



CALL TEXT AND SUPPORTING INFORMATION

Call: Section 1 – Food Value-chain 2022

Topic 1.3.1-2022 (IA) Alternative protein sources for
the Mediterranean food value chain. From
production, extraction, processing and marketing, to
societal acceptance


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Thematic Area Food value-chain

Topic 1.3.1 (IA) Alternative protein sources for the Mediterranean food value chain. From production, extraction, processing and marketing, to societal acceptance

	<p><i>SRIA priorities addressed</i></p> <p>Topic 1.3.1 refers to:</p> <ul style="list-style-type: none">- Priority 3.3 Implementation of innovation in the food chain, promoting higher quality, sustainability and competitiveness, with particular reference to smallholders- Priority 3.4 - Implications of dietary shifts and sustainable diets for the Med populations and food industry <p>OPERATIONAL OBJECTIVES</p> <ul style="list-style-type: none">- /6 NUTRITION AND HEALTH.- /8 NEW FOOD BUSINESS MODELS.
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Challenge

Livestock rearing represents the most important source of proteins in human diets. However, overwhelming evidence shows that overconsumption of meat leads to health issues such as Noncommunicable Diseases (NCDs). Moreover, the World Health Organization (WHO) has classified processed meat as carcinogenic to humans and red meat as probably carcinogenic to humans). Still, its environmental impact is substantial since farmed animals contribute to climate change through, among others, the generation of huge amounts of GHGs, and the depletion of natural resources such as land, soil, and water, a large amount of which is needed to produce animal feed. Therefore, worldwide sustainable food and feed production systems should consider alternative and cheaper sources of proteins to be established, but in the Mediterranean Region in particular, due to an already critical situation in terms of availability of fertile soils and freshwater availability.

Proteins from sustainable sources, alternative to those currently most consumed, such as animal meat and fish, should be introduced into the Mediterranean food systems to relieve pressure on the environment and save fertile soil and water.

However, the complexity of the Mediterranean societies, with their very different cultural, religious and deep-rooted traditional aspects, may represent the biggest challenge to introducing proteins from other sources than farmed animals and fish. Therefore, societal acceptance should be also considered and studied before introducing and

promoting the widespread consumption of alternative protein sources for food and feed in the Mediterranean area.

Scope

Alternative proteins from different origins and new sources (terrestrial and aquatic) should be considered for animal feed and direct human consumption, considering the possible religious and cultural resistance.

Proposals should address all potential sources of alternative proteins such as, but not limited to, traditional alternative protein sources mainly of plants origin (such as legume seeds, cassava or moringa leaves, etc.) and those that fall under the [EU "Novel food"](#) (e.g. protein concentrates from oilseeds cakes, fungal mycelia, micro-algae, insects, etc.) and others derived from production processes such as food wastes, agro-industrial by-products or fermented foods by microorganisms. Food based on microbial fermentation - possibly inspired from traditional fermented Mediterranean foods - could be considered a lever to improve food bio-preservation, nutrition need, food security and acceptability.

For all cases, aspects related to sensory quality (e.g., flavour acceptance) should be considered. The consumers' needs and motivation towards including novel food protein in their diets should be evaluated. Thus, strategies to tackle or adapt to eventual cultural and religious barriers and resistances towards the "EU Novel foods", should be developed to increase social acceptance. Innovative industrial processing techniques and technologies, including fermentation, should be carried out for the extraction and purification of ingredients and the formulation and production of safe and nutritious novel foods.

Also, applicants should propose the more appropriate formulations and presentations of the final products in different forms, e.g., food, feed, extracts, powders, capsules, food supplements, ingredients and additives. The functionality of these novel proteins should be demonstrated by *in vitro* studies (possibly *in vivo* animal or human clinical trials) to prove their safety, including the absence of allergenicity.

In addition, the nutritional benefits should be evaluated by measuring bio-accessibility and bioavailability of nutrients and by estimating the presence of antinutritional factors. The sensory and techno-functional qualities of the new products prepared with alternative proteins should also be evaluated. Positive and/or negative aspects of each type of alternative protein (i.e. flavour, colour) proposed for food or feed should also be evaluated in terms of human and animal health, general safety and environmental impacts and the wise use of natural resources. Economic aspects should also be duly considered to make the new proteins more competitive in the markets. The new

products should be developed considering the different national food and feed quality and safety regulations. This is required to facilitate the new marketing strategy for consumers' acceptance and new business models, market assessment and potential ideas for start-ups. SMEs and entrepreneurs. The project proponents should consider possible synergies with projects funded under Horizon Europe calls with the same objectives.

Expected impacts

- Improve consumers' acceptance of food based on the use of alternative source of proteins
- Reducing greenhouse gas emissions and other negative environmental impacts (e.g. land use, deforestation, biodiversity loss, etc.) due to promoting alternative protein sources.
- Improve human health
- Easier access to cheaper and healthier protein sources as an alternative to animal sources toward healthier and sustainable diets
- Optimised environmentally friendly techniques to produce novel protein-enriched foods.
- Creating new business plans and models for commercialising the new protein sources (for food, feed and other food industrial purposes) to support the competitiveness of Mediterranean SMEs.

Key Performance Indicators

- Number of new food products with enhanced shelf-life, quality and health-related beneficial properties;
- Carbon and water footprints, as well as energy consumption per gram of protein
- Number of business models for quality and sustainability adapted to SME and smallholders;
- Percentage decrease in Food imports dependency (%imports/consumption)
- Number of raising awareness campaign promoting an environment conducive to healthy food choices through appropriate incentives and information provision to consumers and policymakers.

Links with EU Policies, Mission's and Partnerships

The proposal should indicate linkages to relevant EU policies and objectives in the context of the European Green Deal and relevant [Horizon Europe Missions and Partnerships](#)

- [Farm to Fork Strategy](#)¹
- [Biodiversity Strategy](#)²
- [Horizon Europe Mission on Soil Health and Food](#)
- European Partnership Water Security for the Planet (Water4All)
- European Partnership accelerating farming systems transition: agroecology living labs and research infrastructures
- European Partnership Agriculture of data
- European Partnership for Safe and Sustainable Food Systems for people, planet and climate
- European Partnership for rescuing biodiversity to safeguard life on Earth

Links with SDGs

SDG 2 Zero hunger

TARGET 2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round;

TARGET 2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change and climate action;

SDG 3 Good health and well-being

TARGET 3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being;

SDG 12 Responsible consumption and production

TARGET 12. 2 By 2030, achieve the sustainable management and efficient use of natural resources.

¹ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions “A Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system”

² Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions “EU Biodiversity Strategy for 2030 Bringing nature back into our lives”

Supporting information for Section 1 call for Proposals, Topic 1.3.1

Type of action	Innovation Action (IA)
Total indicative amount allocated to this call	EUR 8.2 million
Funding level	According to Horizon 2020 Rules 70% (except for non-profit legal entities, where a rate of 100% applies)
Technology Readiness levels (TRL)	TRL 6-8 Proposals should clearly state the starting and end TRLs of the key technology or technologies targeted in the project.
Budget and duration of grants	PRIMA considers that proposals requesting a contribution from the EU in the range of EUR 4.1 million and with a duration of 36 months would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts or duration.
Eligibility conditions for participation	Please refer to section 5.1.1 for the list of countries eligible for funding. The standard admissibility (section 5.1.2) and standard eligibility conditions (section 5.1.3) apply.
Submission and evaluation procedure	The call will be organised according to a two-stage submission process. A first-stage proposal (maximum ten pages) must be submitted within the first-stage submission deadline for the first step. Successful applicants in the first step will be invited to the second step to submit a full proposal (maximum 50 pages). A timeline for the submission and evaluation of applications can be found in Table 6 .
Evaluation rules	The award criteria, scoring, thresholds and weightings for IAs, listed in part 5.1.7 , will be used.
Grant agreement	PRIMA MGA (multi-beneficiary), based on Horizon 2020 MGA.
Consortium agreement	Participants in projects resulting from this call for Proposals must conclude a consortium agreement before the conclusion of the PRIMA grant agreement.