



**GIANT
LEAPS**

POLICY BRIEF 7

Dietary shift insights for integrated food policy



OBJECTIVE

A dietary transition from animal-based to alternative protein foods is needed to reduce the environmental footprint of our food system and to improve human health. Achieving this dietary transition is inherently complex as it is hindered by major knowledge gaps and affected by dietary habits, norms and culture, the current food environment, etc. Addressing the barriers involves a diverse group of actors. Within the EU-funded GIANT LEAPS project, we performed research across multiple domains of expertise downstream of primary production and raw ingredient processing to close gaps and identify the way forward to make the dietary transition a success. This policy brief describes overarching conclusions from our multidisciplinary work and recommendations to facilitate this transition.

KEY POLICY RECOMMENDATIONS

The following interdependent recommendations aim to facilitate the dietary shift towards healthy diets based on a sustainable food system and society.

Recommendations

1. Leverage the dietary shift's dual benefit on human health and the environment
2. Focus on protein diversification as a high-level strategy that enables tailored solutions
3. Promote a dual strategy towards whole foods and processed foods
4. Facilitate collaboration and generate high quality, open access data on dietary proteins
5. Foster an environment conducive to long-term gradual change, enabling innovation and adaptation

Call for Action

1. Governments, scientist and industry need to collaborate in order to generate open access, high-quality data on alternative proteins, based on consensus methodologies
2. Governments: enable a long-term stable innovation and investment environment to facilitate protein diversification

POLICY RECOMMENDATIONS

Recommendation 1: Leverage the dietary shift's dual benefits on human health and the environment

GIANT LEAPS results demonstrate that human health and environmental benefits can align in both current diets and optimised future diets, challenging the perception that these goals are typically in opposition and require trade-offs. Out of six current EU dietary patterns, the plant-forward diet scored highest on nutritional quality and lowest on environmental impact. While only a small part of the population (1.6%) eats according to this pattern¹, the dual benefit shows great potential. Modelling of future diets based on data from 4 European countries showed that substituting a limited number of animal products in current diets with sufficiently fortified analogues based on alternative proteins can lead to up to 50% reductions in greenhouse gas emissions and land use while maintaining adequate protein



intake². Additional optimisation studies further demonstrated the potential to improve health impact while lowering environmental impact compared to current diets. In these optimised diets, animal product consumption was reduced while consumption of alternative protein foods, but also of fruits, vegetables, nuts and seeds, was increased³. Overall, a dietary shift towards lower consumption of animal-based protein foods and higher consumption of alternative protein foods should be pursued for dual benefits on human health and environmental impact.

Recommendation 2: Focus on protein diversification as a high-level strategy that enables tailored solutions

Protein diversification is a widely supported strategy and the GIANT LEAPS results, which span a diverse range of alternative protein sources including plant-based proteins, microalgae, single cell proteins and insects, provide further evidence for its necessity. No single protein source or solution can address all challenges: there is no silver bullet. Sustainability-related analyses showed that environmental impacts of protein ingredients vary depending on the necessary processing intensity as well as the location and scale at which they are produced⁴. Similarly, from a safety and nutritional point of view, there are differences between protein sources as each has specific features: e.g. which essential nutrients they provide or hazards they might contain^{1,2,5-7}. The suitability of protein sources for use in analogues depends on many aspects such as nutritional and technological requirements, but also on sensory properties. GIANT LEAPS results show that intentionally combining different protein sources in blended products can contribute to optimisation of important product attributes including nutritional and sensory quality^{8,9}. Finally, from a consumer perspective, there are large overall differences in acceptance between protein sources as well as cultural preferences that differ between countries across Europe^{10,11}. Ultimately, a strategy of protein diversification enables tailored solutions across domains of sustainability, food processing, nutrition, and food safety, consumer preferences and more (on the condition that relevant data is available; see recommendation 4).

Recommendation 3: Promote a dual strategy towards alternative whole foods and processed foods

Both current plant-forward and modelled optimised diets showed that consuming more plant-based products improves environmental impact and nutritional quality (see also recommendation 1). However, diet diversification including both whole foods and processed foods (analogues for animal-based foods) is expected to facilitate the dietary transition as it contributes to consumer familiarity in terms of looks, texture, and cooking methods¹² as well as to nutritional requirements³. Different types of products require different protein sources and separate optimisation processes. While protein diversification can support increased consumption of whole foods, it is important that future innovations in healthy and sustainable formulated protein foods should not be precluded by the forms of processing involved. Rather, processing should be applied intentionally to optimise product attributes, including nutritional quality.

Recommendation 4: Facilitate collaboration and generate high quality, open access data related to protein foods and the diet transition

GIANT LEAPS results show that many data gaps across scientific domains remain for alternative protein sources and ingredients. This applies most notably to sustainability-related data, with limited availability of consistent, granular primary data and fragmented assessment practices that hinder comparability across protein sources^{13,14}. Generating comparable data requires agreed common frameworks for what to measure and how, including sustainability dimensions such as economic viability, social impacts, and climate resilience. Collaboration and alignment between the public sector, the private sector and science is necessary to address this issue.

Within the project, an open cloud-based data platform was set up to capture existing public and newly generated information on alternative protein sources, ingredients and foods across domains of food

processing, food safety, nutrition, allergenicity, and sustainability ([GIANT LEAPS database](#)). However, despite intensive efforts during the 4-year project period to collect and generate high-quality data, much data remains missing. This lack of data has limited the extent to which higher-level integrated analyses could be performed. For example, in our multi-criteria decision analysis (MCDA), where we performed an overall sustainability assessment using criteria for safety, nutrition, profit and environment, we had to limit the evaluation to plant-based sources only. Data for other types of alternative proteins, such as single cell proteins, insects or cultured meat, were too limited to be included¹⁵.

To implement science-based, tailored solutions across the full value chain, and to ensure citizen trust, it is important that high-quality, open access data on alternative proteins is generated based on transparent methodologies. The availability of such data can help improve policy making, and if implemented well, can contribute to European competitiveness by information and market efficiency.

Recommendation 5: Foster an environment conducive to long-term gradual change, enabling innovation and adaptation

The GIANT LEAPS project confirmed that a transition from animal-based to alternative protein-based foods positively impacts both planetary and human health^{1,3}. Consumer research showed that familiarity with alternative proteins influences acceptance and thus the likely uptake in daily diets. Therefore, plant-based foods are more likely to drive the transition in the short term than other, more novel, protein sources such as single-cell proteins, insects or cultured meat. Furthermore, for industry, the uptake of plant-based protein sources in product development is faster and more efficient to implement than other protein sources that may require the submission of novel food dossiers or upscaling of production. Nevertheless, when optimising the human diet, modelling approaches showed that the inclusion of novel protein sources in foods helps meeting nutritional requirements compared to using only plant-based proteins³. Therefore, further investment in developing alternative protein foods based on other proteins than plant-based proteins is worthwhile. However, this requires perseverance because:

- Multiple and incremental innovations in food processing are needed to successfully incorporate a variety of alternative protein sources into affordable foods with high nutritional and sensory quality
- Dietary habits only change slowly

Therefore, there is a need for a policy environment that enables long-term, gradual change and allows consumers to become accustomed to alternative protein foods, beyond only the plant-based. This also connects to EU priorities that aim for a resilient food system and healthy industrial competitiveness. A stable investment environment supports start-ups and upscaling of novel and upcoming protein sources.

Policy measures that do not take consumer acceptance into account are unlikely to succeed and may even backfire, leading to public resistance or wasted resources. A balanced approach is needed that supports innovation while respecting cultural traditions and consumer preferences.

Investments should prioritise solutions that are both environmentally sustainable and likely to be accepted by consumers. Ultimately, collaborative efforts and incremental changes are required to achieving a more sustainable food future.

In conclusion: small steps, made consistently and long-term, will lead to GIANT LEAPS in the transition towards a food system that sustainably supports human and planetary health.

CALL FOR ACTION

Based on the policy recommendations stated above, stakeholders are urged to prioritise the following aspects:

- ✓ All stakeholders need to focus on generating open-access, high-quality data, based on consensus methodologies, in order to foster citizen trust and for the market to address the challenges appropriately, rationally and efficiently. Collaboration between government, science and industry can facilitate this process where each have specific roles to play.

For governments and regulators:

- ✓ Consider mandating data sharing (e.g. LCA (life-cycle analysis) data from industry) and to fund science in order to develop the necessary methodologies and standards.
- ✓ Enable a long-term stable innovation and investment environment to facilitate protein diversification, including the introduction of alternative proteins other than plant based.

For scientists and research institutions:

- ✓ Publish and generate datasets (including local data where relevant), in open databases, and develop a harmonised sustainability methodology that includes environmental, economic and social dimensions in a balanced way. The GIANT LEAPS' integrated sustainability assessment framework could provide a basis for this work.

For food business operators:

- ✓ Find ways and take (joint) initiative to publish data openly (including local data) while not compromising business but leveraging for competitive advantage instead.

ABOUT GIANT LEAPS

The EU-funded project GIANT LEAPS aims to accelerate the dietary shift towards a more sustainable and healthier food system, aligning with the EU Green Deal objectives and the Farm to Fork Strategy.

The ambition of GIANT LEAPS is to transform European diets by reducing the consumption of traditional animal proteins, targeting a goal where 50% of total protein dietary intake is derived from alternative protein sources – such as plants, microalgae, insects, and single-cell proteins – by 2030.

To achieve this goal, GIANT LEAPS employs a multi-actor approach, actively engaging with policymakers, production sectors, and European citizens. This collaboration fosters key innovations, methodologies, datasets and information that empower all stakeholders in the food system to make informed decisions, strategic investments, and sustainable choices. Ultimately, the Project seeks to facilitate a large-scale dietary shift towards alternative protein-rich foods, maximising both nutritional and environmental impacts.

DISCLAIMER

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