

Spotlight On Soy Plant Protein

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The global demand for soybeans is not slowing down anytime soon. The harvest of this commodity crop was 370 million metric ton in 2018, compared to 270 million metric ton in 2012 and 130 million metric ton in 1996. As a result, soy crop cultivation is now spreading from the Amazon to the Cerrado region in Brazil. The latter region is home to some 5 percent of the world's biodiversity.

The US, Brasil and Argentina account for approximately 80 percent of this huge yearly harvest. No doubt that the little soybean is a key source of protein for human health as well as animal nutrition. In addition, the soybean contains valuable oil used for cooking and many other food formulas.

The downside of these impressive numbers is that just 2 percent of the global soy market is verifiable as a sustainable source and as such, adheres to the Round Table of responsible Soy's zero deforestation and conversion standards. Subsequently, it can be argued that the soy industry and its customers are wreaking havoc in the soy producing regions.

The primary focus on sustainability is about how to stop deforestation. Sourcing 100 percent deforestation-free soy is easier said than done. Long supply chains—including frequent changes in ownership of soybean traders and crushers—and the legal conversion of natural vegetation to cropland, as well as protecting biodiversity, are the main culprits.

Farmers and conglomerates alike are to blame in converting native vegetation into cropland to further boost soy output to unprecedented levels. Especially now that the world's population is growing rapidly from 7.4 billion in 2020 to 10 billion in 2050, it is of the utmost importance that a soybean certification standard is agreed that assures soy production that is socially equitable, economically feasible, and biodiversity and ecologically/environmentally sound.

It is a fact that soy has a notoriously complex supply chain, with many players involved. Demanding deforestation-free soy is one thing, but reality always is full of surprises due to the complexity of trade patterns and its many processing facilitators.

Increased production of commodities such as soy, beef, coffee, cacao, and palm oil drives almost 80 percent of all deforestation. Moreover, human rights violations, including attacks on environmentalists and indigenous people, undermine the supply chain efforts of fair trade.

Soy Protein & The Ecosystem

Clearly, the upside of soy is that the crop contains the highest protein and oil content. The downside is that soy has only four main harvest regions—the US, Brazil, Argentina, and Paraguay—mostly due to climate restrictions.

Europeans eat an average of 61 kilos of soy per year, mostly embedded in meat and dairy products. Soy cultivation can have irresponsible impact on the ecosystems of the Amazon, the Cerrado, and the Atlantic Forest. In 2020, more than one million square kilometers of farmland globally will be in use to meet the growing demand of soybeans and soy protein. Since 1990, soy has undergone one of the greatest expansions of any global crop and has grown from 17 million hectares to 49 million hectares in 2018, mostly on land converted from natural ecosystems.

A large area of virgin forest is lost to the unrelenting expansion of soy agriculture in environmental sensitive areas. Forest covers about 30 percent of the planet's landmass—but they are disappearing at an alarming rate. For example: between 1990 and 2015, there has been a 3 percent decline in forested land globally—that equates 1.3 million square kilometers, or an area roughly the size of South Africa.

Increasing meat consumption is the main driver of soy farming expansion. Depending on geographic region, a staggering 75-95 percent of the world's soy crop goes into animal feed. Well over 90 percent of the soy imported into Europe is used for livestock feed. To make matters more complicated, there is the ongoing heated GMO debate, though there are clear signs that there is a change of focus towards ecological sound sustainability. Especially the German consumers have shifted blame and now voice their frustration towards soy related to the destruction of wildlife habitat the increase of greenhouse gases.

Increasingly, leading food retailers' push for soy (and palm) traceability, sustainability and transparency in their supply chain. The drive for transparency for soy is only the beginning. Probably the only way to accomplish sustainable sourcing is through legal binding contractual long-term supplier engagement.

Brazil, Argentina, and Paraguay together supply 73 percent of the EU's soybean. In 2018, some 24.8 million tons of soybeans were imported into the EU, but less than 3 million tons were produced within the EU borders. In other words, it is estimated that about 16 million hectares of land are required outside the EU to feed its livestock sector, which is equivalent to approximately 90 percent of Germany's entire agricultural area.

The main commodities driving deforestation—and thus, expanding cropland and pasture for agriculture—are for beef and soy production in South America, and palm oil in primarily Indonesia and Malaysia.

Because of the heavy deforestation issues soybean supply chains have come under severe scrutiny. Equally on the radar screen are the huge palm plantations in vast areas of Malaysia and Indonesia's Borneo. Subsequently, traceability and regionalisation of soybeans will become of key importance for premium branded foods such as Alpro's (Danone) soymilk, Impossible Foods and rapidly growing popularity of plant-based meat alternatives.

To ease consumer concerns, it will be crucial to shorten the supply chain to limit the transport footprint, as well as avoid reputational risks and social media backlash by the millennial consumers. After all, GM soy issues, health concerns related to soy's genistein estrogen facts and fiction, and deforestation are topics premium branded food and beverage companies rather avoid to publicly discussing.

Instead, companies using soy proteins should tout their green credentials to create positive marketing awareness.

Contributed by **Henk Hoogenkamp**, Protein Specialist & Author.