



CONSUMER MARKETS

# A framework for the measurement of soy usage in consumer goods businesses

[kpmg.com/soyframework](http://kpmg.com/soyframework)  
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This document has been written in collaboration with the CGF,  
its members and:





# Introduction

There are many frontiers of sustainability reporting. Some, such as greenhouse gas reporting, have been well explored. Others are beginning to be better understood including timber certification or water reporting.

However, some frontiers are only just seeing the first signs of leading companies venturing into their midst. They are often encouraged by emerging regulation, NGO pressure or a strong vision that a well understood and managed supply chain leads to competitive advantage.

One of these new frontiers is soy footprinting. Soy can be seen as an efficient source of protein, a key component of our food chain, a reliable cash crop or a destroyer of ecosystems. For many of the retailers and manufacturers within The Consumer Good Forum (the CGF), it is a commodity that needs to be clearly understood within the next six years so that they can take action to ensure that their usage of soy leads to no net deforestation by 2020.

One of the first steps in making a business's soy usage more sustainable is to understand where that soy is within the supply chain and which product lines contribute the most to that business's 'soy footprint'. This allows the business to target the most material and highest risk suppliers and move them towards a more sustainable source, or even seek to substitute soy entirely. For retailers in particular, this soy footprint is very complex and approaches to calculating it reliably enough to allow the data to be publicly reported are only now being developed.

In our work together, we have seen that many consumer goods businesses go through a series of 'hierarchies' as they learn about soy reporting and start to include more data within their boundaries. This currently makes comparisons and consolidation across businesses difficult because the footprints may be incomplete and use a different methodology.

We are seeking to accelerate the progress of measurement to meet the needs of stakeholders sooner. This document presents a way of displaying an organization's soy footprint that shows the relative impact of different parts of the supply chain and demonstrates what proportion of the soy footprint is at risk of causing deforestation.

The CGF commitment specifically focuses on members' efforts to ensure zero net deforestation as a result of their activities. We recognize that soy is only one commodity that causes deforestation and we are also actively looking at palm oil, beef, paper and board. We also recognize that there are other high conservation value ecosystems affected by the expansion in soy growth. This is why we are encouraging members to consider their total usage of soy, focus on the material elements and then examine more closely how that is produced.

We welcome debate, suggestions and challenges with a view to developing a standard approach to measurement soy usage in a consistent, granular way that enables understanding and action to be taken.

The CGF is a global, parity-based industry network that is driven by its members to encourage the global adoption of practices and standards that serves the consumer goods industry worldwide. It brings together the CEOs and senior management of some 400 retailers, manufacturers, service providers, and other stakeholders across 70 countries, and it reflects the diversity of the industry in geography, size, product category and format. Its member companies have combined sales of EUR 2.5 trillion and directly employ nearly 10 million people, with a further 90 million related jobs estimated along the value chain. It is governed by its Board of Directors, which comprises 50 manufacturer and retailer CEOs.

For more information, please visit:  
[www.theconsumergoodsforum.com](http://www.theconsumergoodsforum.com)  
[www.tcgfsustainability.com](http://www.tcgfsustainability.com)

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## Why is soy a commodity of concern?



Soy is, surprisingly for some, a key component in many of the foods we eat today. In particular, its high protein content compared to other possible feed ingredients means that it is used as feed for the rearing of cows, pigs, chickens, fish and other animals across the world. Soy derivatives are also used in many other products such as margarines, cosmetics and chocolate.

With the significant growth in demand for meat and dairy products globally the demand for soy has increased many times over. This has put huge pressure on ecosystems such as the Amazon and Cerrado in South America where land is sought for the growing of more soy.

NGOs, consumer groups, governments and responsible businesses have all recognized that the damage to ecosystems, loss of biodiversity, contribution to climate change and impacts on wider natural capital service provision as a result of the expansion in soy growth cannot continue unabated. Pressure is mounting for the users of soy to ensure no net deforestation occurs.

The pressure is also beginning to extend beyond forest ecosystems and includes all high conservation value and high carbon stock ecosystems.

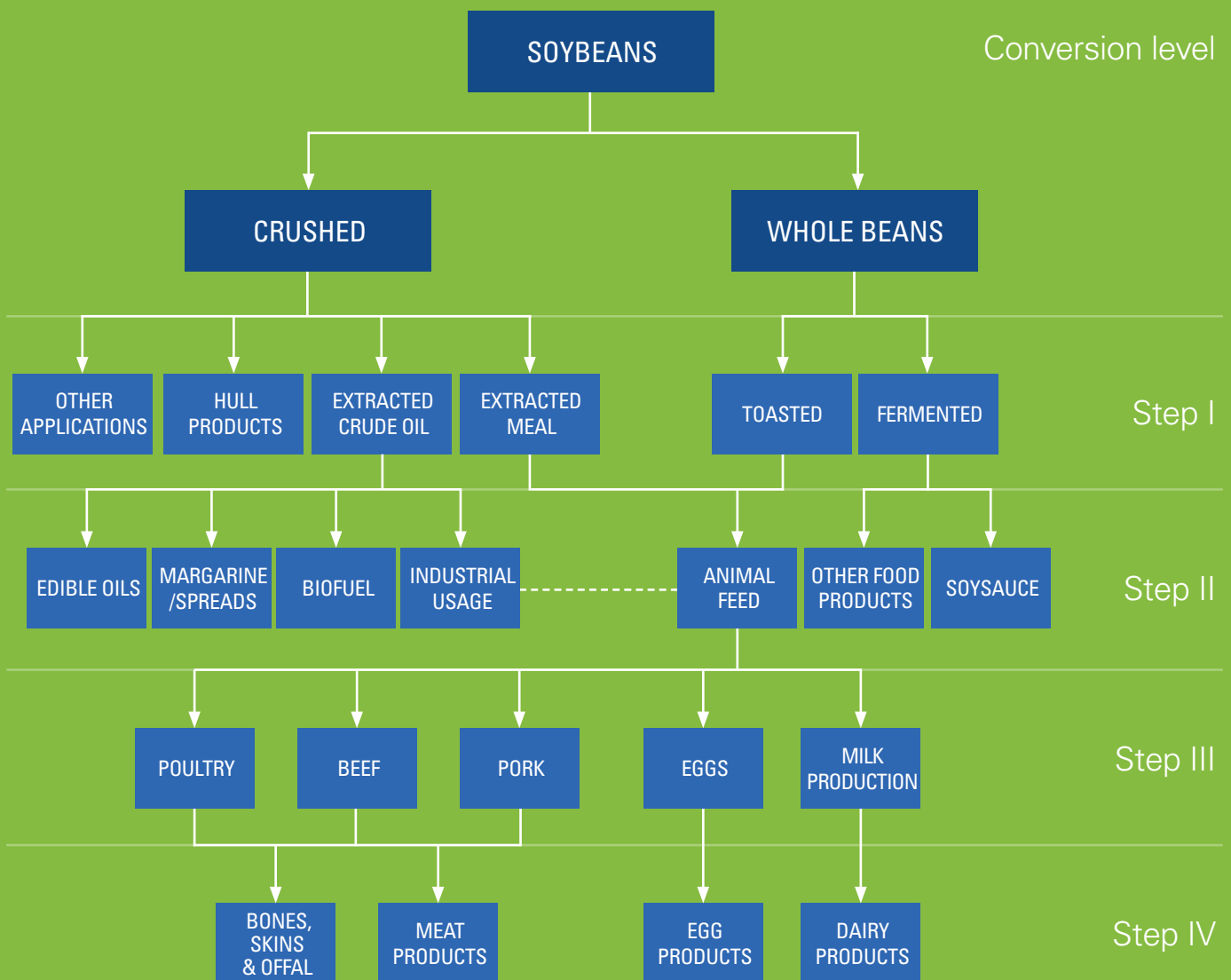


Increasing meat consumption is the main driver behind soy's rapid expansion. Around **75 percent** of soy worldwide is used for animal feed, especially for poultry and pigs. Between 1967 and 2007 pork production rose by **294 percent**, egg production by **353 percent** and poultry meat by **711 percent**; over the same period, the relative costs of these products declined.



**WWF Growth of Soy, 2014**

# Products derived from soy



Source: Soy product flows

1. KPMG, 2013. Sustainable Insight. A roadmap to responsible soy. Approaches to increase certification and reduce risk.
2. Endres, Joseph G. 2001. Soy protein products: characteristics, nutritional aspects, and utilization, pp 2-3. AOCS Press, Champagne, IL, USA.
3. Hoste, R. and Bolhuis, J. 2010. Sojaverbruik in Nederland. LEI-rapport 2010-059. LEI, Wageningen, Netherlands.

# Why is measuring soy usage so difficult?

Much like palm oil and energy, soy is not only purchased directly by businesses but is also purchased indirectly as it is used in the production of many products used by consumer goods businesses. This includes meat, dairy and many other products. This indirect soy use is said to be 'embedded' in the supply chain.

This makes it one of the most challenging sustainability reporting issues that businesses have had to address to date. Challenges include:

CHALLENGE	EXPLANATION
<b>Control and visibility</b>	Few retailers, and even many manufacturers, actually buy soy directly. Many are several layers of the supply chain removed from the growth of soy itself.
<b>Location specificity</b>	Not all soy grown is on deforested land. There is also debate around what types of deforestation should be focused on and whether this can be expanded to include conversion of other valuable habitats. Whilst many focus on the Amazon, recent legislation has driven much soy growth into the Cerrado, another high value ecosystem. Even North America, generally considered a 'deforestation-free' source of soy, is under scrutiny as soy plantations have begun to encroach on increasingly endangered ecosystems.
<b>Decentralized supply chain</b>	Whilst the markets for soy trading are relatively consolidated, the production of feed and the rearing of animals is very decentralized, as is much of the processing of the foods themselves. This requires engaging with many suppliers across different levels.
<b>Varying feed mixes</b>	Different countries, farmers and feed manufacturers use varying amounts of soy to produce a kilo of beef or a dozen eggs because of differing requirements for the mix of proteins used in feed and the amount of natural foraging the animals can do.
<b>Embedded usage</b>	Whilst the usage of soy in meats, eggs and dairy can be determined using a set of conversion factors developed by LEI Wageningen University* (and this doesn't necessarily address the challenges above), the extrapolation of the amounts of meat, eggs and dairy within other products (e.g. ready meals, cakes, chocolate) adds another layer of complexity.

\*Hoste, R. and Bolhuis, J. 2010. Sojaverbruik in Nederland. LEI-rapport 2010-059. LEI, Wageningen, Netherlands.

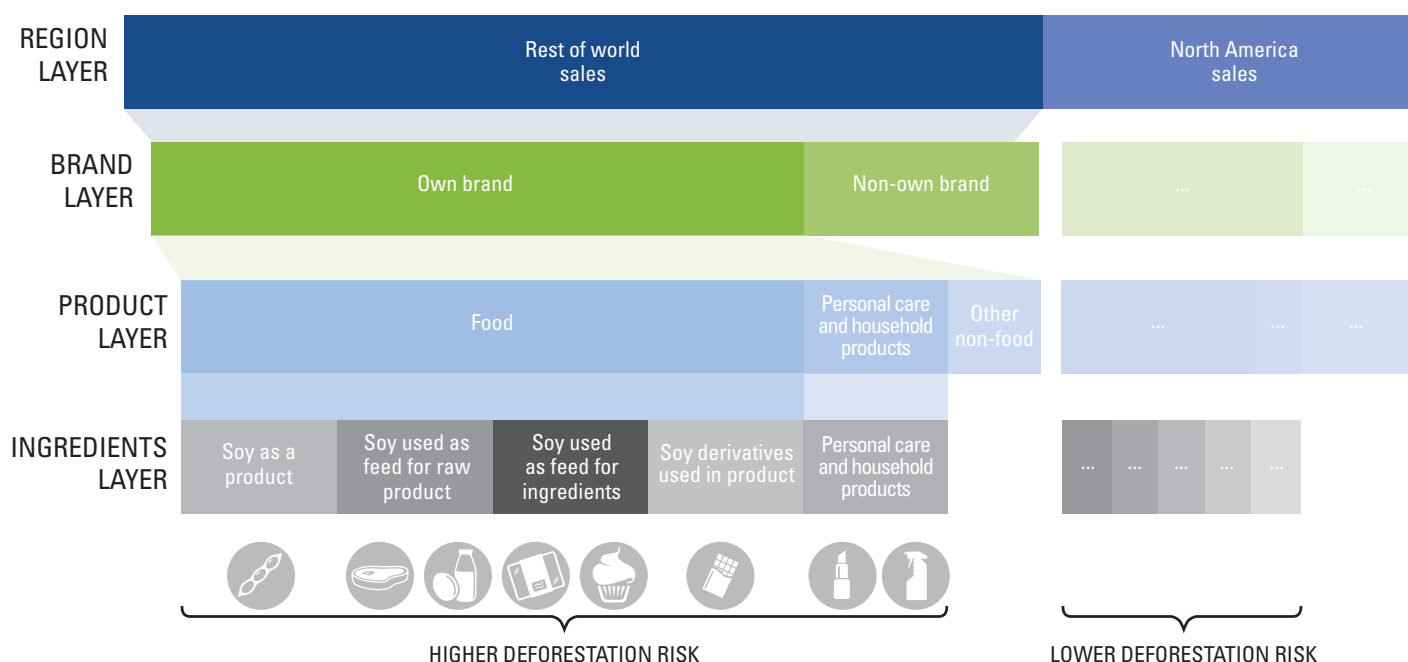
We are seeing many businesses making positive steps towards estimating their soy usage so that they can begin to focus their efforts on the most material uses in the supply chain. However, we still see a strong need for:

- Clarity around which regions 'sustainable soy' or 'non-deforestation linked soy' can be sourced from and the certification schemes that allow sustainable sourcing from those regions that present a risk of deforestation
- Consistent reporting boundaries so that every business knows what it should be capturing and where comparability or sector totals are needed.
- More specific conversion factors are needed to convert from quantities of meat, eggs and dairy into the indirect levels of soy used in the production of these products. These could be tailored to each country or region.
- Further engagement with the supply chain for soy, particularly the feed industry and animal rearers.
- The establishment of a single tool or at least a standard template to capture information on indirect soy used in the supply chain to promote consistency, avoid duplication and improve efficiency.
- A consistent way of measuring and, when members are ready, reporting the soy usage across the industry that makes it clear and comparable.

Groups like the CGF, WWF, RSG and KPMG are working to address each of these challenges for the industry. This document is one part of the solution and are working with others to address the other challenges highlighted above to help the CGF's members meet our 2020 sustainability commitments.

# Setting boundaries for soy measurement

We have interviewed several major, multi country consumer goods businesses on their soy usage and propose a standard approach to the setting of boundaries for soy measurement. The diagram below shows the boundary for soy usage at higher risk of deforestation in that it excludes North American sales, where products are most likely to contain North American soy. For organizations that wish to capture total soy usage, including anywhere where there may be ecosystems conversion, then the brand, product and ingredients layers need to be applied to North American sales as well.



In essence, retailers are currently seeking to calculate the amount of soy in the supply chain for their own brand food products. They then intend on expanding this to cover other own brand products such as cosmetics that may contain relatively small quantities of soy.

For manufacturers, the soy supply chain is generally simpler as most either buy soy directly or within a few major input materials (such as milk) for use in own brand products.

## Region layer

There is currently a general assumption that revenue earned from North American operations is earned selling products that contain soy that is likely to come from North America but all other regions largely use South American soy. Given the global markets for meat, dairy and eggs, this is an assumption that needs to be tested further.

Depending on the structure of the business, it may be more appropriate to apply the region layer after the ingredients layer if the business is split by product type before region.

## Brand layer

Unlike embodied carbon, water and, in some cases, palm oil, retailers are currently only focusing on the supply chain they have most control over: that of their own brands. Given the non-own brand products the CGF retailers sell are largely supplied by manufacturers who are themselves members of the CGF, this prevents double counting at the CGF level. However we suggest that, over time, the methodology should evolve to align with approached such as the GHG protocol where retailers report the embodied aspects of all products they sell. For manufacturers, the brand layer may not be required as most only handle own brand products.



# The CGF soy measurement ladder

Once the boundaries are set, it is important to determine which products may have embodied soy and cluster them via category, supplier or calculation method. Those businesses we have interviewed have had varying levels of success at obtaining accurate data for each product category. Each has used different approaches to calculation and extrapolation of data depending on the time and resources available, as well as the overall complexity of their product mix.

Based on these experiences, we have grouped the products together into a 'ladder' based on the general level of maturity of soy measurement we perceive a business needs to have to be able to gather and report data that allows decisions to be made. As a business gets more sophisticated and its systems and measurement improve, it is able to move up this ladder. It allows them to demonstrate they are capturing a wider swathe of their soy footprint. This also allows agencies, such as the CGF's Soy Working Group, to suggest

deadlines for when members should be meeting each level of the ladder to allow time to move up the ladder whilst still encouraging progress.

In most circumstances, we envisage the business determining if they want to report all of their soy footprint or just that which comes from regions that might cause deforestation. Our examples show a retailer that chooses to measure both to improve transparency to stakeholders.

## Tier 5

Sundry indirect (embedded) soy and soy derivatives



This is all other soy or its derivatives that may be in the supply chain including lecithin in chocolate, soy oil in margarine as well as soy by-products in personal care and household products. This tier also includes soy used to rear cows for leather, gelatin etc. although this is often seen as a by-product. Note that these still form part of the ingredient list for the product – directly purchased derivatives by manufacturers still fall into Tier 1.

## Tier 4b

Eggs and dairy in processed food products



The soy used in feed animals where the eggs and/or dairy ends up in food products such as cakes, smoothies, ice cream etc. where each individual component is less than 95 percent of the total product.

## Tier 4a

Meats in processed food products



The soy used in feeds for animals where the meat ends up in food products such as ready meals, sausages etc. where that particular meat is less than 95 percent of the finished product.

## Tier 3

Eggs and dairy



The soy used in feeds for egg laying chickens/ducks, dairy cows, dairy goats etc. Includes products such as yoghurt, milkshakes etc. where more than 95 percent of the product is eggs or dairy.

## Tier 2

Raw meat feed



The soy used in feeds for meats such as beef, pork, chicken, duck, fish etc.

## Tier 1

Directly purchased soy and its derivatives



Directly purchased and controlled soy. This includes soy bought by a commodities desk, used in manufacturing or within pure soy sold on the shelves (such as edamame beans and soy milk). It also includes any directly purchased soy derivatives such as lecithin, soybean oil and methyl soyate. For the purposes of simplicity, a de minimis rule applies where any product with more than 95 percent soy within it (e.g. flavored soy milk), can be reported in Tier 1, where separating out the data is impractical. It is expected that many manufacturers of pet foods and other products will be buying some amount of soy directly.



This data can then be presented to show what we have called a 'soy ladder graph'. This is shown below. It can be used for reporting and allows targeted activities against the most material areas of soy usage that might present a risk of deforestation.

Users of the soy graph can see, at a glance, where the most soy usage is likely to be within the organization and how well it is performing with moving from 'at risk' sources of soy to known and/or certified sustainable sources. This builds on the principles established in supply chain schemes such as the

Dodd-Frank Act on conflict minerals where any unknown or uncertified sources are assumed to be 'at risk'.

We believe that all levels of the hierarchy will be relevant for consumer goods retailers. Our interviews with manufacturers have shown that the ladder still applies to them but some levels need to be marked as 'not applicable' or 'negligible'.

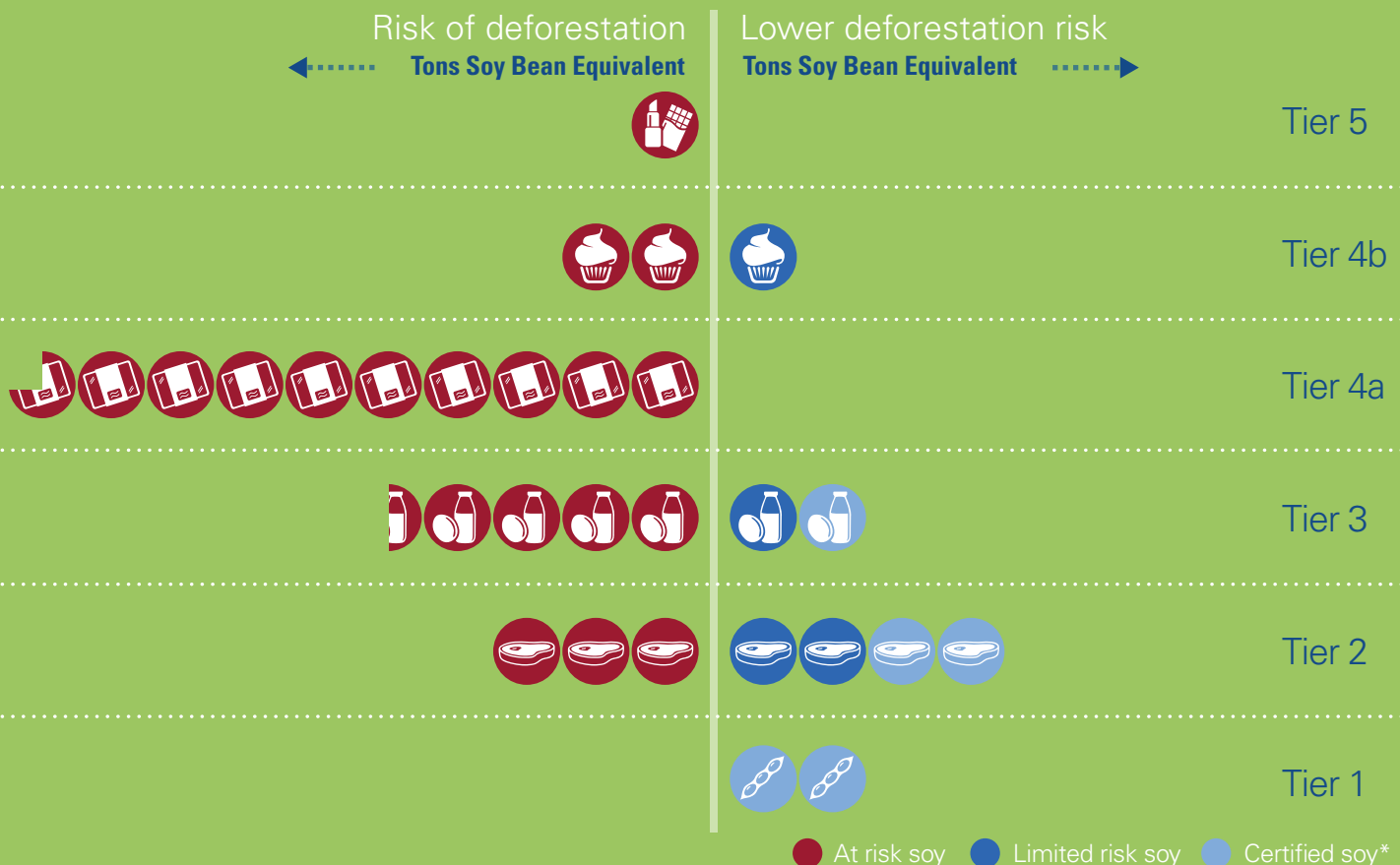
#### Extending this approach

Knowing the tons of soy bean equivalent within the supply chain is an important step in understanding the

risk of deforestation. Further detail will also help a business manage that supply chain more effectively. This includes:

- Understanding where the soy comes from
- Examining the efficiency with which that soy is grown including land usage, yields and carbon intensity
- Considering wider impacts of that soy growth including social impacts, water and fertilizer use
- Expanding the consideration of risk to other ecosystems besides forests

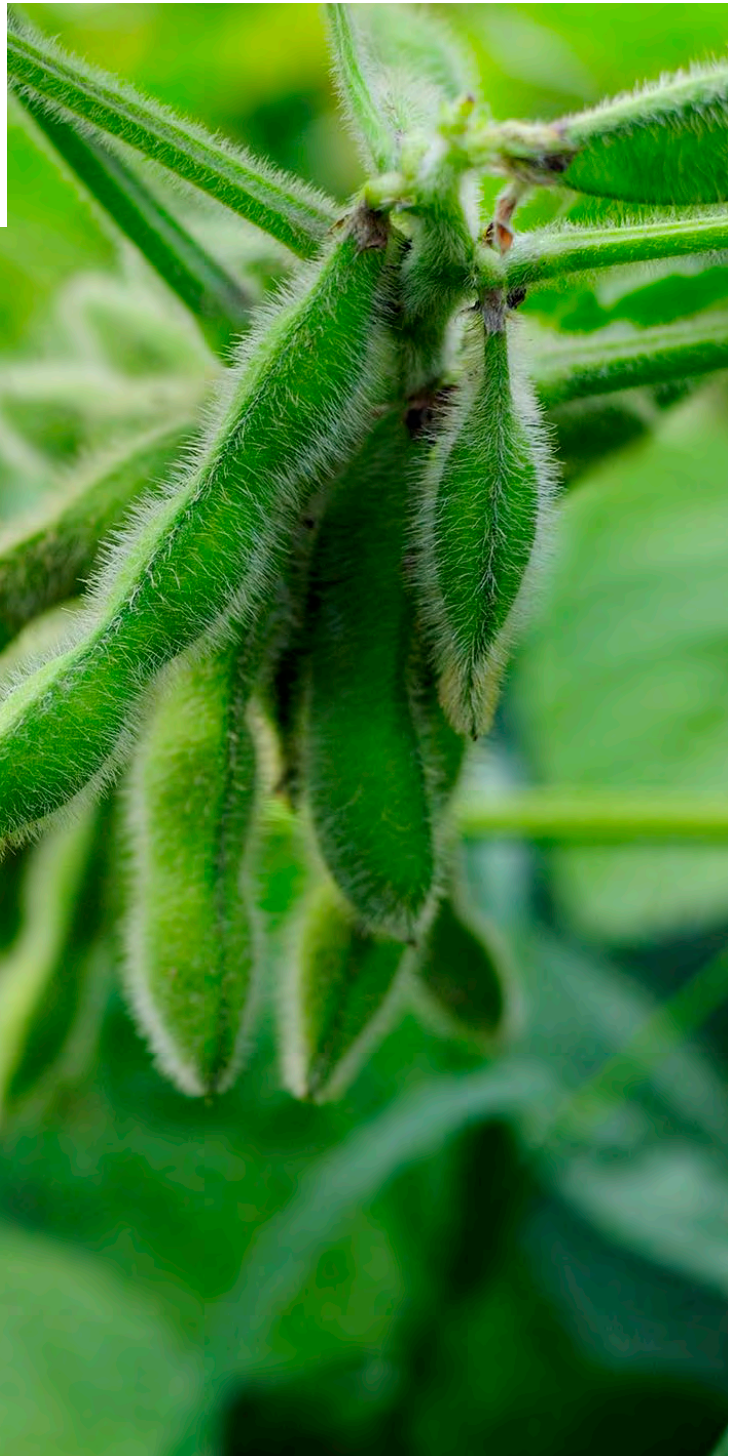
## An example 'soy ladder' graph



## Case studies

We are currently looking for one or two retailers who want to trial this approach so that we can provide a case study of how this works in practice and share lessons learned.

Ideally these would be retailers with very different structures, product mixes etc. so we can show how the soy hierarchy looks different dependent on that.







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