THE MARKET POTENTIAL OF PROTEIN CROPS

In recent years, there has been tremendous growth in Europe's plant-based food sector. This growth has been mirrored by the Smart Protein project, in which partners from all over Europe have been working together to develop alternative-protein ingredients and products that have a positive impact on the environment.

Research conducted by the project in 2021[1] showed that the plant-based sector in Europe grew by 49 % between 2018-2020, generating net sales of about €3.6bn. At the same time, consumer concern around environmental sustainability and animal welfare is driving the market towards a more sustainable path.

- In **the Netherlands**, the sales value of plant-based foods grew by 50% during the period, with the sector led by plant-based meat (e.g. plant-based burger patties and plant-based stir fry).
- In **Denmark**, the sales value of plant-based foods grew by 29%, with the sector led by plant-based milk, and dominated by oat and soya milk.
- In **Italy**, the sales value of plant-based foods underwent a slight decline but remained solid. The sector is led by plant-based milk, and dominated by soya and rice milk.
- In **Spain**, the sales value of plant-based foods grew by 48%, with the sector led by plant-based milk, and dominated by oat and soya milk.
- In **Germany**, the sales value of plant-based foods grew by 97%, with the sector led by plant-based milk, and dominated by oat and almond milk.

Smart Protein's deep insights into the market potential for protein crops have helped us to understand the importance of investing in a different kind of agriculture to the one that is currently dominant in Europe.

Organic farming and organic regenerative farming offer feasible alternatives that don't rely on synthetic inputs such as chemical fertilisers or pesticides, and use more sustainable agricultural techniques. In this context, alternative proteins such as pulses seem to be an appropriate choice, particularly since they are more resistant to the impact of climate change and have sound nutritional content.

[1]Plant-based foods in Europe: How big is the market? Smart Protein Plant-based Food Sector Report by Smart Protein Project, European Union's Horizon 2020 research and innovation programme (No 862957) (2021). https://smartproteinproject.eu/plant-based-food-sector-report.

From an **industrial** point of view, emerging trends in alternative proteins reflect some vital concerns, including health and nutritional functionality, allergenicity, and the sustainable sourcing of ingredients.

From the **health and nutritional** side of things, many companies are currently working on extracts, isolates and protein concentrate, since the diversification of protein sources is important for their consumers. Chickpeas and other legumes can provide useful support here, particularly due to their high protein content.

In terms of the sustainable sourcing of ingredients, many companies, especially in Northern Europe, are increasingly focused on sourcing local raw materials that have a lower carbon footprint. As such, priority is given to suppliers that are careful to enhance biodiversity, reduce their impact on the environment, and reduce their emissions footprint. In addition, organic agriculture is preferred to conventional agriculture, since it is a more sustainable method of farming that preserves the nutritional functionality and healthiness of foods.

Finally, with the widespread increase in food allergies, industries are researching crops that have low or no allergenic potential. For these reasons, crops like chickpeas and quinoa are gradually gaining more attention.

In conclusion, the market for protein crops is continuing to expand, and is predicted to grow at an even faster rate in the near future. This suggests that consumers are becoming more aware of the environmental impact of agri-food chains, as well as of the effects of food products on human health. Food manufacturers, for their part, are driving the market in more sustainable directions, although they face challenges in terms of new product development. While the Smart Protein project is coming to a close, all of the partners involved in the project will have a variety of roles to play in the sector in the coming years.