

## Allegato B - DESCRIZIONE DELLA PROPOSTA PROGETTUALE

### 1) GENERAL INFORMATION

<b>Project acronym:</b>	ProLegOmen
<b>Project title</b> (extended name): <i>Text should be self-explanatory (no acronyms), should not contain special characters (including accented letters), numbers and punctuation, maximum of 300 characters. Previously used titles cannot be used.</i>	Protein products based on fermented legumes: from food technology to human health
<b>Spoke:</b>	6
<b>Duration</b> (months): <i>(the duration cannot exceed 18 months)</i>	15 months
<b>Total project budget</b> (€):	799.977,38 €
<b>Total grant requested</b> (€):	671.984,00 €
<b>Project Coordinator:</b>	<i>Name, Surname: Francesca Giampieri Affiliation: Department of Clinical Sciences, Faculty of Medicine, Polytechnic University of Marche e-mail address: f.giampieri@univpm.it Phone Number: 0712204163</i>
<b>Abstract</b> (max 1500 characters including spaces):	
<p>Legumes are a healthy and sustainable source of protein. Encouraging people to increase their consumption, at the expense of animal-based foods, is a way to reduce the negative impact of the food system on the planet and to address both malnutrition from excess and from deficiency in our society, including vulnerable categories such as seniors.</p> <p>The main problem is that legumes are not among consumers' top preferences. The challenge, therefore, is to present them in new forms that can provide a rich, satisfying experience in line with consumers' lifestyles. The ProLegOmen project takes on this challenge and aims to explore the fermentation of legumes such as fava beans, chickpeas, cicerchia, lentils, and cannellini beans to develop a range of postbiotic functional products with organoleptic properties like those of dairy products, while keeping them minimally processed and with a very short label. Running parallel to R&amp;D activities, the ProLegOmen partners will engage in two main streams of activities: 1) the research stream, aiming to verify the nutritional benefits of a fermented legume substrate through <i>in vitro</i> and <i>in vivo</i> preclinical studies; 2) the marketing stream, aiming to define the value proposition to be tested in the market. By coordinating these streams from the early stages of development, the product will have a better chance of establishing itself as a desirable option for European consumers, increasing the positive impact of ONFOODS Spoke 6 project.</p>	
<b>Keywords</b> (Free Keywords that mainly characterize the project):	
Legume, protein, fermentation, market strategy, branding, postbiotic, functional food, human health, malnutrition	
<b>DNSH Principle:</b>	

Promoting the consumption of legumes as a preferable alternative to animal-derived products has positive impact relative to all six DNSH criteria:

**1. Climate change mitigation** – The carbon footprint of cultivating legumes as a protein source is significantly smaller than that of animal farming. Besides, when integrated into crop rotation following the principles of regenerative agriculture, legumes can substantially decrease the reliance on chemical fertilizers, the production of which heavily depends on fossil fuels. Legumes have indeed environmental advantages, as they enhance soil quality through nitrogen fixation, reduce the need for nitrogen fertilizers and improve crop production and diseases through intercropping or crop rotation.

Additionally, our primary supplier, Macè, responsible for providing all the necessary product samples for the project, operates on a facility equipped with 4000-square-meters of photovoltaic panels and utilizes organic waste to generate biogas. The company claims that 70% of the energy it consumes comes from these two renewable sources.

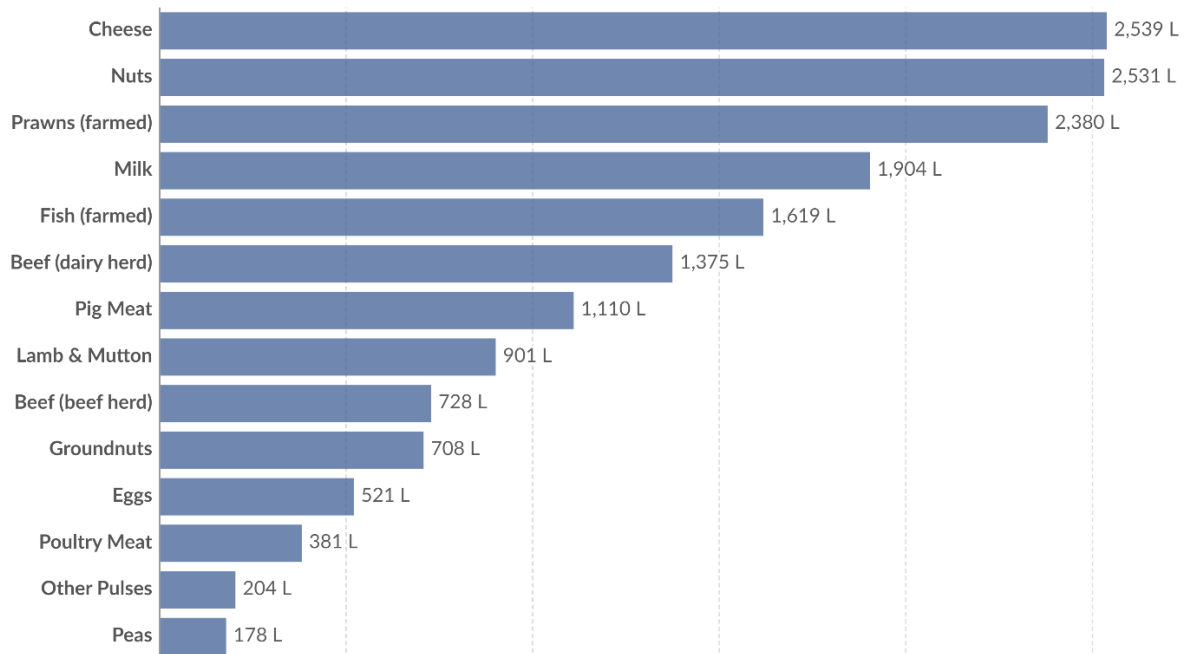
**2. Climate change adaptation** – Most legume varieties show great resistance to water stress and can adapt to drought scenarios.

**3. Sustainable use and protection of water and marine resources** – According to several studies (see for example (Semba et al., 2021; Poore and Nemecek, 2018) the water footprint of proteins from legumes is considerably lower than that from animals and nuts.

### Freshwater withdrawals per 100 grams of protein

Our World in Data

Freshwater withdrawals are measured in liters per 100 grams of protein.



Data source: Joseph Poore and Thomas Nemecek (2018). Additional calculations by Our World in Data.

[OurWorldInData.org/environmental-impacts-of-food](https://OurWorldInData.org/environmental-impacts-of-food) | CC BY

**4. Transition to the circular economy, including waste prevention and recycling** – Due to their protein content, all the by-products from cultivating and processing legumes, such as pea pods and bean husks, are a valuable protein source in livestock feed.



**5. Prevention and reduction of air, water and soil pollution** - Reducing the need for chemical fertilizers (see above) reduces the risk of ground water pollution.

**6. Protection and restoration of biodiversity and health of ecosystems** – According to a [research](#) funded by EU, “legume cultivation has been associated with [...] diversification of crop rotations which can break pest and disease cycles, improved soil quality [...], and support for pollinating insects.”