The transition towards sustainable food systems is at the heart of the European Union’s Farm to Fork Strategy. This shift is essential for the achievement of the Green Deal goal to make Europe climate-neutral by 2050 and the fulfilment of the United Nations Sustainable Development Goals (SDGs).

Research and innovation (R&I) is key to support the development of healthier, nutritious and more sustainable food towards improving European diets and contributing to the climate neutrality of food systems. In February 2021, the European Commission officially launched its funding programme Horizon Europe. Under its Pillar II Global Challenges and European Industrial Competitiveness there is a dedicated cluster Food, Bioeconomy, Natural Resources, Agriculture and Environment with an allocated budget of nearly EUR 8.9 billion.

The European Alliance for Plant-Based Foods (EAPF) and The Global Plant-Based Foods & proteins EcoSystem of Bridge2Food welcome the publication of the Work Programme 2021-2022 and acknowledge the European Commission’s effort to include specific calls for proposals on plant-based proteins. Nonetheless, given their role in transforming European food systems and improving the diets of Europeans, the organisations consider that the EU should go even further in promoting R&I in the food sector.

EAPF and The Global Plant-Based Foods & proteins EcoSystem of Bridge2Food call on the European Commission to foster a sound R&I funding framework that effectively enables the plant-based food and protein sector to develop and contribute to tackling climate change, improving the well-being of Europeans and securing sufficient food for the growing world population. To increase self-sufficiency, foster the production and consumption of plant based proteins in Europe, it is crucial that the Commission increases the budget and funding opportunities for research in the field. It should consider specific calls focusing on developing new crops, further improving the sustainability of plant-based proteins, refining the organoleptic and nutritional properties of the processed products and reducing their costs. Increased R&I would improve the competitiveness of plant-based foods and contribute to restoring the level playing field with their animal-based counterparts.
1. Increased budget for R&I in plant-based proteins

The first Work Programme 2021-2022 of Horizon Europe dedicates a budget to innovation for livestock farming under Cluster 6 which is disproportionally greater to funding foreseen for calls focusing on plant-based proteins. Only 2 calls, out of 182 in total, focus on alternative proteins and one is specifically dedicated to the development of competitive and sustainable land-based protein crop systems.

There has been a historical gap in research and innovation funding for the plant-based crop and food sector in comparison to the funding provided for the animal industry in the areas of production, supplies and services, marketing and processing. To bridge this gap, ensure a level playing field between the products stemming from the two sectors and, most importantly, fulfil the climate and health objectives of the Commission, an acceleration in research coupled with additional funding are required.

While EAPF and Bridge2Food recognise the need to support livestock farming in improving their practices and sustainability, this unbalanced approach is not in line with several EU policy objectives:

- The EU Farm to Fork\(^1\) and Biodiversity\(^2\) strategies share the common objective to reduce the environmental and climate footprint of EU food systems and to strengthen their resilience while preventing further biodiversity loss. Livestock and intensive farming account for 78% of agriculture’s negative impact on biodiversity and 60% of its greenhouse gas emissions (GHG) according to the European Court of Auditors\(^3\). A transition from livestock and animal feed-based farming to more plant-based food for human consumption would bear a significant potential to reduce the carbon footprint of the agri-food sector: for instance, in Denmark, such reduction is estimated to be up to 86.5%\(^4\).

- Europe’s Beating Cancer Plan\(^5\) calls for a shift to more plant-based diets and the Commission is also undertaking a review of the promotion policy for agricultural products, with a view to enhancing its contribution to sustainable production and consumption, and in line with the shift to a more plant-based diet and more fruit and

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3 European Court of Auditors, Biodiversity in Farming, Audit Preview, May 2019.
4 Prag, A.A.; Henriksen, C.B. Transition from Animal-Based to Plant-Based Food Production to Reduce Greenhouse Gas Emissions from Agriculture—The Case of Denmark. Sustainability 2020, 12, 8228.
5 European Commission, Europe’s Beating Cancer Plan, February 2021.
vegetables.“. Scientific reviews\textsuperscript{6,7} have also highlighted the need to shift towards more plant-based diets as a mitigation strategy against future zoonotic pandemics and antimicrobial resistance.

To reflect these EU policy priorities, EAPF and Bridge2Food urge the Commission to build on the potential of plant-based proteins and food crops for green recovery by increasing the number of calls for proposal and allocating higher budget for R\&I in the area through Horizon Europe and its specific programmes. Indeed, plant-based food is an integral part of the circular bio-economy, where Horizon Europe anticipates the establishment of dedicated public-private partnership through the Circular Bio-Economy joint undertaking (CBE). Therefore, we call on the European Commission to include plant-based proteins and ingredients as a high priority of the future CBE, in line with the Food 2030 objectives.

2. Production of environmentally-friendly plant-based protein sources contributing to climate restoration

A shift towards plant-crop farming would free up substantial land for carbon sequestration and contribute to the mitigation of the effects of climate change. Plants are the lungs of the Earth. At farm level, research should thus enable solutions that respond to the challenges emanating from climate change: e.g. improving the carbon sequestration properties of crops and reducing CO\textsubscript{2} emissions, improving soil health, enhancing (natural) resource efficiency, strengthening the resilience of crops to global warming and water scarcity, and so forth.

Incentivising farmers to adopt more sustainable agricultural practices such as service plants and co-cultures with decreased use of natural resources, pesticides and fertilisers is another key element for the green transition of the agricultural sector. In this regard, the next Work Programme should also focus on improving crop yields and optimising protein crops for use in plant-based food products.

Next to that, an emphasis should be placed on research improving the biodiversity of food crops. Humans have only domesticated about 150 plant species for farming where 30 account for more than 85\% of global crop production. On the one side, research could advance the use of neglected and underutilised sources of crop proteins from land and, on the other, it can provide solutions for broadening the genetic resilience base of crops by using native traits from wild relatives to create modern varieties adapted to extreme conditions.

\textsuperscript{6} UNDEP’s report “Preventing the next pandemic zoonotic diseases and how to break the chain of transmission (P. 15) link.
\textsuperscript{7} Report Antimicrobials in agriculture and the environment., Reducing the unnecessary use and waste, December 2015 link.
weather conditions, pests, weeds, and diseases.

To avoid further biodiversity loss and contribute to environmental restoration, research needs to focus on developing relevant biodiversity indicators looking at agro/domestic biodiversity, soil biodiversity and habitat changes that also affect wild biodiversity. In this context, quantitative assessments integrating aspects like crop productivity, land use, new crop systems, fertilisers applications and pesticides should be subject to future R&I calls.

3. Facilitating the shift to healthy and sustainable diets based on plant-based foods

Increased plant-based proteins and reduced consumption of animal-derived proteins support more nutritious and healthy diets and the protein transition. Promoting food environments that support and facilitate the uptake of plant-based proteins would help reduce the burden of diseases on society, avoid the risks of antimicrobial resistance and zoonotic diseases while improving the overall well-being of the population.

Research could contribute to making plant-based proteins the default choice for consumers. In fact, despite increasing consumers’ demand for plant-based proteins, access remains limited by several regulatory, financial and societal hurdles. Calls should therefore be oriented towards understanding current barriers for consumers and defining effective strategies to overcome them. R&I should thus explore ways to improve the nutritional and organoleptic properties of plant-based processed foods, including taste, flavour, and texture. This would help better tailor plant-based products to consumer preferences and convert more people to a flexitarian diet, thereby increasing their demand and acceptance. Also, research areas should cover consumer perception and understanding of plant-based food terminology (e.g. vegan cheese), nutritional and environmental labelling, category management (e.g. where to best place plant-based food products in the supermarket), detailed consumption habits (e.g. better understanding of the food diets of flexitarians and the regularity of consuming plant-based meat or milk), health and societal interactions (e.g. the influence of the dietary choices of children on parents’ eating behaviour and health) and the role of media (e.g. impact of advertisement, radio and TV on consumer’s food choices).

Along with taste, the main drivers of consumers’ food choices remain price and convenience. Processed plant-based foods are more expensive than meat and dairy products (partly due to imbalance subsidies and lower VAT rates to the advantage of meat and dairy). Horizon Europe

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8 Following a flexitarian diet highlights an increased intake of plant-based meals without completely eliminating meat.
should thus open funding opportunities for projects aiming to pressure down the cost of processed plant-based foods to create price parity to ensure fair competition with their animal-based analogues, thereby making them more accessible to low-income consumers.

Conclusion

The increased production and consumption of plant-based foods and protein in Europe will facilitate the EU’s sustainable transition, for the benefit of people and the planet. It is therefore crucial that the European Commission ensures a research and innovation environment that provides more budget and opportunities for the development of concrete solutions to boost more sustainable, healthy and resilient consumption patterns.

Bridge2Food and Global Plant-Based Foods & Proteins EcoSystem Partners

Bridge2Food brings together industry & research leaders from around the world in the Global Plant-Based Foods & Proteins Ecosystem. The aim of this EcoSystem is to accelerate the transition towards a more plant-based diet, with better foods, produced in a sustainable way, as well as increase food security with an abundant supply of proteins for food, feed, and petfood markets as well as initiating €1 Billion Public-Private Partnerships by 2025.

Global Plant-Based Foods & Proteins EcoSystem

110+ Organisations + 300+ Leading Experts

EAPF Members and Partners:
The European Alliance for Plant-Based Foods (EAPF) brings together like-minded organisations in the plant-based value chain around a unique mission: To put plant-based foods at the heart of the transition towards more sustainable and healthy food systems. The Alliance represents the entire plant-based value chain: Food producers and manufacturers, NGOs, nutritionists, research & academia, and consumers.

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