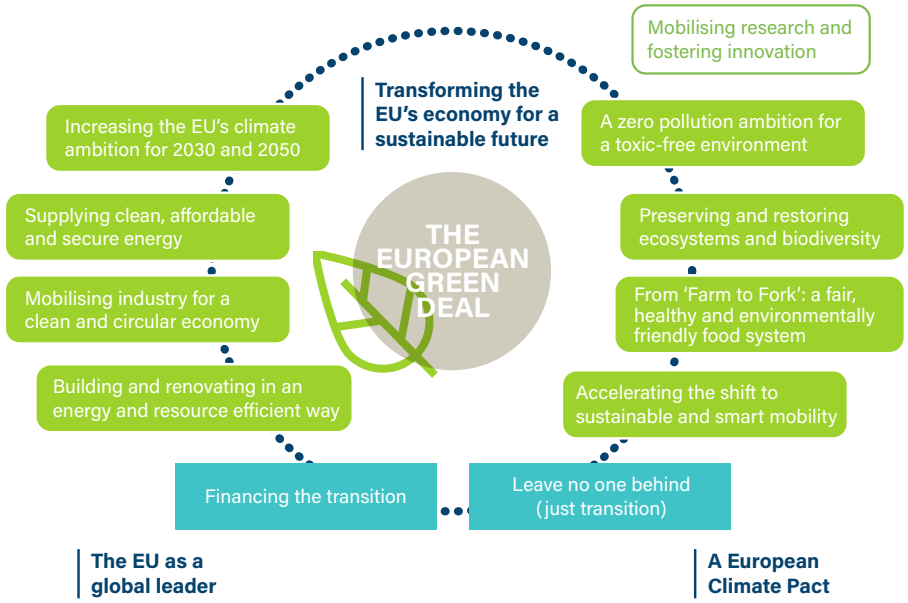
SUGAR AND THE EUROPEAN GREEN DEAL
FOR A COMPETITIVE ECOLOGY

Sugar is a strategic product. Beet sugar was "invented" by the continental blockade. The entire history of European sugar revolves around the same words: research and development, efficiency and anticipation. The European Green Deal opens the way to an economy combining sustainability, circularity and innovation, with the objective of creating a competitive ecology. We support this project.

It is surprising how quickly things evolve when the situation requires swift moves. This is the case for beet sugar, which between 1806 and 1812 created an industry from scratch. In 6 years, the sugar content of beets was improved and extraction techniques were invented. In 1812, 100,000 hectares were sown in France, sugar factories were well represented on the territory with the desire, from the outset, to develop the sector "in a chain" – that is, in close cooperation between beet growers and sugar manufacturers.



Source: European Commission, 2019

A sector at the forefront of agricultural, industrial and regulatory innovation

The history of sugar is marked by a systematic drive to innovate.

At the agricultural level, this translated into a continuous increase in sugar content and yields per hectare by new varieties that avoided the labour intensive dismantling of seedlings or by the introduction of coated seeds, among other techniques.

The same desire for performance applies at the industrial level with a constant optimisation of the factors of production, regional specialisation and an increase in processing capacities, all of which led to a sector that is not only efficient, but also competitive at the global level and capable of competing with historical cane sugar producers, such as Cuba, the USA, Brazil and Australia.

In the DNA of the European sugar sector, there has been the constant desire to democratise the product, which moved from a rare and expensive commodity ("white gold from Venice") to a popular, even ordinary, consumer good. Also deeply rooted in the tradition of the European sugar sector was the willingness to open up to and accept international competition: sugar is international by nature. Another peculiar feature – unique in the agricultural sector – is the chain management of the sugar sector.

The structural association of beet growers and sugar manufacturers is a key point to understand the past and look to the future. From 1967 to 2017, the Common Market Organization for Sugar (CMO Sugar) was conceived among the Member States, professionals and the European Commission as a single system that offered each EU country the right to produce sugar with innovative systems. This enabled the most productive regions to increase production and connected growers and manufacturers to export financing with a unique budgetary neutrality in the Common Agricultural Policy (CAP).

Throughout this period, the management of sugar quotas was conducted through constant dialogue with the agricultural and industrial components, which were always consulted for the development of technical rules for the operation and development of the sector. This process became so strong that over the years the weight of farmers has continued to strengthen within the sector. Today, growers control a substantial and dominant share of sugar companies (80%) in the form of cooperatives or equity investments.

A constant optimisation of the factors of production

Even more than the other primary agri-food industries (flour, oil, milk, etc.), sugar constitutes a pole of economic development of crucial importance in rural areas. Despite downsizing due to productivity gains, the sugar sector still provides a large pool of high-quality, well-paid jobs. In 2017, the number of direct and indirect jobs (including beet growers) was estimated at more than 360,000 for a total contribution of €15.6 billion.

A remarkable fact: 1 job in a sugar factory generates more than 14 jobs upstream in the EU-27.

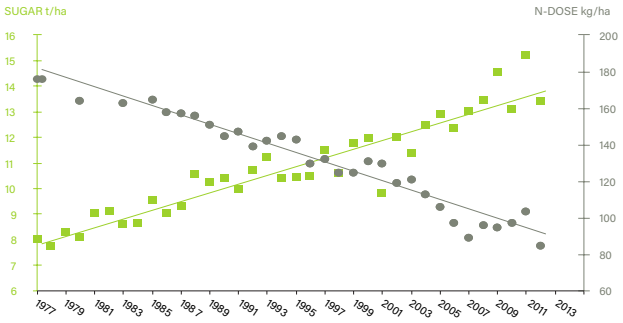
On 7 May 2020, Vice-President Frans Timmermans of the European Commission, who is in charge of the European Green Deal, insisted before the AGRI Committee of the European Parliament on the need to improve the resilience of the CAP and to reassess the manner of European production. This is precisely what the sugar beet industry has always done.

In fact, the sugar sector has always been attentive to reducing its impact on the environment. In beet growing, several factors have contributed to reducing greenhouse gas (GHG) emissions, such as the selection of seeds that are more resistant to water stress and plant diseases and the adjustment of sowing periods due to increasing temperatures. European beet growers recommend the use of mulch, reduced tillage and the use of intermediate crops and green manure to contribute to biodiversity and soil fertility. Sugar beets are grown in rotation with other crops to mitigate the loss of soil-specific nutrients and reduce the development and accumulation of crop-specific diseases.

Systematic reductions in energy consumption per hectare and in the use of nitrogen fertilisers have also played an important role. The table below shows that the use of nitrates has decreased by 44% over 30 years in France while the yield per hectare has increased by 60%.

The same process has been verified on the industrial side, including in recent years. Between 1990 and 2014, energy consumption per tonne of sugar produced fell by 33% in France and in the primary producing Western European countries. These results were accomplished using different techniques, involving each step of the sugar manufacturing process (diffusion, evaporation, crystallisation). In particular, energy requirements have been reduced due to the use of combined heat and power systems (CHP) in factories and by heat recovery. CHP power produces both steam and electricity. Some factories use renewable biogas fuel from on-site wastewater treatment or fermentation to power operations.

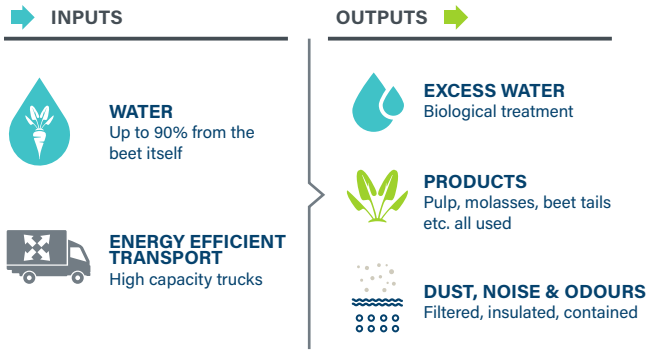
Evolution of sugar yield and N-DOSE in france, 1977-2012



Source: French Technical Institute of Beet, ITB

High-pressure steam drives a turbine and generator to produce the electricity needed to power the factory. The low-pressure steam emitted from the exhaust leaves the turbine only to be used to heat the sugar juice during the process (evaporation and crystallisation). The steam is used several times in the process through multi-effect evaporation.

Water usage is also controlled by recycling process water and by keeping the use of freshwater to a minimum. In fact, up to 90% of the water during processing comes from the sugar beet itself.



Source: CEFS Priorities 2019-2024

Sugar as a pioneer of the circular bio-economy

Maximising the value of co-products and minimising waste is an objective – or rather, a long-standing tradition – of the sugar sector. This applies to both the agricultural and industrial portions of the sector.

Source: CEFS Priorities 2019-2024

This willingness manifests itself at each stage of the process and begins from the harvest onwards: beet pre-washing, minimal storage time, frost protection, just-in-time factory delivery and fallen leaves used as compost. The technical processes developed to enable the recovery of the co-products from the manufacture of sugar in factories generate an impressive circularity. Upstream, the beets are used as animal feed in the form of fresh or dry pulp enriched with molasses once the sugar is extracted. These molasses (the non-crystallisable parts of sugar) are sought after as a fermentation vector for various pharmaceutical, chemical and energy applications. Beet pulp is also used as a fertiliser with high environmental properties. The lime slurry used in the manufacturing process returns to the earth to improve the soil structure.

The sugar industry – already prior to greenhouse gas emissions trading scheme or the European Green Deal – was a pioneer in increasing energy efficiency. Compared to 1990, the sector is on the way to achieve the GHG emission savings that the industry is asked to deliver in 2030 (minus 50 – 55%). In the period 2019 to 2020 several factories using coal have been or will be closed.

It should be further noted that 1.24 billion litres of bioethanol from beets are produced each year in the EU. It has multiple uses: energy (fuel for the automotive industry), food (alcohol, additives) and non-food (cosmetics, pharmacy, solvents, paints), including a remarkable and important production of hydroalcoholic gel during the COVID-19 crisis.

The European Green Deal: an economic and societal revolution

In terms of huge projects, the single market of 1993 comes close to the European Green Deal initiative. The idea was to erase internal borders to enable the free movement of goods, services, people and capital. Clearly, it was about creating a mass effect that would lead to more volume, more competitiveness, more jobs and more growth. With the Green Deal the

challenge is quite different. The main idea is simple: ensuring carbon neutrality in the EU by 2050. **This objective, however, requires the acceptance of new concepts and new behaviours, accompanied by a vast reorganisation of systems of production**. To reach this neutrality objective proposed by the Green Deal, we must promote low-carbon energy, develop clean transportation, improve the energy efficiency of buildings, create an environment free from toxic substances and guarantee a more sustainable food chain, among other measures.

The timeline of the European Green Deal is impressive because in 2020 alone, the European Commission planned to propose the Climate Law, adopt an EU Industrial Strategy and a Circular Economy Action Plan 2.0, present the Farm-to-Fork Strategy and release the Biodiversity Strategy for 2030.

The course set by the Green Deal cannot be disputed, but it definitely raises some legitimate questions. The first concerns its pace: is it too fast? The second concerns financing; will the 2021-2027 Community budget, not yet adopted, meet the challenges? The third question is also fundamental: are the innovative concepts of the Green Deal compatible with the maintenance of earlier Community policies, for instance the CAP? A fourth question can be further added: should the innovation promoted by the Green Deal extend to genetics and new agri-food techniques?

In addition, the Green Deal’s success largely depends on the simultaneous compliance of common rules on the global scale, which need to be urgently (re) defined to ensure a sustainable planetary balance for everyone. This is especially true for the social and environmental standards, currently very inequitable. It is also fundamental and urgent to restore undistorted global competition through many economic, trade, or monetary distortions. Without this prerequisite, there is a great risk of exposing our agriculture and our primary processing industry to a regression, leading to its attrition. Promoting a new European model is first and foremost about ensuring its sustainability without naivety, but with realism and pragmatism.

Thinking about a new CAP rather than patching up the old one

Globally autonomous and financially neutral for the Community budget, sugar has entered the common CAP regime since the abolition of the quotas. Clearly, the CAP and its market management tools are obsolete and ineffective against our competitors. In other words, it works poorly because it was designed in 1992 to be made compatible with the World Trade Organization (WTO) rules, and is based on a system of aid to agriculture ill-suited to the current world market realities. The CAP model, which has been periodically adjusted for more than 20 years, needs to be redesigned. However, the Commission’s current projects seem to be moving towards 2022 with minimal adjustments. **The CAP must be aligned with the Green Deal, and in particular with carbon neutrality and a commercial new world order concretely integrating the social, environmental and economic dimensions of sustainability. This would ensure balanced competitive conditions**.

Unfortunately, this is far from being the case today for the European sugar sector, which suffers from a glaring lack of an equitable playing field. In addition to feeding humanity and thus constituting a highly strategic sector, there is a fundamental difference between agriculture and other production activities. While industrial activities emit CO2, agriculture is a carbon sink, as plants absorb CO2 in large quantities.

Agriculture also emits CO2 through its production and processing methods, but much less than other sectors with regard to arable crops, in general, and the sugar sector, in particular.

Integrating a "carbon footprint" dimension into the CAP

The Paris Agreement (COP 21 in 2015) introduced the concept of "climate neutrality," which requires reducing the gross emission levels and strengthening the natural carbon sinks of the ocean and biosphere. The agreement also provides for "carbon offsetting" between deficit and surplus sectors.

This notion of carbon footprint must be integrated into the thoughts about the future CAP. We know that between 1990 and 2018, emissions from agricultural sources have significantly decreased, but there is still room for improvement. It is also important to integrate the carbon dimension into international transportation (primarily air and sea) and especially for the massive imports of cereal substitute products from the USA, Brazil, or Argentina.

Along with the introduction of a carbon account calculated by sector with debits and credits, a carbon tax as provided by the European Green Deal must be added at the external border of the EU to tax products of industrial and agricultural imports. It should moreover be noted that the WTO has no safeguards to subordinate free trade principles to the requirements of climate protection. The European Green Deal provides a unique opportunity for the EU to overhaul these otherwise weakened WTO rules, which are highly contested by the USA.

It is illusory to imagine a CAP integrating a dimension of carbon neutrality without a relocation of certain production and, in particular, the substitutes for imported cereals. It will therefore be up to the EU – if the boldness of the European Green Deal becomes a reality – to start renegotiating the agreements made in 1962 under the GATT. Freed from this constraint, the EU will regain its sovereignty to promote low-carbon agriculture and promote virtuous sectors, including sugar.

Producing in an "ecologically intensive" manner

This expression can cover various definitions or interpretations. It is used here in the sense provided by the economist Christian de Perthuis in his recent work, *Le tic-tac de l'horloge climatique* [Eng.: *The ticking of the climate clock*]. "Ecologically intensive" production includes a research and development dimension in genetic research and new generations of phytosanitary products.

Reducing the use of crop protection products is a goal that beet growers set for themselves long ago by engaging in integrated pest management, which has led them to use techniques such as coated seeds, crop rotation optimisation and precision farming. More recently, the development of robotics and digital farming have supplemented the farmers' toolbox.

New breeding techniques (NBTs), including mutagenesis, are complementary but essential tools that will make it possible to better balance societal demand, agricultural production, sustainability and respect for the environment. However, the investments in terms of research and development and the time necessary to overcome the technical obstacles are such that the uncertainty generated at the EU level risks preventing NBTs from becoming mainstream and a permanent part of agricultural practices.

The innovation promoted in each chapter of the European Green Deal must find its full application in agriculture. This will require major changes in the Community decision-making processes by conferring to the European Food Safety Agency (EFSA) and its chemical counterpart (ECHA) a role that is not advisory but at least co-decisional to strengthen the weight of science in the decision-making process and promote the acceptance of new technologies.

Towards a more sustainable food chain

This theme is also at the heart of the European Green Deal. However, it should be given an acceptable definition throughout the food chain: from producer to consumer. This is where the difficulty arises because **in recent years there has been a breach of confidence between the consumer and the food chain. This breach of confidence first finds its origin in an increased complexity of everything related to food: production and manufacturing techniques, product composition, labeling, European standards, etc. This complexity is at best a source of preconceived ideas and at worst a source of activism and disinformation**.

In reality, there are no good or bad foods. And it is striking to see the stigmatisation of an entire set of products: sugar and fat. Just as the acceptance of new techniques resulting from research should justify an increased role for the Union's scientific agencies, restoring a climate of understanding between producers and consumers will require Community authorities to adopt a new approach to the role of stakeholders in decision-making processes.

Speaking loudly and clearly should no longer be seen as a major vehicle for influence. There the challenge is immense. It will be up to civil society to adopt a demanding but realistic discourse. Agriculture and industry will have to learn to communicate with its consumers. The COVID-19 crisis will undoubtedly have the consequences of fueling already high tensions. Therefore, the desire for appeasement, dialogue and learning will become essential and will be the responsibility of everyone involved.

The road is very long, but even if the European Green Deal does not accomplish all of its objectives or does not meet all of its deadlines, the proposed course of action is the right one and the vibrant forces of the European Union must now act as solution-makers.

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The European Association of Sugar Manufacturers (or CEFS, French acronym standing for Comité Européen des Fabricants de Sucre) is a non-profit organisation founded in 1953 to represent the interests of the European sugar industry, vis-à-vis international institutions with a view to creating a positive regulatory climate for the sector in all its dimensions: production, competitiveness, nutrition and food legislation.

CEFS is an interlocutor recognized by the European Commission and participate, along with others, in the civil dialogue groups. CEFS' membership is composed of sugar-producing companies in the EU, the UK and Switzerland.