



Image: Planted Foods

Championing protein **diversification**

The missing piece of the puzzle for a resilient and competitive Europe.

What are **alternative proteins**?

By 2050, global meat demand is set to grow by 52% (FAO, *The future of food and agriculture, 2018*) which current production methods cannot sustainably grow to meet. Instead of asking people to give up the foods they love, alternative proteins (APs) enable the development of tasty, affordable meat, seafood, eggs and dairy to reduce reliance on intensive animal agriculture and build a more resilient food system. There are 3 main AP ‘pillars’:



Plant-based meat

looks, cooks and tastes like conventional meat – but is made entirely from plants (and sometimes fungi in the case of mycoprotein). Plant-based meat has been around for decades, but new next-generation products are starting to emerge that can better replicate the taste and texture of meat.

Image: Juicy Marbles

Cultivated meat is made from real animal cells, but grown in fermentors (like those used to brew beer). Cultivated meat (and fat) can give the authentic flavour of meat that is difficult to achieve using only plant-based ingredients. Some cultivated meat products have been authorised for sale in Singapore and the United States, but none have yet been approved in the EU.



Image: Mosa Meat



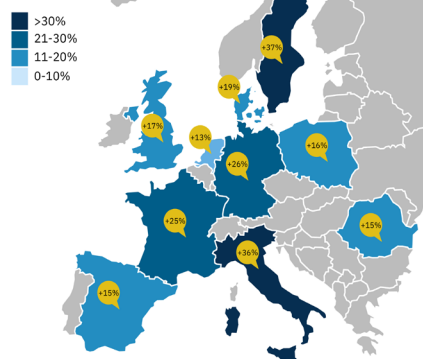
Fermentation is a centuries old process common in food production, with several AP applications. One example is precision fermentation (PF), common in current rennet production for cheesemaking. PF uses yeast to make proteins like whey and animal fats and oils. Many of these new ingredients are awaiting EU approval, but are already available in the US, Singapore and Israel.

Image: Onego bio

A missing piece of the puzzle to achieve key EU policy goals

With growing global uncertainty, the EU must strategically plan its future and consolidate its leadership role in green technology. Success depends on capacity building in those industries able to help Europe meet its climate targets while reducing dependency on imports. Supporting alternative proteins is a crucial piece of the puzzle for the EU to thrive in this new state of play.

Potential self-sufficiency gains by 2050 facilitated by high uptake of alternative proteins



Source: Green Alliance, A New Land Dividend (2024).

Economic competitiveness

Cultivated meat was invented in the EU, and the bloc is the world's biggest market for plant-based meat. Home to top universities and innovative startups, we have the potential to capitalise on the growth of this emerging sector, expected to support 9.8 million jobs globally by 2050 (*Climateworks, GINA Protein diversity report, 2021*). By tapping into cutting-edge biotechnology, the AP sector can play its part in unlocking future-proof jobs and industries. But with countries like the United States and China now prioritising investment in these areas, we risk losing our edge and falling behind.

Public health

Intensive animal farming drives antimicrobial resistance and pandemic risk. The ongoing birdflu pandemic is causing heavy losses of farmed animals across Europe. Protein diversification could not only reduce reliance on antibiotics in global food production and reduce human exposure to such diseases, but also safeguard food security in the context of the losses driven by emerging pandemics.

Food security

With a growing global population and finite natural resources like land and water, current production methods will not be able to meet the rising demand for protein. In the EU, 45% of crops grown are fed to animals (*European Commission. EU Feed Protein Balance Sheet, 2022*) and we are still heavily dependant on imported feed. The land and efficiency savings offered by APs could be used to boost domestic food production and increase resilience.

Climate

The EU has made considerable progress in setting binding climate targets to reach climate neutrality by 2050. However, the trajectory for achieving them, particularly in the agrifood sector, remains so far undefined. Encouraging protein diversification by supporting alternative proteins offers a practical pathway towards meeting climate obligations by significantly reducing the environmental footprint associated with food production and making space for nature restoration to sequester carbon.

Ensuring a just transition

APs have the potential to support farmers and rural communities. With the right policy incentives and support mechanisms, farmers can capitalise on the growing market demand for plant-based foods and diversify their income streams by cultivating high-value crops. The rise of AP industries could also bring new diversification opportunities for farmers, eg by leveraging feedstock and agricultural sidestreams essential for fermentation processes.

	Greenhouse gas emissions	Land use	
Plant-based meat ¹	86-94% lower	71-89% less land needed	Compared to conventional meat (chicken, pork, beef and lamb)
Cultivated meat ²	92% lower	90% less land needed	Compared to conventional beef
Fermentation-made ³	35-55% lower	87-89% less land needed	Compared to conventional egg (chicken)

Source: S N Espinosa et al. Nutrition Reviews. nuae031 (2024). 2. Sinke, P. et al. Int J Life Cycle Assess 28, 234-254 (2023). 3. N Järviö et al. Nature Food. 2, pp1005-1013 (2021).

How can the EU champion protein diversification?

Recognise alternative proteins' strategic role in green industry and biotechnology:

- Ensure the revised Bioeconomy Strategy and new EU Biotech Act address the strategic importance of APs and food innovation generally.
- Identify APs as a critical and priority technology to achieve 2040 climate targets.
- Develop an Alternative Protein Industrial Plan with a clear, ambitious roadmap to 2040, identifying key policy levers and creating dedicated instruments to support sector growth.

Facilitate world-leading European innovation by protecting the scientific integrity of the regulatory pathway:

- Keep regulation grounded in the EFSA's world-leading scientific expertise.
- Increase EFSA accountability for offering a regulatory ecosystem that enables innovation through appropriate staffing and funding, guidance and pre-submission consultations.
- Develop a policy framework on premarket tastings for novel food products as part of the EU Biotechnology Act.
- Protect the integrity of the EU single market by preventing unjustified unilateral bans and ensuring a consistent regulatory framework across all Member States.

Increase open-access public research and innovation funding:

- Increase public R&I focusing on the key drivers of consumer uptake – taste and price. In particular, funding to advance food processing techniques.
- Establish an industrial and environmental ("white") biotechnology fund covering novel proteins and co-administered by DG GROW and DG RTD.
- Leverage available Horizon Europe funding and the next R&I framework programme (FP10) to invest in international public-private funding partnerships to boost infrastructure and private investment, connect the value chain, and successfully commercialise research.

- Strengthen connections between R&I and commercialisation, eg by funding innovation centres of excellence bringing together researchers, universities and companies.

Boost public funding to secure European manufacturing capacity:

- Boost EU grant and blended finance opportunities supporting scale-up of AP production. Expand the scope of existing instruments, such as the EIC Accelerator, and develop new ones tailored to food biotech sector needs, like the Innovation Fund for cleantech.
- Encourage the EIB and other financial institutions to offer more debt financing solutions to de-risk scale-up to commercial-scale facilities in the AP sector. Draw on success stories in renewable energy and electric vehicles to ensure effective risk reduction.
- Incentivise repurposing of underutilised facilities in other food processing and fermentation sectors for AP production.

Support farmers to unlock new economic opportunities through protein diversification:

- Revise the CAP's funding structure to ensure economic stability for farmers who deliver environmental services and public goods, such as cultivating nitrogen-fixing legumes for food.
- Share responsibility for change equitably across the agrifood value chain, starting with a market-based ETS that applies to downstream food processors.
- Support open-access research that involves farmers in emerging AP value chains and explores potential new economic opportunities for European agriculture as the sector grows.

Keep labelling rules fair and transparent:

- Ensure food labelling rules prioritise consumer information and choice by upholding the use of familiar names like "burger" and "sausage" on plant-based foods.
- Review the prohibition of labels such as "oat milk" for plant-based dairy to align with global practices and everyday consumer usage.

About us

The Good Food Institute Europe is an international nonprofit and think tank helping to build a more sustainable, secure and just food system by diversifying protein production.

We work with scientists, businesses and policymakers to advance plant-based, fermentation-made and cultivated meat – making them delicious, affordable and accessible across Europe.

We are a founding member of the EIT Food Protein Diversification Thinktank, and the European Alliance for plant-based foods.

GFI Europe is powered by philanthropy.

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