforested land after July 2008. Combined with public conservation policies, the moratorium has contributed to a decrease in the direct conversion of forests for soy production (Paim, 2021). However, while the direct impact of soy has been greatly reduced, it is still playing a role in tropical deforestation. Ranchers sell pasture land for soybean production and move their operations into forested areas (UCS, 2015). Moreover, according to Paim (2021) the deforestation of the Brazilian Amazon has increased significantly since 2019 and for the second year in a row, the deforestation level in 2020 reached its highest rate since 2008.

UK imports of soybeans

The UK imports both soybeans and soybean meal. Whilst part of the soybeans can go to the food processing industry, soybean meal is imported for feed. Figure 1 shows the shares of imports of soybeans for the period 2017-20. About 57 per cent of them comes from Brazil

and 40 per cent from North America (United States and Canada). The EU share is about 3.2 per cent.

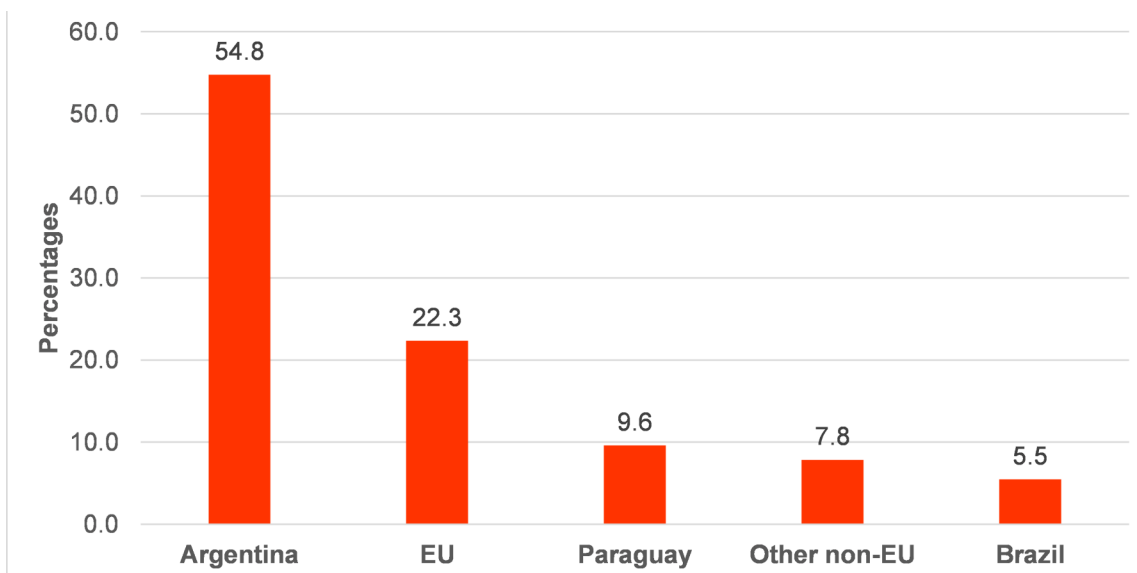
Figure 1. UK import shares of soybeans, whether broken or not (excluding seed for sowing) – 2017-20



Source: HMRC (code: 120190000). Note: Percentages based on imported quantities.

Figure 2 shows countries' shares of UK imports of soybean meal, also for 2017-20. South American countries (Argentina, Paraguay, and Brazil) supply about 70 per cent of the product, while the EU supplies 22 per cent of UK imports. Moreover, from 2017 to 2020 the share from the EU has grown from 20 per cent to 28 per cent. Something to have in mind in the future is whether in the post Brexit world the share from South American countries may increase even more if the UK strikes a free trade agreement with the Mercosur countries.

Figure 2. UK import shares of soybean meal – 2017-20



Source: HMRC (code: 230400000). Note: The full name of the import category is 'oilcake and other solid residues, whether or not ground or in the form of pellets, resulting from the extraction of soybean oil'.

Percentages based on imported quantities.

What are the alternatives to reduce the risk of deforestation?

Given the import shares of soybean and its products that come from the Mercosur countries, it would be probably difficult, at least in the short term, to switch the purchases towards other countries. This leaves two major options on the table: (1) either to ensure that the imports are certified to have been produced in a sustainable way or (2) to replace soybeans in livestock feed.

Import soybeans that have been produced in a sustainable fashion

This means importing soybeans that are certified to have been produced in a sustainable way. As of January 2021 **RSPCA** have guaranteed that they will not permit the use of the RSPCA Assured label on products that contain soy from non-certified sources.

Only soy from **Round Table on Responsible Soy (RTRS)** or **ProTerra** certified growers, or alternatively soy credits from a credible certification scheme like RTRS will be permitted.

Several retailers are following this approach (e.g., M&S, Lidl). Of course, the issue has to do with the difficulties of tracing the sources of all the meats, particularly in the case of long supply chains of meat processed products. Not only traceability improvements are key but also consumers' interest in supporting the measure.

Substitutions for soybeans in the production of meat

There are several initiatives trying to reduce or find substitutes for soybeans in animal feed diets (e.g., use of legumes or insects). For instance M&S have worked with its 44 British farmers producing M&S RSPCA Assured milk (see [Should food standards be left to the market in post-Brexit Britain?](#)) to cut soybean from their milk production.

Of course, not all supply chains are the same and the replacement of soybeans seems more feasible in some of them like dairy. In the case of grazing animals, there is no problem but in the case of pigs and poultry, the substitution of soybeans is more difficult because they are associated with the degree of leanness and growth of the animals.

Information from an EU project ([Legumes Translated](#)) indicates that the components peas, beans and rape seed are less tasty for pigs and they will eat less, which will likely result in lower growth performance and a reduced lean meat content in the carcasses, which is relevant for the price that farmers receive. In the case of poultry, which is a vertically integrated industry, soybeans are even more important and their substitution more difficult.

Another problem with substitution is that producers need to find enough supply of high-quality feed, which might require developing an entire supply chain (i.e., just expecting farmers to plant more of a crop in competitive circumstances is not realistic).

Final remarks

Farmed livestock is an integral part of the British food system. To achieve sustainable supply chains it is essential to reduce their negative impacts such as deforestation, greenhouse gas emissions, water pollution, or other environmental impacts. The possible solutions to these threats need to consider the final products and producers' perceptions about what their final customers require.

Currently, UK livestock producers and retailers depend on imports of soybean from South America. However, programmes are being implemented to ensure that these imports are more sustainable. The following elements are essential to address the climate change, deforestation, and biodiversity loss associated with livestock production:

- * Ingredient certification, supply chain traceability and stakeholder collaboration are critical for achieving a more transparent and sustainable livestock industry.

- * Research & development needs to provide cost-efficient, sustainable, and nutritious alternatives to reduce producers' dependence on imported soybeans.

- * An adequate traceability system, using certification, and new technologies such as QR codes and blockchain will allow producers to inform consumers and policymakers in more detail about the sustainability of the meat industry.

- * Consumers also need to take responsibility and understand that their food choices influence retailers and producers' decisions. This means paying a bit more for a more sustainable meat product and planning diets to consume animal protein responsibly.



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