

SUSTAINABILITY OF THE EUROPEAN FOOD SYSTEM

THE EU STARCH SECTOR VISION FOR, AND EXPECTATIONS OF, A CONSTRUCTIVE SUSTAINABLE FOOD SYSTEMS FRAMEWORK LEGISLATION

POSITION PAPER | JULY 2023



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1. INTRODUCTION

In late 2023, the European Commission is due to publish its proposal for a legislative framework on sustainable food systems (FSFS). This proposal, once adopted, will likely provide the framework for a multitude of specific actions to help promote a sustainable food system going forward for years to come. It is of paramount importance to get that right.

This paper aims to demonstrate the substantial contribution so far of the EU starch industry to a sustainable food system, as well as what core needs our sector has for that contribution to continue, and even increase.

2. HOW WE CONTRIBUTE TODAY

The story of the European starch industry is also one of constant and fast-paced innovation; one of discovery; one of unlocking the powers of a natural agricultural raw material, be it wheat, maize, potatoes, or barley, peas or rice, to get everything out of it, and waste nearly nothing.

European starch producers have for decades played an important role in making the European Food System more sustainable. Touching on all three pillars of sustainability - Economic, Social and Environmental - the starch industry not only makes strong efforts itself to increase its sustainability; it is fundamental to the sustainability of many of Europe's most important supply chains.

2.1 Economic sustainability

The European starch industry's contribution to the economic pillar of sustainability is undeniable, and multifaceted. First and foremost, starch producers process over 25 million tonnes of EU grown agricultural raw materials, thus serving as an important outlet to EU agriculture. In so doing, the starch industry provides just under 16.000 direct jobs - primarily in rural areas - through its 71 plants across 20 EU member states.

These plants produce roughly 11 million tonnes of starch and starch derivatives, as well as over 5 million tonnes of plant-based proteins and fibres, used for food, feed and industrial costumers.

From this, the EU starch industry generates revenues of €7.5 billion.

But the impact on the EU economy goes well beyond that. In simple terms, without our starch derivatives such as glucose the production of drip bags for hospitals is not possible, without starch the production and recycling of paper and cardboard is not possible; without plant-based proteins, vegetarians and vegans would lack an important alternative to animal proteins in a vast array of meat and dairy alternatives and animal feed itself would lack the essential nutrient to keep European livestock healthy; baby food would be lacking an essential energy source for infants without maltodextrins; our plant-based ingredients provide alternatives to animal-derived or synthetic ingredients in skin care products and cosmetics; our biobased ingredients serve as vital alternatives to fossil-based products in a wide number of industrial applications, including bioplastics and biochemicals.

The list of sectors and products relying on our ingredients is vast. The starch sector helps its customers by providing a versatile portfolio of up to 600 essential ingredients, ranging from

native starches, modified starches, liquid and solid sweeteners to oils, proteins and fibres. Many of these ingredients also contributes to making the starch industry's customers more sustainable, as the examples above show.

The impact of EU starch producers thus goes well beyond its own figures, and its importance to sustainability - both economic, social and environmental - is long established.

2.2 Social sustainability

Too often overlooked, the social aspect is a important pillar of overall sustainability. Here too, the European starch sector makes an important contribution and can be a key actor going forward.

2.2.1 Nutrition & health

Dietary sustainability is much debated in Brussels today. The rising challenge of obesity and overweight, alongside the pressure of increasing numbers of people suffering from Non-Communicable Diseases (NCDs) attributable at least in part to diet on our health systems, have brought some to drastic measures.

Here too, the European starch industry brings a number of solutions to the table, from its versatile plant-based portfolio.

2.2.1.1 Plant-based proteins and fibres

Fibres, crucial for human digestion, are valued for a number of purposes today. The starch industry is helping its customers in the agri-food chain make their final foods healthier and more nutritious, in particular as there is increasingly a scientific consensus that dietary fibre intake is too often below the recommended levels (25-30 gr per day). They are also an important component in sugar-reduction.

This fibre enrichment not only serves to lower that calorie intake (2kcal/g instead of 4kcal/g for starch or sugars), but simultaneously helps to plug the fibre gap. Indeed, while it is recommended by such organisations as the European Food Safety Authority (EFSA) that adult diets contain between 25 and 30g of fibre each day, the true intake levels for most often fall well short of that.

Plant-based proteins are important both in food and feed production. Providing an excellent alternative or complement to animal proteins, they play a key role in the sustainability of our diets. This is especially critical in the debates and discussions on healthier and more sustainable food systems and diets in Europe.

A recent European Parliament own initiative report summarised this well, highlighting "(.) the big potential of plant-based protein and the fact that the development of the sector will benefit European farmers, soil quality, biodiversity, the climate and human health;"¹

2.2.1.2 Essential plant-based ingredients

Starch itself is a natural carbohydrate found in many grains and vegetables. It is the most common carbohydrate in the human diet, and is an essential source of energy for our brains and muscle.

¹ [DRAFT REPORT European Protein Strategy | AGRI_PR\(2023\)742624 | European Parliament](#)

Extracting it principally from wheat, maize and starch potatoes, but also rice, barley and peas, European starch producers supply a vast array of ingredients to food and drink.

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To put it simply, we need carbohydrates such as starch and its derivatives to stand or to think. Indeed, the European Food Standards Agency (EFSA) recommends that 45%-60% of daily human energy intake come from carbohydrates.

The versatility of starch is striking. From the initial process of extraction from the plants, seemingly endless possibilities present themselves to starch producers, from either simple drying or roasting, or further processing. Having extracted what nature is offering from the raw materials, starch producers have at their disposal not only starch, but also a valuable variety of fibres, lipids, and proteins.

The European starch industry has spent decades developing solutions to valorise the crops we use to their fullest potential, and today over 99% of the raw material is used.

Sugars, including starch-based sugars - continue to play an important role in many recipes, both to produce the taste that consumers look for, but also for numerous other purposes including to provide needed energy, or to prolong shelf-life. However the increasing demand of many consumers to reduce their consumption of sugars is one that EU starch producers have long recognised and we have for now close to a decade worked with our customers to develop ways to reformulate recipes of food products, to reduce the quantity of sugars contained and replace these, for example with innovative fibre solutions and polyols.

2.2.2 Working with farmers

According to a study conducted by the University of Wageningen in 2015, 160.000 farmers are indirectly employed by the starch industry, 60.000 on a full-time equivalent basis.

EU starch companies continue to support the EU farmers who supply them with raw materials in adopting regenerative agricultural practices.

This support takes many forms, and includes contributing to increased precision farming through digitalisation, supporting regenerative agricultural practices which include reducing carbon, better water management and increasing soil health, but also working together on the future use of alternative growing techniques. All of these can help farmers significantly reduce the need for pesticide use but can also have other environmental and nutritional benefits.

Furthermore, most of Europe's potato starch producers are cooperatives - owned and run by the very communities from which they source their raw materials.

2.2.3 Safety programme and awards

Starch producers also invest considerable efforts into the well-being of their employees and a safer working environment. To recognise this, but also foster further collaboration and exchange of best practices, the Starch Europe Safety Programme was created, supported by European starch producers.

Launched in 2014, the Starch Europe Safety Programme recognises the best performing EU starch plants in terms of reducing workplace accidents. This showcases the dedication of

companies to maintain efforts to reduce the risk of accidents occurring, through the constant exchange of experience and good practices.

An example of the outcome of these awards [can be found here](#).

2.3 Environmental sustainability

Starch Europe supports the EU ambition of achieving climate neutrality by 2050 as outlined in the EU Green Deal and the overall framework of the Fit for 55 Package. EU starch producers have long been engaged in efforts to lower their environmental footprint.

2.3.1 LCA studies

As on many other topics, the European starch sector has long been pioneer. The sector first decided in the early 2000s that it was important to keep regular track of their performance, and was thus one of the first sectors to begin the process of developing an industry-wide Life Cycle Analysis (LCA) studies.

Producing its first internal LCA study in 2001, the starch industry has upheld this tradition conducting a further LCA study in 2012, later updated in 2015. Continuing this trend, starch producers recently conducted its broadest yet LCA study, the results of which were published on 13 April 2022, and which can be [found here](#).

These results showed significant improvements were achieved in the period since 2010.

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The sector's total GHG emissions from its own production sites decreased between 2009 and 2019, in spite of the increased production. An overall GHG emissions reduction of 7% was achieved between 2009 and 2019, translating to a 19% GHG reduction per tonne of dry substance output in that period.

These reductions were mainly achieved thanks to energy efficiency improvements of the processes of the starch industry, the introduction of combined heat and power systems in almost all starch plants and the switch of starch plants to less GHG intensive energy sources.

Whilst Starch Europe's most recent LCA study demonstrates that most of the environmental footprint of the ingredients which we produce occurs at farm level (77% of the total), the starch sector is also itself an energy and heat intensive sector and recognises that it needs to continue its own efforts to decarbonise further.

2.3.2 Decarbonisation Roadmap

Following the publication of the latest LCA Study, Starch Europe launched a Decarbonisation Roadmap in late 2022, where we commit to achieving a reduction in scope 1 and 2 GHG emissions per tonne of starch (starch equivalent – commercial basis) of 25% between 2019 and 2030.

To monitor the sector's progress in line with this roadmap, reductions in terms of scope 1 and

2 GHG emissions¹ per tonne of starch will be monitored every two years based on internal data collection.

Furthermore, Starch Europe will perform an LCA in 2031 to check that the target(s) are reached, and an interim progress report in 2026.

Beyond the 2030 horizon, and in view of working further towards climate neutrality, the sector will explore further solutions in addition the ones outlined above, such as carbon capture/sink solutions. Starch Europe will consider developing a new roadmap covering the 2030-2050 period.

3. OUR VISION FOR THE FUTURE AND HOW WE CAN GET THERE

While our contribution today is already substantial, European starch producers know that there are many avenues still to explore, and much that can still be done.

We are engaged in doing our part, but some areas require action - broad or specific - from policy makers in Brussels and member state capitals, to help create an environment in which the full potential can be unlocked.

In late 2023, the European Commission plans to publish its proposal for a legislative framework on sustainable food systems. This proposal, once adopted, will likely provide the framework for a multitude of specific actions to help promote a sustainable food system going forward for years to come.

The following principles must be at the core of such a Framework legislation, to ensure the continued ability of sectors such as the Starch sector to remain ambitious in its goals to play an ever-increasing role within the food system.

A. Recognising the importance of our ingredients to European diets & overall sustainability

The EU starch industry makes key contributions both to EU consumers' diets, and to food system sustainability more broadly, through its broad offering of ingredients. From essential carbohydrates, through sugars and low-calorie sweeteners, to plant-based proteins and fibres, starch producers deliver safe, high-quality, and essential ingredients to food & drink manufacturers across Europe.

Policy makers should avoid misinformation or ambiguous messaging in their communication, and EU legislation and communication should remain soundly grounded in robust science.

And on one thing, the science is unequivocal: Carbohydrates, proteins, and fibers are important - even essential - elements of the human diet.

While adapting the source of nutrient intake notably through reformulation initiatives covers one facet of making our diets more future-proof, other factors come into play for EU consumers. Better understanding the food they eat, and obtaining a better balance in their diets, remains a major concern for many, the starch industry is a proactive actor in the transition, working

¹ [Starch Europe Publishes Results of 2022 Life Cycle Analysis \(LCA\)](#)

with partner food & drink producers, to develop new ingredients & adapt recipes.

For this, European institutions and EU member states collectively have an important role to play too, not only in regulation, but also in helping consumers get better education through access to robust science-based information. As important in healthy diets as nutrient composition, are quantity, frequency, variety and lifestyles. This must be emphasised in any communication around specific nutrients, foods and diets.

A renewed focus on better informing consumers in the EU to help them understand the importance of adopting more sustainable dietary habits, will be of utmost importance.

The impact of nutrient profiling and maximum limits - both referred to in the EU Farm to Fork Strategy - may be negative for some ingredients and an opportunity for others. Crucial to these initiatives if they are to make a positive contribution to sustainable diets, is the backing in robust science and appropriate communication.

Food reformulation continues to play a crucial role in addressing these concerns but rather than targeting specific nutrients, which often serves only to further confuse consumers, a more holistic approach to helping them understand healthy behaviours, would appear to be more helpful in actually ensuring better health outcomes.

Our industry needs a regulatory framework which is conducive to innovation, and is supportive of the introduction of innovative processed ingredients and technologies.

B. Understanding the critical interlinkage of the EU bioeconomy and sustainability in our food system

As has been recognised for some time already, notably by the European Commission in various reports, the European Parliament³, but also by the European Council through its recent Conclusions on the Opportunities of the Bioeconomy⁴, the EU Circular Bioeconomy is key to the EU achieving its broader EU Green Deal objectives.

As a catalyst for systemic change, the bioeconomy helps achieve economic, social and environmental objectives the EU has set itself.

The European starch industry, as a pioneer providing ingredients and solutions to all four outlets - food, feed, industrial and energy - is a strong actor and firm supporter of the bioeconomy, and strongly believes that the shift to biobased products and processes will strengthen both Europe's agri-food value chain and economic resilience, and reduce its dependency on fossil and non-renewable resources.

It is also thanks to the bioeconomy that the Starch industry can be circular and zero-waste. Decades of innovation by the industry result today in all parts of the EU-grown agricultural raw materials we process being used through the 4 outlets. Without a strong bioeconomy, true sustainability of the food system will be impossible to achieve.

For that to continue being the case, the European Commission needs to put renewed strength behind its EU Bioeconomy Action Plan, to ensure that it is fully and adequately implemented.

In the words of the European Commission's Directorate General for Research & Innovation: "To fully reap the economic, social and environmental benefits of the bioeconomy, dedicated bioeconomy strategies, investments and innovation are required at all levels in the EU"⁵.

3. [DRAFT REPORT European Protein Strategy | AGRI_PR\(2023\)742624 | European Parliament](#)

4. [European Council Conclusions on the Opportunities of the Bioeconomy](#)

EU policy makers must view sustainability in a holistic manner, avoiding the false narrative of conflict between different uses of agricultural raw materials, between food and non-food actors and applications

C. An EU Protein Strategy to ensure resource diversity and increased autonomy

With the EU Green Deal and Farm to Fork Strategy has come a clear and formal recognition that dietary shifts, notably in terms of protein consumption, are necessary to make the consumption-side of the food system more sustainable.

In addition, the COVID19 pandemic and the war in Ukraine, have simultaneously demonstrated the clear need for increased resource autonomy and diversification of food and feed supply chains in Europe, in a global context.

Starch Europe is therefore a strong proponent of an ambitious and actionable EU Protein Strategy, as has also recently been highlighted by the European Parliament's Report on a European Protein Strategy (2023/2015(INI))⁶.

EU starch producers are well positioned to contribute, but concrete support is needed. The recognition of the importance of the processing steps required on our EU-grown cereals and protein crops into plant-based protein ingredients for food and drink products, as a part of the Strategy, is a first important step.

The starch industry is heavily investing in its protein potential to process new crops, valorise even more the protein fraction contained in the grains, the peas and the starch potatoes and to sell them to the food and feed markets.

Real support must be given there too throughout the value chain, to further the sustainable development and production of EU-cultivated plant-based protein sources of sufficient quality and sufficient quantities, including supporting farmers to transition to new crops.

Supporting the development of a sustainable EU supply chain for all existing plant-based proteins as well as potential new protein sources for use in food and feed through research and innovation funding at all levels of the value chain is critical. So too is a strong promotion policy that includes plant-based proteins for food & drink products.

Finally, increasing the resilience of the food system, including through a rules-based international trade system, to strengthen food security globally.

D. The global dimension

It will also continue to be vital to take into account the global dimension. EU starch producers have to compete in a global market. The major international competitors to the EU starch industry already benefit from either lower raw material costs, lower energy costs, more government support, lower regulatory constraints or greater economies of scale, or a combination of these.

If the EU's Farm to Fork objectives are not matched by its international competitors, the EU's competitive disadvantage may be further reinforced. In the absence of a global level playing field, suitable mechanisms will be needed to ensure that EU starch producers can compete.

5. [How the bioeconomy contributes to the European Green Deal](#)

6. [DRAFT REPORT European Protein Strategy | AGRI_PR\(2023\)742624 | European Parliament](#)

A significant threat to a sustainable EU food system is the outsourcing of any link in the supply chain to less sustainable international competition.

The EU starch industry fully supports the holistic approach of the proposed Farm to Fork strategy and stresses that a holistic approach means a thorough impact assessment of all the impacts on all three pillars of sustainability (economic, environmental and social) of each new policy initiative.

In times of highly volatile energy prices, and with the risk of upcoming energy shortage still not averted for 2023, it is also of extreme importance that primary food processing sectors such as the starch sectors be protected and prioritised, so as not to give undue advantages to our international competitors who do not suffer those same risks.

E. Investment to support sustainability

The EU agri-food sector as a whole - including EU starch producers - is suffering from an investment deficit which harms its competitiveness and hinders innovation to accelerate the sustainability transition. Now is the moment for the EU to take a bold step in investing and creating the right market conditions for farmers and agri-food businesses - including Primary Food Processors such as the Starch industry - to become more sustainable and more competitive

On top of existing financial support linked to, inter alia, the EU Bioeconomy Strategy and EU Green Deal Industrial Plan, we fully and strongly support FoodDrinkEurope's recent request, for a dedicated EU Food Investment and Resilience Plan that would put competitiveness and resilience of the agri-food sector central by:

- Stimulating public-private investment to facilitate the transition to sustainable food systems (for example on regenerative agricultural practices).
- Encouraging innovations that will give farmers and food operators confidence to invest in and use cutting-edge technology (for example, societally-beneficial NGTs).

F. Coherence and long-term policy predictability

The Framework for a Sustainable Food System Legislation (FSFS) promises, in the anticipation, a wholesale review of legislation covering the agrifood value chain. As a crucial part of the EU Farm to Fork Strategy, the FSFS will likely aim to strengthen the policy space in which sectors, such as the starch sector, operate.

In order to fulfil its objective to help - and not hinder - the agrifood sector to fully leverage its capabilities in striving towards greater sustainability, however, it is essential that it provides long-term clarity and visibility for our sectors.

The EU Starch sector has set ambitious goals for itself, notably in terms of decarbonisation. The investments required to achieve such are difficult both to ascertain and to commit, as long as such uncertainties remain.

Many questions remain unanswered as to precisely what the expectations will be. It will be key to maintain coherence, for example, with the principles of the General Food Law,

and to ensure that food safety remains the key principle, within a balanced and risk-based approach. Disproportionate and unbalanced approaches risk leading to food loss or waste, and unnecessary economic losses.

It is critical, for example, that EU-wide solutions be sought, to ensure safeguarding of the EU Single Market. Relying on Member States for national implementation plans could do untold damage to the integrity of the Single Market.

Furthermore, concerns persist around the method with which this Framework will set standards and implement such a framework. It is, as always, crucial that all stakeholders are able to participate in be heard within such a decision-making process. Indications that a more unilateral - and thus less predictable - approach of resorting to Delegated Acts for specifics is being considered, are particularly concerning.

To properly, and in a lasting manner, transition towards a more sustainable food system in the EU, all partners need to work together with a clear common long-term goal-set. For this to happen, all stakeholders need to be heard, and should be able to take part in framing.

4. CONCLUSIONS

Important as it is to understand that true sustainability rests on three pillars - economic, social and environmental - and that you cannot exist without all three being satisfied, so it is vital to understand the importance for the starch industry of being able to rely on all outlets of the Bioeconomy in order to be a zero-waste industry that can continue to strive for ever-greater sustainability.

EU starch producers, and other primary food processors, will be key enablers in the move towards a more sustainable food system. EU policies need to reflect the sector's potential and challenges. With that policy support, the EU starch sector can play a key role in increasing transparency, meeting changing consumer needs and developing a more efficient and sustainable food system, whilst also maintaining the need for food security and food safety.

The sector looks forward to working with European policy makers and other stakeholders on detailed proposals to help improve that contribution further.

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