Acceptance of Alternative Proteins Among European Consumers. Policymakers Brief.

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LIKE-A-PRO Project
Acceptance of Alternative Proteins Among European Consumers

Target Group
Policymakers

Introduction
High-quality protein is crucial for health, weight management, metabolism, and healthy aging. Yet, the more traditional sources of protein, namely meat and dairy production, raise significant socio-economic and environmental concerns[1]. Hence, there's a need for alternative proteins such as plant-, fungus-/mushroom-, and/or insect-based proteins, which hold manifold sustainability benefits. Despite the recognised positive impacts, the widespread adoption of alternative proteins among European consumers neither is quick nor large enough in scale to meet the needed sustainability transition. Understanding the factors at play – both at the individual and the food system environment level – that limit or enable the prevalence of alternative proteins is crucial in catalysing (mitigate the limiting and exploit the enabling) the much-needed shift.

The following summary illustrates the key insights of a series of studies conducted as part of the LIKE-A-PRO project. These studies address different factors, both enabling and limiting the uptake and acceptance of alternative protein sources in our diets. The factors are clustered using the COM-B model[2], which covers both factors close to the individual (capability and motivation) as well as those external to individuals (opportunity). Insights are also clustered by demographic factors, such as age, gender, education, income, and geographical location. On the basis of the compiled insights, this summary concludes with some key recommendations to policy makers on how to promote and mainstream consumption and production of alternative proteins in Europe, as well as foster the transition towards a sustainable and good life for all.

Enablers and Barriers of the Acceptance of Alternative Proteins
The table below summarises the findings on the enablers and barriers to the uptake and acceptance of various alternative protein sources and products. The insights stem from a review of existing literature conducted as part of the LIKE-A-PRO project[3][4][5]. A determinant has been linked to an alternative protein source where and when information was found in the reviewed literature. This is not exhaustive due to the specific approaches in our research process. For more information on the methodological approaches, please have a look at the original reports listed in the footnote section (3 & 5).

	Enablers	Barriers
Capability	• **Familiarity** with alternative protein products *(applicable to general, plant, fungus/mushroom and insect-based*	• **Lack of cooking skills** *(applicable to general and plant-based proteins)*

[1] EAT. (2022). Healthy diets from sustainable food systems. Food planet health. Summary report of the EAT-Lancet Commission. EAT.

[2] Michie, S., van Stralen, M. M., & West, R. (2011). The behaviour change wheel: a new method for characterising and designing behaviour change interventions. Implementation science, 6, Article 42. https://doi.org/10.1186/1748-5908-6-42

[3] Zaleskiewicz, H., Luszczynska, A., Kulis, E., Siwa, M., Szczuka, Z., Banik, A., Grossi, F., Nystrand, B.T., Samoggia, A., Chrysochou, P., Perrea, T., Krystallis, A. (2023). D1.1. Alternative protein integration in EU diets. LIKE A PRO project.

[4] Zaleskiewicz, H., Kulis, E., Siwa, M., Szczuka, Z., Banik, A., Grossi, F., Chrysochou, P., Nystrand, B. T., Perrea, T., Samoggia, A., Xhelili, A., Krystallis, A., & Luszczynska, A. (2024). Geographical context of European consumers' choices of alternative protein food: A systematic review. Food Quality and Preference, 117, 105174. https://doi.org/10.1016/j.foodqual.2024.105174

[5] Zaleskiewicz, H., Kulis, E., Siwa, M., Szczuka, Z., Banik, A., Grossi, F. Chrysochou, P., Nystrand, B. T., Perra, T., Samoggia, A., Xhelili, A., Krystallis, A., & Luszczynska, A. (2024). Characteristics of built food environments associated with alternative protein food choices: a systematic review. International Journal of Behavioral Nutrition and Physical Activity, 21, 58. https://doi.org/10.1186/s12966-024-01606-6

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	proteins) as well as **cooking skills** *(applicable to general and plant-based proteins)* • **Easiness to replace** conventional food products with alternative ones *(applicable to general, plant, fungus/mushroom and insect-based proteins)* • **Labels** and **information** indicating **ingredients and origin** (clean and local / regional sources) *(applicable to general proteins)*	
	• **Increased health literacy** as well as **general knowledge** about the **environmental impact** of conventional products have moderate and volatile impact on people's acceptance of other sources of protein *(applicable to general, plant-based, fungus/mushroom as well as insect-based proteins)*	
Opportunity	• Increased **availability and accessibility** of alternative products in food environments *(applicable to general, plant, fungus/mushroom and insect-based proteins)* • **Casual and non-routine food environment situations** which are linked to curiosity and feeling of adventure (e.g., festivals, restaurants, food markets) *(applicable to plant and insect-based proteins)* • If **insects are invisible** in the meal, the **name** of the insect-based product is **ambiguous** or **deliberately beautified** consumers are more likely to eat insect-based proteins *(applicable to insect-based protein products)* • **Positive social and cultural norms**, including increased acceptance of alternative protein products among immediate social circles *(applicable to general, plant, fungus/mushroom and insect-based proteins)*	• **Difficulty to recognize** alternative protein products **and/or find them in food environments** *(applicable to general and plant-based proteins)* • **Isolated and/or segregated placement** of alternative protein products in food environments *(applicable to general and plant-based proteins)* • **Selling** insect-based **proteins solely via e-commerce** • **Perceived incompatibility** with **local food** and/or **people's preference for regional / local food, including sources/ingredients** *(applicable to general alternative sources of proteins)* • **Labelling** plant-based proteins **as vegetarian or vegan** • **Social norms among men and masculinity and related identity** built around meat *(applicable to general proteins)*
Motivation	• **Perceived nutritional and health value** *(applicable to general, plant and insect-based proteins)* • **Good and matching taste, flavour and texture** with conventional meat and dairy products *(applicable to general and plant-based proteins)* • **Lower and/or equal prices** to conventional products *(applicable to general and plant-based proteins)* • Presential **pro-environmental** and generally **pro-sustainability attitudes** *(applicable to general, plant, fungus/mushroom and insect-based proteins)*	• Simultaneously, **off flavour** and **unpleasant texture** can inhibit the uptake products based on alternative sources of protein • **Neophobia** as well as **unbalanced nutritional profiles** and **health risk aversiveness** *(applicable to general, plant and insect-based proteins)* • **Attachment, positive emotions** and **routine food behaviours**, especially towards meat *(applicable to general, plant and insect-based proteins)* • **Perceived unsafety of food production and handling** (storing, maintenance) at the upper part of the value chain *(applicable to general, plant and insect-based proteins)*

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	• **Pro-animal welfare attitudes** *(applicable to general, plant and insect-based proteins)* • **Feeling adventurous, daring, excitement** accompanying **sensation-seeking** as well as **curiosity** *(applicable to general, fungus/mushroom and insect-based proteins)*	• **Distrust** towards high technologically processed food *(applicable to general and insect-based proteins)*
Other demographic factors (e.g., age, gender, education, income, geographical location)	• **Women, people of younger ages** as well as those with **higher income levels** showcase more positive attitudes towards *general and plant-based proteins* • **Higher education** level is correlated with positive attitudes towards *general and plant-based proteins* • **Older consumers** are more likely to buy *insect-based proteins* if they are sourced locally while as **younger ages and people with higher income** seem to be more accepting of *insect-based proteins*, regardless of their source • **Men** have a tendency to be more accepting of *insect-based proteins* • **People living in urban areas** exhibit increased curiosity towards *general and plant-based* alternative sources of protein.	• Simultaneously, **men** most likely to avoid alternative sources of protein, especially if among peers (as seen above due to social pressure)

Recommendations for Action

Educating and training consumers. To address barriers hindering alternative protein consumption, particularly informational and perceptual challenges, targeted educational campaigns are essential. Consumers need to be informed about the nutritional value and diverse forms of alternative proteins, while also receiving practical guidance on their integration into daily diets. Emphasis should be placed on dispelling misconceptions and addressing perceived difficulties. This approach requires providing evidence-based nutritional information, enhancing culinary skills, raising awareness of environmental and ethical considerations, and implementing behaviour change strategies. By prioritizing education and training initiatives, policymakers can foster a more informed and receptive consumer base, promoting greater acceptance of alternative proteins within the food system. Given that credibility and trust are paramount to the acceptance of alternative proteins, policymakers have a crucial role in reshaping perceptions and enhancing public confidence.

Facilitating accessibility to alternative proteins. To broaden access to alternative proteins and transition them from a niche to a mainstream food option, joint efforts are needed to ensure that alternative proteins are easily accessible and affordable. This entails policy actions also (e.g., new and/or improved regulatory frameworks that can make the production and market integration of alternative proteins easier, while maintaining safety standards, green public procurement and similar) that will ensure availability of alternative proteins across all food environments, but importantly to channels of everyday food consumption (e.g. retail outlets, restaurants, canteens). Besides, the goal should be to ensure equitable access for individuals across socioeconomic strata, thereby making alternative proteins a viable dietary choice for all.

Promoting innovation and scale-up. To drive innovation and scale-up production of alternative proteins, it is crucial to allocate funding towards academic and industrial research. Addressing technical barriers, such as taste, flavour, and texture, is imperative. Additionally, support for access to capital and/or other financial support is vital for scaling up production capacities. Adopting a systems thinking approach is essential, recognizing the interconnectedness of various factors within the food system, that may also necessitate adjustments to existing business models. Success in

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diversifying protein sources requires collaboration across the entire food value chain and fostering interdisciplinary research to develop comprehensive solutions.

Promoting labelling schemes. To advance the promotion of alternative food proteins and nurture a fair market environment, policymakers should prioritize the implementation of labelling schemes across Europe. Such labelling schemes could be tailored to various food environments, providing consumers with the information needed to make conscious choices. The adoption of such measures can enhance the availability and accessibility of alternative foods, and further empower consumers to make more informed and sustainable decisions. Besides, consumer and behavioural insights are needed to further understand and improve the effectiveness of labelling schemes.

Continuous monitoring and evaluation. While alternative food proteins have the potential to promote sustainable and healthier diets, there is a critical need for more comprehensive, science-based evidence. This evidence should encompass the entire lifecycle of alternative proteins, from production to consumption, to better understand their impact on sustainability and health. Moreover, it is essential to investigate the reasons behind consumer rejection, which may range from product properties to cultural resistance. By implementing continuous monitoring and evaluation, policymakers can ensure that the development and promotion of alternative proteins are informed by robust data, addressing both the benefits and the challenges associated with their adoption. This approach will enable the creation of more effective strategies to support the integration of alternative proteins into mainstream diets and to overcome potential barriers to acceptance.

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